PORT OF OAKLAND

October 31, 2002

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: 3rd Quarter 2002, Quarterly Groundwater Monitoring and Product Recovery Report – 2277 and 2225 Seventh Street, Oakland, CA

Dear Mr. Chan:

Please find enclosed the subject Port of Oakland (Port) groundwater monitoring and product recovery report for 2277 and 2225 Seventh Street in Oakland, California. This report is being submitted in accordance with Alameda County Health Care Services Agency (ACHCSA) requirements.

The next monitoring event will be performed during the fourth quarter of 2002, and will be in accordance with the aforementioned requirements. If you have any questions or comments regarding the results, please contact me at (510) 627-1134.

Sincerely,

Jeffrey L. Rubin, CPSS, REA
Associate Port Environmental Scientist
Environmental Health and Safety Compliance

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Jeff Jones
Buck King (Harding ESE)
Trish Eliasson (Harding ESE)

Harding ESE
A MACTEC COMPANY

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October 29, 2002

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Mr. Jeff Rubin
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Third Quarter of 2002 Quarterly Groundwater Monitoring and Product Recovery Report
2277 and 2225 Seventh Street
Oakland, California

Dear Mr. Rubin:

Harding ESE, Inc. (Harding ESE) has prepared this report on behalf of the Port of Oakland (Port) for the groundwater monitoring and sampling programs at 2277 7th Street and 2225 7th Street in Oakland, California (Plate 1). This report summarizes the quarterly monitoring of six groundwater monitoring wells (MW-2, MW-4, MW-5, MW-6, MW-7, and MW-8A) at 2277 7th Street and the quarterly water level monitoring of three groundwater monitoring wells (MW-1, MW-2, and MW-3) at 2225 7th Street. The locations of these wells are shown on Plates 2 through 4.

This report also summarizes the operation of the product recovery system at the 2277 7th Street site during the third quarter of 2002. Monitoring well MW-3 at 2277 7th Street contains an active product skimmer that recovers separate-phase petroleum hydrocarbons from the groundwater surface; Harding ESE did not collect a groundwater sample from this well. Monitoring well MW-1 contains a passive product skimmer, and, therefore, Harding ESE did not collect a sample from this well either.

BACKGROUND

2277 7th Street

Monitoring wells were installed to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in September 1993. The former USTs, located on the south side of Building C-401, consisted of two 10,000-gallon gasoline tanks (CF-17 and CF-18), one 500-gallon oil tank (CF-19), and one 300-gallon waste oil tank (CF-20). On April 20, 2000, Harding ESE oversaw the abandonment of monitoring well MW-8 located at the northern edge of the property. Because of the Port's plans to construct a railroad track associated with the Port of Oakland Vision 2000 improvements in the immediate vicinity of the well, all surface structures, including the well, needed to be removed.

After the railroad construction was completed, the Port had a new well, MW-8A, installed in the same vicinity on October 2, 2001 by Innovative Technical Solutions, Inc.

2225 7th Street

Monitoring wells were installed at the adjacent site to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in 1989 and 1992. The former USTs consisted of seven diesel USTs and one bulk oil UST located on the east side of Building C-407 and one waste oil UST located north of Building C-407.

GROUNDWATER MONITORING

Harding ESE used the following procedures during groundwater monitoring at the 2277 7th Street site. Prior to purging and sampling the monitoring wells, Harding ESE measured the depth to groundwater below the top of the well casing with an electric water level indicator. After measuring the depth to water, Harding ESE purged the wells using a disposable or PVC bailer. Conductivity, pH, and temperature were monitored periodically during purging. Harding ESE collected the groundwater samples after removing a minimum of three well-casing volumes of water, and when the conductivity, pH, and temperature measurements had stabilized. The depths to groundwater and field parameter measurements were recorded on Groundwater Sampling Forms included in Appendix A. The purge water was stored onsite in the treatment system's product recovery tank. The Port's waste disposal contractor, Foss Environmental Services Company, Inc. periodically off-hauls and disposes of the purge water along with the product in the tank.

Harding ESE collected groundwater samples from the monitoring wells using Teflon disposable bailers and then transferred the groundwater into laboratory-provided containers. A duplicate sample was collected for quality assurance. Sample containers were labeled with the sample number, date and time of collection, and sampler's initials, then placed in an insulated cooler with ice. The samples were delivered under chain-of-custody protocol to STL San Francisco, a California certified analytical laboratory.

2277 7th Street

Harding ESE conducted this quarter's groundwater monitoring at 2277 7th Street on September 26th, 2002. In addition to measuring depth to groundwater, Harding ESE measured the depth to product in MW-1 and MW-3 to calculate product thickness. Groundwater level measurements are summarized in Table 1 and product thickness measurements are summarized on Table 2. The groundwater gradient direction is presented on Plate 3. Harding ESE did not use the groundwater measurements from MW-1 and MW-3 to develop the groundwater gradient because of the product recovery equipment in the well.

2225 7th Street

Harding ESE measured the depth to water at 2225 7th Street on September 26th, 2002. Groundwater level measurements are summarized in Table 3. Groundwater elevations and the gradient direction are presented on Plate 3.

LABORATORY ANALYSIS GROUNDWATER SAMPLES

STL San Francisco performed the chemical analyses of the groundwater samples using the following analytical methods:

- Total petroleum hydrocarbons as gasoline (TPHg) in accordance with EPA Method 8015 modified.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl t-butyl ether (MTBE) in accordance with EPA Method 8021B with confirmation of MTBE by EPA Test Method 8260.
- TPH as diesel (TPHd) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.
- TPH as motor oil (TPHmo) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.

The laboratory results for 2277 7th Street are summarized in Table 4 and are shown on Plate 4. Copies of the laboratory results and chain-of-custody forms are provided in Appendix B. The historical semi-annual laboratory results for 2225 7th Street are summarized in Table 5.

FINDINGS

During this monitoring event, the groundwater measurements at both sites were conducted on September 26, 2002. The water levels are presented in Tables 1 and 3. Harding ESE used the computer program Surfer to create the contours on Plate 3 using the Kriging method. According to these contours, the groundwater appears to be moving towards the north from Building C-407 toward Building C-401. The groundwater flow direction observed during September 2002 are similar to that observed during the first and second quarters of 2002.

2277 7th Street

Harding ESE monitored MW-8 from 1998 through its abandonment in April 2000. During this time, no groundwater samples were collected because the well contained a thick, viscous, tar-like petroleum product. The new well, MW-8A, was installed in October, 2001 near the location of abandoned well MW-8. Harding ESE sampled MW-8A for the fourth time in the third quarter 2002, and no separate-phase products have been detected in this well.

Results of the September 26, 2002 groundwater sampling at 2277 7th Street are summarized below:

- Harding ESE found measurable product in MW-1 and MW-3 and therefore did not collect a groundwater sample from either well.
- TPHg was reported at a concentration of 69 µg/L in MW-2, 390 µg/L and 500 µg/L in MW-4, 230 µg/L in MW-6, and 83 µg/L in MW-7. TPHg was not detected in MW-5 or MW-8A. Last quarter, TPHg was reported at a concentration of 62 µg/L in MW-2, 830 µg/L and 820 µg/L in MW-4, 160 µg/L in MW-6, and 87 µg/L in MW-7.
- Benzene was reported at a concentration of 1.8 µg/L in MW-2, 150 µg/L and 200 µg/L in MW-4 and 40 µg/L in MW-6. Benzene was not detected in MW-5, MW-7, or MW-8A. Last quarter, benzene was detected at a concentration of 250 µg/L and 240 µg/L in MW-4 and 34 µg/L in MW-6.
- Toluene was reported at a concentration of 2.1 µg/L and 1.5 µg/L in MW-4, and 0.64 µg/L in MW-6. Toluene was not detected above the reporting limit in MW-4 or MW-6 last quarter, and was not detected above the reporting limit in MW-2, MW-5, MW-7, or MW-8A this quarter or last quarter.
- Ethylbenzene was reported at a concentration of 0.8 µg/L in MW-6. Ethylbenzene was not detected above the reporting limit in MW-2, MW-4, MW-5, MW-7, or MW-8A this quarter or last quarter.
- Total xylenes were not detected above the reporting limit in MW-2, MW-4, MW-5, MW-6, MW-7, or MW-8A this quarter or last quarter.
- MTBE was reported at a concentration of 75 µg/L in MW-7. Wells MW-2, MW-4, MW-5, MW-6, and MW-8A did not contain detectable amounts of MTBE this quarter. Last quarter, MTBE was detected at a concentration of 51 µg/L in MW-7.
- TPHd was reported at a concentration of 57 µg/l in MW-4, 1400 µg/l in MW-6, 84 µg/L in MW-7, and 410 µg/L in MW-8A. TPHd was not detected in MW-2, the MW-4 duplicate sample, or MW-5. During the previous quarter, TPHd was detected at a concentration of 670 µg/l in MW-6, 54 µg/L in MW-7, and 570 µg/L in MW-8A.
- TPHmo was not detected above the reporting limit in any of the wells sampled this quarter or last.
- TPHd and TPHmo were not detected above the reporting limits in MW-1, MW-2, or MW-3 this semi-annual sampling event or last.

QUALITY ASSURANCE AND QUALITY CONTROL

A duplicate sample was collected from monitoring well MW-4 at 2277 7th Street on September 26, 2002 and submitted to the analytical laboratory to evaluate the precision of the analytical results. Precision is an indication of the reproducibility of results and is assessed by calculating the relative percent difference (RPD) between the primary sample result (X_1) and the duplicate sample result (X_2), as follows:

$$RPD = \frac{X_1 - X_2}{(X_1 + X_2)/2} \times 100$$

For example: A low RPD indicates high precision; a RPD of 67 percent indicates the two results differ by a factor of two. As shown below, the RPD was calculated for chemical compounds detected above the reporting limit in both the duplicate and primary samples.

2277 7th St.
MW-4
9/26/02

ANALYTE	X_1	X_2	RPD
MTBE	<10	<10	--
B	150	200	29%
T	2.1	1.5	33%
E	<1.0	<1.0	--
X	<1.0	<1.0	--
TPHd	57	<50	--
TPHg	390	500	25%

- The relative percent difference between the analytical results from MW-4 and its duplicate sample ranged from 25% to 33%.

PRODUCT RECOVERY SYSTEM AT 2277 7TH STREET

The product recovery system at 2277 7th Street consists of an air-actuated (active) product skimmer in MW-3. Since MW-1 contained no measurable product, the passive product skimmer was removed on May 22, 2000. However in the following months, product was measured in the well and skimmer was replaced. Harding ESE completed product recovery at MW-6 and removed the passive skimmer on April 19, 1999. The product in MW-3 discharges to a product recovery tank, and Harding ESE conducts bi-weekly inspections of the treatment system. The Port's waste disposal contractor, Foss Environmental Services Company, Inc., removes product from the product recovery tank at various times throughout the quarter. Table 2 presents a summary of the product thickness data. A summary of the activities during the past quarter associated with the operation and maintenance of the product recovery system is presented in Table 6.

CLOSURE

We trust that this provides the information required at this time. If you have any questions, please contact Trish Eliasson at (510) 628-3240.

Yours very truly,

Harding ESE, Inc.

Trish Eliasson
Senior Staff Engineer

Buck King, RG, CHG
Senior Project Hydrogeologist

REGISTERED GEOLOGIST
JON BUCKALEW KING
No. 6353
EXP. 8/03
STATE OF CALIFORNIA

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Attachments: Table 1 – Groundwater Elevations Data, 2277 7th Street
Table 2 – Summary of Product Removal and Product Thickness, 2277 7th Street
Table 3 – Groundwater Elevations Data, 2225 7th Street
Table 4 – Groundwater Sample Results, 2277 7th Street
Table 5 – Groundwater Sample Results, 2225 7th Street
Table 6 – Summary of Operation and Maintenance Activities

Plate 1 – Vicinity Map
Plate 2 – Site Plan
Plate 3 – Groundwater Elevations, 2277 and 2225 7th Street, September 26, 2002
Plate 4 – Groundwater Sample Results, 2277 7th Street, September 26, 2002

Appendix A - Groundwater Sampling Forms
Appendix B - Laboratory Reports

Table 1. Groundwater Elevations Data
Port of Oakland
2277 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	14.14	4/18/00	8.21	5.93
		5/22/00	8.17	5.97
		7/10/01	10.00	4.14
		12/12/01	NA	NA
		3/8/02	NA	NA
		6/13/02	NA	NA
		9/26/02	NA	NA
MW-2	14.36	12/31/97	8.73	5.63
		4/13/98	7.72	6.64
		11/6/98	9.43	4.93
		3/19/99	8.21	6.15
		6/24/99	8.91	5.45
		9/28/99	9.42	4.94
		11/12/99	9.63	4.73
		2/11/00	8.54	5.82
		5/22/00	8.10	6.26
		9/6/00	8.79	5.57
		12/19/00	9.19	5.17
		2/21/01	7.99	6.37
		4/3/01	8.23	6.13
		7/10/01	8.70	5.66
		12/12/01	8.16	6.20
		1/22/02	7.64	6.72
		3/8/02	8.31	6.05
		6/13/02	8.64	5.72
		9/26/02	8.95	5.41
MW-4	13.15	12/31/97	7.09	6.06
		4/13/98	7.71	5.44
		11/6/98	8.69	4.46
		3/19/99	8.00	5.15
		6/24/99	8.45	4.70
		9/28/99	8.73	4.42
		11/12/99	8.83	4.32
		2/11/00	7.71	5.44
		5/22/00	8.09	5.06
		9/6/00	8.32	4.83
		12/19/00	8.47	4.68
		2/21/01	7.51	5.64
		4/3/01	8.13	5.02
		7/10/01	8.12	5.03
		12/12/01	7.65	5.50
		1/22/02	7.60	5.55
		3/8/02	7.96	5.19
		6/13/02	8.20	4.95
		9/26/02	8.21	4.94

Table 1. Groundwater Elevations Data
Port of Oakland
2277 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-5	13.49	12/31/97	6.38	7.11
		4/13/98	5.56	7.93
		11/6/98	6.59	6.90
		3/19/99	6.20	7.29
		6/24/99	6.73	6.76
		9/28/99	6.91	6.58
		11/12/99	7.06	6.43
		2/11/00	7.00	6.49
		5/22/00	6.21	7.28
		9/6/00	6.56	6.93
		12/19/00	6.68	6.81
		2/21/01	6.08	7.41
		4/3/01	6.38	7.11
		7/10/01	6.58	6.91
		12/12/01	6.40	7.09
		1/22/02	6.10	7.39
		3/8/02	6.10	7.39
		6/13/02	6.31	7.18
		9/26/02	6.60	6.89
MW-6	14.00	6/24/99	8.61	5.39
		9/28/99	9.26	4.74
		11/12/99	8.01	5.99
		2/11/00	7.20	6.80
		5/22/00	7.13	6.87
		9/6/00	7.12	6.88
		12/19/00	7.57	6.43
		2/21/01	7.50	6.50
		4/3/01	6.88	7.12
		7/10/01	7.15	6.85
		12/12/01	9.50	4.50
		1/22/02	6.69	7.31
		3/8/02	6.98	7.02
		6/13/02	7.45	6.55
		9/26/02	7.95	6.05

Table 1. Groundwater Elevations Data
Port of Oakland
2277 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-7	14.35	12/31/97	8.88	5.47
		4/13/98	7.86	6.49
		11/6/98	9.55	4.80
		3/19/99	8.41	5.94
		6/24/99	9.08	5.27
		9/28/99	9.60	4.75
		11/12/99	9.77	4.58
		2/11/00	8.67	5.68
		5/22/00	8.43	5.92
		9/6/00	8.88	5.47
		12/19/00	9.21	5.14
		2/21/01	8.13	6.22
		4/3/01	8.45	5.90
		7/10/01	8.87	5.48
		12/12/01	8.39	5.96
		1/22/02	7.99	6.36
		3/8/02	8.51	5.84
		6/13/02	8.90	5.45
		9/26/02	9.00	5.35
MW-8A	12.94	12/12/01	7.20	NA
		1/22/02	7.20	5.74
		3/8/02	7.70	5.24
		6/13/02	7.72	5.22
		9/26/02	7.91	5.03

[1] Elevation data relative to Port of Oakland datum; well surveys performed on September 12, 1996, and February 4, 1998, by PLS Surveys.

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.
- Monitoring MW-8 was abandoned on April 20, 2000 in order to construct a railroad track associated with the Port of Oakland Vision 2000.

NA = Not available

Table 2. Summary of Product Removal and Product Thickness
Port of Oakland
2277 7th Street, Oakland California

Well ID	Elevation of Top of Casing[1] (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method[2]
MW-1	14.14	12/31/97	-	-	-	0.2	passive skimmer
		1/29/98	-	-	-	0.2	passive skimmer
		3/2/98	-	-	-	0.018	passive skimmer
		5/11/98	-	-	-	0.02	passive skimmer
		6/15/98	-	-	-	0.2	passive skimmer
		11/6/98	9.34	10.3	0.96	1.2	passive skimmer
		1/7/99	-	-	-	0.2	passive skimmer
		2/11/99	-	-	-	0.2	passive skimmer
		3/12/99	-	-	-	0.2	passive skimmer
		3/19/99	NM	8.45	>0.01	0.07	passive skimmer
		4/14/99	-	-	-	0.2	passive skimmer
		5/11/99	-	-	-	0.2	passive skimmer
		6/24/99	8.88	9.63	0.8	0.2	passive skimmer
		7/15/99	--	--	--	0.2	passive skimmer
		7/16/99	--	--	--	0.2	passive skimmer
		8/27/99	--	--	--	0.2	passive skimmer
		9/28/99	--	--	0.65	0.2	passive skimmer
		10/5/99	--	--	--	0.2	passive skimmer
		11/12/99	9.38	10.27	0.89	0.2	passive skimmer
		12/21/99	--	--	--	0.2	passive skimmer
		1/26/00	--	--	--	0.2	passive skimmer
		1/28/00	9.22	9.24	0.02	--	passive skimmer
		2/11/00	--	7.00	0.00	0.2	passive skimmer
		3/1/00	--	7.45	0.00	0.0	passive skimmer
		3/21/00	NM	7.34	0.00	0.0	passive skimmer
		4/18/00	NM	8.21	0.00	0.0	passive skimmer
		5/22/2000[3]	NM	8.51	0.00	0.0	passive skimmer
		9/6/2000[4]	8.52	9.24	0.72	0.0	passive skimmer
		9/21/00	8.71	9.26	0.55	0.0	passive skimmer
		10/11/00	--	--	--	0.0	passive skimmer
		11/30/00	--	--	--	0.0	passive skimmer
		12/19/00	9.5	9.89	0.39	0.0	passive skimmer
		2/22/01	8.3	8.4	0.13	0.0	passive skimmer
		4/3/01	8.3	8.55	0.25	0.0	passive skimmer
		4/23/01	--	--	--	0.0	passive skimmer
		5/11/01	--	--	--	0.0	passive skimmer
		5/30/01	8.5	8.9	0.40	0.0	passive skimmer
		6/14/01	--	--	--	0.0	passive skimmer
		7/10/01	8.8	10	1.20	0.0	passive skimmer
		12/12/01	NA	NA	NA	1.0	passive skimmer
		3/8/02	NA	NA	NA	NA	passive skimmer
		4/3/02	8.3	9.2	0.90	--	passive skimmer
		4/23/02	8.5	9.6	1.10	--	passive skimmer
		5/10/02	8.7	9.6	0.90	--	passive skimmer
		5/24/02	8.8	10	1.20	--	passive skimmer
		6/13/02	8.7	10	1.30	--	passive skimmer
		6/21/02	8.8	10	1.20	--	passive skimmer
		7/5/02	8.5	9.4	0.90	0.2	passive skimmer
		7/19/02	8.6	9.6	1.00	0.2	passive skimmer
		7/30/02	8.5	9.3	0.80	0.2	passive skimmer
		8/14/02	8.5	9.3	0.80	0.2	passive skimmer
		9/13/02	8.8	9.6	0.80	0.2	passive skimmer
		9/26/02	8.6	9.5	0.90	0.2	passive skimmer
		10/14/02	9.0	10.1	1.10	0.2	passive skimmer

Table 2. Summary of Product Removal and Product Thickness

Port of Oakland

2277 7th Street, Oakland California

Well ID	Elevation of Top of Casing[1] (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method[2]
MW-3	14.22	12/31/97	-	-	-	30	active skimmer
		1/29/98	-	-	-	10	active skimmer
		4/13/98	-	-	-	240	active skimmer
		5/11/98	-	-	-	1,545	active skimmer
		6/15/98	-	-	-	1,950	active skimmer
		11/6/98	8.84	9.94	1.1	500	active skimmer
		1/5/99	-	-	-	275[3]	active skimmer
		1/14/99	-	-	-	400[3]	active skimmer
		2/3/99	-	-	-	400[3]	active skimmer
		2/26/99	-	-	-	570[3]	active skimmer
		3/19/99	7.52	8.05	0.5	211	active skimmer
		6/16/99	-	-	-	310	active skimmer
		6/24/99	8.38	8.56	0.2	--	active skimmer
		7/14/99	--	--	--	50[3]	active skimmer
		9/28/99	--	--	0.2	--	active skimmer
		10/29/99	--	--	--	125[3]	active skimmer
		11/12/99	9.14	9.23	0.09	--	active skimmer
		1/28/00	--	--	--	135	active skimmer
		2/11/00	7.97	8.37	0.40	40	active skimmer
		3/1/00	6.59	7.24	0.65	0.0	active skimmer
		3/21/00	6.50	6.56	0.06	35	active skimmer
		4/18/00	--	--	--	--	active skimmer
		5/22/00	7.51	8.05	0.54	40	active skimmer
		6/26/00	7.82	8.2	0.38	90	active skimmer
		7/25/00	7.90	8.92	1.02	20	active skimmer
		8/31/00	8.15	9.5	1.35	30	active skimmer
		9/6/00	8.21	9.42	1.21	--	active skimmer
		9/21/00	8.30	8.88	0.58	115	active skimmer
		10/11/00	--	--	--	170	active skimmer
		11/30/00	--	--	--	105	active skimmer
		12/19/00	8.60	9.65	1.05	10	active skimmer
		2/22/01	6.36	8.15	1.79	--	active skimmer
		4/3/01	7.48	8.88	1.40	--	active skimmer
		4/23/01	7.85	9.1	1.25	--	active skimmer
		5/11/01	--	--	--	--	active skimmer
		5/30/01	7.75	9.1	1.35	--	active skimmer
		6/14/01	--	--	--	--	active skimmer
		7/10/01	8.10	9.6	1.50	--	active skimmer
		12/12/01	NA	NA	NA	1,000[5]	active skimmer
		3/8/02	7.80	8	0.20	1,000[5]	active skimmer
		4/3/02	7.60	7.7	0.10	--	active skimmer
		4/23/02	7.90	8.4	0.50	--	active skimmer
		4/25/02	7.90	8.8	0.90	--	active skimmer
		5/10/02	8.10	8.2	0.10	--	active skimmer
		5/24/02	8.05	8.1	0.05	--	active skimmer
		6/13/02	8.10	8.7	0.60	1,000[5]	active skimmer
		7/5/02	8.10	8.95	0.85	--	active skimmer
		7/19/02	8.10	8.9	0.80	--	active skimmer
		7/30/02	8.10	8.9	0.80	--	active skimmer
		8/14/02	8.10	8.9	0.80	--	active skimmer
		9/13/02	8.30	9.3	1.00	--	active skimmer
		9/26/02	8.30	9.0	0.70	--	active skimmer
		10/14/02	8.60	9.5	0.90	--	active skimmer

Table 2. Summary of Product Removal and Product Thickness
Port of Oakland
2277 7th Street, Oakland California

Well ID	Elevation of Top of Casing[1] (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method [2]
MW-6	14.00	13/31/97	-	-	-	0.0014	passive skimmer
		1/29/98	-	-	-	0.0014	passive skimmer
		3/2/98	-	-	-	0.0014	passive skimmer
		11/6/98	NM	9.62	>0.01	0.0	passive skimmer
		3/19/99	NM	7.37	>0.01	0.0	passive skimmer
MW-8 [1]	12.94	12/31/97	8.49	8.82	0.33	4.38	-
		11/6/98	9.25	10.3	1.1	3.48	-

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.
- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product*
- Product removal volumes from 11/6/98 on represent total product removed during that reporting period.

[1] Free product in well is too viscous to allow product thickness or groundwater level measurements.

[2] Product removal totals for MW-3 are estimated from documentation of product removal from the treatment system performed by Performance Excavators, Inc.

[3] The passive skimmer was removed from MW-1 on 5/22/00.

[4] The passive skimmer replaced MW-1 on 9/6/00.

[5] Removal total is the volume of both product and wastewater removed from the treatment system by Foss Environmental Services Company, Inc.

NM - Well checked for free product but not able to detect a measurable amount in the well.
Shaded areas indicate data from this reporting period.

NA - Not Available

Table 3. Groundwater Elevations Data
Port of Oakland
2225 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	13.72	1/15/93	5.21	8.51
		9/12/94	6.37	7.35
		11/30/94	5.76	7.96
		3/29/95	4.57	9.15
		5/25/95	5.14	8.58
		6/21/95	5.41	8.31
		6/23/95	5.44	8.28
		11/20/95	6.28	7.44
		12/27/95	5.86	7.86
		3/25/96	5.21	8.51
		6/26/96	5.58	8.14
		10/14/96	6.22	7.50
		3/19/97	5.48	8.24
		6/26/00	5.19	8.53
		9/6/00	5.62	8.10
		12/19/00	5.57	8.15
		4/3/01	5.03	8.69
		7/10/01	5.57	8.15
		12/12/01	5.60	8.12
		1/22/02	5.19	8.53
		3/8/02	5.17	8.55
		6/13/02	5.60	8.12
		9/26/02	6.05	7.67
MW-2	13.8	1/15/93	6.21	7.59
		9/12/94	6.47	7.33
		11/30/94	6.34	7.46
		3/29/95	5.51	8.29
		5/25/95	5.60	8.20
		6/21/95	5.72	8.08
		6/23/95	5.72	8.08
		9/28/95	6.15	7.65
		11/20/95	6.42	7.38
		12/27/95	6.31	7.49
		3/25/96	5.74	8.06
		6/26/96	5.85	7.95
		10/14/96	6.36	7.44
		3/19/97	5.90	7.90
		6/26/00	5.37	8.43
		9/6/00	5.62	8.18
		12/19/00	5.81	7.99
		4/3/01	5.38	8.42
		7/10/01	5.80	8.00
		12/12/01	10.00	3.80
		1/22/02	5.45	8.35
		3/8/02	5.49	8.31
		6/13/02	5.79	8.01
		9/26/02	8.15	5.65

Table 3. Groundwater Elevations Data
Port of Oakland
2225 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-3	15.06	1/15/93	6.44	8.62
		9/12/94	7.35	7.71
		11/30/94	7.12	7.94
		3/29/95	6.31	8.75
		5/25/95	6.75	8.31
		6/21/95	6.87	8.19
		6/23/95	6.88	8.18
		9/28/95	7.28	7.78
		11/20/95	7.51	7.55
		12/27/95	7.20	7.86
		3/25/96	6.64	8.42
		6/26/96	6.98	8.08
		10/14/96	7.47	7.59
		3/19/97	6.99	8.07
		6/26/00	6.82	8.24
		9/6/00	6.82	8.24
		12/19/00	7.10	7.96
		4/3/01	6.66	8.40
		7/10/01	7.00	8.06
		12/12/01	7.04	8.02
		1/22/02	6.67	8.39
		3/8/02	6.86	8.20
		6/13/02	7.00	8.06
		9/26/02	7.40	7.66

[1] Elevation data relative to Port of Oakland datum; well surveys performed on December 6, 1994
- Data prior to June 26, 2000 taken from *First Quarter 1997 Groundwater Monitoring and Sampling report* dated May 6, 1999, by Fluor Daniel GTI.

Table 4. Groundwater Sample Results
Port of Oakland
2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-1	05/22/00	3,600	41,000	<3,000	100	13 [8]	2.9	2.05	3.2 [9]
MW-2	05/27/94	87	470	NA	<0.5	<0.5	<0.5	<0.5	NA
	03/29/95	<50	110	1,400	<0.4	<0.3	<0.3	<0.4	NA
	09/06/95	<50	NA	NA	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	<50	1200	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	160	320	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1400	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	230 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	714	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	51	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	82	<50	<250	0.56	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	1.4	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<50	<300	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	11/12/99	<50	120 [2,6]	<300	<0.5	<0.5	<0.5	<0.5	6.3 [8,9]
	02/11/00	<50	<50	<300	5.4	<0.5	<0.5	<0.5	<2
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	0.76 [8]	<0.5	<0.5	<0.5	<0.5 [10]
	12/19/00	200 [3,11]	<50	<300	39	1.8	<0.5	2.6	<0.5 [10,12]
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/05/01	<50	<50	<300	4.4	<0.5	<0.5	<0.5	5.0 [14]
	03/08/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	62 [15]	<57	<570	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	69 [2]	<50	<500	1.8	<0.5	<0.5	<0.5	<5.0
MW-4	09/11/95	150	<200	500	23	<0.3	<0.3	<0.4	NA
	01/08/96	790	90	400	170	1.2	0.6	0.6	NA
	04/04/96	1,100	180	300	320	1.6	1.1	1.2	NA
	07/10/96	1,200	120	300	470	1.5	0.8	0.8	NA
	12/03/96	990	220 [1,2]	<250	350	3.3	1.3	1.3	NA
	03/28/97	440 [2]	<50	<250	190	1.2	0.64	<1.0	NA
	06/13/97	1,300	92 [3]	<250	500	5.5	3.4	2.8	NA
	09/18/97	1,300	150	<250	550	4.9	2.1	2.00	NA
	12/31/97	73 [1,2,3]	<47	<280	110 [1]	1.0 [1]	<0.5	<1.0	NA
	04/13/98	150 [2,3]	<50	<300	520	2.9	<2.5	<5.0	NA
	11/06/98	<50	<50	<300	250	1.7	<1	<1	<4
	03/19/99	81	<50	<300	250	<1	1.2	<1	<4
	06/24/99	190	<50	<300	360	1.4	2.2	1	24
	09/28/99	750 [3,5]	63 [3,5]	<300	280	1.5	<1	<1	<4
	11/12/99	330 [3]	840 [2]	<300	740	<2.5	<2.5	<2.5	42 [9]
	02/11/00	200 [2]	<50	<300	58	0.73	<0.5	<0.5	4.4 [9]
	05/22/00	240	<50	<300	500	<2.5	<2.5	<2.5	17

Table 4. Groundwater Sample Results
Port of Oakland
2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-4	09/06/00	530 [2,3]	<50	<300	190	0.93	0.6	0.57	<0.5 [10]
(cont'd)	12/19/00	960 [3,11]	70 [5]	<300	420	<2.5	<2.5	<2.5	<0.5 [10,12]
Dup.	12/19/00	1,200 [3,11]	<50	<300	440	<2.5	<2.5	<2.5	<0.5 [10,12]
	02/21/01	450 [13]	<50	<300	120	<0.5	<0.5	<0.5	<0.5 [10]
	07/10/01	<250	110 [2,13]	<300	620	2.6	2.9	<2.5	<0.5 [8,10]
	12/05/01	180	<50	<300	61	<0.5	<0.5	<0.5	3.8 [14]
	03/08/02	490 [2]	54 [2]	<500	180	<2.5	<2.5	<2.5	<25
	06/13/02	830 [2]	<50	<500	250	<5.0	<5.0	<5.0	<50
Dup.	06/13/02	820 [2]	<56	<560	240	<5.0	<5.0	<5.0	<50
	09/26/02	390 [2]	57	<500	150	2.1	<1.0	<1.0	<10
Dup.	09/26/02	500 [2]	<50 [16]	<500 [16]	200	1.5	<1.0	<1.0	<10
MW-5	09/11/95	90	<300	2,500	3.3	<0.3	<0.3	<0.4	NA
	04/04/96	<50	180	520	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1,500	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	200 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	3.1
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	11/12/99	<50	110 [2,6]	<300	<0.5	<0.5	<0.5	<0.5	5.5 [9]
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/05/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/08/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	11/06/98	120	12,000	1,200	19	0.65	1.8	<0.5	<2
	03/19/99	170	3,800	580	21	0.86	1.5	2.9	<2
	06/24/99	120	1,700 [7]	<300 [7]	18	<0.5	1.0	<0.5	54
	09/28/99	130 [3,5]	820	<300	20	0.51	2.2	<0.5	<2
	11/12/99	150	11,000 [2,6]	3,000 [3,6]	27	<0.5	2.2	<0.5	13 [9]
	02/11/00	270 [2]	2,300	<300	23	0.51	2.7	<0.5	5.8
	05/22/00	350	3,000	<300	18	0.51	<0.5	<0.5	7.7
	09/06/00	190	610	<300	26	<0.5	1.7	<0.5	<0.5 [10]
	12/19/00	130 [3,11]	620	<300	24	<0.5	1.6	<0.5	<2
	02/21/01	120 [13]	440	<300	21	<0.5	0.96	<0.5	<2
	07/10/01	120	560	<300	29	<0.5	0.99	<0.5	<2
	12/12/01	53	550	<300	27	<0.5	1.3	<0.5	<2.0
	03/08/02	160 [2]	640 [2]	<500	30	<0.5	<0.5	<0.5	5.0 [14]
	06/13/02	160 [2]	670 [2]	<500	34	<0.5	<0.5	<0.5	<5.0
	09/26/02	230 [2]	1400 [2]	<500	40	0.64	0.8	<0.5	<5.0

Table 4. Groundwater Sample Results
Port of Oakland
2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-7	09/06/95	<50	<300	800	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	410	110	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	530	340	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	80	840	1,700	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	280 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	65 [6]	94 [2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	100	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	240	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	53 [2,3]	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<48	<290	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	5.3
	06/24/99	73	<50	<300	<0.5	<0.5	<0.5	<0.5	12
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	14
	11/12/99	<50	600 [2,6]	420 [3]	<0.5	<0.5	<0.5	<0.5	15 [9]
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	51
	05/22/00	110	53 [2]	<300	<0.5	<0.5	<0.5	<0.5	75
	09/06/00	50 [6]	<50	<300	<0.5	<0.5	<0.5	<0.5	40 [10]
	12/19/00	54 [11]	51 [5]	<300	<0.5	<0.5	<0.5	<0.5	47 [10,12]
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	66 [10]
Dup.	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	60 [10]
	07/10/01	<50	51 [2]	<300	<0.5	<0.5	<0.5	<0.5	76 [10]
Dup.	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	75 [10]
	12/12/01	51	<50	<300	<0.5	<0.5	<0.5	<0.5	98 [14]
Dup.	12/12/01	64	52 [13,15]	<300	<0.5	<0.5	<0.5	<0.5	96 [14]
	03/08/02	52 [2]	<50	<500	<0.5	<0.5	<0.5	<0.5	24 [14]
	06/13/02	87 [2]	54 [2]	<500	<0.5	<0.5	<0.5	<0.5	51
	09/26/02	83 [2]	84 [2]	<500	<0.5	<0.5	<0.5	<0.5	75 [10]
MW-8A	12/12/01	68	720 [13,15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/08/02	<50	760 [2]	<570	<0.5	<0.5	<0.5	<0.5	<5.0
Dup.	03/08/02	<50	350 [2]	<580	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	<50	570 [2]	<570	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	<50	410 [2]	<500	<0.5	<0.5	<0.5	<0.5	<5.0

1 Analyte found in the associated blank as well as in the sample.
2 Hydrocarbons present do not match profile of laboratory standard.
3 Low-boiling-point/lighter hydrocarbons are present in the sample.
4 Chromatographic pattern matches known laboratory contaminant.
5 Hydrocarbons are present in the requested fuel quantification range, but do not resemble pattern of available fuel standard.
6 High-boiling-point/heavier hydrocarbons are present in sample.
7 Sample did not pass laboratory QA/QC and may be biased low
8 Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor or two.
9 Trip blank contained MTBE at a concentration of 4.2 µg/l
10 MTBE detections confirmed by EPA Test Method 8260. 8260 results displayed.
11 Sample exhibits unknown single peak or peaks
12 EPA Method 8260 confirmation analyzed past holding time.
13 Lighter hydrocarbons contributed to the quantitation
14 MTBE results from EPA Test Method 8021B.
15 Sample exhibits fuel pattern which does not resemble standard
16 Sample extracted out of hold time

- Data from December 1997 through April 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.
-Data prior to December 1997 taken from *Groundwater Analytical Results, Quarterly Groundwater Monitoring Report: Third Quarter 1997, Building C-401, 2277 7th Street, Oakland, CA,* dated October 24, 1997, by Uribe and Associate

NA Not Analyzed.

Table 5. Groundwater Sample Results
Port of Oakland
2225 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-1	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/94	<10 [1]	10,000	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/94	<10	2,800	NA	<0.3	<0.3	<0.3	<0.3	NA
	3/29/95	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	6/21/95	<50	<50 [2]	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/95	<50	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/96	<50	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/97	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [5]
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
Dup.	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
Dup.	7/10/01	<50	<50	310	<0.5	<0.5	<0.5	<0.5	<2
	12/12/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	6/13/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
Dup.	6/13/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
MW-2	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/94	34 [1]	<50	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/94	<10	81	NA	0.9	<0.3	<0.3	<0.3	NA
	3/29/95	<50 [3]	75	NA	0.3	<0.3	<0.3	<0.3	NA
	6/21/95	<50 [3]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	250 [1]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/95	220 [1]	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/96	200 [1]	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/96	77 [4]	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/97	150	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [5]
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/12/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	6/13/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
MW-3	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/94	<50	<50	NA	0.3	<0.3	<0.3	<0.3	NA
	11/30/94	110	150	NA	<0.3	<0.3	<0.3	<0.3	NA
	3/29/95	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	6/21/95	<50 [3]	<50 [2]	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	51 [1]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA

Table 5. Groundwater Sample Results
Port of Oakland
2225 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-3 (cont'd)	12/27/95	55 [1]	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/96	53	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/97	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [5]
	12/19/00	<50	50 [2]	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/12/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	6/13/02	<50	<56	<560	<0.5	<0.5	<0.5	<0.5	<5.0

NA Not Analyzed.

[1] Hydrocarbon pattern is not characteristic of gasoline

[2] Hydrocarbon pattern present in sample is not characteristic of diesel

[3] Uncategorized compound not included in the gasoline concentration

[4] Product is not typical gasoline

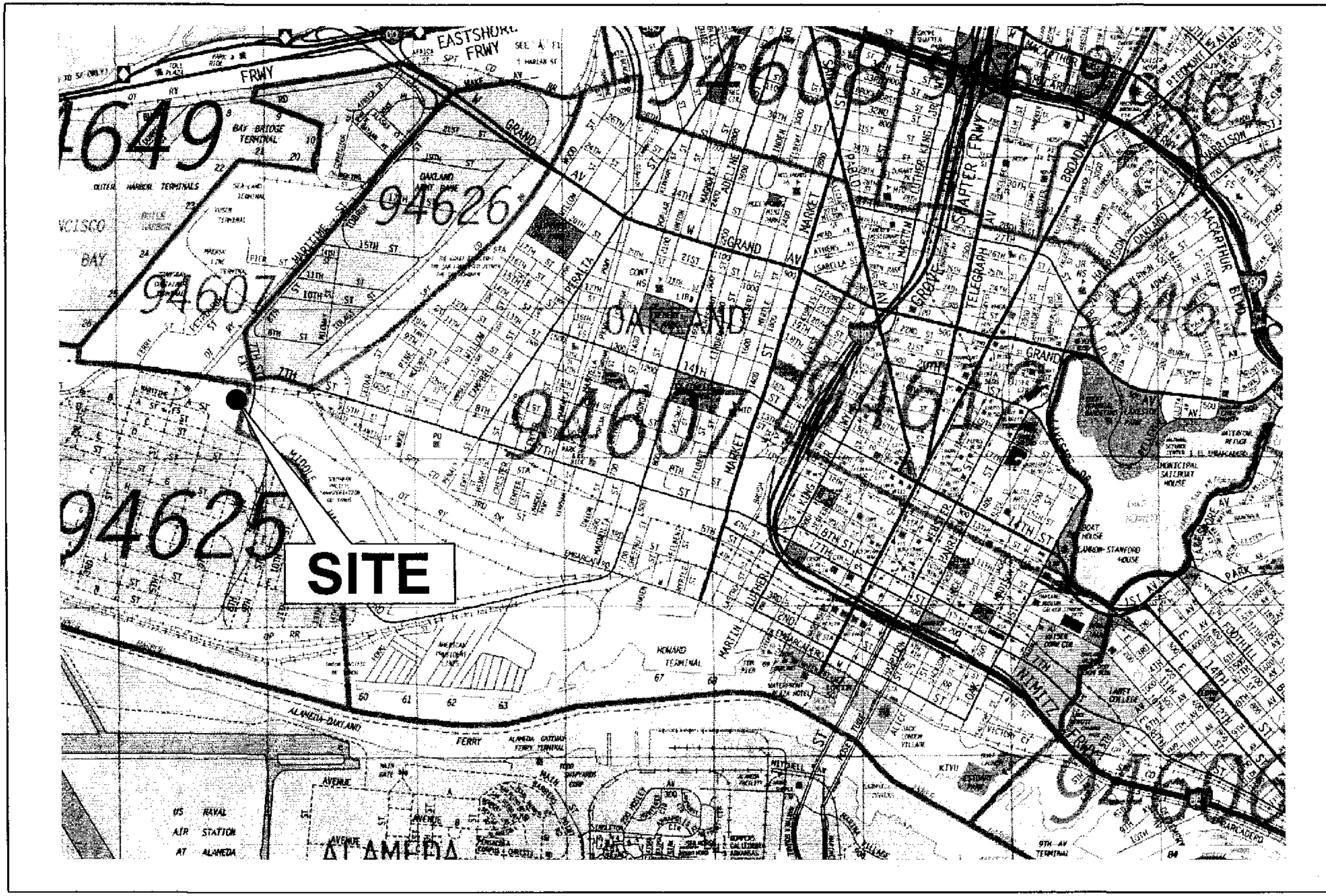
[5] MTBE detected by EPA Test Method 8021B but reported as ND<0.5 by EPA Test Method 8260

[6] Heavier hydrocarbons contributed to the quantitation

- Data prior to June 26, 2000 taken from *First Quarter 1997 Groundwater Monitoring and Sampling report* dated May 6, 1999, by Fluor Daniel GTI.

Table 6. Summary of Operation and Maintenance Activities
Port of Oakland
2277 7th Street, Oakland California

Date	System Status	Comments
7/5/02	Off	System is turned off and is in the process of being moved to new location.
7/19/02	Off	System is moved to new location but is not hooked up to electricity.
7/30/02	Off	System is moved to new location but is not hooked up to electricity.
8/14/02	Off	System is moved to new location but is not hooked up to electricity.
9/13/02	On	System is powered and operating.
9/26/02	On	System operating OK.
10/14/02	On	System operating OK.



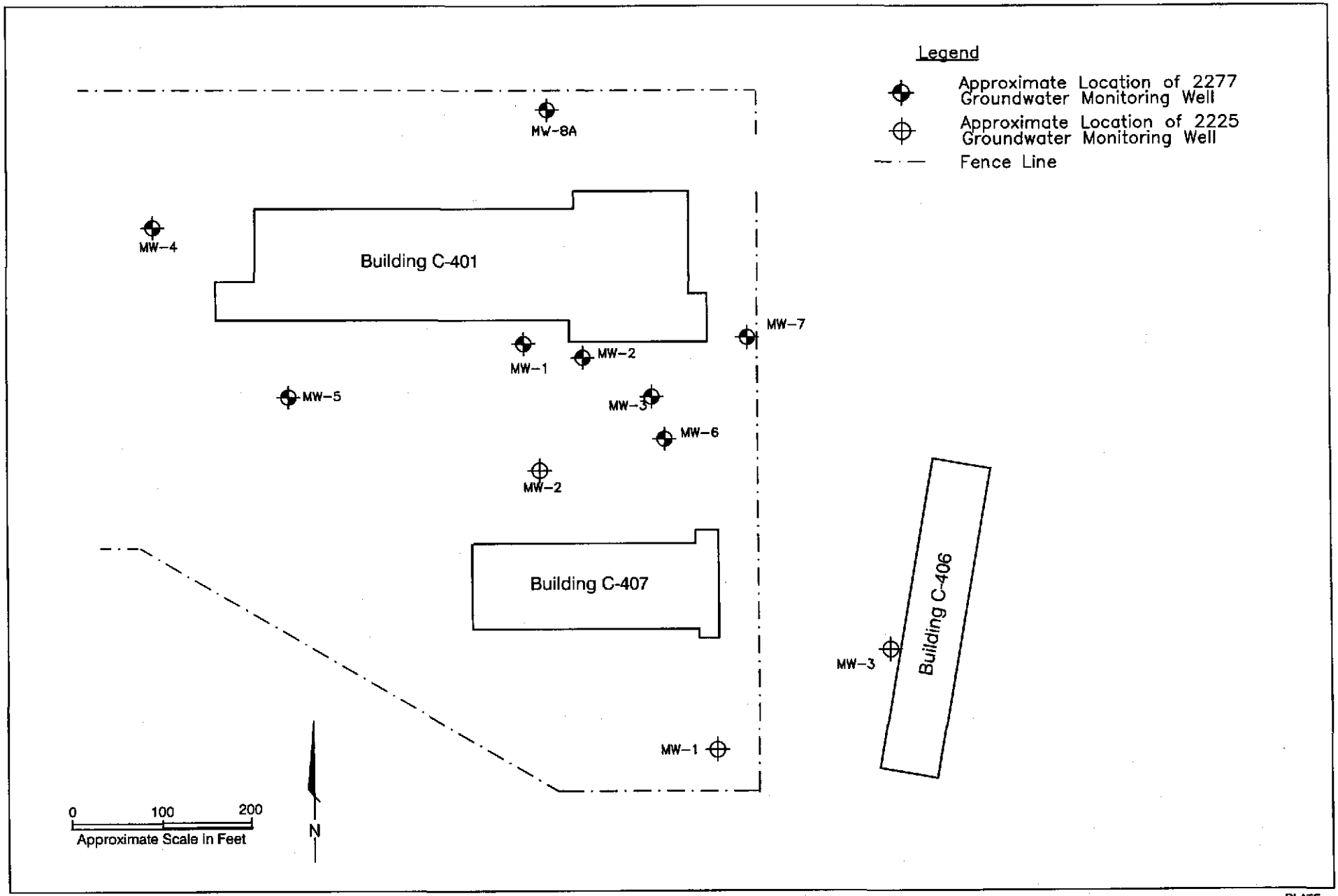
54821003.DWG 1.0
20021016.1020

Harding ESE
A MACTEC COMPANY

Vicinity Map
Quarterly Groundwater Monitoring Report
2277 and 2225 Seventh Street
Oakland, California 94607

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		10/02	



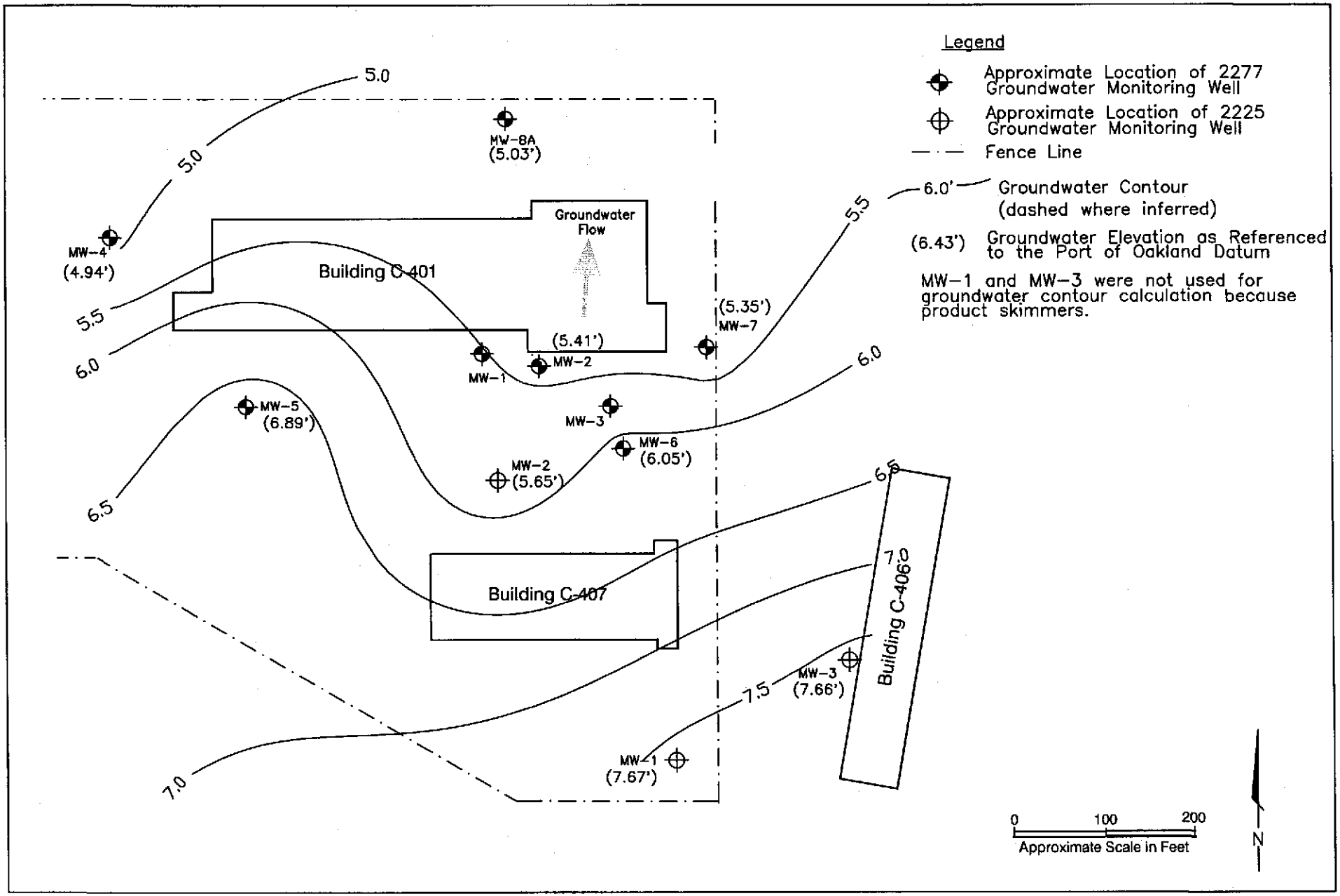
54821004.DWG 1.0
20021016.1014

Harding ESE
A MACTEC COMPANY

Site Plan
Quarterly Groundwater Monitoring Report
2277 and 2225 Seventh Street
Oakland, California 95607

PLATE
2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		10/02	



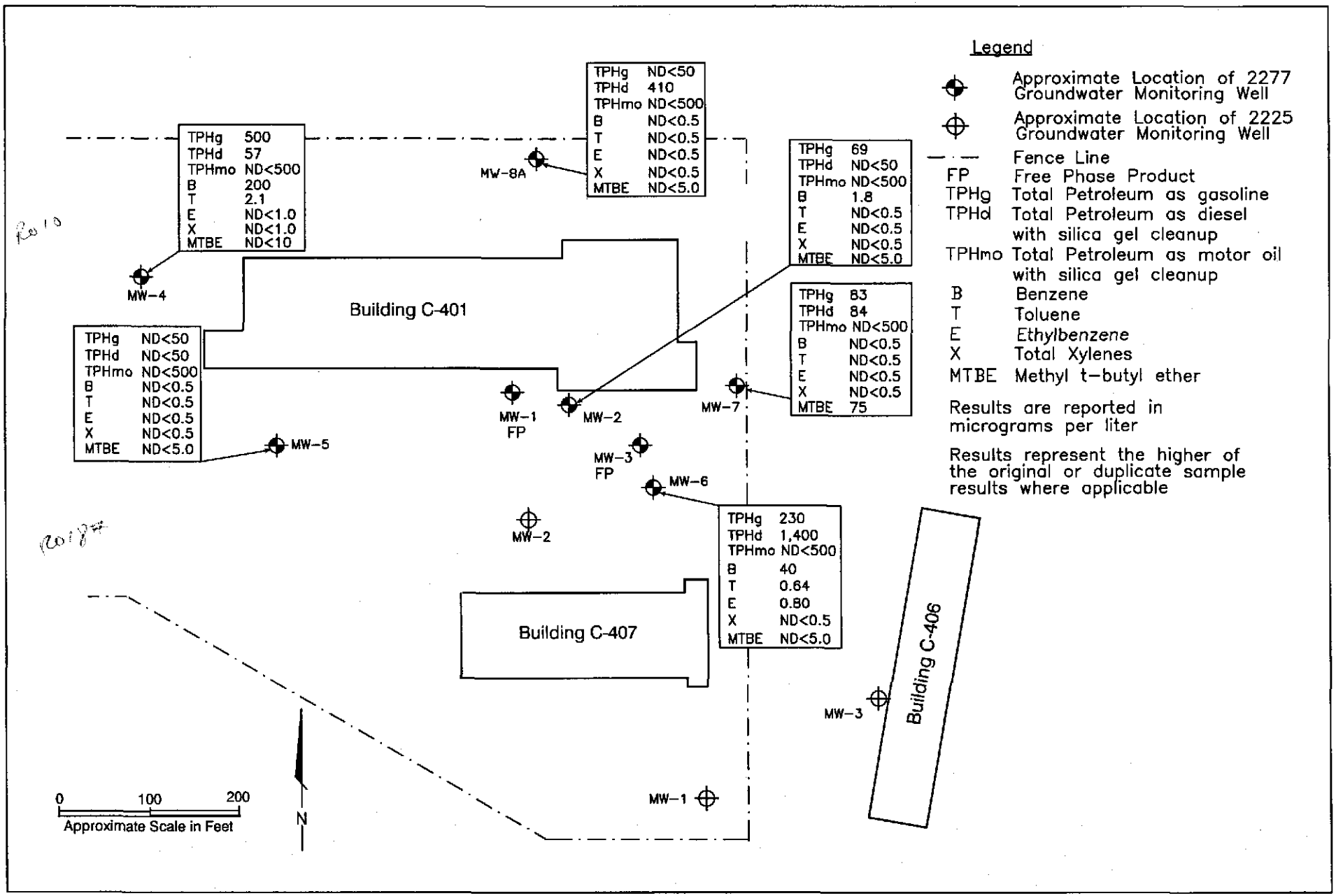
54821014.DWG 1.0
20021016.1059

Harding ESE
A MACTEC COMPANY

Groundwater Elevations, September 26, 2002
Quarterly Groundwater Monitoring Report
2277 and 2225 Seventh Street
Oakland, California 95607

PLATE
3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		10/02	



Harding ESE
A MACTEC Company

Groundwater Sample Results, September 26, 2002
Quarterly Groundwater Monitoring Report
2277 Seventh Street
Oakland, California 95607

PLATE
4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		10/02	

54821015.DWG 1.0
20021016.1013

APPENDIX A

GROUNDWATER SAMPLE FORMS

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1.1

Recorded By: [signature] (Signature)

Well Number: MW-2

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 9/6/2002

Sampled By: CJ (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 15.27

Water Level Depth (WL in ft BTOC): 8.95

No.of Well Volumes to be purged (# V): 3

PURGE VOLUME CALCULATION

(15.27 - 8.95) X 2 ² X 3 X 0.0408 = 3.09 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: ___

[ ] Other - Type: ___

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other ___

Depth in feet (BTOC): ___

Screen Interval in feet (BTOC): from ___ to ___

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	8.18	1771	70.5	
1 GAL	7.98	1753	67.5	
2 GAL	8.28	1722	66.7	
3 GAL	8.11	1765	66.2	
Final	8.23	1720	67.5	
Meter S/N				

PURGE TIME

Purge Start: ___ GPM: ___

Purge Stop: ___ GPM: ___

Elapsed: ___

PURGE RATE

PURGE VOLUME

Volume: 3.5 gallons

Observations During Purging (Well Condition, Color, Odor):

Water is turbid, light gray in color & has light hydrocarbon smell

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 10:30

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Well Number: MW-4

Well Type: [x] Monitor [ ] Extraction [ ] Other ___
[x] PVC [ ] St. Steel [ ] Other ___

Job Name: 2277 7th St.

Job Number: 54821.1.1

Date: 9/26/2002

Recorded By: _____ (Signature)

Sampled By: el (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
Total Depth of Casing (TD in ft BTOC): 18.84
Water Level Depth (WL in ft BTOC): 8.21
No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable
[ ] Submersible - Type: _____
[ ] Other - Type: _____

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top
[ ] Other _____
Depth in feet (BTOC): _____
Screen Interval in feet (BTOC): from ____ to ____

PURGE VOLUME CALCULATION

(18.84 - 8.21) X 2 ² X 3 X 0.0408 = 5.2 gals

TD (feet) | WL (Feet) | D (inches) | # V | Calculated Purge Volume

PURGE TIME

Purge Start: _____
Purge Stop: _____
Elapsed: _____

PURGE RATE

GPM: _____
GPM: _____

PURGE VOLUME

Volume: 5.5 gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	1030	70.7	
GAL 1		1060	71.0	
GAL 2		1090	71.1	
GAL 3		1140	70.7	
GAL 4		1150	72.4	
GAL 5		1120	70.3	
FINAL	↓	1150	71.2	
Meter S/N				

Observations During Purging (Well Condition, Color, Odor):
Light brown in color. No odors

Discharge Water Disposal: [ ] Sanitary Sewer
[ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1640

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

NA² Not Available

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1.1

Recorded By: _____ (Signature)

Well Number: MW-5

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 9/ /2002

Sampled By: el (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 17.68

Water Level Depth (WL in ft BTOC): 6.6

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: _____

[ ] Other - Type: _____

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC): from ____ to ____

PURGE VOLUME CALCULATION

(17.68 - 6.6) x 2 ² x 3 x 0.0408 = 5.3 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PURGE TIME

Purge Start: _____

Purge Stop: _____

Elapsed: _____

PURGE RATE

GPM: _____

GPM: _____

PURGE VOLUME

Volume: 5.5 gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	936	69.9	
1 GAL		1020	70.1	
2 GAL		1140	71.1	
3 GAL		1080	70.4	
4 GAL		1120	71.0	
5 GAL		1140	70.5	
FINAL		1090	71.2	
Meter S/N				

Observations During Purging (Well Condition, Color, Odor):

Relatively clear, slightly brown water. No odors

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1730

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1.1

Recorded By: _____ (Signature)

Well Number: MW-6

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 9/ /2002

Sampled By: _____ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 18.05

Water Level Depth (WL in ft BTOC): 7.95

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: _____

[ ] Other - Type: _____

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC): from ____ to ____

PURGE VOLUME CALCULATION

(18.05 - 7.95) X 2 ² X 3 X 0.0408 = 4.91 gals

TD (feet) | WL (Feet) | D (inches) | # V | Calculated Purge Volume

PURGE TIME

Purge Start: _____

Purge Stop: _____

Elapsed: _____

PURGE RATE

GPM: _____

GPM: _____

PURGE VOLUME

Volume: 4 or 5 gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	2590	73.8	
1 GAL		2800	72.2	
2 GAL		2680	71.0	
3 GAL		2710	71.6	
4 GAL		2670	71.0	
5 GAL		2655	71.3	
Final	↓	2700	71.2	
Meter S/N				

Observations During Purging (Well Condition, Color, Odor):

turbid + dark gray water with slight hydrocarbon odor. Very slow recharge

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1420

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1.1

Recorded By: (Signature)

Well Number: MW-7

Well Type: [x] Monitor [ ] Extraction [ ] Other ___

[x] PVC [ ] St. Steel [ ] Other ___

Date: 9/ /2002

Sampled By: (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 18.16

Water Level Depth (WL in ft BTOC): 9.0

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(18.16 - 9.0) x 2 ² x 3 x 0.0408 = 4.48 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	1074	75.1	
1GAL	NA	1062	71.2	
2GAL	NA	1137	71.5	
3GAL	NA	1165	71.6	
4GAL	NA	1190	71.3	
FINAL	NA	1152	71.5	
Meter S/N				

PURGE TIME

Purge Start: ___ GPM: ___

Purge Stop: ___ GPM: ___

Elapsed: ___

PURGE RATE

PURGE VOLUME

Volume: 5 gallons

Observations During Purging (Well Condition, Color, Odor):

Turbid, gray water, No odor

Discharge Water Disposal: [ ] Sanitary Sewer

[ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1355

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Well Number: MW-8A

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ ; [x] PVC [ ] St. Steel [ ] Other ___

Job Name: 2277 7th St.

Job Number: 54821.1.1

Date: 9/12/2002

Recorded By: (Signature)

Sampled By: el (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 20.75

Water Level Depth (WL in ft BTOC): 7.91

No.of Well Volumes to be purged (# V): 3

PURGE VOLUME CALCULATION

(20.75 - 7.91) x 2 ² X 3 X 0.0408 = 6.2 gals

TD (feet) | WL (Feet) | D (inches) | # V | Calculated Purge Volume

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	2030	72.5	
1 GAL		1990	72.6	
2 GAL		2020	72.4	
3 GAL		2010	72.2	
4 GAL		1980	71.3	
5 GAL		1990	71.5	
6 GAL		1970	70.6	
Final		1990	71.2	
Meter S/N				

PURGE TIME

Purge Start: ___ GPM: ___

Purge Stop: ___ GPM: ___

Elapsed: ___

PURGE RATE

PURGE VOLUME

Volume: 6.5 gallons

Observations During Purging (Well Condition, Color, Odor):

heavily turbid - dark milky gray water. No odors

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: ~~1355~~ 1530

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	2 (1 L Amber)	TEPH	none	STL	
	4 (voas)	TPHg, MTBE, BTEX	HCL	STL	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

APPENDIX B

LABORATORY REPORTS

Submission#: 2002-09-0676

October 09, 2002

SEVERN TRENT LABORATORY

STL San Francisco
1220 Quarry Ln
Pleasanton CA 94566

Tel.: (925) 484-1919
Fax: (925) 484-1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#:2496

Harding ESE, Inc.
600 Grand Ave, Suite 300
Oakland, CA 94607
Attn.: Trish Eliasson

Project#: 54821.1.1
Project: Port of Oakland
Site: 2277 7th STREET

Attached is our report for your samples received on 09/27/2002 14:05
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/11/2002 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions,

You can also contact me via email. My email address is: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

Submission #: 2002-09-0676

TEPH w/ Silica Gel Clean-up

Harding ESE, Inc.
Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
Port of Oakland

Received: 09/27/2002 14:05

Site: 2277 7th STREET

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Pleasanton, CA 94566

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Fax: (925) 484-1096
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www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-2	09/26/2002 10:30	Water	1
MW-7	09/26/2002 13:55	Water	2
MW-6	09/26/2002 14:20	Water	3
MW-8A	09/26/2002 15:30	Water	4
MW-4	09/26/2002 16:40	Water	5
MW-5	09/26/2002 17:30	Water	7

Submission #: 2002-09-0676

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www.chromalab.com

CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-2**
Sampled: 09/26/2002 10:30
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 1
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/01/2002 08:36	
Motor Oil	ND	500	ug/L	1.00	10/01/2002 08:36	
Surrogates(s)						
o-Terphenyl	75.8	60-130	%	1.00	10/01/2002 08:36	

Submission #: 2002-09-0676

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CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-7**
Sampled: 09/26/2002 13:55
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 2
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	84	50	ug/L	1.00	10/01/2002 09:13	ndp
Motor Oil	ND	500	ug/L	1.00	10/01/2002 09:13	
Surrogates(s)						
o-Terphenyl	76.5	60-130	%	1.00	10/01/2002 09:13	

Submission #: 2002-09-0676

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CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-6**
Sampled: 09/26/2002 14:20
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 3
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1400	50	ug/L	1.00	10/01/2002 09:51	ndp
Motor Oil	ND	500	ug/L	1.00	10/01/2002 09:51	
Surrogates(s)						
o-Terphenyl	76.2	60-130	%	1.00	10/01/2002 09:51	

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CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-8A**
Sampled: 09/26/2002 15:30
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 4
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	410	50	ug/L	1.00	10/01/2002 09:34	ndp
Motor Oil	ND	500	ug/L	1.00	10/01/2002 09:34	
Surrogates(s)						
o-Terphenyl	60.9	60-130	%	1.00	10/01/2002 09:34	

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CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-4**
Sampled: 09/26/2002 16:40
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 5
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	57	50	ug/L	1.00	10/01/2002 10:14	ndp
Motor Oil	ND	500	ug/L	1.00	10/01/2002 10:14	
Surrogates(s)						
o-Terphenyl	68.0	60-130	%	1.00	10/01/2002 10:14	

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www.chromalab.com

CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **MW-5**
Sampled: 09/26/2002 17:30
Matrix: Water

Test(s): 8015M
Lab ID: 2002-09-0676 - 7
Extracted: 9/30/2002 17:15
QC Batch#: 2002/09/30-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/01/2002 10:54	
Motor Oil	ND	500	ug/L	1.00	10/01/2002 10:54	
Surrogates(s)						
o-Terphenyl	74.3	60-130	%	1.00	10/01/2002 10:54	

Submission #: 2002-09-0676

TEPH w/ Silica Gel Clean-up

Harding ESE, Inc.
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Project: 54821.1.1
Port of Oakland

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www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2002/09/30-07.10-001

Water

Test(s): 8015M
QC Batch # 2002/09/30-07.10
Date Extracted: 09/30/2002 17:15

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	10/01/2002 08:36	
Motor Oil	ND	500	ug/L	10/01/2002 08:36	
Surrogates(s)					
o-Terphenyl	85.1	60-130	%	10/01/2002 08:36	

Submission #: 2002-09-0676

TEPH w/ Silica Gel Clean-up

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www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/09/30-07.10**

LCS 2002/09/30-07.10-002 Extracted: 09/30/2002 Analyzed: 10/01/2002 08:36

LCSD 2002/09/30-07.10-003 Extracted: 09/30/2002 Analyzed: 10/01/2002 09:13

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	1040	1170	1250	83.2	93.6	11.8	60-130	25		
Surrogates(s)										
o-Terphenyl	17.5	18.1	20.0	87.3	90.5		60-130	0		

Submission #: 2002-09-0676

TEPH w/ Silica Gel Clean-up

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CA DHS ELAP# 2496

Legend and Notes

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-2	09/26/2002 10:30	Water	1
MW-7	09/26/2002 13:55	Water	2
MW-6	09/26/2002 14:20	Water	3
MW-8A	09/26/2002 15:30	Water	4
MW-4	09/26/2002 16:40	Water	5
TB	09/26/2002 17:00	Water	6
MW-5	09/26/2002 17:30	Water	7

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-2**	Lab ID:	2002-09-0676 - 1
Sampled:	09/26/2002 10:30	Extracted:	10/7/2002 16:44
Matrix:	Water	QC Batch#:	2002/10/07-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	69	50	ug/L	1.00	10/07/2002 16:44	g
Benzene	1.8	0.50	ug/L	1.00	10/07/2002 16:44	
Toluene	ND	0.50	ug/L	1.00	10/07/2002 16:44	
Ethyl benzene	ND	0.50	ug/L	1.00	10/07/2002 16:44	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2002 16:44	
MTBE	ND	5.0	ug/L	1.00	10/07/2002 16:44	mtbe
Surrogates(s)						
Trifluorotoluene	107.1	58-124	%	1.00	10/07/2002 16:44	
4-Bromofluorobenzene-FID	81.5	50-150	%	1.00	10/07/2002 16:44	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **MW-7**

Lab ID: 2002-09-0676 - 2

Sampled: 09/26/2002 13:55

Extracted: 10/7/2002 17:11

Matrix: Water

QC Batch#: 2002/10/07-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	83	50	ug/L	1.00	10/07/2002 17:11	g
Benzene	ND	0.50	ug/L	1.00	10/07/2002 17:11	
Toluene	ND	0.50	ug/L	1.00	10/07/2002 17:11	
Ethyl benzene	ND	0.50	ug/L	1.00	10/07/2002 17:11	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2002 17:11	
MTBE	75	5.0	ug/L	1.00	10/07/2002 17:11	mtbe
Surrogates(s)						
Trifluorotoluene	113.7	58-124	%	1.00	10/07/2002 17:11	
4-Bromofluorobenzene-FID	84.6	50-150	%	1.00	10/07/2002 17:11	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **MW-6**

Lab ID: 2002-09-0676 - 3

Sampled: 09/26/2002 14:20

Extracted: 10/7/2002 17:37

Matrix: Water

QC Batch#: 2002/10/07-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	230	50	ug/L	1.00	10/07/2002 17:37	g
Benzene	40	0.50	ug/L	1.00	10/07/2002 17:37	
Toluene	0.64	0.50	ug/L	1.00	10/07/2002 17:37	
Ethyl benzene	0.80	0.50	ug/L	1.00	10/07/2002 17:37	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2002 17:37	
MTBE	ND	5.0	ug/L	1.00	10/07/2002 17:37	mtbe
Surrogates(s)						
Trifluorotoluene	99.0	58-124	%	1.00	10/07/2002 17:37	
4-Bromofluorobenzene-FID	78.6	50-150	%	1.00	10/07/2002 17:37	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **MW-8A**

Lab ID: 2002-09-0676 - 4

Sampled: 09/26/2002 15:30

Extracted: 10/7/2002 18:03

Matrix: Water

QC Batch#: 2002/10/07-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/07/2002 18:03	
Benzene	ND	0.50	ug/L	1.00	10/07/2002 18:03	
Toluene	ND	0.50	ug/L	1.00	10/07/2002 18:03	
Ethyl benzene	ND	0.50	ug/L	1.00	10/07/2002 18:03	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2002 18:03	
MTBE	ND	5.0	ug/L	1.00	10/07/2002 18:03	mtbe
Surrogates(s)						
Trifluorotoluene	113.6	58-124	%	1.00	10/07/2002 18:03	
4-Bromofluorobenzene-FID	83.5	50-150	%	1.00	10/07/2002 18:03	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-4**	Lab ID:	2002-09-0676 - 5
Sampled:	09/26/2002 16:40	Extracted:	10/8/2002 12:07
Matrix:	Water	QC Batch#:	2002/10/08-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	390	100	ug/L	2.00	10/08/2002 12:07	g
Benzene	150	1.0	ug/L	2.00	10/08/2002 12:07	
Toluene	2.1	1.0	ug/L	2.00	10/08/2002 12:07	
Ethyl benzene	ND	1.0	ug/L	2.00	10/08/2002 12:07	
Xylene(s)	ND	1.0	ug/L	2.00	10/08/2002 12:07	
MTBE	ND	10	ug/L	2.00	10/08/2002 12:07	mtbe
Surrogates(s)						
Trifluorotoluene	91.2	58-124	%	2.00	10/08/2002 12:07	
4-Bromofluorobenzene-FID	76.0	50-150	%	2.00	10/08/2002 12:07	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **TB**

Lab ID: 2002-09-0676 - 6

Sampled: 09/26/2002 17:00

Extracted: 10/8/2002 12:39

Matrix: Water

QC Batch#: 2002/10/08-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	500	100	ug/L	2.00	10/08/2002 12:39	g
Benzene	200	1.0	ug/L	2.00	10/08/2002 12:39	
Toluene	1.5	1.0	ug/L	2.00	10/08/2002 12:39	
Ethyl benzene	ND	1.0	ug/L	2.00	10/08/2002 12:39	
Xylene(s)	ND	1.0	ug/L	2.00	10/08/2002 12:39	
MTBE	ND	10	ug/L	2.00	10/08/2002 12:39	mtbe
Surrogates(s)						
Trifluorotoluene	103.4	58-124	%	2.00	10/08/2002 12:39	
4-Bromofluorobenzene-FID	82.6	50-150	%	2.00	10/08/2002 12:39	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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Site: 2277 7th STREET

SEVERN TRENT LABORATORY
STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel: (925) 484-1919
Fax: (925) 484-1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP# 2496

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **MW-5**

Lab ID: 2002-09-0676 - 7

Sampled: 09/26/2002 17:30

Extracted: 10/7/2002 18:56

Matrix: Water

QC Batch#: 2002/10/07-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/07/2002 18:56	
Benzene	ND	0.50	ug/L	1.00	10/07/2002 18:56	
Toluene	ND	0.50	ug/L	1.00	10/07/2002 18:56	
Ethyl benzene	ND	0.50	ug/L	1.00	10/07/2002 18:56	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2002 18:56	
MTBE	ND	5.0	ug/L	1.00	10/07/2002 18:56	mtbe
Surrogates(s)						
Trifluorotoluene	86.7	58-124	%	1.00	10/07/2002 18:56	
4-Bromofluorobenzene-FID	65.0	50-150	%	1.00	10/07/2002 18:56	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.
Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
Port of Oakland

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030
Method Blank
MB: 2002/10/07-01.04-003

Water

Test(s): 8015M
QC Batch # 2002/10/07-01.04
Date Extracted: 10/07/2002 08:26

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/07/2002 08:26	
Benzene	ND	0.5	ug/L	10/07/2002 08:26	
Toluene	ND	0.5	ug/L	10/07/2002 08:26	
Ethyl benzene	ND	0.5	ug/L	10/07/2002 08:26	
Xylene(s)	ND	0.5	ug/L	10/07/2002 08:26	
Surrogates(s)					
Trifluorotoluene	113.4	58-124	%	10/07/2002 08:26	
4-Bromofluorobenzene-FID	93.8	50-150	%	10/07/2002 08:26	

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030 | Test(s): 8015M

Method Blank | **Water** | **QC Batch # 2002/10/08-01.05**

MB: 2002/10/08-01.05-003 | Date Extracted: 10/08/2002 08:09

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/08/2002 08:09	
Benzene	ND	0.5	ug/L	10/08/2002 08:09	
Toluene	ND	0.5	ug/L	10/08/2002 08:09	
Ethyl benzene	ND	0.5	ug/L	10/08/2002 08:09	
Xylene(s)	ND	0.5	ug/L	10/08/2002 08:09	
MTBE	ND	5.0	ug/L	10/08/2002 08:09	
Surrogates(s)					
Trifluorotoluene	100.2	58-124	%	10/08/2002 08:09	
4-Bromofluorobenzene-FID	88.2	50-150	%	10/08/2002 08:09	

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/10/07-01.04**

LCS 2002/10/07-01.04-004 Extracted: 10/07/2002 Analyzed: 10/07/2002 08:52

LCSD 2002/10/07-01.04-005 Extracted: 10/07/2002 Analyzed: 10/07/2002 09:18

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	98.8	95.1	100.0	98.8	95.1	3.8	77-123	20		
Toluene	94.4	91.4	100.0	94.4	91.4	3.2	78-122	20		
Ethyl benzene	102	97.6	100.0	102.0	97.6	4.4	70-130	20		
Xylene(s)	299	288	300	99.7	96.0	3.8	75-125	20		
Surrogates(s)										
Trifluorotoluene	495	469	500	99.0	93.8		58-124			

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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Port of Oakland

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030 Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/10/07-01.04**

LCS 2002/10/07-01.04-006 Extracted: 10/07/2002 Analyzed: 10/07/2002 09:44
LCSD 2002/10/07-01.04-007 Extracted: 10/07/2002 Analyzed: 10/07/2002 10:09

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	476	455	500	95.2	91.0	4.5	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	431	419	500	86.2	83.8		50-150			

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

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Project: 54821.1.1
Port of Oakland

Received: 09/27/2002 14:05

Site: 2277 7th STREET

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2002/10/08-01.05**

LCS 2002/10/08-01.05-004 Extracted: 10/08/2002 Analyzed: 10/08/2002 08:42
LCSD 2002/10/08-01.05-005 Extracted: 10/08/2002 Analyzed: 10/08/2002 09:14

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	100	102	100.0	100.0	102.0	2.0	77-123	20		
Toluene	98.7	101	100.0	98.7	101.0	2.3	78-122	20		
Ethyl benzene	98.6	101	100.0	98.6	101.0	2.4	70-130	20		
Xylene(s)	292	299	300	97.3	99.7	2.4	75-125	20		
Surrogates(s)										
Trifluorotoluene	486	484	500	97.2	96.8		58-124			

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.

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Project: 54821.1.1
Port of Oakland

Received: 09/27/2002 14:05

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/10/08-01.05

LCS 2002/10/08-01.05-006 Extracted: 10/08/2002 Analyzed: 10/08/2002 09:46

LCSD 2002/10/08-01.05-007 Extracted: 10/08/2002 Analyzed: 10/08/2002 10:18

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	466	479	500	93.2	95.8	2.8	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	445	462	500	89.0	92.4		50-150			

Submission #: 2002-09-0676

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.

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600 Grand Ave, Suite 300
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Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
Port of Oakland

Received: 09/27/2002 14:05

Site: 2277 7th STREET

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CA DHS ELAP# 2496

Legend and Notes

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

mtbe

MTBE analyzed by GC/MS 8260

Submission#: 2002-10-0320

October 18, 2002

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CA DHS ELAP#:2496

Harding ESE, Inc.
600 Grand Ave, Suite 300
Oakland, CA 94607
Attn.: Trish Eliasson
Project#: 54821.1.1
Project: Port of Oakland

Attached is our report for your samples received on 09/27/2002 00:00
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/11/2002 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions,

You can also contact me via email. My email address is: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

Submission #: 2002-10-0320

TEPH w/ Silica Gel Clean-up

Harding ESE, Inc.
Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
Port of Oakland

Received: 09/27/2002

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CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
TB	09/26/2002 17:05	Water	1

Submission #: 2002-10-0320

TEPH w/ Silica Gel Clean-up

Harding ESE, Inc.
Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
Port of Oakland

Received: 09/27/2002

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CA DHS ELAP# 2496

Prep(s): 3510/8015M
Sample ID: **TB**
Sampled: 09/26/2002 17:05
Matrix: Water
Analysis Flag: HT (See Legend and Note Section)

Test(s): 8015M
Lab ID: 2002-10-0320 - 1
Extracted: 10/15/2002 09:37
QC Batch#: 2002/10/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/16/2002 09:33	
Motor Oil	ND	500	ug/L	1.00	10/16/2002 09:33	
Surrogates(s)						
o-Terphenyl	77.6	60-130	%	1.00	10/16/2002 09:33	

Submission #: 2002-10-0320

TEPH w/ Silica Gel Clean-up

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Project: 54821.1.1
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Received: 09/27/2002

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M
Method Blank

Water

Test(s): 8015M
QC Batch # 2002/10/15-03.10

MB: 2002/10/15-03.10-001

Date Extracted: 10/15/2002 09:37

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	10/16/2002 08:18	
Motor Oil	ND	500	ug/L	10/16/2002 08:18	
Surrogates(s)					
o-Terphenyl	87.5	60-130	%	10/16/2002 08:18	

Submission #: 2002-10-0320

TEPH w/ Silica Gel Clean-up

Harding ESE, Inc.
Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.1.1
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Received: 09/27/2002

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2002/10/15-03.10**

LCS 2002/10/15-03.10-002 Extracted: 10/15/2002 Analyzed: 10/16/2002 05:49
LCSD 2002/10/15-03.10-003 Extracted: 10/15/2002 Analyzed: 10/17/2002 06:26

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	1290	1300	1250	103.2	104.0	0.8	60-130	25		
Surrogates(s)										
o-Terphenyl	20.3	20.1	20.0	101.4	100.7		60-130	0		

Submission #: 2002-10-0320

TEPH w/ Silica Gel Clean-up

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CA DHS ELAP# 2496

Legend and Notes

Analysis Flag

HT

Extracted out of holding time