PORT OF OAKLAND

October 31, 2003

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

RE: 3rd Quarter 2003, Quarterly Groundwater Monitoring and Product Recovery Report – 2277 Seventh Street, Oakland, CA

Dear Mr. Chan:

Please find enclosed the subject Port of Oakland (Port) groundwater monitoring and product recovery report for 2277 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 2003, 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
Port Associate Environmental Scientist
Environmental Health and Safety Compliance

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Jeff Jones
Rogerio Leong (Innovative Technical Solutions, Inc.)
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Jeffrey D. Hess (Innovative Technical Solutions, Inc.)

Innovative
Technical
Solutions, Inc.

October 27, 2003

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

Third Quarter of 2003 Quarterly Groundwater Monitoring and Product Monitoring Report
2277 Seventh Street
Oakland, California

Dear Mr. Rubin:

Innovative Technical Solutions, Inc. (ITSI) is pleased to submit this report to the Port of Oakland (Port) for the groundwater monitoring and sampling program at 2277 7th Street in Oakland, California (Figure 1). This report summarizes the quarterly monitoring of four groundwater-monitoring wells (MW-2, MW-4, MW-5, and MW-8A) at 2277 7th Street. The locations of these wells are shown on Figure 2.

This report also encompasses the operation of the product recovery system at the 2277 7th Street site. The operation of the active product recovery system was stopped since April 2003 when a section of the conveyance system was removed for construction upgrades at the site. Collection of groundwater samples from monitoring wells MW-1 and MW-3 was not performed this quarter due to the presence of separate-phase petroleum hydrocarbons.

BACKGROUND

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 (Harding) performed oversight of the abandonment of monitoring well MW-8, located at the northern edge of the property. This monitoring well was properly destroyed[1] to accommodate the construction of a railroad track associated with the Port of Oakland Vision 2000 improvements. All surface structures, including the well, needed to be removed.

Harding monitored MW-8 from 1998 until it was abandoned. During this time, no groundwater samples were collected because the well contained a thick, viscous, tar-like petroleum product. After the railroad construction was completed, the Port had a replacement well, MW-8A, installed in the same vicinity on October 2, 2001 by ITSI. MW-8A has been sampled since the Fourth quarter of 2001, and no separate phase petroleum has been detected.

[1] - Destruction and abandonment of all monitoring wells were performed in accordance with Alameda County Public Works Agency Guidelines.

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Site preparation activities were recently initiated for construction of a new Port Field Support Services Complex (PFSSC) at the site. The eastern side of Building C-401 was demolished, and the asphalt pavement east of the building was removed in December 2002. A concrete ring was placed around each well for protection and prevention from damage by heavy equipment during site demolition. Two monitoring wells (MW-6 and MW-7) were properly destroyed to facilitate the construction plans at the site, and six monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-8A) still remain onsite. The surface grade was raised approximately 2 feet in the vicinity of wells MW-2 and MW-3 during the first quarter of 2003.

On April 16, 2003, ITSI on behalf of the Port oversaw the removal of a 100-foot section of the product recovery conveyance system (refer to Figure 2). The Port contracted Dillard Environmental Services (Dillard) to perform the work. The section of product recovery system was removed to minimize interference with site development. A new product removal system will be installed after development activities are completed. The conveyance system consisted of a PVC conduit pipe containing the pneumatic and product recovery lines. These lines connected the system control box and the recovery tank to the skimmer pump installed in well MW-3. Portions of the surface concrete pieces and asphalt from the trench line were appropriately excavated, removed and stockpiled onsite. Sections of the removed conduit pipes and product line were appropriately disposed of and transported offsite by Dillard as non-RCRA hazardous solid waste material under the Uniform Hazardous Waste Manifest.

Monitoring wells were previously installed at the adjacent 2225 7th Street site to assess groundwater quality following the removal of USTs in 1989 and 1992. The 2225 7th Street site is also currently under modification for the construction of the future PFSSC. Buildings C-406 and C-407 were demolished and the entire surrounding asphalt pavement was removed in November 2002. The three former monitoring wells (MW-1, MW-2, and MW-3) located at the site were properly destroyed to facilitate the Port's construction plans.

GROUNDWATER MONITORING

ITSI personnel performed groundwater monitoring and sampling at the 2277 7th Street site on September 03, 2003. Prior to purging and sampling the monitoring wells, ITSI measured the depth to groundwater below the top of the well casing with a water level indicator. After measuring the depth to water, ITSI purged the wells using a disposable bailer. Conductivity, pH, and temperature were monitored periodically during purging. ITSI collected the groundwater samples after removing a minimum of three well-casing volumes of water and upon stabilization of three consecutive measurements of conductivity, pH, and temperature. The depths to groundwater and field parameter measurements were recorded on respective Monitoring Well Water Level Measurement and Monitoring Well Purging and Sampling forms included as Appendix A. The purge water was stored onsite in the treatment system's product recovery tank. Dillard Environmental Services Company, Inc. (Dillard) periodically removes and appropriately disposes of the purge water along with the product in the tank.

ITSI 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, and then placed in an insulated cooler with ice. The samples were accompanied by a laboratory provided trip blank and delivered under chain-of-custody protocol to Curtis & Tompkins in Berkeley, a California certified analytical laboratory.

The third quarter 2003 groundwater monitoring event at 2277 7th Street involved monitoring and sampling of monitoring wells MW-2, MW-4, MW-5, and MW-8A, and monitoring of the free-phase petroleum product in wells MW-1 and MW-3. Groundwater level measurements are summarized in Table 1 and product thickness measurements are summarized on Table 2. The groundwater gradient direction is presented on Figure 3. Copies of the respective Monitoring Well Water Level Measurement and Monitoring Well Purging and Sampling forms are included in Appendix A.

LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

Curtis and Tompkins of Berkeley, California performed the chemical analyses of the groundwater samples using the following analytical methods:

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

The laboratory results for 2277 7th Street are summarized in Table 3 and are shown on Figure 4. Copies of the laboratory results and chain-of-custody forms are provided in Appendix B.

FINDINGS

Groundwater measurements were conducted on September 03, 2003. The water levels are presented in Table 1. The groundwater elevation contour map is presented on Figure 3. According to these contours, the groundwater appears to be flowing towards the north-northeast. The groundwater flow direction observed during September 2003 is consistent with the historic flow direction reported in the previous reports.

Results of the September 03, 2003 groundwater sampling at 2277 7th Street are summarized below:

- TPHg was detected in one well at a concentration of 140 µg/L in MW-4. The laboratory, however, reported that the result is based on an analyte with chromatographic pattern that does not resemble the chromatographic pattern of a gasoline standard.
- Benzene was detected in two monitoring wells at concentrations of 3.2 µg/L in MW-2 and 240 µg/L in MW-4, respectively.
- Toluene was detected in one well at a concentration of 1.3 µg/L in MW-4.
- Ethylbenzene was not detected above the reporting limit in any of the wells sampled this quarter.
- Total xylenes were not detected above the reporting limit in any of the wells sampled this quarter.

- MTBE was detected in one well at a concentration of 3.0 µg/L in MW-8A using EPA method 8021B. However, same sample was not detected above the reporting limit using confirmation by EPA method 8260B.
- TPHd was not detected above the reporting limit in any of the wells sampled this quarter.
- TPHmo was not detected above the reporting limit in any of the wells sampled this quarter.

QUALITY ASSURANCE AND QUALITY CONTROL

A duplicate sample was collected simultaneously from monitoring well MW-4 and labeled as MW-4D at 2277 7th Street on September 03, 2003 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 either the duplicate or primary sample.

2277 7th St. MW-4 09/03/03	ANALYTE	X_1	X_2	RPD
	MTBE	<2.0	<2.0	--
	B	240	130	59.46%
	T	1.3	0.58	76.59%
	E	<0.5	<0.5	--
	X	<0.5	<0.5	--
	TPHd	<50	<50	--
	TPHg	140	83	51.12%

- The relative percent difference between the analytical results from MW-4 and its duplicate sample MW-4D ranged from 51.12% to 76.59%. The RPD values for TPHg and Benzene indicate that the results from the sample and the duplicate analysis are in agreement. The RPD value of 76.59% for Toluene is high and indicate low precision, but the low precision value was based on detections of low concentrations near the laboratory detection limit.

PRODUCT RECOVERY SYSTEM AT 2277 7TH STREET

Until April 16, 2003 the product recovery system at 2277 7th Street consisted of an air-actuated (active) product skimmer in MW-3. The product in MW-3 was discharged to a product recovery 1,000-gallon tank, and Foss Environmental Services Company, Inc. (former contractor) emptied at various times throughout a quarter. A passive skimmer was installed in MW-1, although it was removed on May 22, 2000 because no

measurable product appeared in the well, the passive skimmer was subsequently replaced in the well during the following months after free product was measured in MW-1. 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 4. Field notes of system's maintenance activities are noted in Daily Field Activity Reports included as Appendix C.

Since the active product recovery system has been temporarily interrupted for site construction upgrade purpose, the passive skimmer was removed from well MW-1 during this quarter as well. The free-phase petroleum product has been measured in monitoring wells MW-1 and MW-3 on a quarterly basis and in conjunction with the quarterly groundwater sampling event. Free-phase petroleum product was measured at 0.90 feet and 1.65 feet in MW-1 and MW-3, respectively, this quarter.

We appreciate the opportunity to present this report and trust that this document meets with your approval. Please do not hesitate to contact us at (925) 946-3105 with any questions or comments.

Sincerely yours,

INNOVATIVE TECHNICAL SOLUTIONS, INC.

Rogerio Leong
Project Geologist

Rachel B. Hess
Project Manager

Jeffrey D. Hess, R.G.
Senior Geologist

REGISTERED GEOLOGIST
JEFFREY D. HESS
No. 4776
Exp. 4/04
STATE OF CALIFORNIA

Attachments:

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

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevations, 2277 7th Street, September 03, 2003
Figure 4 – Groundwater Sample Results, 2277 7th Street, September 03, 2003

Appendix A – Monitoring Well Water Level Measurement Form and
Monitoring Well Purging and Sampling Form
Appendix B - Laboratory Reports
Appendix C – Daily Field Activity Report

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	4/18/2000	8.21	5.93
		5/22/2000	8.17	5.97
		7/10/2001	10.00	4.14
		12/12/2001	NA	NA
		3/8/2002	NA	NA
		6/13/2002	NA	NA
		9/26/2002	NA	NA
		12/12/2002	NA	NA
		3/17/2003	NA	NA
		6/18/2003	NA	NA
		9/3/2003	NA	NA
MW-2	14.36	12/31/1997	8.73	5.63
		4/13/1998	7.72	6.64
		11/6/1998	9.43	4.93
		3/19/1999	8.21	6.15
		6/24/1999	8.91	5.45
		9/28/1999	9.42	4.94
		11/12/1999	9.63	4.73
		2/11/2000	8.54	5.82
		5/22/2000	8.10	6.26
		9/6/2000	8.79	5.57
		12/19/2000	9.19	5.17
		2/21/2001	7.99	6.37
		4/3/2001	8.23	6.13
		7/10/2001	8.70	5.66
		12/12/2001	8.16	6.20
		1/22/2002	7.64	6.72
		3/8/2002	8.31	6.05
		6/13/2002	8.64	5.72
		9/26/2002	8.95	5.41
		12/12/2002	9.17	5.19
		3/17/2003	7.77	6.59
		6/18/2003	8.44	5.92
		9/3/2003	8.98	5.38
MW-4	13.15	12/31/1997	7.09	6.06
		4/13/1998	7.71	5.44
		11/6/1998	8.69	4.46
		3/19/1999	8.00	5.15
		6/24/1999	8.45	4.70
		9/28/1999	8.73	4.42
		11/12/1999	8.83	4.32
		2/11/2000	7.71	5.44
		5/22/2000	8.09	5.06
		9/6/2000	8.32	4.83
		12/19/2000	8.47	4.68
		2/21/2001	7.51	5.64
		4/3/2001	8.13	5.02
		7/10/2001	8.12	5.03
		12/12/2001	7.65	5.50
		1/22/2002	7.60	5.55
		3/8/2002	7.96	5.19
		6/13/2002	8.20	4.95
		9/26/2002	8.21	4.94
		12/12/2002	8.38	4.77
		3/17/2003	7.72	5.43
		6/18/2003	8.02	5.13
		9/3/2003	8.29	4.86

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	12/31/1997	6.38	7.11
		4/13/1998	5.56	7.93
		11/6/1998	6.59	6.90
		3/19/1999	6.20	7.29
		6/24/1999	6.73	6.76
		9/28/1999	6.91	6.58
		11/12/1999	7.06	6.43
		2/11/2000	7.00	6.49
		5/22/2000	6.21	7.28
		9/6/2000	6.56	6.93
		12/19/2000	6.68	6.81
		2/21/2001	6.08	7.41
		4/3/2001	6.38	7.11
		7/10/2001	6.58	6.91
		12/12/2001	6.40	7.09
		1/22/2002	6.10	7.39
		3/8/2002	6.10	7.39
		6/13/2002	6.31	7.18
		9/26/2002	6.60	6.89
		12/12/2002	6.75	6.74
		3/17/2003	5.73	7.76
		6/18/2003	6.10	7.39
		9/3/2003	6.50	6.99
MW-6	14.00	6/24/1999	8.61	5.39
		9/28/1999	9.26	4.74
		11/12/1999	8.01	5.99
		2/11/2000	7.20	6.80
		5/22/2000	7.13	6.87
		9/6/2000	7.12	6.88
		12/19/2000	7.57	6.43
		2/21/2001	7.50	6.50
		4/3/2001	6.88	7.12
		7/10/2001	7.15	6.85
		12/12/2001	9.50	4.50
		1/22/2002	6.69	7.31
		3/8/2002	6.98	7.02
		6/13/2002	7.45	6.55
		9/26/2002	7.95	6.05
		12/12/2002	7.71	6.29
		12/18/2002	Monitoring well was destroyed	

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	12/31/1997	8.88	5.47
		4/13/1998	7.86	6.49
		11/6/1998	9.55	4.80
		3/19/1999	8.41	5.94
		6/24/1999	9.08	5.27
		9/28/1999	9.60	4.75
		11/12/1999	9.77	4.58
		2/11/2000	8.67	5.68
		5/22/2000	8.43	5.92
		9/6/2000	8.88	5.47
		12/19/2000	9.21	5.14
		2/21/2001	8.13	6.22
		4/3/2001	8.45	5.90
		7/10/2001	8.87	5.48
		12/12/2001	8.39	5.96
		1/22/2002	7.99	6.36
		3/8/2002	8.51	5.84
		6/13/2002	8.90	5.45
		9/26/2002	9.00	5.35
		12/12/2002	9.28	5.07
		12/18/2002	Monitoring well was destroyed	
MW-8A	12.94	12/12/2001	7.20	NA
		1/22/2002	7.20	5.74
		3/8/2002	7.70	5.24
		6/13/2002	7.72	5.22
		9/26/2002	7.91	5.03
		12/12/2002	8.15	4.79
		3/17/2003	7.28	5.66
		6/18/2003	7.72	5.22
		9/3/2003	8.18	4.76

[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	12/31/1997	-	-	-	0.2	passive skimmer
		1/29/1998	-	-	-	0.2	passive skimmer
		3/2/1998	-	-	-	0.018	passive skimmer
		5/11/1998	-	-	-	0.02	passive skimmer
		6/15/1998	-	-	-	0.2	passive skimmer
		11/6/1998	9.34	10.3	0.96	1.2	passive skimmer
		1/7/1999	-	-	-	0.2	passive skimmer
		2/11/1999	-	-	-	0.2	passive skimmer
		3/12/1999	-	-	-	0.2	passive skimmer
		3/19/1999	NM	8.45	>0.01	0.07	passive skimmer
		4/14/1999	-	-	-	0.2	passive skimmer
		5/11/1999	-	-	-	0.2	passive skimmer
		6/24/1999	8.88	9.63	0.8	0.2	passive skimmer
		7/15/1999	--	--	--	0.2	passive skimmer
		7/16/1999	--	--	--	0.2	passive skimmer
		8/27/1999	--	--	--	0.2	passive skimmer
		9/28/1999	--	--	0.65	0.2	passive skimmer
		10/5/1999	--	--	--	0.2	passive skimmer
		11/12/1999	9.38	10.27	0.89	0.2	passive skimmer
		12/21/1999	--	--	--	0.2	passive skimmer
		1/26/2000	--	--	--	0.2	passive skimmer
		1/28/2000	9.22	9.24	0.02	--	passive skimmer
		2/11/2000	--	7.00	0.00	0.2	passive skimmer
		3/1/2000	--	7.45	0.00	0.0	passive skimmer
		3/21/2000	NM	7.34	0.00	0.0	passive skimmer
		4/18/2000	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
		9/21/2000	8.71	9.26	0.55	0.0	passive skimmer
		10/11/2000	--	--	--	0.0	passive skimmer
		11/30/2000	--	--	--	0.0	passive skimmer
		12/19/2000	9.5	9.89	0.39	0.0	passive skimmer
		2/22/2001	8.3	8.4	0.13	0.0	passive skimmer
		4/3/2001	8.3	8.55	0.25	0.0	passive skimmer
		4/23/2001	--	--	--	0.0	passive skimmer
		5/11/2001	--	--	--	0.0	passive skimmer
		5/30/2001	8.5	8.9	0.40	0.0	passive skimmer
		6/14/2001	--	--	--	0.0	passive skimmer
		7/10/2001	8.8	10	1.20	0.0	passive skimmer
		12/12/2001	NA	NA	NA	1.0	passive skimmer
		3/8/2002	NA	NA	NA	NA	passive skimmer
		4/3/2002	8.3	9.2	0.90	--	passive skimmer
		4/23/2002	8.5	9.6	1.10	--	passive skimmer
		5/10/2002	8.7	9.6	0.90	--	passive skimmer
		5/24/2002	8.8	10	1.20	--	passive skimmer
		6/13/2002	8.7	10	1.30	--	passive skimmer
		6/21/2002	8.8	10	1.20	--	passive skimmer
		7/5/2002	8.5	9.4	0.90	0.2	passive skimmer
		7/19/2002	8.6	9.6	1.00	0.2	passive skimmer
		7/30/2002	8.5	9.3	0.80	0.2	passive skimmer
		8/14/2002	8.5	9.3	0.80	0.2	passive skimmer
		9/13/2002	8.8	9.6	0.80	0.2	passive skimmer
		9/26/2002	8.6	9.5	0.90	0.2	passive skimmer
		10/14/2002	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-1	14.14	11/4/2002	9.22	10.12	0.90	0.2	passive skimmer
		11/21/2002	8.48	8.86	0.38	0.2	passive skimmer
		12/6/2002	8.85	9.38	0.53	0.0	passive skimmer
		12/18/2002	8.05	8.26	0.21	0.2	passive skimmer
		12/30/2002	7.61	7.63	0.02	<0.1	passive skimmer
		1/2/2003	7.36	7.36	sheen	<0.1	passive skimmer
		1/3/2003	7.35	7.35	sheen	<0.1	passive skimmer
		1/14/2003	7.35	7.36	sheen	<0.1	passive skimmer
		1/30/2003	7.75	7.81	0.06	<0.1	passive skimmer
		2/18/2003	7.81	8.35	0.54	<0.1	passive skimmer
		2/26/2003	7.72	8.62	0.90	<0.1	passive skimmer
		3/13/2003	7.80	8.11	0.89	0.2	passive skimmer
		3/17/2003	7.61	8.88	1.27	0.2	passive skimmer
		4/16/2003	7.42	8.71	1.29	<0.2	passive skimmer
		6/18/2003	8.20	9.44	1.24	<0.2	passive skimmer
		9/3/2003	8.50	9.40	0.90	--	[3]
MW-3	14.22	12/31/1997	-	-	-	30	active skimmer
		1/29/1998	-	-	-	10	active skimmer
		4/13/1998	-	-	-	240	active skimmer
		5/11/1998	-	-	-	1,545	active skimmer
		6/15/1998	-	-	-	1,950	active skimmer
		11/6/1998	8.84	9.94	1.1	500	active skimmer
		1/5/1999	-	-	-	275[2]	active skimmer
		1/14/1999	-	-	-	400[2]	active skimmer
		2/3/1999	-	-	-	400[2]	active skimmer
		2/26/1999	-	-	-	570[2]	active skimmer
		3/19/1999	7.52	8.05	0.5	211	active skimmer
		6/16/1999	-	-	-	310	active skimmer
		6/24/1999	8.38	8.56	0.2	--	active skimmer
		7/14/1999	--	--	--	50[2]	active skimmer
		9/28/1999	--	--	0.2	--	active skimmer
		10/29/1999	--	--	--	125[2]	active skimmer
		11/12/1999	9.14	9.23	0.09	--	active skimmer
		1/28/2000	--	--	--	135	active skimmer
		2/11/2000	7.97	8.37	0.40	40	active skimmer
		3/1/2000	6.59	7.24	0.65	0.0	active skimmer
		3/21/2000	6.50	6.56	0.06	35	active skimmer
		4/18/2000	--	--	--	--	active skimmer
		5/22/2000	7.51	8.05	0.54	40	active skimmer
		6/26/2000	7.82	8.2	0.38	90	active skimmer
		7/25/2000	7.90	8.92	1.02	20	active skimmer
		8/31/2000	8.15	9.5	1.35	30	active skimmer
		9/6/2000	8.21	9.42	1.21	--	active skimmer
		9/21/2000	8.30	8.88	0.58	115	active skimmer
		10/11/2000	--	--	--	170	active skimmer
		11/30/2000	--	--	--	105	active skimmer
		12/19/2000	8.60	9.65	1.05	10	active skimmer
		2/22/2001	6.36	8.15	1.79	--	active skimmer
		4/3/2001	7.48	8.88	1.40	--	active skimmer
		4/23/2001	7.85	9.1	1.25	--	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-3	14.22	5/11/2001	--	--	--	--	active skimmer
		5/30/2001	7.75	9.1	1.35	--	active skimmer
		6/14/2001	--	--	--	--	active skimmer
		7/10/2001	8.10	9.6	1.50	--	active skimmer
		12/12/2001	NA	NA	NA	1,000 [5]	active skimmer
		3/8/2002	7.80	8	0.20	1,000 [5]	active skimmer
		4/3/2002	7.60	7.7	0.10	--	active skimmer
		4/23/2002	7.90	8.4	0.50	--	active skimmer
		4/25/2002	7.90	8.8	0.90	--	active skimmer
		5/10/2002	8.10	8.2	0.10	--	active skimmer
		5/24/2002	8.05	8.1	0.05	--	active skimmer
		6/13/2002	8.10	8.7	0.60	1,000 [5]	active skimmer
		7/5/2002	8.10	8.95	0.85	--	active skimmer
		7/19/2002	8.10	8.9	0.80	--	active skimmer
		7/30/2002	8.10	8.9	0.80	--	active skimmer
		8/14/2002	8.10	8.9	0.80	--	active skimmer
		9/13/2002	8.30	9.3	1.00	--	active skimmer
		9/26/2002	8.30	9.0	0.70	--	active skimmer
		10/14/2002	8.60	9.5	0.90	--	active skimmer
		11/4/2002	8.75	9.99	1.24	--	active skimmer
		11/21/2002	8.59	11.29	2.70	150 [6]	active skimmer
		12/6/2002	8.56	9.3	0.74	150 [6]	active skimmer
		12/18/2002	7.35	8.43	1.08	25 [6]	active skimmer
		12/30/2002	6.50	7.15	0.65	25 [6]	active skimmer
		1/2/2003	6.20	6.20	sheen	--	active skimmer
		1/3/2003	6.21	6.21	sheen	--	active skimmer
		1/14/2003	6.20	6.21	0.01	--	active skimmer
		1/30/2003	6.81	6.85	0.04	--	active skimmer
		2/18/2002	7.09	7.15	0.06	--	active skimmer
		2/26/2003	7.04	7.11	0.07	--	active skimmer
		3/13/2003	7.22	8.11	0.89	--	active skimmer
		3/17/2003	7.15	7.50	0.35	5 [6]	active skimmer
		4/16/2003	7.27	8.25	0.98	--	active skimmer
		6/18/2003	7.78	9.00	1.22	--	[7]
		9/3/2003	8.31	9.96	1.65	--	[7]
MW-6	14.00	13/31/97	-	-	-	0.0014	passive skimmer
		1/29/1998	-	-	-	0.0014	passive skimmer
		3/2/1998	-	-	-	0.0014	passive skimmer
		11/6/1998	NM	9.62	>0.01	0.0	passive skimmer
		3/19/1999	NM	7.37	>0.01	0.0	passive skimmer
MW-8 [1]	12.94	12/31/1997	8.49	8.82	0.33	4.38	-
		11/6/1998	9.25	10.3	1.1	3.48	-

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]

- 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.

[6] Product removed is based on volume measured in the 1,000-gallon holding poly-tank.

[7] The active skimmer was removed from MW-3 on 04/16/2003

[8] Passive skimmer was removed from MW-1

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 Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
MW-1	05/22/00	3,600	41,000	<3,000	100	13 [4]	2.9	2.05	3.2 [6]
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
	12/12/02	<50	<50	<300	0.98	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/18/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	3.2	<0.5	<0.5	<0.5	<2.0
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 [5]	<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 [6]
	05/22/00	240	<50	<300	500	<2.5	<2.5	<2.5	17
	09/06/00	530 [2,3]	<50	<300	190	0.93	0.6	0.57	<0.5 [10]
	12/19/00	960 [3,11]	70 [5]	<300	420	<2.5	<2.5	<2.5	<0.5 [10,12]
	12/19/00	1,200 [3,11]	<50	<300	440	<2.5	<2.5	<2.5	<0.5 [10,12]

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
MW-4	02/21/01	450 [13]	<50	<300	120	<0.5	<0.5	<0.5	<0.5 [10]
(cont'd)	07/10/01	<250	110 [2,13]	<300	620	2.6	2.9	<2.5	<0.5 [8,10]
Dup.	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
	12/12/02	580	<50	<300	240	1.4	0.56	<0.5	<2.0
Dup.	12/12/02	2,400	<50	<300	680	5.0	2.3	1.4	<2.0
	03/17/03	130 [15]	<50	<300	320 [17]	<0.5	<0.5	<0.5	<0.5 [16]
Dup.	03/17/03	82 [15]	<50	<300	190	0.64 [17]	0.56	0.53	<0.5 [16]
	06/18/03	360 [11, 15]	<50	<300	150	<0.5	<0.5	<0.5	<2.0
Dup.	06/18/03	330 [11, 15]	<50	<300	140	<0.5	<0.5	<0.5	<2.0
	09/03/03	140 [11, 15]	<50	<300	240	1.3	<0.5	<0.5	<2.0
Dup.	09/03/03	83 [11, 15]	<50	<300	130	0.58 [17]	<0.5	<0.5	<2.0
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
	12/12/02	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [10]
	06/18/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
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]

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
MW-6	12/19/00	130 [3,11]	620	<300	24	<0.5	1.6	<0.5	<2
(cont'd)	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
	12/12/02	53	110	<300	43	<0.5	<0.5	<0.5	<2.0
	12/18/02	Monitoring well was destroyed							
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]
	12/12/02	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	58 [14]
	12/18/02	Monitoring well was destroyed							
MW-8A	12/12/01	68	720 [11,15]	<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
	12/12/02	<50	160 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [10]
	06/18/03	<50	74 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	3.0 [14], <0.5 [10]

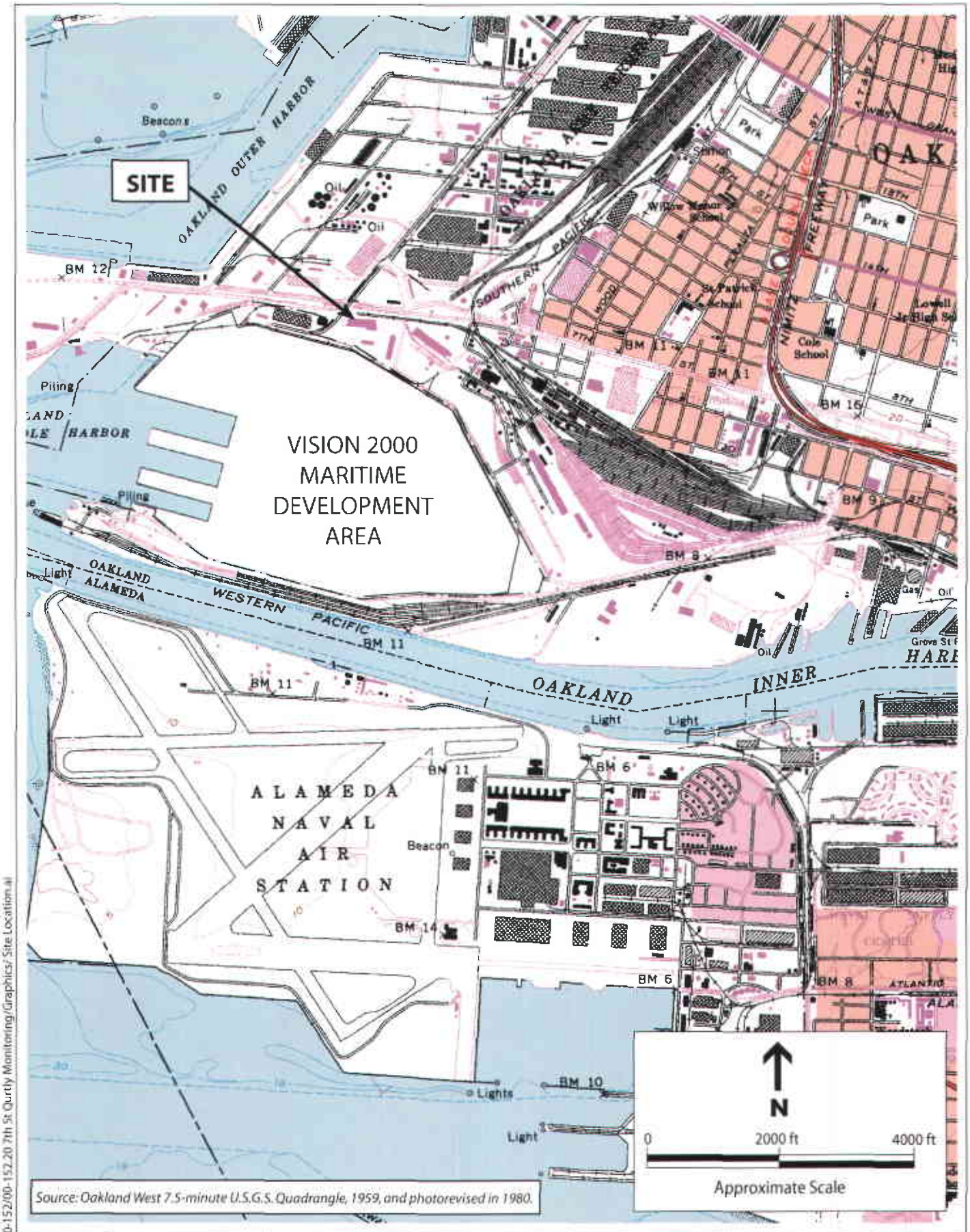
Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)

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
17 Presence confirmed, but Relative Percent Difference (RPD) between columns exceeds 40%
NA Not Analyzed.

Table 4
Summary of Operation and Maintenance Activities
Port of Oakland, 2277 7th Street, Oakland, California

Date	System Status	Comments
7/5/2002	Off	System is turned off and is in the process of being moved to new location.
7/19/2002	Off	System is moved to new location but is not hooked up to electricity.
7/30/2002	Off	System is moved to new location but is not hooked up to electricity.
8/14/2002	Off	System is moved to new location but is not hooked up to electricity.
9/13/2002	On	System is powered and operating.
9/26/2002	On	System operating OK.
10/14/2002	On	System operating OK.
11/4/2002	On	System operating OK.
11/21/2002	On	System operating OK.
12/6/2002	On	System operating OK.
12/18/2002	On	System operating OK.
12/23/2002	On	System operating OK.
12/27/2002	On	System operating OK.
12/30/2002	On	System operating OK.
1/2/2003	Off	System is turned off because no free product was detected in well MW-3
1/3/2003	Off	System is turned off because no free product was detected in well MW-3
1/14/2003	Off	System is turned off because only product sheen was detected in well MW-3
1/30/2003	Off	System is turned off because only product sheen was detected in well MW-3
2/18/2003	Off	System is turned off because only product sheen was detected in well MW-3
2/26/2003	Off	System is turned off because only product sheen was detected in well MW-3
3/13/2003	Off	System is kept off because of the expected rainfall during weekend
3/17/2003	On	System is tested to verify that only product is being recovered from well MW-3
4/16/2003	Off	Product recovery line was removed due to Port's construction upgrades at the site
6/18/2003	Off	Product recovery line was removed on 04/16/2003
9/3/2003	Off	Product recovery line was removed on 04/16/2003



Projects/2000/00-152/00-152.20 7th St Qurtly Monitoring/Graphics/ Site Location.ai

ITSI Innovative Technical Solutions, Inc.

Port of Oakland
2225 and 2277 Seventh Street
Oakland, California

Figure 1
Site Location Map

N81°53'14"W

MW-8A

MW-4

C-401

MW-2

MW-1

MW-3

MW-5

2277 7TH STREET

2225 7TH STREET

PROPERTY BOUNDARY LINE

Future Port Field Support Services Building

MARITIME STREET

LEGEND

- Existing Groundwater Monitoring Well (various installations).
- UST Removal Excavation.
- Groundwater Treatment System Conveyance Piping. Section of Conveyance Piping removed on April 16, 2003 where dashed.

N

0 100 200

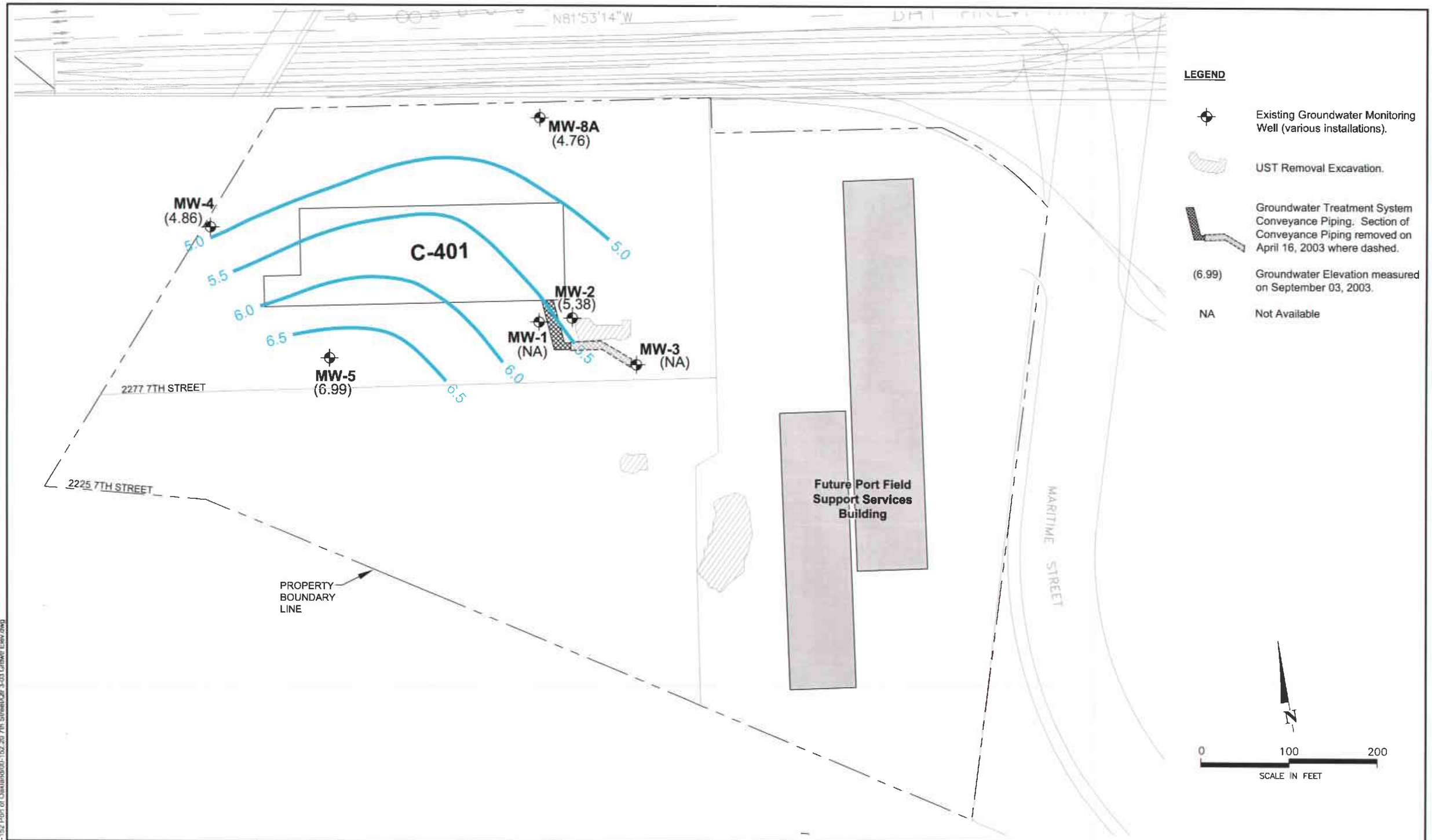
SCALE IN FEET

Projects\00-152 Port of Oakland\00-152_20 7th Street\Graphics\AD\Dir 3-03.dwg

ITSI Innovative Technical Solutions, Inc.

Third Quarter 2003, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 2
Site Plan



ITSI Innovative Technical Solutions, Inc.

Third Quarter 2003, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 3
Groundwater Elevations
September 03, 2003

CAD GIS Stations\00-152 Port of Oakland\MXD Files\2277 7th Street\Qtr 3-03 Gwtr Elev.dwg

Projects\00-152 Port of Oakland\00-152 20 7th Street\Graphics\CAD\Qtr 3-03 Grdwtr Samples.dwg

Innovative Technical Solutions, Inc.

Third Quarter 2003, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 4
Groundwater Sample Results
September 03, 2003

APPENDIX A

MONITORING WELL WATER LEVEL MEASUREMENT FORM
AND
MONITORING WELL PURGING AND SAMPLING FORM

Innovative Technical Solutions, Inc.

MONITORING WELL WATER LEVEL MEASUREMENT FORM

PROJECT NAME: 2277 7th Street PROJECT NO.: 00-152.20

MEASURED BY: R. LEONG DATE: 09/03/2003

Monitoring Well I.D.	Depth to Water (feet)	Total Well Depth (feet)	Time
MW-2	8.98	15.30	9:40
MW-4	8.29	18.76	11:55
MW-5	6.50	16.81	10:27
MW-6	Well was destroyed on December 18, 2002		
MW-7	Well was destroyed on December 18, 2002		
MW-8A	8.18	20.45	11:00

Innovative Technical Solutions, Inc.

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: Port of Oakland – 2277 7th Street PROJECT NO.: 00-152.20

WELL NO.: MW-8A TESTED BY: R LEONG DATE: 09/03/2003

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 8.18

Total Well Depth (ft.): 20.45 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): 0.5

Time Start Purge: 11:05 Time End Purge: 11:15

Comments : Groundwater has slight sulfide odor (Bay Mud)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	20.45		8.18		12.27		0.16	0.64	1.44		1.96

Time	11:05	11:07	11:09	11:11	11:13	11:15	
Cumulative Volume Purged (gals)	1	2	3	4	5	6	
Cumulative Number of Casing Volumes	–	~1	–	~2	–	~3	
Temperature (F°(C°))	23.0	22.1	21.7	21.6	21.6	21.6	
pH	6.21	6.34	6.32	6.42	6.41	6.43	
Specific Conductivity (mS/cm)	2.66	2.70	2.69	2.71	2.71	2.71	
Turbidity (NTU)	456	995	>1,000	>1,000	999	999	

WELL SAMPLING

Sampling Time: 11:30 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-8A	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-8A	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: Port of Oakland – 2277 7th Street PROJECT NO.: 00-152.20

WELL NO.: MW-4 TESTED BY: R LEONG DATE: 09/03/2003

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 8.29

Total Well Depth (ft.): 18.76 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): 0.5

Time Start Purge: 1200 Time End Purge: 1208

Comments: Bailed out water from well box; Groundwater is clear and odorless

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	18.76		8.29		10.47		0.16	0.64	1.44		1.68

Time	1200	1202	1204	1206	1208		
Cumulative Volume Purged (gals)	1	2	3	4	5		
Cumulative Number of Casing Volumes	–	>1	–	>2	3		
Temperature (F°(C°))	23.2 ~~19.0~~	22.9	22.9	23.2	23.4		
pH	7.69 ~~3.52~~	7.61	6.40	6.35	6.30		
Specific Conductivity (mS/cm)	1.64	1.59	1.63	1.64	1.66		
Turbidity (NTU)	10	11	10	14	18		

WELL SAMPLING

Sampling Time: 12:25 Sampling Method: Disposable Bailer

Duplicate Sample & Time: MW-4D @ 12:30

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-4	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-4	5 voas	TPHg, MTBE, BTEX	HCL	C&T
MW-4D	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-4D	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: Port of Oakland – 2277 7th Street PROJECT NO.: 00-152.20

WELL NO.: MW-5 TESTED BY: R. LEONG DATE: 09/03/2003

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 6.50

Total Well Depth (ft.): 16.81 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): 0.5

Time Start Purge: 10:30 Time End Purge: 10:38

Comments : Groundwater is odorless during purging

Well Volume Calculation (fill in before purging)	Total Depth (ft)		Depth to Water (ft)		Water Column (ft)		Multiplier for Casing Diameter (in)				Casing Volume (gal)
							2	4	6		
	16.81	-	6.50	=	10.31	x	0.16	0.64	1.44	=	1.65

Time	10:30	10:32	10:34	10:36	10:38		
Cumulative Volume Purged (gals)	1	2	3	4	5		
Cumulative Number of Casing Volumes	-	~1	-	-	3		
Temperature (F°/C°)	24.3	24.3	24.2	24.5	24.5		
pH	6.35	6.45	6.42	6.37	6.36		
Specific Conductivity (mS/cm)	1.73	1.89	1.86	1.67	1.59		
Turbidity (NTU)	9	10	12	19	20		

WELL SAMPLING

Sampling Time: 10:50 Sampling Method: Disposable Bailer

Duplicate Sample & Time: ~~MW-4D @~~ NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-5 ✓	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-5 ✓	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: Port of Oakland – 2277 7th Street PROJECT NO.: 00-152.20

WELL NO.: MW-2 TESTED BY: R. LEONG DATE: 09/03/2003

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 8.98

Total Well Depth (ft.): 15.30 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): 0.5

Time Start Purge: 9:42 Time End Purge: 9:49

Comments : Groundwater is clear and odorless during purging

Well Volume Calculation (fill in before purging)	Total Depth (ft)		Depth to Water (ft)		Water Column (ft)		Multiplier for Casing Diameter (in)				Casing Volume (gal)
							2	4	6		
	15.30	-	8.98	=	6.32	x	0.16	0.64	1.44	=	1.01

Time	9:43	9:44	9:45	9:46	9:47	9:48	9:49
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Cumulative Number of Casing Volumes	–	~1	–	~2	–	–	~3
Temperature (F° C°)	22.2	21.5	21.0	21.1	19.7	19.8	20.0
pH	3.99	3.97	4.03	6.93	6.97	6.96	6.97
Specific Conductivity (mS/cm)	2.33	2.31	2.31	2.31	2.30	2.30	2.31
Turbidity (NTU)	10	10	9	7	15	18	21

WELL SAMPLING

Sampling Time: 10:05 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-2	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-2	5 voas	TPHg, MTBE, BTEX	HCL	C&T

ITSI Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598
(925) 946-3100 – (925) 256-8998 (fax)

Local Address: 2277 Seventh st. Oakland, California

Chain-Of-Custody

Project Name and Number: Port of Oakland (CO.152-20)
Project Manager: Rachel Hess
Site Location: 2277 Seventh st. Oakland, Ca

Laboratory Name: C&T
Address: 2323 5th Street Berkely, California
Contact Name: John Goyette
Phone: (510) 486-0900

Date: 09/03/2003
Page: 1 of 1

Sample I.D.	Date	Time	Sample Depth	No. of Containers	Sample Matrix	Analysis: TPH(d) by EPA 8015	TPH(g) by EPA 8015	TPH by EPA 8015	Chlorinated Hydrocarbons by EPA 8010	VOCs (Halocarbons & BTEX) by EPA 8260	Special Instructions/Comments
						1	-	HCl	HCl	HCl	Preservative:
						Amb	Amb	VOA	VOA	VOA	Container Type:
MW-2	09/03/03	10:05	~10	7	H_2O						
MW-5	09/03/03	10:50	~12	7	H_2O						
MW-8A	09/03/03	11:30	~15	7	H_2O						
MW-4	09/03/03	12:25	~10	7	H_2O						
MW-4D	09/03/03	12:50	~10	7	H_2O						
TRIP BLANK	09/03/03	8:00	—	2	H_2O						

Sampled By: Rogerio Lima
Signature:
Special Instructions: Send bill Port of Oakland
Contact will Rubio @ (510) 627-1134
Send Results to: Rachel Hess (ITSI)
(w/fax #) (925) 256-8998
Turnaround Time: Standard

Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Lima / ITSI	09/03/03	12:30		9/3/03	2:30
Temp (c) 4					

Original – Laboratory Yellow – Field/Office

ITSI 5/02

APPENDIX B

LABORATORY REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

SEP 22 2003

ANALYTICAL REPORT

Prepared for:

Innovative Technical Solutions,Inc.
2730 Shadelands Drive
Suite 100
Walnut Creek, CA 94598-2540

Date: 17-SEP-03
Lab Job Number: 167319
Project ID: 00.15220
Location: 2277 7th Port of Oakland

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

1623 [redacted]

ITSI Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598
(925) 946-3100 – (925) 256-8998 (fax)

Local Address: 2277 Seventh st. Oakland, California

Chain-Of-Custody

Project Name and Number: Port of Oakland (00.152-20)
Project Manager: Rachel Hess
Site Location: 2277 Seventh st. Oakland, Ca

Laboratory Name: C&T
Address: 2323 5th Street Berkeley, California
Contact Name: John Goyette
Phone: (510) 486-0900

Date: 09/03/2003
Page: 1 of 1

Special Instructions/Comments: Silica Gel Cleanup for TPHd, TPHmo

	Sample I.D.	Date	Time	Sample Depth	No. of Containers	Sample Matrix	TPHd by EPA 8015	TPHmo by EPA 8015	TPHg by EPA 8015	BTEX + MTBE by 8021	MTBE Confirmation 8260
	Preservative:						–	–	HCl	HCl	HCl
	Container Type:						Amber	Amber	VOA	VOA	VOA
1	MW-2	09/03/03	10:05	~10	7	H_2O	X	X	X	X	X
2	MW-5	09/03/03	10:50	~12	7	H_2O	X	X	X	X	X
3	MW-8A	09/03/03	11:30	~15	7	H_2O	X	X	X	X	X
4	MW-4	09/03/03	12:25	~10	7	H_2O	X	X	X	X	X
5	MW-4D	09/03/03	12:30	~10	7	H_2O	X	X	X	X	X
6	TRIP BLANK	09/03/03	8:00	–	2	H_2O			X	X	X

Received: ☒ On Ice ☐ Cold ☐ Ambient ☒ Intact

Preservation Correct? ☐ Yes ☐ No ☐ N/A

NOT USED

09/04/2003

Sampled By: Rogerio Leanos
Signature:
Special Instructions: Direct Bill Port of Oakland Contact Jeff Rubin @ (510) 627-1134
Send Results to: Rachel Hess (ITSI) (w/fax #) (925) 256-8998
Turnaround Time: Standard

Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Leanos / ITSI	09/03/03	14:30		9/3/03	2:30

Temp @ 4

Original – Laboratory Yellow – Field/Office

ITSI 5/02

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1
Effective Date: 10-May-99
Revision: 1 Number 3 of 3
Filename: F:\QC\Forms\QC\Cooler.wpd

Curtis & Tompkins, Ltd.

COOLER RECEIPT CHECKLIST

Login#: 167319 Date Received: 9-3-03 Number of Coolers: 1
Client: ITSI Project: 00.152-20

A. Preliminary Examination Phase
Date Opened: 9-3-03 By (print): Troy Windsor (sign) Troy E. Windsor

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)
   If YES, enter carrier name and airbill number: _____
2. Were custody seals on outside of cooler? ..... YES (NO) N/A
   How many and where? _____ Seal date: _____ Seal name: _____
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Were custody papers dry and intact when received? ..... (YES) NO
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO
6. Did you sign the custody papers in the appropriate place? ..... (YES) NO
7. Was project identifiable from custody papers? ..... (YES) NO
   If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. ..... YES (NO)
   Type of ice: wet Temperature: 12.4 - Samples received directly from the field & cooling process had beg

B. Login Phase
Date Logged In: 9-3-03 By (print): Troy Windsor (sign) Troy E. Windsor 9-3-0

1. Describe type of packing in cooler: Foam voa holders
2. Did all bottles arrive unbroken? ..... (YES) NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)? ... (YES) NO
4. Did bottle labels agree with custody papers? ..... YES (NO)
5. Were appropriate containers used for the tests indicated? ..... (YES) NO
6. Were correct preservatives added to samples? ..... (YES) NO
7. Was sufficient amount of sample sent for tests indicated? ..... (YES) NO
8. Were bubbles absent in VOA samples? If NO, list sample Ids below ..... (YES) NO
9. Was the client contacted concerning this sample delivery? ..... YES NO
   If YES, give details below.
   Who was called? _____ By whom? _____ Date: _____

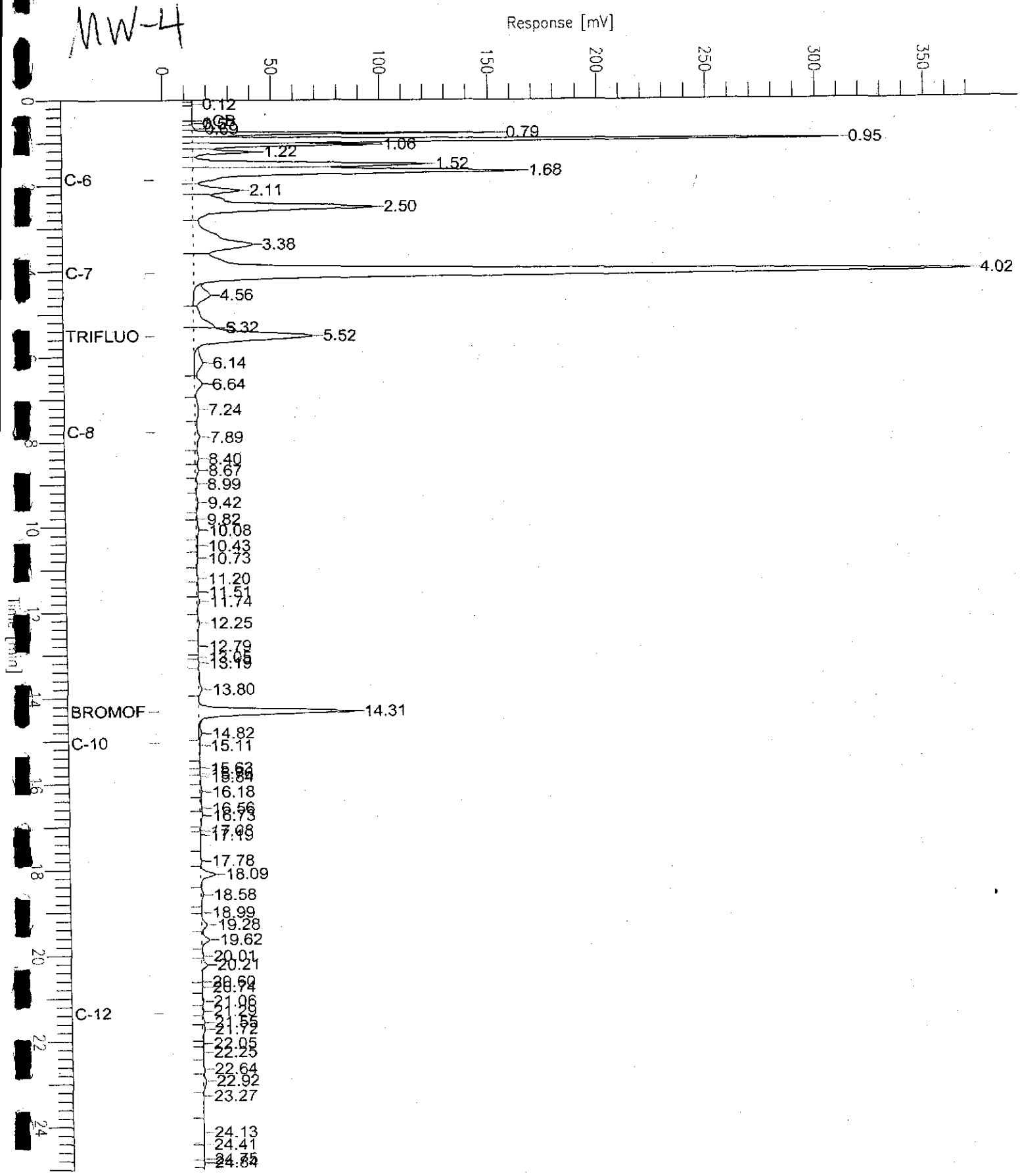
Additional Comments:
4- Sample -002 Date on labels = 03/03/2003 COC = 09/03/03
↓ -004 one voa date on label = 03/03/2003 COC = 09/03/03

Chromatogram

[redacted] Name : 167319-004,84173
[redacted] Name : G:\GC05\DATA\245G021.raw
[redacted]ethod : TVHBTXE
[redacted]tart Time : 0.00 min End Time : 25.00 min
[redacted]c[redacted] Factor: 1.0 Plot Offset: -4 mV

Sample #: a1.0 Page 1 of 1
Date : 9/4/03 11:32 AM
Time of Injection: 9/3/03 11:48 PM
Low Point : -4.06 mV High Point : 372.07 mV
Plot Scale: 376.1 mV

MW-4



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Batch#:	84173
Units:	ug/L	Sampled:	09/03/03
Diln Fac:	1.000	Received:	09/03/03

Field ID:	MW-4D	Lab ID:	167319-005
Type:	SAMPLE	Analyzed:	09/04/03

Analyte	Result	RL	Analysis
Gasoline C7-C12	83 Y Z	50	8015B
MTBE	ND	2.0	EPA 8021B
Benzene	130	0.50	EPA 8021B
Toluene	0.58 C	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	101	57-150	8015B
Bromofluorobenzene (FID)	130	65-144	8015B
Trifluorotoluene (PID)	80	54-149	EPA 8021B
Bromofluorobenzene (PID)	106	58-143	EPA 8021B

Field ID:	TRIP BLANK	Lab ID:	167319-006
Type:	SAMPLE	Analyzed:	09/03/03

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	57-150	8015B
Bromofluorobenzene (FID)	132	65-144	8015B
Trifluorotoluene (PID)	79	54-149	EPA 8021B
Bromofluorobenzene (PID)	109	58-143	EPA 8021B

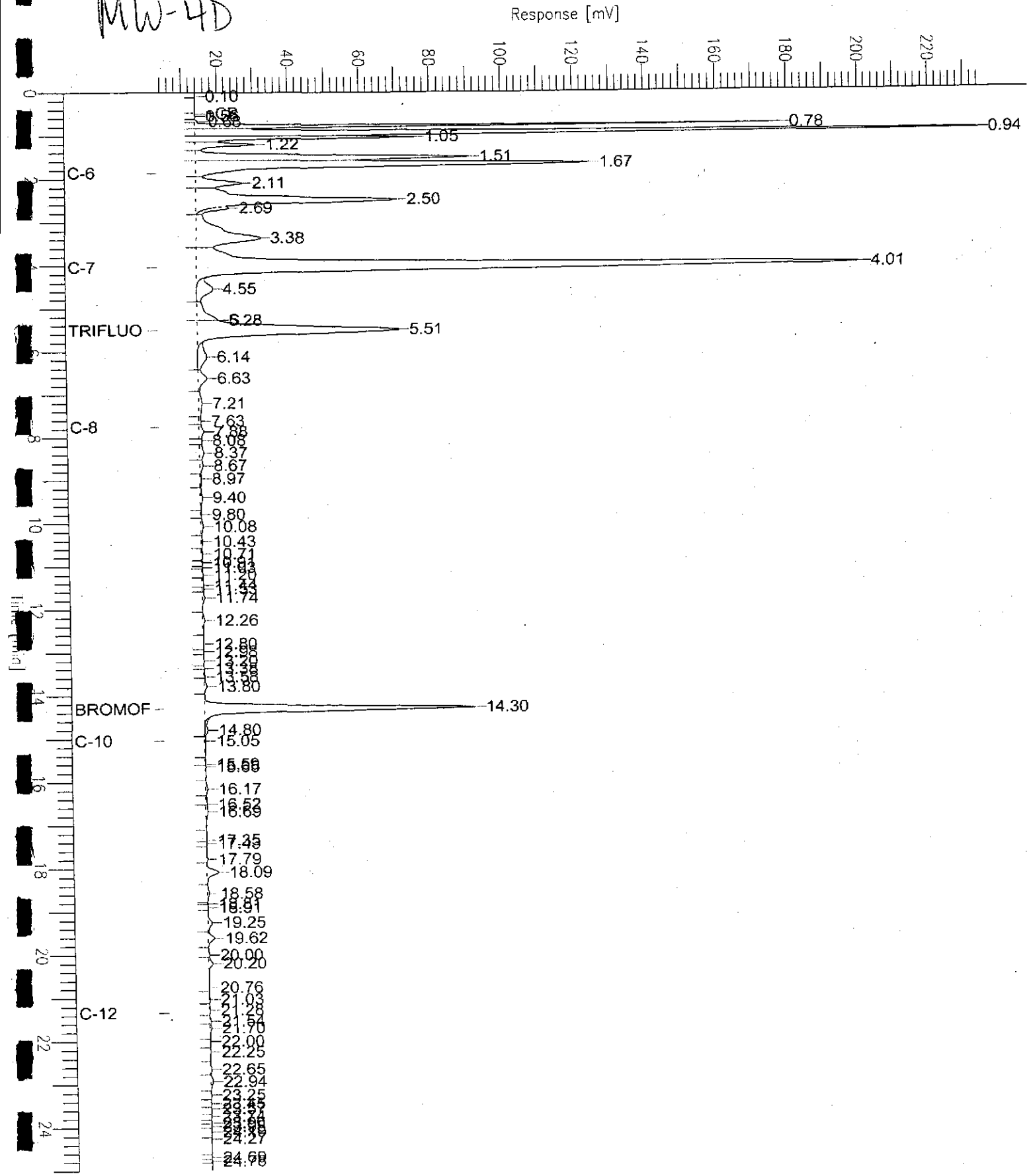
C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 167319-005,84173
File Name : G:\GC05\DATA\245G024.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 3 mV

Sample #: a1.0
Date : 9/4/03 11:37 AM
Time of Injection: 9/4/03 01:29 AM
Low Point : 2.86 mV High Point : 234.62 mV
Plot Scale: 231.8 mV

MW-4D



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Batch#:	84173
Units:	ug/L	Sampled:	09/03/03
Diln Fac:	1.000	Received:	09/03/03

Type: BLANK
Lab ID: QC224358

Analyzed: 09/03/03

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	57-150	8015B
Bromofluorobenzene (FID)	125	65-144	8015B
Trifluorotoluene (PID)	82	54-149	EPA 8021B
Bromofluorobenzene (PID)	103	58-143	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC224359	Batch#:	84173
Matrix:	Water	Analyzed:	09/03/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.37	92	63-133
Benzene	20.00	20.39	102	78-123
Toluene	20.00	18.96	95	79-120
Ethylbenzene	20.00	19.64	98	80-120
m,p-Xylenes	40.00	41.00	102	76-120
o-Xylene	20.00	20.07	100	80-121

Surrogate	%REC	Limits
Trifluorotoluene (PID)	73	54-149
Bromofluorobenzene (PID)	91	58-143

S.1

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC224360	Batch#:	84173
Matrix:	Water	Analyzed:	09/03/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,226	111	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	123	57-150
Bromofluorobenzene (FID)	136	65-144

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	8015B
Field ID:	ZZZZZZZZZZ	Batch#:	84173
MSS Lab ID:	167298-001	Sampled:	09/02/03
Matrix:	Water	Received:	09/02/03
Units:	ug/L	Analyzed:	09/04/03
Diln Fac:	1.000		

Type: MS Lab ID: QC224404

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	33.24	2,000	2,135	105	76-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	116	57-150
Bromofluorobenzene (FID)	137	65-144

Type: MSD Lab ID: QC224405

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,165	107	76-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	57-150
Bromofluorobenzene (FID)	140	65-144

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8260B
Field ID:	MW-8A	Batch#:	84447
Lab ID:	167319-003	Sampled:	09/03/03
Matrix:	Water	Received:	09/03/03
Units:	ug/L	Analyzed:	09/12/03
Dil'n Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	77-129
Toluene-d8	93	80-120
Bromofluorobenzene	101	80-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC225437	Batch#:	84447
Matrix:	Water	Analyzed:	09/12/03
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	77-129
Toluene-d8	97	80-120
Bromofluorobenzene	98	80-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC225438	Batch#:	84447
Matrix:	Water	Analyzed:	09/12/03
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	77-129
Toluene-d8	94	80-120
Bromofluorobenzene	102	80-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC225436	Batch#:	84447
Matrix:	Water	Analyzed:	09/12/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	48.34	97	69-124

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	77-129
Toluene-d8	95	80-120
Bromofluorobenzene	94	80-123

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Purgeable Aromatics by GC/MS

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	84447
MSS Lab ID:	167511-012	Sampled:	09/11/03
Matrix:	Water	Received:	09/11/03
Units:	ug/L	Analyzed:	09/12/03
Dil'n Fac:	1.000		

Type: MS Lab ID: QC225439

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	2.462	50.00	52.06	99	67-127

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	100	77-129
Toluene-d8	102	80-120
Bromofluorobenzene	93	80-123

Type: MSD Lab ID: QC225440

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	52.55	100	67-127	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	77-129
Toluene-d8	98	80-120
Bromofluorobenzene	93	80-123

RPD= Relative Percent Difference

14.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/03/03
Units:	ug/L	Received:	09/03/03
Diln Fac:	1.000	Prepared:	09/03/03
Batch#:	84183		

Field ID: MW-2
Type: SAMPLE
Lab ID: 167319-001
Analyzed: 09/09/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	117	44-146

Field ID: MW-5
Type: SAMPLE
Lab ID: 167319-002
Analyzed: 09/10/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	99	44-146

Field ID: MW-8A
Type: SAMPLE
Lab ID: 167319-003
Analyzed: 09/10/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	92	44-146

ND= Not Detected
RL= Reporting Limit

8.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/03/03
Units:	ug/L	Received:	09/03/03
Diln Fac:	1.000	Prepared:	09/03/03
Batch#:	84183		

Field ID: MW-4
Type: SAMPLE
Lab ID: 167319-004

Analyzed: 09/10/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	108	44-146

Field ID: MW-4D
Type: SAMPLE
Lab ID: 167319-005

Analyzed: 09/10/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	120	44-146

Type: BLANK
Lab ID: QC224401

Analyzed: 09/10/03
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	88	44-146

ND= Not Detected
RL= Reporting Limit

8.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	167319	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	84183
Units:	ug/L	Prepared:	09/03/03
Diln Fac:	1.000	Analyzed:	09/09/03

Type: BS
Lab ID: QC224402
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,020	81	38-137

Surrogate	%REC	Limits
Hexacosane	100	44-146

Type: BSD
Lab ID: QC224403
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,190	88	38-137	8	35

Surrogate	%REC	Limits
Hexacosane	107	44-146

RPD= Relative Percent Difference

9.0

APPENDIX C

DAILY FIELD ACTIVITY REPORT

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598
(925) 946-3100 (Tel), (925) 256-8998 (Fax)

PROJECT NAME: 00-152.20
PROJECT NUMBER: Port of Oakland
SITE LOCATION: 2277 Seventh street, Oakland

DAILY ACTIVITY REPORT

DATE: 09/03/03
PAGE 1 OF 1

DESCRIPTION OF FIELD ACTIVITIES AND EVENTS

6:30 Purchase Ice, batteries for IP, water for decontamination
7:00 Pick up Ice chest and sample containers at C&T in Berkeley
8:00 Arrive at job site
8:15 Open fenced gate and set up for sampling.
8:30 Calibrate Horiba U-10 with Auto Cal solution
9:30 Set up at MW-2
10:05 Sample MW-2
10:10 transfer purged water into 1,000-gal poly
10:20 Set up at MW-5
10:50 Sample MW-5
11:05 Set up at MW-8A
11:30 sample MW-8A
11:50 Set up at MW-4
12:25 Sample MW-4
12:30 Sample MW-4D as duplicate
12:45 Set up at MW-1
12:50 [redacted] passive skimmer absent in well
13:00 Measure Depth-to-Product = 8.50 feet
Depth-to-water = 9.40 feet
Product thickness = 0.90 feet
13:15 At MW-3
13:20 Measure Depth-to-Product = 8.31 feet
Depth-to-Water = 9.96 feet
Product thickness = 1.65 feet
14:00 Lock gate
14:05 Leave site to drop cooler with samples at C&T and return ~~cooler~~ Horiba U-10 at Equipco

PREPARED BY: Rogelio Lerma
DATE: 09/03/2003
PREPARER'S SIGNATURE:

DR Art Rpt-w- no -Reviewed by-