PORT OF OAKLAND

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ALAMEDA COUNTY ENVIRONMENTAL HEALTH

September 26, 2005

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

RE: 2nd Quarter 2005, 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 third quarter of 2005, 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.)
Rachel B. Hess (Innovative Technical Solutions, Inc.)
Jeffrey D. Hess (Innovative Technical Solutions, Inc.)

Innovative Technical Solutions, Inc.

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SEPT. 29, 2005
ALAMEDA COUNTY
ENVIRONMENTAL HEALTH

September 22, 2005

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

Second Quarter of 2005 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.

Collection of groundwater samples from monitoring wells MW-1 and MW-3 was not performed this quarter due to the presence of measurable thickness of separate-phase petroleum hydrocarbons floating on the groundwater surface.

Three sampling events were respectively performed on June 14, July 06, and August 10, 2005 as part of the second quarter. The analytical results of the samples collected on June 14, reported by Severn Trent Laboratories (STL) in Pleasanton, California, were inconsistent with the history of detections and concentration ranges of Total Petroleum Hydrocarbons as diesel (TPHd) and motor oil (TPHmo) in all wells. The highest discrepancy was reported in MW-5, a well that has not had detections of TPHd and TPHmo since February 2000. The anomalous results triggered a confirmatory sampling effort in all wells on July 06, 2005. Samples were again submitted to the STL and a single split sample from MW-5 was also submitted to a second California certified laboratory in Pacheco, McCampbell Analytical, Inc. (MAI), for quality assurance. The results of the confirmatory sampling for MW-5 indicated a disagreement between the two laboratories. MAI's result indicated a much more reasonable degree of consistency with the range of historical TPHd detection in MW-5. Further discussions and evaluations of the TPHd and TPHmo in well MW-5 and laboratory procedures are presented in the ITSI Technical Memorandum dated August 9, 2005, included in Appendix D. Based on the questionable validity of analytical results for TPHd and TPHmo in MW-5, STL's data for the June 14 and July 06, 2005 events were considered anomalous and unreliable. A final sampling effort for the second quarter 2005 event was then performed on August 10, 2005. The results of this event are presented in this report.

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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.

Site preparation activities for the construction of a new Harbor Facilities Center (HFC) were initiated in November 2002 at 2277 7th Street 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.

Three additional 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 was also modified and included for the expansion plan of HFC. 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 also properly destroyed to facilitate the Port's construction plans.

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. 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 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. A new product removal system was installed as part of the HFC construction activities. The system was operational in November 2004 after the HFC development activities were completed.

On November 17 and 18, 2003, ITSI personnel raised monitoring wells MW-2 and MW-3 to match the asphalt surface elevation of the future HFC parking lot. New traffic rated well boxes were placed on the two wells

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

and the elevation of the top of each well box was set with a laser level instrument. The elevations of the wells were subsequently surveyed on November 26, 2003 to a relative Port of Oakland datum by PLS Surveys, Inc. (PLS).

GROUNDWATER MONITORING

ITSI personnel performed groundwater monitoring and sampling at the 2277 7th Street site on August 10, 2005. Prior to purging and sampling the monitoring wells, the depth to groundwater below the top of the well casing was measured with a water level indicator. After measuring the depth to water, the wells were purged using a disposable bailer. Conductivity, pH, and temperature were monitored periodically during purging. Collection of groundwater samples was performed 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 the respective Monitoring Well Water Level Measurement and Monitoring Well Purging and Sampling forms included as Appendix A. The purge water was stored onsite in a 55-gallon DOT drum. Dillard Environmental Services Company, Inc. (Dillard) periodically removes and appropriately disposes of the purge water.

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 McCampbell Analytical, Inc. (MAI) in Pacheco, a California certified analytical laboratory.

The second quarter 2005 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

MAI 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 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 August 10, 2005. 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 August 2005 is consistent with the historic flow direction reported in the previous reports.

Results of the August 10, 2005 groundwater sampling at 2277 7th Street are summarized below:

- TPHg was detected in one well at a concentration of 500 µg/L in MW-4.
- Benzene was detected in one well at a concentration of 180 µg/L in MW-4.
- Toluene was not detected above the reporting limit in any of the wells sampled this quarter.
- 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 not detected above the reporting limit in any of the wells sampled this quarter.
- TPHd was detected in one well at a concentration of 150 µg/L in well MW-8A.
- TPHmo was not detected above 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-5 and labeled as MW-5D at 2277 7th Street on August 10, 2005 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 of 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-5
08/10/05

ANALYTE	X_1	X_2	RPD
MTBE	<0.5	<0.5	--
B	<0.5	<0.5	--
T	<0.5	<0.5	--
E	<0.5	<0.5	--
X	<0.5	<0.5	--
TPHd	<50	<50	--
TPHg	<50	<50	--

- The overall RPD values indicate that the results from the sample and the duplicate analysis are in agreement.

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 that Foss Environmental Services Company, Inc.*(former contractor) emptied at various times throughout a quarter. A passive skimmer was installed in MW-1, and it was subsequently removed on May 22, 2000 because no measurable product appeared in the well. The passive skimmer was reinstalled in MW-1 after free product was detected in the well on September 6, 2000. The active and passive product recovery skimmers were subsequently removed from the wells in April 2003 due to activities related to the construction of the new HFC.

The Port recently replaced the former free product recovery system with the installation of two new mitigation systems at the site. Overaa Construction (Overaa) completed the installation of a soil gas venting system beneath the new HFC's building slab. The system was completed in early 2005 and initial testing was performed in April 2005. Final "as built" drawings and an operation and maintenance manual have been prepared for the soil gas venting system. Beliveau Engineering Contractors, Inc., subcontracted to Dillard, completed a new product recovery system in November 2004 designed to recover the product floating on the groundwater beneath the site. Initial testing and calibration began during December 2004. The system is currently fully operational and free product is being removed from the surface of shallow groundwater. Further testing and calibration of the system will continue for a full year through the end of 2005 accounting for seasonal variations. Final "as built" drawings and an operation and maintenance manual have been prepared for the free product recovery system.

The free-phase petroleum product has been monitored in wells MW-1 and MW-3 on a quarterly basis in conjunction with the quarterly groundwater sampling event. During this second quarter monitoring event, free-phase petroleum product was measured at 0.50 feet and 1.24 feet in MW-1 and MW-3, respectively. Table 2 presents a summary of the product thickness data. A summary of the activities during the past quarters associated with the operation and maintenance of the product recovery system is presented in Table 4.

* Effective October 31, 2003, Foss Environmental Services, Inc. was acquired as a wholly owned subsidiary of National Response Corporation, Inc. (NRC)

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. 4/06
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, August 10, 2005
Figure 4 – Groundwater Sample Results, 2277 7th Street, August 10, 2005

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
Appendix D - Technical Memorandum – August 9, 2005

TABLES

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
		11/26/2003	NA	NA
		3/5/2004	NA	NA
		6/2/2004	NA	NA
		9/3/2004	NA	NA
		12/16/2004	NA	NA
		3/29/2005	NA	NA
		6/14/2005	NA	NA
		8/10/2005	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
	17.21	11/26/2003	12.01	5.20
		3/5/2004	9.75	7.46
		6/2/2004	11.22	5.99
		9/3/2004	11.62	5.59
		12/16/2004	10.80	6.41
		3/29/2005	9.67	7.54
		6/14/2005	10.68	6.53
		8/10/2005	11.05	6.16

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-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
		11/26/2003	8.69	4.46
		3/5/2004	7.45	5.70
		6/2/2004	8.25	4.90
		9/3/2004	8.31	4.84
		12/16/2004	7.96	5.19
		3/29/2005	7.11	6.04
		6/14/2005	7.90	5.25
		8/10/2005	7.86	5.29

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
		11/26/2003	6.70	6.79
		3/5/2004	5.70	7.79
		6/2/2004	6.27	7.22
		9/3/2004	6.61	6.88
		12/16/2004	6.02	7.47
		3/29/2005	5.25	8.24
		6/14/2005	5.82	7.67
		8/10/2005	6.00	7.49

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-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	
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	

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-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
		11/26/2003	8.55	4.39
		3/5/2004	6.92	6.02
		6/2/2004	7.92	5.02
		9/3/2004	8.16	4.78
		12/16/2004	7.62	5.32
		3/29/2005	6.63	6.31
		6/14/2005	7.60	5.34
		8/10/2005	7.50	5.44

[1] Elevation data relative to Port of Oakland datum; well surveys performed on September 12, 1996 February 4, 1998, and November 26, 2003, 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's New Harbor Facility.

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 (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

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

Well ID	Elevation of Top of Casing (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 (Cont'd)	14.14	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
		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	--	[8]
		11/26/2003	8.85	9.25	0.40	--	[8]
		3/5/2004	6.76	7.07	0.31	--	[8]
		6/2/2004	8.26	8.71	0.45	--	[8]
		9/3/2004	8.70	9.11	0.41	--	[8]
		12/16/2004	7.75	7.92	0.17	--	[8]
		3/29/2005	6.21	6.38	0.17	--	[8]
		6/14/2005	7.41	7.61	0.20	--	[8]
		8/10/2005	8.05	8.55	0.50	--	[8]
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

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

Well ID	Elevation of Top of Casing (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	9/28/1999	--	--	0.2	--	active skimmer
(Cont'd)		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
		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

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

Well ID	Elevation of Top of Casing (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	12/30/2002	6.50	7.15	0.65	25 [6]	active skimmer
(Cont'd)		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]
	16.18 [9]	11/26/2003	10.79	12.85	2.06	--	[7]
		3/5/2004	8.39	9.85	1.46	--	[7]
		6/2/2004	10.03	11.35	1.32	--	[7]
		9/3/2004	10.46	12.06	1.59	--	[7]
		12/16/2004	9.41	10.38	0.97	--	[7]
		3/29/2005	8.17	9.01	0.84	--	[7]
		6/14/2005	9.59	10.55	0.96	--	[7]
		8/10/2005	9.91	11.15	1.24	--	[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	-

- 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 measuremen

[2] Product removal totals for MW-3 are estimated from documentation of product remov 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 b Foss Environmental Services Company, Inc

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

[7] The active skimmer was removed from MW-3 on 04/16/200

[8] Passive skimmer was removed from MW-

[9] Elevation data relative to Port of Oakland datum; well surveys performed o November 26, 2003, by PLS Survey.

NM - Well checked for free product but not able to detect a measurable amount in the well.
Shaded area indicates 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 [8]	2.9	2.05	3.2 [8]
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
	11/26/03	<50	<50	<300	3.0	<0.5	<0.5	<0.5	<2.0
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	96 [6, 15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/29/05	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	08/10/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5

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	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
Dup.	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 [8]
	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]
	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
	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 [10]
Dup.	03/17/03	82 [15]	<50	<300	190	0.64 [17]	0.56	0.53	<0.5 [10]
	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
	11/26/03	160 [15]	68 [15]	<300	320	0.91 [17]	<0.5	0.53	<2.0
Dup.	11/26/03	120 [15]	<50	<300	210	0.66 [17]	<0.5	<0.5	<2.0
	03/05/04	90 [11]	<50	<300	190	1.1	0.55	0.50 [17]	23 [14, 17], <0.5 [10]
Dup.	03/05/04	84 [11]	<50	<300	180	0.81	<0.5	<0.5	21 [14, 17], <0.5 [10]
	06/02/04	620 [13]	<50	<300	210	0.55 [17]	<0.5	<0.5	<2.0
Dup.	06/02/04	400 [13]	<50	<300	130	<0.5	<0.5	<0.5	<2.0
	09/03/04	780 [13, 15]	<50	<300	<0.5	1.0 [17]	<0.5	0.57	<2.0
Dup.	09/03/04	370 [13, 15]	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0

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	12/16/04	840	<50	<300	290	1.3 [17]	0.69	0.75	<2.0
Dup.	12/16/04	670	<50	<300	230	1.3 [17]	<0.5	<0.5	<2.0
	03/29/05	440 [13]	<50	<300	140	0.57	<0.5	<0.5	<2.0
Dup.	03/29/05	540 [13]	<50	<300	170	0.72	<0.5	<0.5	<2.0
	08/10/05	500 [18]	<50	<250	180	<2.5	<2.5	<2.5	<2.5
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
	11/26/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	4.1 [14], <0.5 [10]
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	2.2 [14], <0.5 [10]
	03/29/05	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	08/10/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5D	08/10/05	<50 [19]	<50 [19]	<250	<0.5	<0.5	<0.5	<0.5	<0.5

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	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
	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							

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

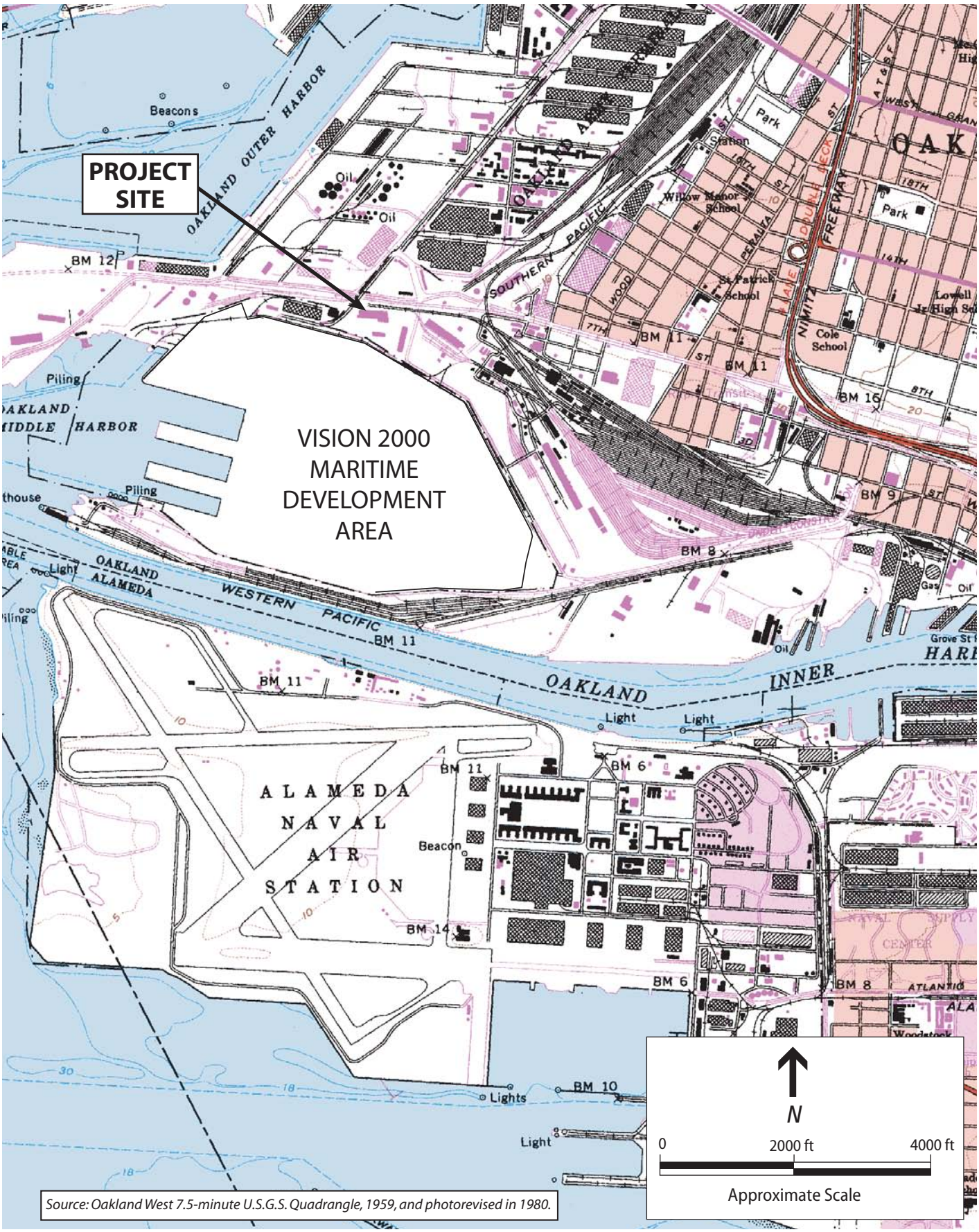
Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
MW-8A	12/12/01	68	720 [11,15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/08/02	<50	760 [2]	<570	<0.5	<0.5	<0.5	<0.5	<5.0
Dup.	03/08/02	<50	350 [2]	<580	<0.5	<0.5	<0.5	<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]
	11/26/03	<50	94 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	67 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	86 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	160 [6, 15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/29/05	<50	53	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	08/10/05	<50 [19]	150 [15, 19]	<250	<0.5	<0.5	<0.5	<0.5	<0.5

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 7 th 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.
18 Unmodified or weakly modified gasoline is significant
19 Liquid Sample contains greater than ~1 vol.% sediment

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 locatior
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-
1/3/2003	Off	System is turned off because no free product was detected in well MW-
1/14/2003	Off	System is turned off because only product sheen was detected in well MW-
1/30/2003	Off	System is turned off because only product sheen was detected in well MW-
2/18/2003	Off	System is turned off because only product sheen was detected in well MW-
2/26/2003	Off	System is turned off because only product sheen was detected in well MW-
3/13/2003	Off	System is kept off because of the expected rainfall during weeken
3/17/2003	On	System is tested to verify that only product is being recovered from well MW-
4/16/2003	Off	Product recovery line was removed due to Port's construction upgrades at the sit
6/18/2003	Off	Product recovery line was removed on 04/16/200
9/3/2003	Off	Product recovery line was removed on 04/16/200
11/26/2003	Off	Product recovery line was removed on 04/16/200
3/5/2004	Off	Product recovery line was removed on 04/16/200
6/2/2004	Off	Product recovery line was removed on 04/16/200
9/3/2004	Off	Product recovery line was removed on 04/16/200
12/16/2004	Off	Product recovery line was removed on 04/16/200
3/29/2005	Off	Product recovery line was removed on 04/16/200
6/14/2005	Removed	Replaced by a new system fully operational at the sit

FIGURES



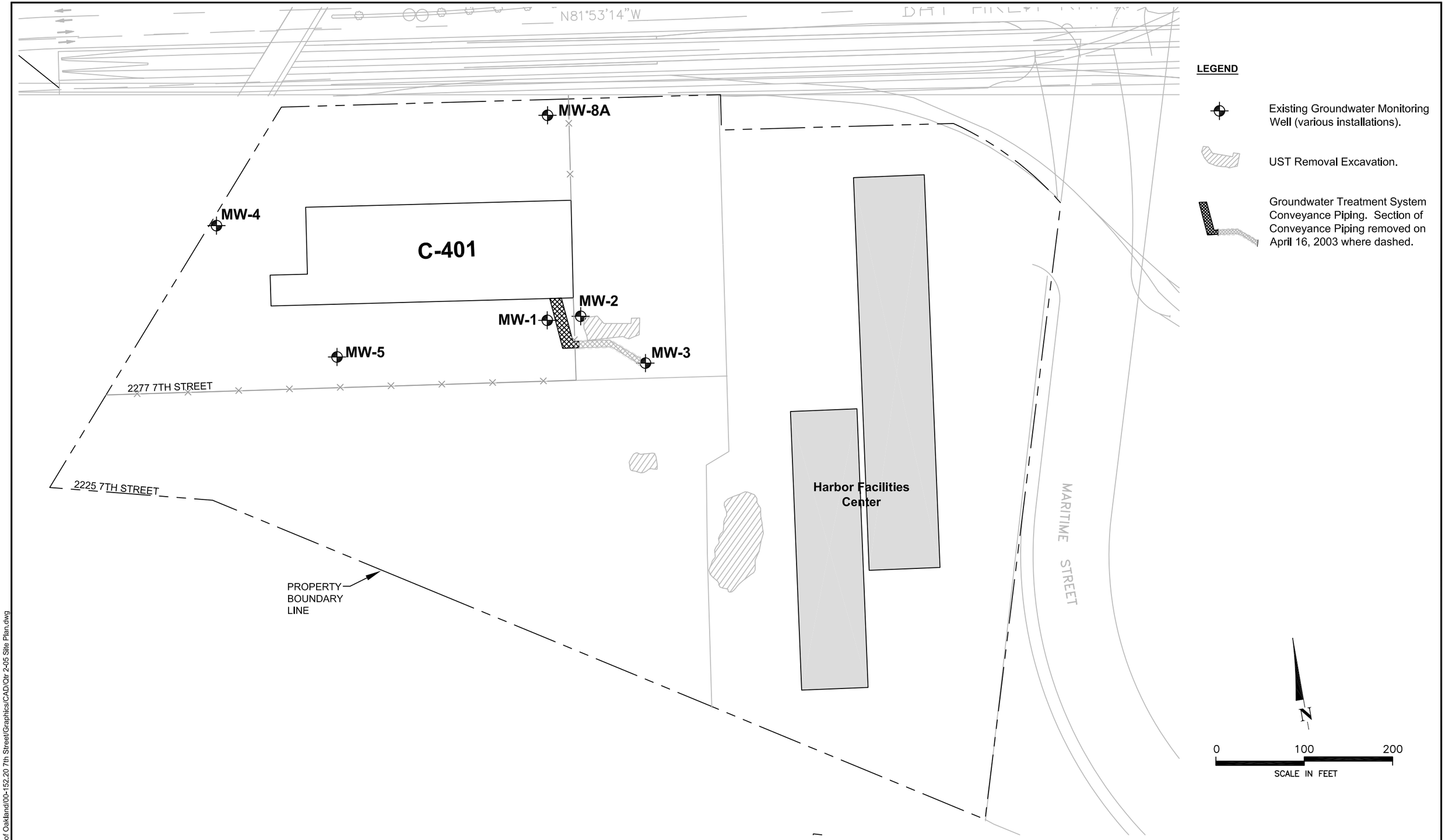
Source: Oakland West 7.5-minute U.S.G.S. Quadrangle, 1959, and photorevised in 1980.

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

Innovative Technical Solutions, Inc.

Port of Oakland
2277 Seventh Street
Oakland, California

Figure 1
Site Location Map



Projects/00-152 Port of Oakland/00-152.20 7th Street/Graphics/CAD/Qtr 2-05 Site Plan.dwg

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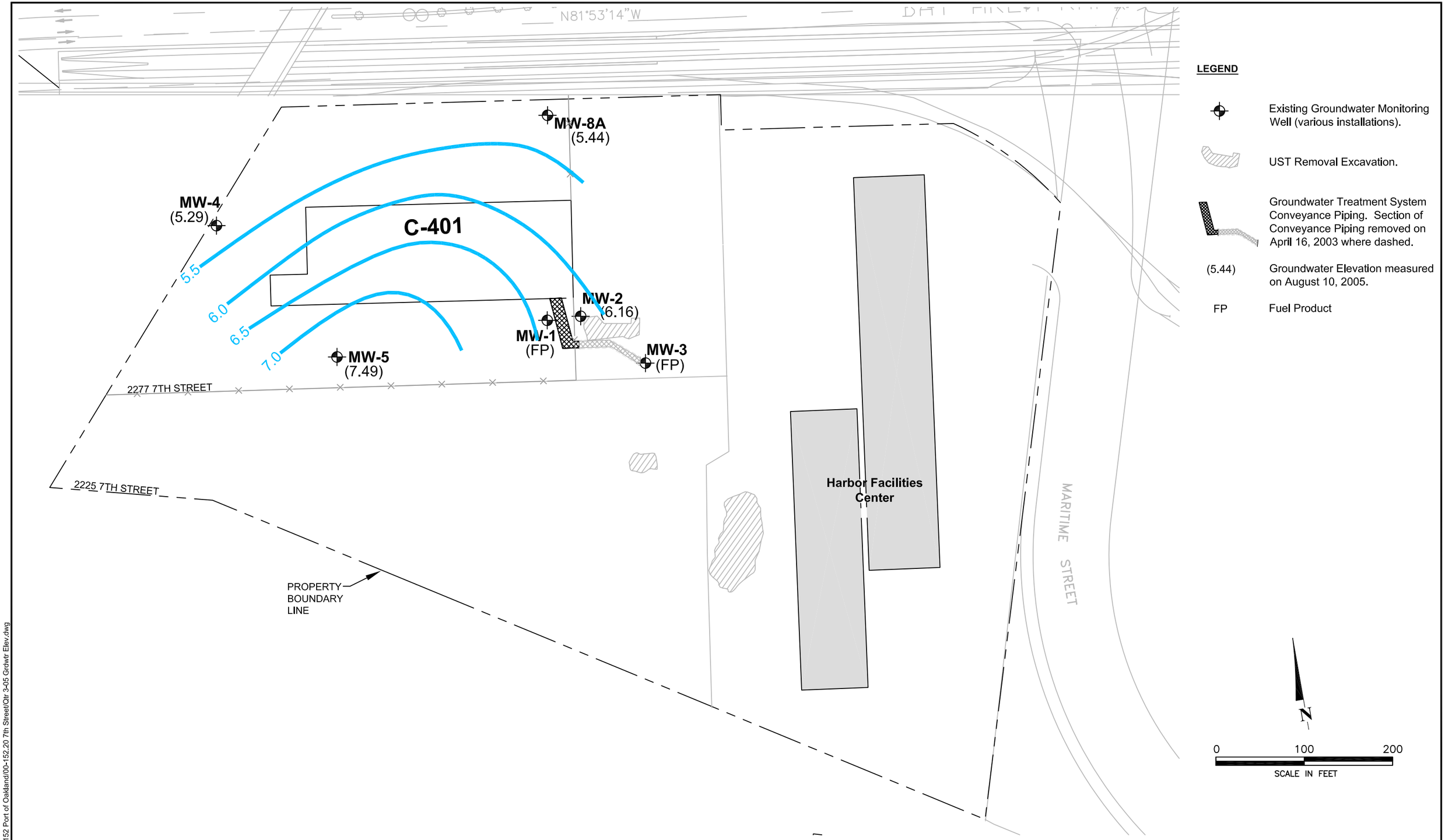
Second Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 2
Site Plan



CAD GIS Station/00-152 Port of Oakland/00-152.20 7th Street/Qtr 3-05 Grdwtr Elev.dwg

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Second Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 3
Groundwater Elevations
August 10, 2005

Projects\00-152 Port of Oakland\00-152.20 7th Street\Graphics\CAD\Qtr 3-05 Grdwtr Samples.dwg

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Second Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 4
Groundwater Sample Results
August 10, 2005

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.: 00-152.25

MEASURED BY: R. LEONG DATE: 08/10/2005

Monitoring Well I.D.	Depth to Water (feet)	Total Well Depth (feet)	Time
MW-2	11.05	17.75	11:04
MW-4	7.86	18.70	9:38
MW-5	6.00	16.40	10:32
MW-6	Well was destroyed on December 18, 2002		
MW-7	Well was destroyed on December 18, 2002		
MW-8A	7.50	20.50	8:57
———	DEPTH TO WATER	DEPTH TO PRODUCT	THICKNESS (feet)
MW-1	8.55	8.05	0.50
MW-3	11.15	9.91	1.24

Innovative Technical Solutions, Inc.

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-5 TESTED BY: RLEONG DATE: 08/10/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 6.0

Total Well Depth (ft.): 16.40 Purge Method: Disposable Bailer

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

Time Start Purge: 10:15 Time End Purge:

Comments :

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		
	16.40	-	6.0	=	10.40	x	0.16	0.64	1.44	=	1.70

Time	10:17	10:19	10:21	10:22	10:24	10:26	
Cumulative Volume Purged (gals)	1.0	2.0	3.0	3.5	4.5	5.5	
Cumulative Number of Casing Volumes	>0.5	>1.0	>1.5	~2.0	>2.5	>3.0	
Temperature (F°/C°)	22.8	22.4	22.5	22.5	22.5	22.6	
pH	8.51	8.32	8.67	8.81	8.83	8.87	
Specific Conductivity (mS/cm)	1.90	1.85	1.97	2.05	2.02	1.99	
Turbidity (NTU)	157	201	551	705	~~749~~	~~751~~	

WELL SAMPLING

Sampling Time: 10:30 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NW-5D @ 10:35

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

NCCAMPBELL

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Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-4 TESTED BY: R LEONG DATE: 08/10/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 7.86

Total Well Depth (ft.): 18.70 Purge Method: Disposable Bailer

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

Time Start Purge: 9:40 Time End Purge: 9:51

Comments :

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)
	7.86	-	18.70	=	10.84	x	2	4	6	=	1.75
							0.16	0.64	1.44		

Time	9:42	9:43	9:45	9:47	9:49	9:51	
Cumulative Volume Purged (gals)	1.0	1.50	2.5	3.5	4.50	5.50	
Cumulative Number of Casing Volumes	>0.5	~1.0	<1.5	2.0	>2.5	>3.0	
Temperature (F°/C°)	22.0	21.8	21.8	21.9	21.8	21.8	
pH	9.00	8.66	8.88	8.93	8.90	8.87	
Specific Conductivity (mS/cm)	1.53	1.46	1.50	1.53	1.56	1.57	
Turbidity (NTU)	95	160	158	159	235	230	

WELL SAMPLING

Sampling Time: 10:00 Sampling Method: Disposable Bailer

Duplicate Sample & Time: None

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

MCCAMPBELL

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORT OF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-8A TESTED BY: R. LEONG DATE: 08/10/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 7.50

Total Well Depth (ft.): 20.50 Purge Method: Disposable Bailer

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

Time Start Purge: 9:00 Time End Purge: 9:12

Comments :

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)
						x	2	4	6	=	
	20.50	-	7.50	=	13.0		0.16	0.64	1.44		2.0

Time	9:02	9:04	9:06	9:08	9:10	9:12	
Cumulative Volume Purged (gals)	1.0	2.0	3.0	4.0	5.0	6.0	
Cumulative Number of Casing Volumes	0.5	1.0	1.5	2.0	2.5	3.0	
Temperature (F° C°)	21.1	19.9	20.5	20.4	20.3	20.3	
pH	8.49	8.44	8.86	8.90	8.93	8.95	
Specific Conductivity (mS/cm)	1.90	1.86	2.43	2.46	2.47	2.49	
Turbidity (NTU)	320	544	>999	>999	>999	>999	

WELL SAMPLING

Sampling Time: 9:25 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~~ HCl	~~C&T~~ McCAMPB.
MW-8A	4 VOAs ~~5 voas~~	TPHg, MTBE, BTEX	HCL	~~C&T~~ " "

Innovative Technical Solutions, Inc.

Sheet ___ of ___

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-2 TESTED BY: R. LEONG DATE: 08/10/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 11.05

Total Well Depth (ft.): 17.75 Purge Method: Disposable Bailer

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

Time Start Purge: 11:15 Time End Purge: 11:21

Comments :

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		
	17.75		11.05		6.70		0.16	0.64	1.44		1.0

Time	11:17	11:18	11:19	11:20	11:21		
Cumulative Volume Purged (gals)	1.0	1.5	2.0	2.5	3.0		
Cumulative Number of Casing Volumes	1.0	1.5	2.0	2.5	3.0		
Temperature (F° (C°))	20.2	20.2	20.4	20.2	20.0		
pH	8.94	8.83	8.74	8.78	8.80		
Specific Conductivity (mS/cm)	1.76	1.76	1.76	1.77	1.77		
Turbidity (NTU)	32	35	23	31	36		

WELL SAMPLING

Sampling Time: 11:45 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~~ HCL	~~C&T~~
MW-2	4/5/voas	TPHg, MTBE, BTEX	HCL	~~C&T~~

NCCAMPBELL

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

Local Address: 2277 7th street Oakland Ca

Chain-Of-Custody

Project Name and Number: Port of Oakland 100-152.25
Project Manager: Rachel Hess
Site Location: 7th Street site

Laboratory Name: McCampbell Analytical Inc.
Address: 110 Second Ave South #7 Contact Name: Angela Rydelius
Pacheco CA 94553 Phone: 925 798 1620

Date: 08/10/2005
Page: 1 of 1

Sample I.D.	Date	Time	Sample Depth	No. of Containers	Sample Matrix	Analysis: TPH diesel 8015B	TPH w/o 8015B	TPH as Gas 8015B	BTEX + MTBE 8260B	Special Instructions/Comments
						Preservative: HCl	HCl	HCl	HCl	Perform Silica Gel cleanup on TPH diesel and motor oil analyses
						Container Type: 1 Lt Amb	1 Lt Amb	VOA	VOA	
TRIP BLANK	08/10/2005	700	1	2	H2O				X	
MW-2		1145	14'	5		X	X	X	X	
MW-4		1000	15'	5		X	X	X	X	
MW-5		1030	15'	5		X	X	X	X	
MW-5D		1045	15.5'	5		X	X	X	X	
MW-8A		0925	17.0'	5		X	X	X	X	

Sampled By: Rogerio Leovy
Signature:
Special Instructions: Fax results to Rachel Hess / Rogerio Leovy @ (925) 258-8998
Send Results to: (w/fax #) Direct Bill Port of Oakland, w/ Jeff Kubin
Turnaround Time: Standard

Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Leovy	08/10/05	13:45		8/10	1345

Original – Laboratory Yellow – Field/Office

ITSI 5/02

APPENDIX B

LABORATORY REPORTS

McCAMPBELL ANALYTICAL INC.

110 2nd Ave South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Date: 08-16-05

ATTN: Rachel Hess

Message: Results for Project #100-152.25 Port of Oakland.

FROM:

Number of pages faxed including this one: 11

CAUTION: CONFIDENTIAL!

THE DOCUMENT BEING TELECOPIED TO YOU MAY CONTAIN INFORMATION PROTECTED BY THE SENDER AND/OR CLIENT. It is intended only for the use of the person to whom it is addressed. If you are not the intended recipient or an authorized representative, then this is notice to you that dissemination, distribution or copying of this document is prohibited. If this was received in error, please call us at once and destroy the document.

0508174

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

Local Address: 2217 7th street Oakland Ca

Chain-Of-Custody

Project Name and Number: Port of Oakland 100-152.25
Project Manager: Rachel Hess
Site Location: 7th street site

Laboratory Name: McCampbell Analytical Inc.
Address: 110 Second Ave South #D Contact Name: Angela Rydelius
Pacheco CA 94553 Phone: 925 798 1620

Date: 08/10/2005
Page: 1 of 1

Sample I.D.	Date	Time	Sample Depth	No. of Containers	Sample Matrix	Analysis: TPH diesel 8015B	TPH mo 8015B	TPH gas 8015B	BTEX + MTBE 8260B	Special Instructions/Comments
						Preservative: HCl	HCl	HCl	HCl	Perform Silica Gel cleanup on TPH diesel and motor oil analyses
						Container Type: 1 Lt	1 Lt	VOA	VOA	
✓ TRIP BLANK	08/10/2005	700	—	2	H2O				X	
+ MW-2		1145	14'	5		X	X	X	X	
+ MW-4		1000	15'	5		X	X	X	X	
+ MW-5		1030	15'	5		X	X	X	X	
+1 MW-5D		1045	15.5'	5		X	X	X	X	
+1 MW-8A		0925	17.0'	5		X	X	X	X	

ICE/T ✓
GOOD CONDITION ✓ APPROPRIATE CONTAINERS ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB PRESERVED IN LAB

PRESERVATION	VOAS ✓	O&G	METALS	OTHER Diesel

Sampled By: Rogerio Leon
Signature:
Special Instructions: Fax results to Rachel Hess / Rogerio Leon @ (925) 256-8998
Send Results to: (w/fax #) Direct Bill Port of Oakland w/ Jeff Rubin
Turnaround Time: Standard

Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Leon	08/10/05	13:45	[illegible]	8/10	1345

AUG 16 2005 11:28AM MCCAMPBELL ANALYTICAL 925-798-1620 P.2

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0508174 **ClientID: ITSI** **EDF: NO**

Report to:
Rachel Hess
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598
TEL: (510) 719-6858
FAX: (925) 256-8998
ProjectNo: #00-152.25; Port of Oakland
PO:

Bill to:
Jeff Rubin
Port of Oakland
530 Water Street
Oakland, CA 94607

Requested TAT: 5 days
Date Received: 08/10/2005
Date Printed: 08/10/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0508174-001	Trip Blank	Water	8/10/05 7:00:00 AM	☐		A													
0508174-002	MW-2	Water	8/10/05 10:00:00	☐	A	B													
0508174-003	MW-4	Water	8/10/05 10:00:00	☐	A	B													
0508174-004	MW-5	Water	8/10/05 10:30:00	☐	A	B													
0508174-005	MW-5D	Water	8/10/05 10:45:00	☐	A	B													
0508174-006	MW-8A	Water	8/10/05 9:25:00 AM	☐	A	B													

Test Legend:

1	G-MBTEX_W	2	MBTEX-8260B_W	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Maria Venegas

Comments:

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

Aug 16 2005 11:28AM McCAMPBELL ANALYTICAL 9257984612 P.3

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

ITSI 2730 Shadelands Drive Suite 100 Walnut Creek, CA 94598	Client Project ID: #00-152.25; Port of Oakland	Date Sampled: 08/10/05
		Date Received: 08/10/05
	Client Contact: Rachel Hess	Date Extracted: 08/10/05-08/11/05
	Client P.O.:	Date Analyzed: 08/10/05-08/11/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method: SW5030B Analytical methods: SW8015Cm Work Order: 0508174

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
002A	MW-2	W	ND	1	99
003A	MW-4	W	500,a	1	96
004A	MW-5	W	ND	1	116
005A	MW-5D	W	ND,i	1	99
006A	MW-8A	W	ND,i	1	97

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
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Website: www.mccampbell.com E-mail: main@mccampbell.com

ITSI 2730 Shadelands Drive Suite 100 Walnut Creek, CA 94598	Client Project ID: #00-152.25; Port of Oakland	Date Sampled: 08/10/05
		Date Received: 08/10/05
	Client Contact: Rachel Hess	Date Extracted: 08/10/05
	Client P.O.:	Date Analyzed: 08/11/05-08/12/05

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0508174

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0508174-002A	MW-2	W	ND	ND	1	100
0508174-003A	MW-4	W	ND	ND	1	101
0508174-004A	MW-5	W	ND	ND	1	102
0508174-005A	MW-5D	W	ND,i	ND	1	102
0508174-006A	MW-8A	W	150,b,i	ND	1	97

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

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

#) cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; &) low or no surrogate due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

ITSI 2730 Shadelands Drive Suite 100 Walnut Creek, CA 94598	Client Project ID: #00-152.25; Port of Oakland	Date Sampled: 08/10/05
		Date Received: 08/10/05
	Client Contact: Rachel Hess	Date Extracted: 08/10/05-08/11/05
	Client P.O.:	Date Analyzed: 08/10/05-08/11/05

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0508174

Lab ID	0508174-001A	0508174-002B	0508174-003B	0508174-004B	Reporting Limit for DF =1	
Client ID	Trip Blank	MW-2	MW-4	MW-5		
Matrix	W	W	W	W		
DF	1	1	5	1	S	W
Compound	**Concentration**				ug/kg	µg/L
Benzene	ND	ND	180	ND	NA	0.5
Ethylbenzene	ND	ND	ND<2.5	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND	ND<2.5	ND	NA	0.5
Toluene	ND	ND	ND<2.5	ND	NA	0.5
Xylenes	ND	ND	ND<2.5	ND	NA	0.5
Surrogate Recoveries (%)						
%SS:	97	95	95	95		
Comments						

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Website: www.mccampbell.com E-mail: main@mccampbell.com

ITSI 2730 Shadelands Drive Suite 100 Walnut Creek, CA 94598	Client Project ID: #00-152.25; Port of Oakland	Date Sampled: 08/10/05
		Date Received: 08/10/05
	Client Contact: Rachel Hess	Date Extracted: 08/10/05-08/11/05
	Client P.O.:	Date Analyzed: 08/10/05-08/11/05

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0508174

Lab ID	0508174-005B	0508174-006B			Reporting Limit for DF =1	
Client ID	MW-5D	MW-8A				
Matrix	W	W				
DF	1	1			S	W
Compound	**Concentration**				ug/kg	µg/L
Benzene	ND	ND			NA	0.5
Ethylbenzene	ND	ND			NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND			NA	0.5
Toluene	ND	ND			NA	0.5
Xylenes	ND	ND			NA	0.5
Surrogate Recoveries (%)						
%SS:	94	94				
Comments	i	i				

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0508174

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 17516** **Spiked Sample ID: 0508174-002A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	87.9	89.4	1.68	84.8	85.2	0.438	70 - 130	70 - 130
MTBE	ND	10	100	96.8	3.44	99.7	97.7	2.05	70 - 130	70 - 130
Benzene	ND	10	90.9	88.6	2.57	90.6	89.2	1.54	70 - 130	70 - 130
Toluene	ND	10	91.2	89.5	1.98	89.6	88.4	1.39	70 - 130	70 - 130
Ethylbenzene	ND	10	92	90.4	1.71	91.5	90.6	0.923	70 - 130	70 - 130
Xylenes	ND	30	94.7	90.7	4.32	94.3	90.7	3.96	70 - 130	70 - 130
%SS:	99	10	97	96	0.241	99	98	1.54	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17516 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0508174-002A	8/10/05 10:00 AM	8/10/05	8/10/05 11:20 PM	0508174-003A	8/10/05 10:00 AM	8/11/05	8/11/05 8:18 PM
0508174-004A	8/10/05 10:30 AM	8/11/05	8/11/05 12:25 AM	0508174-005A	8/10/05 10:45 AM	8/11/05	8/11/05 12:57 AM
0508174-006A	8/10/05 9:25 AM	8/11/05	8/11/05 8:52 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0508174

EPA Method: SW8015C	Extraction: SW3510C				BatchID: 17517			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	98.3	98.7	0.342	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	96	96	0	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17517 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0508174-002A	8/10/05 10:00 AM	8/10/05	8/11/05 3:15 AM	0508174-003A	8/10/05 10:00 AM	8/10/05	8/11/05 4:25 AM
0508174-004A	8/10/05 10:30 AM	8/10/05	8/11/05 5:34 AM	0508174-005A	8/10/05 10:45 AM	8/10/05	8/11/05 6:44 AM
0508174-006A	8/10/05 9:25 AM	8/10/05	8/12/05 12:33 PM				

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0508174

EPA Method: SW8260B	Extraction: SW5030B		BatchID: 17510			Spiked Sample ID: 0508174-001A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Benzene	ND	10	109	108	1.11	106	110	3.50	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	109	110	0.350	105	109	3.57	70 - 130	70 - 130
Toluene	ND	10	96.6	95.6	0.979	92.3	99.6	7.55	70 - 130	70 - 130
%SS:	118	10	112	111	0.500	116	112	3.37	70 - 130	70 - 130
%SS:	104	10	97	97	0	96	99	2.45	70 - 130	70 - 130
%SS:	97	10	95	98	3.01	95	97	2.64	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17510 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0508174-001A	8/10/05 7:00 AM	8/10/05	8/10/05 3:54 PM	0508174-002B	8/10/05 10:00 AM	8/10/05	8/10/05 4:42 PM
0508174-003B	8/10/05 10:00 AM	8/11/05	8/11/05 12:33 AM	0508174-004B	8/10/05 10:30 AM	8/10/05	8/10/05 6:09 PM
0508174-005B	8/10/05 10:45 AM	8/10/05	8/10/05 6:52 PM	0508174-006B	8/10/05 9:25 AM	8/10/05	8/10/05 7:35 PM

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

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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

INVOICE for ANALYTICAL SERVICES

Project Name: #00-152.25; Port of Oakland
PO Number: N/A
Date Sampled: 08/10/05
Date Received: 08/10/05

Invoice N°: 0508174

INV DATE: *August 16, 2005*
Print DATE: *August 16, 2005*

Report To: Rachel Hess
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598

Invoice To: Jeff Rubin
Port of Oakland
530 Water Street
Oakland, CA 94607

Description	TAT	Matrix	Qty	Mult	Unit Price	Test Total
Tests:						
EPA 8260B (MTBE & BTEX)	5 days	Water	6	1	$100.00	$600.00
Multi-Range TPH(g,d,mo)	5 days	Water	5	1	$55.60	$278.00
					SubTotal:	$878.00

Invoice Total: $878.00

If paid by**09/16/05** Prompt Pay Invoice Total = $790.20

*** ALL FAXED INVOICES ARE FOR YOUR INFORMATION ONLY - PLEASE PAY OFF ORIGINAL**

Please include the invoice number with your check and remit to Accounts Receivable at the letter head address. MAI also accepts credit card (Visa/Master Card/Discover/American Express) payment. Please call Account Receivable for details on this service.

MAI's EDF charge does not include the EDF charge for subcontracted analyses. The minimum EDF charge per workorder is $25.00. For invoice total greater than $5000.00, EDF will be 2% of the total invoice. The EDF charge for subcontracted analyses will be identical to Subcontractor's fee.

Terms are net 30 days from the invoice date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing, please contact Accounts Receivable at McCampbell Analytical.

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: Port of Oakland
DATE: 08/10/2005
PROJECT NUMBER: 00-152.25

DAILY ACTIVITY REPORT

PAGE 1 OF 1
SITE LOCATION: Interim Sampling for 7th Street Site

DESCRIPTION OF FIELD ACTIVITIES AND EVENTS

7:30 Set up Van for Sampling
8:50 Arrive at site
8:55 set up at MW-8A
9:25 Sample MW-8A
9:35 Set up at MW-4
10:00 Sample MW-4
10:10 Set up at MW-5
10:30 Sample MW-5
10:45 Sample MW-5D as duplicate
11:00 Set up at MW-2
11:45 Sample MW-2
12:15 Monitor Free product at MW-1
Depth to water = 8.55
Depth to Product = 9.05
12:30 Monitor Free product at MW-3 0.50' → Free Product in MW-1
Depth to water = 11.15
Depth to Product = 9.91
1.24' free product in MW-3
13:45 Drop Samples off at McCampbell Lab in Pacheco
14:30 Returne Water level meter for Equipo

PREPARED BY: Roger Leong	REVIEWED BY:
DATE: 08/10/2005	DATE:
PREPARERS SIGNATURE:	REVIEWERS SIGNATURE:

* *Not appropriate for a field activity report when only one responsible person is in the field.*

APPENDIX D

TECHNICAL MEMORANDUM
(AUGUST 09, 2005)

Innovative Technical Solutions, Inc.

August 9, 2005

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

Re: Severn-Trent Laboratories (STL) Report 2005-06-0355; STL Report 2005-07-0091; McCampbell Analytical, Inc. (MAI) report 0507064

Dear Mr. Rubin:

As part of your ongoing groundwater monitoring project at 7th street, one trip blank, one field duplicate sample and four primary samples were collected on June 14, 2005. Samples were submitted to the San Francisco branch of Severn Trent Laboratories, Inc., (STL) located in Pleasanton, California. Due to the results of the first round of sampling, a second set of four samples and one field duplicate were collected and submitted to STL on July 6, 2005. In addition, a quality assurance split sample from monitoring well MW-5 was forwarded to McCampbell Analytical, Inc., (MAI) of Pacheco, California. Samples were couriered directly from the field to each laboratory under chain-of-custody procedures and delivered on the same day the sampling occurred. A list of all samples collected for this effort is attached.

STL is accredited under the California Department of Health Services (DHS) Environmental Laboratory Accreditation Program (ELAP) with an expiration of January 31, 2006. MAI is also accredited under the DHS ELAP with an expiration of October 31, 2005.

The first round of samples were tested for Total Extractable Petroleum Hydrocarbons (TEPH) as Diesel and Motor Oil, Fuel Oxygenates and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), and Gasoline by standard Environmental Protection Agency (EPA) analytical methods EPA 8015M, EPA 8260B, and EPA 8015M/8021. To avoid a potential high bias from interferences, the samples for TEPH were pretreated using Silica Gel to remove polar organic compounds which are often contributed from natural sources. The second round of samples were tested for TEPH as Diesel and Motor Oil only.

Results of Samples Collected June 14, 2005

Surrogate compounds added by the laboratory to monitor analytical performance were recovered within acceptable control limits. No analytes were detected above the reporting limit in all laboratory method blanks. The recovery of known analytes for the laboratory control samples for all tests were within acceptable control limits. The trip blank was analyzed for volatile components only (Fuel Oxygenates, BTEX and Gasoline), and no analytes were detected above

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Walnut Creek, California 94598

(925)946-3100
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www.itsi.com

the reporting limit. Sample MW-4 and MW-4D were field duplicates, and reproducible results were obtained for these samples for analytes detected above the reporting limit.

TEPH with Silica Gel Cleanup

STL reported concentrations of diesel range organics (DRO) 240 µg/L in sample MW-2; 310 µg/L and 190 µg/L in sample MW-4 and its duplicate MW-4D, respectively; 1500 µg/L in sample MW-5; and 600 µg/L in sample MW-8. STL also reported a concentration of motor oil range organics of 1000 µg/L in sample MW-5.

The ITSI Field Sampler did not note any odor, sheen or any other obvious evidence of hydrocarbon products. Although hydrocarbons are generally considered to be insoluble in water, a small amount may be soluble and therefore would not be evident to the Field Sampler. All of the measured concentrations are generally low (less than 1,000 µg/L). I reviewed the laboratory chromatograms for this analysis. The chromatogram for sample MW-5, in particular, shows a chromatogram consistent with a mixture of hydrocarbon products of mid-range boiling points.

Fuel oxygenates by Method 8260B

STL reported concentrations of benzene of 130 µg/L and 150 µg/L in sample MW-4 and its duplicate MW-4D, respectively. No other analytes for this method were detected in any other sample. Method 8260B employs mass-spectroscopic confirmation of the individual analytes. The results between the field duplicate and the parent sample are reproducible. The concentrations of benzene reported from the Fuel Oxygenates analysis is consistent with the amount of Gas/BTEX compounds detected from EPA Method 8015M/8021.

Gas/BTEX compounds by Method 8015M/8021

STL reported concentrations of gasoline of 490 µg/L and 480 µg/L in sample MW-4 and its duplicate MW-4D, respectively. No other analytes for this method were detected in any other sample. Method 8015M/8021 uses a flame-ionization detection (FID), which does not provide specific compound confirmation like EPA Method 8260B.

I reviewed the laboratory chromatograms for these samples. The chromatographic patterns for samples MW-4 and MW-4D are nearly identical, and are consistent with a low-boiling refined petroleum product. Due to the wide variety of commercial products and the non-specific nature of EPA Method 8015M/8021, it is not possible to unequivocally identify the material from this analysis. However, examples of these products include but are not limited to some grades of gasoline, aviation gas, and other general hydrocarbon solvents.

Reconciliation with Historical Data Results

Although the results of this set of samples were generally higher than past results, the results were generally within the range of previous rounds of sampling. One exception was evident with MW-5, which initially had a reported concentration of 1,500 µg/l of TEPH as Diesel. The highest previously detected concentration in this well was 200 µg/l, and TEPH results were less than 50

µg/l for the previous 20 rounds of sampling (extending back to February 11, 2000). This anomalous result led to further scrutiny of the results from STL, and the decision to resample the wells on July 6, 2005.

Results of Samples Collected July 6, 2005

Surrogate compounds added by the laboratory to monitor analytical performance were recovered within acceptable control limits. No analytes were detected above the reporting limit in all laboratory method blanks. The recovery of known analytes for the laboratory control samples for all tests were within acceptable control limits. Because no analysis was intended for these samples for volatile analytes (TEPH-gasoline, BTEX and MTBE), trip blanks were not required and were not included with this round of samples.

TEPH with Silica Gel Cleanup

STL reported concentrations of DRO of 110 µg/l in sample MW-2; 190 µg/L in sample MW-4; 450 µg/L and 500 µg/L in sample MW-5 and its duplicate MW-5D, respectively; and 350 µg/L in sample MW-8A. As requested, STL also included the chromatograms of the analysis for review.

MAI reported concentrations of DRO of 77 µg/l in sample MW-5. The results between both laboratories for sample MW-5 are in sufficient disagreement to cause concern. Sufficient original sample remained at MAI for further investigation, and MAI performed the following additional analysis on sample MW-5:

Sample MW-5 Diesel Range Organic Comparison

Laboratory Sample ID	Extraction Type	Silica Gel Clean Up	DRO µg/l (ppb)	Comment	Surrogate Recovery (%)	
					S1	S2
0507064-001A	Original	Yes	77	Silica-gel cleanup used	109	107
0507064-001A	Original	No	164.5	Silica-gel cleanup not used	114	137
0507064-001A	Re-extract	Yes	10.5	Re-extracted with silica-gel cleanup	98	103
0507064-001A	Re-extract	No	140.3	Re-extracted without silica-gel cleanup	98	103
LCS	N/A	Yes	92%	% Recovery of analyte	108	94
LCSD	N/A	Yes	91%	% Recovery of analyte	108	95
LCS	N/A	No	105%	% Recovery of analyte	103	104
LCSD	N/A	No	104%	% Recovery of analyte	102	105

As a final check to check that MAI's silica gel cleanup procedure does not affect diesel and hydrocarbon results, a standard diesel mixture was analyzed using MAI's cleanup procedure. The results of this final check confirmed that the specific procedure that MAI uses does not affect the hydrocarbon results.

Innovative Technical Solutions, Inc.

Overall Conclusion

Quality control results within STL reports 2005-06-0355 and 2005-07-0091 and MAI report 0507064 indicate that the laboratory analytical methods were operating within acceptable performance parameters. The result of the trip blank indicates that the samples remained free from external effects. The results from the field duplicate sample indicates good reproducibility of the results. The chromatograms are even consistent with patterns that would be expected for hydrocarbon mixtures.

However, the additional analysis by MAI indicates that the silica-gel cleanup procedure employed by STL for these samples is not sufficiently effective to remove all of the interferences for the TEPH diesel and motor-oil hydrocarbon analyses in these samples. Therefore the results reported by STL for the samples collected on June 20 and July 6 for TEPH-Diesel should be regarded as having a high bias.

Recommendations

The results from MAI for the sample collected in MW-5 on July 6 are valid data. All other TEPH diesel results reported by STL (on both June 20 and July 6) should be rejected as unusable. These changes to the reports must also be included in any electronic data submittal.

Please let me know if you have any questions or concerns. I can be contacted by email at pwest@itsi.com and at 925-946-3138.

Thank you,

Paul West
ITSI Program Chemist

Rachel B. Hess
ITSI Project Manager

cc: Surinder Sidhu, STL Project Manager
Ed Hamilton, MAI Laboratory Director

Attachment:

List of Samples

Submission#: 2005-06-0355

Innovative Technical Solutions, Inc June 29, 2005

2730 Shadelands Drive
Walnut Creek, CA 94598

Attn.: Rachel Hess

Project#: 00.152-28
Project: Port of Oakland

Dear Ms. Hess,

Attached is our report for your samples received on 06/14/2005 14:15
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 07/29/2005 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu
Project Manager

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-2	06/14/2005 13:15	Water	2
MW-4	06/14/2005 11:45	Water	3
MW-4D	06/14/2005 11:55	Water	4
MW-5	06/14/2005 12:35	Water	5
MW-8A	06/14/2005 11:00	Water	6

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-2**	Lab ID:	2005-06-0355 - 2
Sampled:	06/14/2005 13:15	Extracted:	6/15/2005 13:03
Matrix:	Water	QC Batch#:	2005/06/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	06/16/2005 22:07	
DRO (C10-C28)	240	50	ug/L	1.00	06/16/2005 22:07	
Surrogate(s)						
o-Terphenyl	85.8	60-130	%	1.00	06/16/2005 22:07	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
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Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-4**	Lab ID:	2005-06-0355 - 3
Sampled:	06/14/2005 11:45	Extracted:	6/15/2005 13:03
Matrix:	Water	QC Batch#:	2005/06/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	06/16/2005 22:34	
DRO (C10-C28)	310	50	ug/L	1.00	06/16/2005 22:34	
Surrogate(s)						
o-Terphenyl	120.8	60-130	%	1.00	06/16/2005 22:34	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

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Walnut Creek, CA 94598
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Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-4D**	Lab ID:	2005-06-0355 - 4
Sampled:	06/14/2005 11:55	Extracted:	6/15/2005 13:03
Matrix:	Water	QC Batch#:	2005/06/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	06/16/2005 23:01	
DRO (C10-C28)	190	50	ug/L	1.00	06/16/2005 23:01	
Surrogate(s)						
o-Terphenyl	96.6	60-130	%	1.00	06/16/2005 23:01	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-5**	Lab ID:	2005-06-0355 - 5
Sampled:	06/14/2005 12:35	Extracted:	6/15/2005 13:03
Matrix:	Water	QC Batch#:	2005/06/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	1000	500	ug/L	1.00	06/16/2005 23:27	Q3
DRO (C10-C28)	1500	50	ug/L	1.00	06/16/2005 23:27	
Surrogate(s)						
o-Terphenyl	94.6	60-130	%	1.00	06/16/2005 23:27	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**MW-8A**	Lab ID:	2005-06-0355 - 6
Sampled:	06/14/2005 11:00	Extracted:	6/15/2005 13:03
Matrix:	Water	QC Batch#:	2005/06/15-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	06/17/2005 01:15	
DRO (C10-C28)	600	50	ug/L	1.00	06/17/2005 01:15	
Surrogate(s)						
o-Terphenyl	94.2	60-130	%	1.00	06/17/2005 01:15	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Batch QC Report

Prep(s): 3510/8015M
Test(s): 8015M

Method Blank
Water
QC Batch # 2005/06/15-03.10

MB: 2005/06/15-03.10-001
Date Extracted: 06/15/2005 13:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Motor Oil	ND	500	ug/L	06/16/2005 11:20	
DRO (C10-C28)	ND	50	ug/L	06/16/2005 11:20	
Surrogates(s)					
o-Terphenyl	88.1	60-130	%	06/16/2005 11:20	

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

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Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2005/06/15-03.10**

LCS 2005/06/15-03.10-002 Extracted: 06/15/2005 Analyzed: 06/16/2005 12:15
LCSD 2005/06/15-03.10-003 Extracted: 06/15/2005 Analyzed: 06/16/2005 12:43

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
DRO (C10-C28)	777	763	1000	77.7	76.3	1.8	60-130	25		
Surrogates(s)										
o-Terphenyl	18.0	18.1	20.0	90.2	90.4		60-130	0		

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Legend and Notes

Result Flag

Q3

Quantit. of unknown hydrocarbon(s) in sample based on motor oil.

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-2	06/14/2005 13:15	Water	2
MW-4	06/14/2005 11:45	Water	3
MW-4D	06/14/2005 11:55	Water	4
MW-5	06/14/2005 12:35	Water	5
MW-8A	06/14/2005 11:00	Water	6

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**MW-2**	Lab ID:	2005-06-0355 - 2
Sampled:	06/14/2005 13:15	Extracted:	6/23/2005 14:00
Matrix:	Water	QC Batch#:	2005/06/23-01.66
pH: <2			

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	06/23/2005 14:00	
Benzene	ND	0.50	ug/L	1.00	06/23/2005 14:00	
Toluene	ND	0.50	ug/L	1.00	06/23/2005 14:00	
Ethylbenzene	ND	0.50	ug/L	1.00	06/23/2005 14:00	
Total xylenes	ND	1.0	ug/L	1.00	06/23/2005 14:00	
Surrogate(s)						
1,2-Dichloroethane-d4	91.7	73-130	%	1.00	06/23/2005 14:00	
Toluene-d8	91.4	81-114	%	1.00	06/23/2005 14:00	

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**MW-4**	Lab ID:	2005-06-0355 - 3
Sampled:	06/14/2005 11:45	Extracted:	6/24/2005 02:11
Matrix:	Water	QC Batch#:	2005/06/23-02.66

Analysis Flag: L2, pH: <2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	4.00	06/24/2005 02:11	
Benzene	130	2.0	ug/L	4.00	06/24/2005 02:11	
Toluene	ND	2.0	ug/L	4.00	06/24/2005 02:11	
Ethylbenzene	ND	2.0	ug/L	4.00	06/24/2005 02:11	
Total xylenes	ND	4.0	ug/L	4.00	06/24/2005 02:11	
Surrogate(s)						
1,2-Dichloroethane-d4	109.1	73-130	%	4.00	06/24/2005 02:11	
Toluene-d8	91.8	81-114	%	4.00	06/24/2005 02:11	

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**MW-4D**	Lab ID:	2005-06-0355 - 4
Sampled:	06/14/2005 11:55	Extracted:	6/24/2005 02:36
Matrix:	Water	QC Batch#:	2005/06/23-02.66

Analysis Flag: L2, pH: <2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	2.00	06/24/2005 02:36	
Benzene	150	1.0	ug/L	2.00	06/24/2005 02:36	
Toluene	ND	1.0	ug/L	2.00	06/24/2005 02:36	
Ethylbenzene	ND	1.0	ug/L	2.00	06/24/2005 02:36	
Total xylenes	ND	2.0	ug/L	2.00	06/24/2005 02:36	
Surrogate(s)						
1,2-Dichloroethane-d4	111.3	73-130	%	2.00	06/24/2005 02:36	
Toluene-d8	93.9	81-114	%	2.00	06/24/2005 02:36	

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**MW-5**	Lab ID:	2005-06-0355 - 5
Sampled:	06/14/2005 12:35	Extracted:	6/24/2005 05:31
Matrix:	Water	QC Batch#:	2005/06/23-02.66
pH: <2			

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	06/24/2005 05:31	
Benzene	ND	0.50	ug/L	1.00	06/24/2005 05:31	
Toluene	ND	0.50	ug/L	1.00	06/24/2005 05:31	
Ethylbenzene	ND	0.50	ug/L	1.00	06/24/2005 05:31	
Total xylenes	ND	1.0	ug/L	1.00	06/24/2005 05:31	
Surrogate(s)						
1,2-Dichloroethane-d4	101.0	73-130	%	1.00	06/24/2005 05:31	
Toluene-d8	91.8	81-114	%	1.00	06/24/2005 05:31	

Fuel Oxygenates by 8260B

Innovative Technical Solutions, Inc

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Prep(s):	5030B	Test(s):	8260B
Sample ID:	**MW-8A**	Lab ID:	2005-06-0355 - 6
Sampled:	06/14/2005 11:00	Extracted:	6/24/2005 05:57
Matrix:	Water	QC Batch#:	2005/06/23-04.69
pH: <2			

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	06/24/2005 05:57	
Benzene	ND	0.50	ug/L	1.00	06/24/2005 05:57	
Toluene	ND	0.50	ug/L	1.00	06/24/2005 05:57	
Ethylbenzene	ND	0.50	ug/L	1.00	06/24/2005 05:57	
Total xylenes	ND	1.0	ug/L	1.00	06/24/2005 05:57	
Surrogate(s)						
1,2-Dichloroethane-d4	95.7	73-130	%	1.00	06/24/2005 05:57	
Toluene-d8	96.7	81-114	%	1.00	06/24/2005 05:57	

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B
Test(s): 8260B

Method Blank **Water** **QC Batch # 2005/06/23-01.66**

MB: 2005/06/23-01.66-037
Date Extracted: 06/23/2005 07:37

Compound	Conc.	RL	Unit	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	06/23/2005 07:37	
Benzene	ND	0.5	ug/L	06/23/2005 07:37	
Toluene	ND	0.5	ug/L	06/23/2005 07:37	
Ethylbenzene	ND	0.5	ug/L	06/23/2005 07:37	
Total xylenes	ND	1.0	ug/L	06/23/2005 07:37	
Surrogates(s)					
1,2-Dichloroethane-d4	101.8	73-130	%	06/23/2005 07:37	
Toluene-d8	95.0	81-114	%	06/23/2005 07:37	

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B
Method Blank

Water

Test(s): 8260B
QC Batch # 2005/06/23-02.66

MB: 2005/06/23-02.66-050

Date Extracted: 06/23/2005 19:50

Compound	Conc.	RL	Unit	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	06/23/2005 19:50	
Benzene	ND	0.5	ug/L	06/23/2005 19:50	
Toluene	ND	0.5	ug/L	06/23/2005 19:50	
Ethylbenzene	ND	0.5	ug/L	06/23/2005 19:50	
Total xylenes	ND	1.0	ug/L	06/23/2005 19:50	
Surrogates(s)					
1,2-Dichloroethane-d4	99.8	73-130	%	06/23/2005 19:50	
Toluene-d8	89.8	81-114	%	06/23/2005 19:50	

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B
Method Blank

Water

Test(s): 8260B
QC Batch # 2005/06/23-04.69

MB: 2005/06/23-04.69-016

Date Extracted: 06/23/2005 23:16

Compound	Conc.	RL	Unit	Analyzed	Flag
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	06/23/2005 23:16	
Benzene	ND	0.5	ug/L	06/23/2005 23:16	
Toluene	ND	0.5	ug/L	06/23/2005 23:16	
Ethylbenzene	ND	0.5	ug/L	06/23/2005 23:16	
Total xylenes	ND	1.0	ug/L	06/23/2005 23:16	
Surrogates(s)					
1,2-Dichloroethane-d4	95.9	73-130	%	06/23/2005 23:16	
Toluene-d8	98.6	81-114	%	06/23/2005 23:16	

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/06/23-01.66**

LCS 2005/06/23-01.66-012 Extracted: 06/23/2005 Analyzed: 06/23/2005 07:12
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	24.6		25.0	98.4			65-165	20		
Benzene	23.9		25.0	95.6			69-129	20		
Toluene	26.2		25.0	104.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	463		500	92.6			73-130			
Toluene-d8	482		500	96.4			81-114			

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/06/23-02.66**

LCS 2005/06/23-02.66-025 Extracted: 06/23/2005 Analyzed: 06/23/2005 19:25
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	26.1		25.0	104.4			65-165	20		
Benzene	21.1		25.0	84.4			69-129	20		
Toluene	23.0		25.0	92.0			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	447		500	89.4			73-130			
Toluene-d8	444		500	88.8			81-114			

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/06/23-04.69**

LCS 2005/06/23-04.69-057 Extracted: 06/23/2005 Analyzed: 06/23/2005 22:57
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	22.3		25.0	89.2			65-165	20		
Benzene	23.2		25.0	92.8			69-129	20		
Toluene	24.0		25.0	96.0			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	434		500	86.8			73-130			
Toluene-d8	487		500	97.4			81-114			

Fuel Oxygenates by 8260B

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Received: 06/14/2005 14:15

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/06/23-01.66**

MS/MSD

Lab ID: 2005-06-0314 - 001

MS: 2005/06/23-01.66-014 Extracted: 06/23/2005 Analyzed: 06/23/2005 10:14
Dilution: 10.00

MSD: 2005/06/23-01.66-039 Extracted: 06/23/2005 Analyzed: 06/23/2005 10:39
Dilution: 10.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	954	891	660	250	117.6	92.4	24.0	65-165	20		R1
Benzene	186	202	ND	250	74.4	80.8	8.2	69-129	20		
Toluene	218	234	ND	250	87.2	93.6	7.1	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	494	487		500	98.8	97.4		73-130			
Toluene-d8	502	493		500	100.4	98.6		81-114			

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/06/23-02.66**

MS/MSD

Lab ID: 2005-06-0423 - 001

MS: 2005/06/23-02.66-056 Extracted: 06/24/2005 Analyzed: 06/24/2005 00:56

Dilution: 1.00

MSD: 2005/06/23-02.66-021 Extracted: 06/24/2005 Analyzed: 06/24/2005 01:21

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	21.0	20.0	ND	25.0	84.0	80.0	4.9	69-129	20		
Toluene	22.8	19.8	ND	25.0	91.2	79.2	14.1	70-130	20		
Methyl tert-butyl ether	55.3	57.4	29.4	25.0	103.6	112.0	7.8	65-165	20		
Surrogate(s)											
1,2-Dichloroethane-d4	474	487		500	94.8	97.4		73-130			
Toluene-d8	469	438		500	93.8	87.6		81-114			

Fuel Oxygenates by 8260B

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Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/06/23-04.69**

MS/MSD

Lab ID: 2005-06-0356 - 004

MS: 2005/06/23-04.69-047 Extracted: 06/24/2005 Analyzed: 06/24/2005 00:47

Dilution: 1.00

MSD: 2005/06/23-04.69-005 Extracted: 06/24/2005 Analyzed: 06/24/2005 01:05

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	19.4	20.1	ND	25.0	77.6	80.4	3.5	65-165	20		
Benzene	20.5	19.7	ND	25.0	82.0	78.8	4.0	69-129	20		
Toluene	21.7	21.0	ND	25.0	86.8	84.0	3.3	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	467	481		500	93.3	96.2		73-130			
Toluene-d8	512	503		500	102.4	100.6		81-114			

Fuel Oxygenates by 8260B

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Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

R1

Analyte RPD was out of QC limits.

Gas/BTEX Compounds by 8015M/8021

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Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
TRIP BLANK	06/14/2005 14:20	Water	1
MW-2	06/14/2005 13:15	Water	2
MW-4	06/14/2005 11:45	Water	3
MW-4D	06/14/2005 11:55	Water	4
MW-5	06/14/2005 12:35	Water	5
MW-8A	06/14/2005 11:00	Water	6

Gas/BTEX Compounds by 8015M/8021

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Received: 06/14/2005 14:15

Prep(s):	5030	Test(s):	8015M
Sample ID:	**TRIP BLANK**	Lab ID:	2005-06-0355 - 1
Sampled:	06/14/2005 14:20	Extracted:	6/21/2005 13:41
Matrix:	Water	QC Batch#:	2005/06/21-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	06/21/2005 13:41	
Surrogate(s)						
4-Bromofluorobenzene-FID	73.6	50-150	%	1.00	06/21/2005 13:41	

Gas/BTEX Compounds by 8015M/8021

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Received: 06/14/2005 14:15

Prep(s):	5030	Test(s):	8015M
Sample ID:	**MW-2**	Lab ID:	2005-06-0355 - 2
Sampled:	06/14/2005 13:15	Extracted:	6/25/2005 19:49
Matrix:	Water	QC Batch#:	2005/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	06/25/2005 19:49	
Surrogate(s)						
4-Bromofluorobenzene-FID	79.0	50-150	%	1.00	06/25/2005 19:49	

Gas/BTEX Compounds by 8015M/8021

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Prep(s):	5030	Test(s):	8015M
Sample ID:	**MW-4**	Lab ID:	2005-06-0355 - 3
Sampled:	06/14/2005 11:45	Extracted:	6/25/2005 20:16
Matrix:	Water	QC Batch#:	2005/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	490	50	ug/L	1.00	06/25/2005 20:16	Q6
Surrogate(s)						
4-Bromofluorobenzene-FID	75.2	50-150	%	1.00	06/25/2005 20:16	

Gas/BTEX Compounds by 8015M/8021

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Prep(s):	5030	Test(s):	8015M
Sample ID:	**MW-4D**	Lab ID:	2005-06-0355 - 4
Sampled:	06/14/2005 11:55	Extracted:	6/25/2005 20:42
Matrix:	Water	QC Batch#:	2005/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	480	50	ug/L	1.00	06/25/2005 20:42	Q6
Surrogate(s)						
4-Bromofluorobenzene-FID	74.3	50-150	%	1.00	06/25/2005 20:42	

Gas/BTEX Compounds by 8015M/8021

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Prep(s):	5030	Test(s):	8015M
Sample ID:	**MW-5**	Lab ID:	2005-06-0355 - 5
Sampled:	06/14/2005 12:35	Extracted:	6/25/2005 21:09
Matrix:	Water	QC Batch#:	2005/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	06/25/2005 21:09	
Surrogate(s)						
4-Bromofluorobenzene-FID	77.0	50-150	%	1.00	06/25/2005 21:09	

Gas/BTEX Compounds by 8015M/8021

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Prep(s):	5030	Test(s):	8015M
Sample ID:	**MW-8A**	Lab ID:	2005-06-0355 - 6
Sampled:	06/14/2005 11:00	Extracted:	6/25/2005 21:36
Matrix:	Water	QC Batch#:	2005/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	06/25/2005 21:36	
Surrogate(s)						
4-Bromofluorobenzene-FID	79.5	50-150	%	1.00	06/25/2005 21:36	

Gas/BTEX Compounds by 8015M/8021

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Batch QC Report

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

Method Blank **Water** **QC Batch # 2005/06/21-01.05**

MB: 2005/06/21-01.05-003 Date Extracted: 06/21/2005 08:43

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	06/21/2005 08:43	
Surrogates(s)					
4-Bromofluorobenzene-FID	73.0	50-150	%	06/21/2005 08:43	

Gas/BTEX Compounds by 8015M/8021

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Received: 06/14/2005 14:15

Batch QC Report

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

Method Blank **Water** **QC Batch # 2005/06/25-01.05**

MB: 2005/06/25-01.05-003 Date Extracted: 06/25/2005 12:27

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	06/25/2005 12:27	
Surrogates(s)					
4-Bromofluorobenzene-FID	81.4	50-150	%	06/25/2005 12:27	

Gas/BTEX Compounds by 8015M/8021

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Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2005/06/21-01.05**

LCS 2005/06/21-01.05-005 Extracted: 06/21/2005 Analyzed: 06/21/2005 09:34
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	270		250	108.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	363		500	72.6			50-150			

Gas/BTEX Compounds by 8015M/8021

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Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2005/06/25-01.05**

LCS 2005/06/25-01.05-005 Extracted: 06/25/2005 Analyzed: 06/25/2005 13:21
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	250		250	100.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	441		500	88.2			50-150			

Gas/BTEX Compounds by 8015M/8021

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Batch QC Report

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

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/06/25-01.05**

MS/MSD Lab ID: 2005-06-0447 - 002

MS: 2005/06/25-01.05-030 Extracted: 06/26/2005 Analyzed: 06/26/2005 01:07
Dilution: 1.00

MSD: 2005/06/25-01.05-031 Extracted: 06/26/2005 Analyzed: 06/26/2005 01:33
Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	230	229	ND	250	92.0	91.6	0.4	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	409	417		500	81.8	83.4		50-150			

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00.152-28
Port of Oakland

Received: 06/14/2005 14:15

Legend and Notes

Result Flag

Q6

The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.

STL San Francisco

Sample Receipt Checklist

Submission #:2005- 06-0355

Checklist completed by:	SA	DATE	6/14/05
Courier: ☐ STL SF	Courier ☐ Fedex UPS Other		Client ☑

	Log-In Details	Yes	No	Comments
1	Custody seals intact on shipping container/samples		✓	
2	Chain of custody present?	✓		
3	Chain of custody signed when relinquished and received?	✓		☐ Picked-Up at Secure Location ☐ Client signed-off at time prior to pick-up
4	All samples checked when COC relinquished		✓	
5	Chain of custody agrees with sample labels?	✓		
6	Samples in proper container/bottle?	✓		
7	Sample containers intact?	✓		
8	Sufficient sample volume for indicated test?	✓		
9	All samples received within holding time?	✓		

Cooler Temperature Compliance Check

Temperature Blank Reading	Cooler Sample Temperature #1	#2	#3	Average
8°C				

If no trip blank is submitted individual temperatures must be taken as per SOP →

Reason for Elevated Temperature

☐ - Ice Melted ☐ Insufficient Ice ☐

☐ Samp. in boxes ☐ Sampled < 4hr ☐ Ice not req.

Samples with Temp > 6°C - Comments

VOA Sample Inspection

Are bubbles present in any of the VOA vials ?	Sample #	Small	Med.	Large	Samples with broken, cracked or leaking containers
		O	O	O	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

Water - pH acceptable upon receipt?	Yes	No	Samples with Unacceptable pH
	☐	☐	

☐ pH adjusted– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc –Lot #(s) _____

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/05 Client contacted: Ye☐ N☐

Summary of discussion:

Corrective Action (per PM/Client):

2005 Checklist Ver. 2.0

2005-06-0355 116565

Innovative Technical Solutions, Inc.
~~2855 Mitchell Drive, Suite 111~~ 2730 Shadelands Dr. Ste 100
Walnut Creek, California 94598
~~(925) 256-8898~~ – (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: Port of Oakland / 00.152-28
Project Manager: Rachel Hess
Site Location: 2277 7th Street, Oakland Ca

Laboratory Name: STL
Address: 1220 Quarry lane Contact Name: Surinder Sidhu
Pleasanton, Ca Phone: 925 484 1919

Date: 06/14/2005
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHd by 8015B	TPHmo by 8015B	TPHg by 8015B	BTEX & MTBE by 8021B	MTBE by confirmation 8260B	Preservative:	Container Type:	Special Instructions/Comments
TripBlank	–	06/14/05	1000	1	H2O				X				Silica Gel Cleanup for TPHd, mo
MW-2	13'	06/14/05	1315	6		X	X	X	X	X			MTBE confirmation by 8260B only if detected by 8021B
MW-4	16'	06/14/05	1145	6		X	X	X	X	X			
MW-4D	16'	06/14/05	1155	6		X	X	X	X	X			
MW-5	16'	06/14/05	1235	6		X	X	X	X	X			
MW-8A	16'	06/14/05	1100	6		X	X	X	X	X			

TEMP: 8°C

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

Samplers: Rogerio Leong
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	06/14/05	14:10	STL-SF	06/14/05	14:15

Original – Laboratory Yellow – Field/Office

SEVERN TRENT STL

Submission#: 2005-07-0091

Innovative Technical Solutions, Inc July 20, 2005

2730 Shadelands Drive
Walnut Creek, CA 94598

Attn.: Rachel Hess

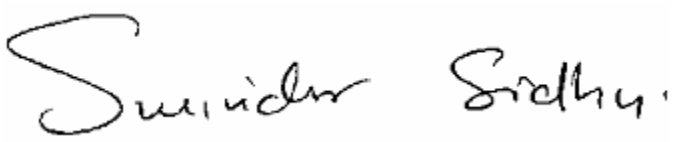
Project#: 00-152.28
Project: Port of Oakland
Site: 2277 Seventh Street, Oakland

Dear Ms. Hess,

Attached is our report for your samples received on 07/06/2005 13:50
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 08/20/2005 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,



Surinder Sidhu
Project Manager

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-2	07/06/2005 12:30	Water	1
MW-5	07/06/2005 11:45	Water	3
MW-5D	07/06/2005 11:50	Water	4
MW-8A	07/06/2005 10:40	Water	5

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-2**	Lab ID:	2005-07-0091 - 1
Sampled:	07/06/2005 12:30	Extracted:	7/13/2005 17:53
Matrix:	Water	QC Batch#:	2005/07/13-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	07/14/2005 12:52	
DRO (C10-C28)	110	50	ug/L	1.00	07/14/2005 12:52	
Surrogate(s)						
o-Terphenyl	103.7	74-193	%	1.00	07/14/2005 12:52	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-5**	Lab ID:	2005-07-0091 - 3
Sampled:	07/06/2005 11:45	Extracted:	7/13/2005 17:53
Matrix:	Water	QC Batch#:	2005/07/13-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	07/14/2005 14:13	
DRO (C10-C28)	450	50	ug/L	1.00	07/14/2005 14:13	
Surrogate(s)						
o-Terphenyl	108.1	74-193	%	1.00	07/14/2005 14:13	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-5D**	Lab ID:	2005-07-0091 - 4
Sampled:	07/06/2005 11:50	Extracted:	7/13/2005 17:53
Matrix:	Water	QC Batch#:	2005/07/13-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	07/14/2005 14:40	
DRO (C10-C28)	500	50	ug/L	1.00	07/14/2005 14:40	
Surrogate(s)						
o-Terphenyl	103.7	74-193	%	1.00	07/14/2005 14:40	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-8A**	Lab ID:	2005-07-0091 - 5
Sampled:	07/06/2005 10:40	Extracted:	7/13/2005 17:53
Matrix:	Water	QC Batch#:	2005/07/13-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	07/14/2005 15:07	
DRO (C10-C28)	350	50	ug/L	1.00	07/14/2005 15:07	
Surrogate(s)						
o-Terphenyl	104.8	74-193	%	1.00	07/14/2005 15:07	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Batch QC Report

Prep(s): 3511 Test(s): 8015M

Method Blank **Water** **QC Batch # 2005/07/13-04.10**

MB: 2005/07/13-04.10-001 Date Extracted: 07/13/2005 17:53

Compound	Conc.	RL	Unit	Analyzed	Flag
DRO (C10-C28)	ND	50	ug/L	07/14/2005 12:25	
Motor Oil	ND	500	ug/L	07/14/2005 12:25	
Surrogates(s)					
o-Terphenyl	101.5	60-130	%	07/14/2005 12:25	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Batch QC Report

Prep(s): 3511

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2005/07/13-04.10**

LCS 2005/07/13-04.10-002 Extracted: 07/13/2005 Analyzed: 07/14/2005 12:25

LCSD 2005/07/13-04.10-003 Extracted: 07/13/2005 Analyzed: 07/14/2005 12:52

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
DRO (C10-C28)	552	616	680	81.2	90.6	10.9	60-150	25		
Surrogates(s)										
o-Terphenyl	1.16	1.26	1.25	93.2	100.4		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-4	07/06/2005 11:15	Water	2

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc
Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-4**	Lab ID:	2005-07-0091 - 2
Sampled:	07/06/2005 11:15	Extracted:	7/18/2005 13:18
Matrix:	Water	QC Batch#:	2005/07/18-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Motor Oil	ND	500	ug/L	1.00	07/19/2005 21:37	
DRO (C10-C28)	190	50	ug/L	1.00	07/19/2005 21:37	
Surrogate(s)						
o-Terphenyl	106.1	74-193	%	1.00	07/19/2005 21:37	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Batch QC Report

Prep(s): 3511 Test(s): 8015M

Method Blank DRO **Water** **QC Batch # 2005/07/18-05.10**

MB: 2005/07/18-05.10-004 Date Extracted: 07/18/2005 13:18

Compound	Conc.	RL	Unit	Analyzed	Flag
Motor Oil	ND	500	ug/L	07/19/2005 21:10	
DRO (C10-C28)	ND	50	ug/L	07/19/2005 21:10	
Surrogates(s)					
o-Terphenyl	106.8	74-193	%	07/19/2005 21:10	

Total Extractable Petroleum Hydrocarbons (TEPH) by 8015m (Silical Gel Clean-up)

Innovative Technical Solutions, Inc

Attn.: Rachel Hess

2730 Shadelands Drive
Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998

Project: 00-152.28
Port of Oakland

Received: 07/06/2005 13:50

Site: 2277 Seventh Street, Oakland

Batch QC Report

Prep(s): 3511

Test(s): 8015M

Laboratory Control Spike DRO **Water** **QC Batch # 2005/07/18-05.10**

LCS 2005/07/18-05.10-005 Extracted: 07/18/2005 Analyzed: 07/19/2005 22:32

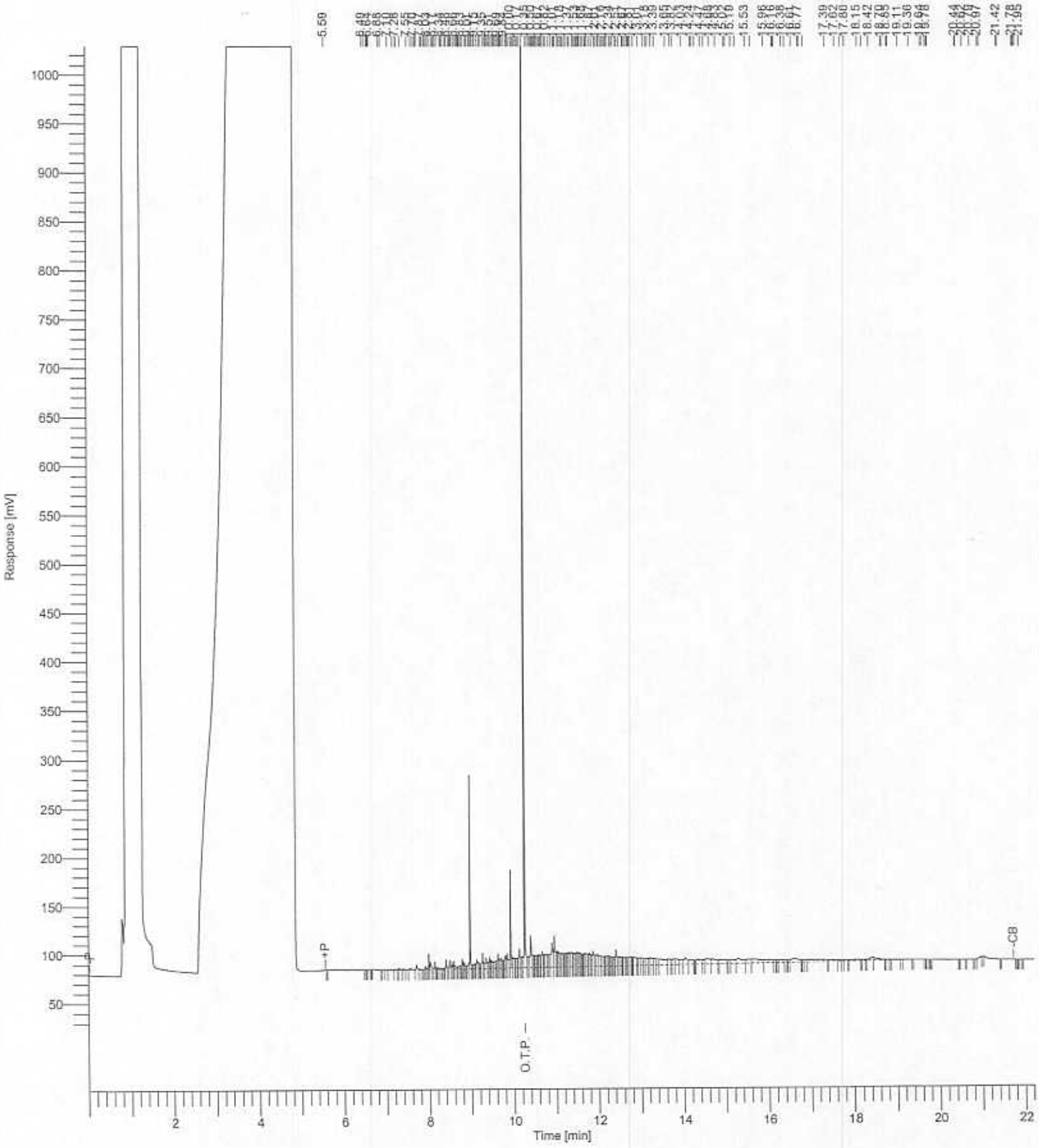
LCSD 2005/07/18-05.10-006 Extracted: 07/18/2005 Analyzed: 07/19/2005 22:59

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
DRO (C10-C28)	598	582	680	87.9	85.6	2.7	60-150	25		
Surrogates(s)										
o-Terphenyl	1.32	1.27	1.25	105.2	101.7		74-193	0		

Chromatogram

Sample Name : 070091-001sg
Sample #: 008

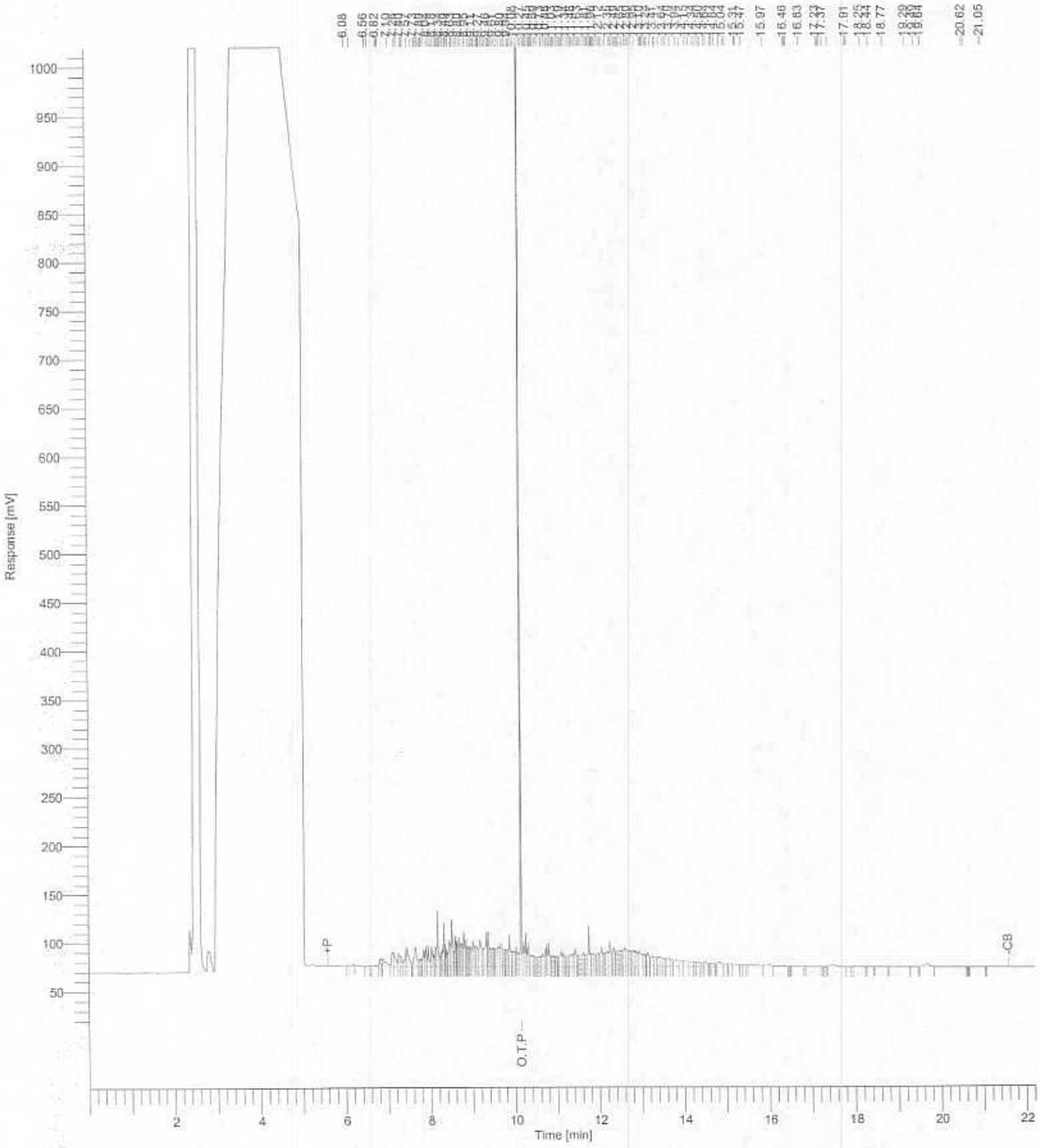
FileName : E:\Diesel4\200507\raw\70714009.raw
Date : 7/15/2005 12:39:48 PM
Method : 7lvi63005
Time of Injection: 7/14/2005 12:52:30 PM
Start Time : 0.00 min
End Time : 22.20 min
Low Point : 28.94 mV
High Point : 1028.94 mV
Plot Offset: 28.94 mV
Plot Scale: 1000.0 mV



Chromatogram

Sample Name : 070091-002sg
FileName : E:\Diesel4\200507\raw\80719028.raw
Date : 7/20/2005 3:02:40 PM
Method : 7tph071805
Start Time : 0.00 min
Plot Offset: 19.83 mV

Sample #: 126
Page 1 of 1
Time of Injection: 7/19/2005 9:37:46 PM
End Time : 22.20 min
Low Point : 19.83 mV
High Point : 1019.83 mV
Plot Scale: 1000.0 mV

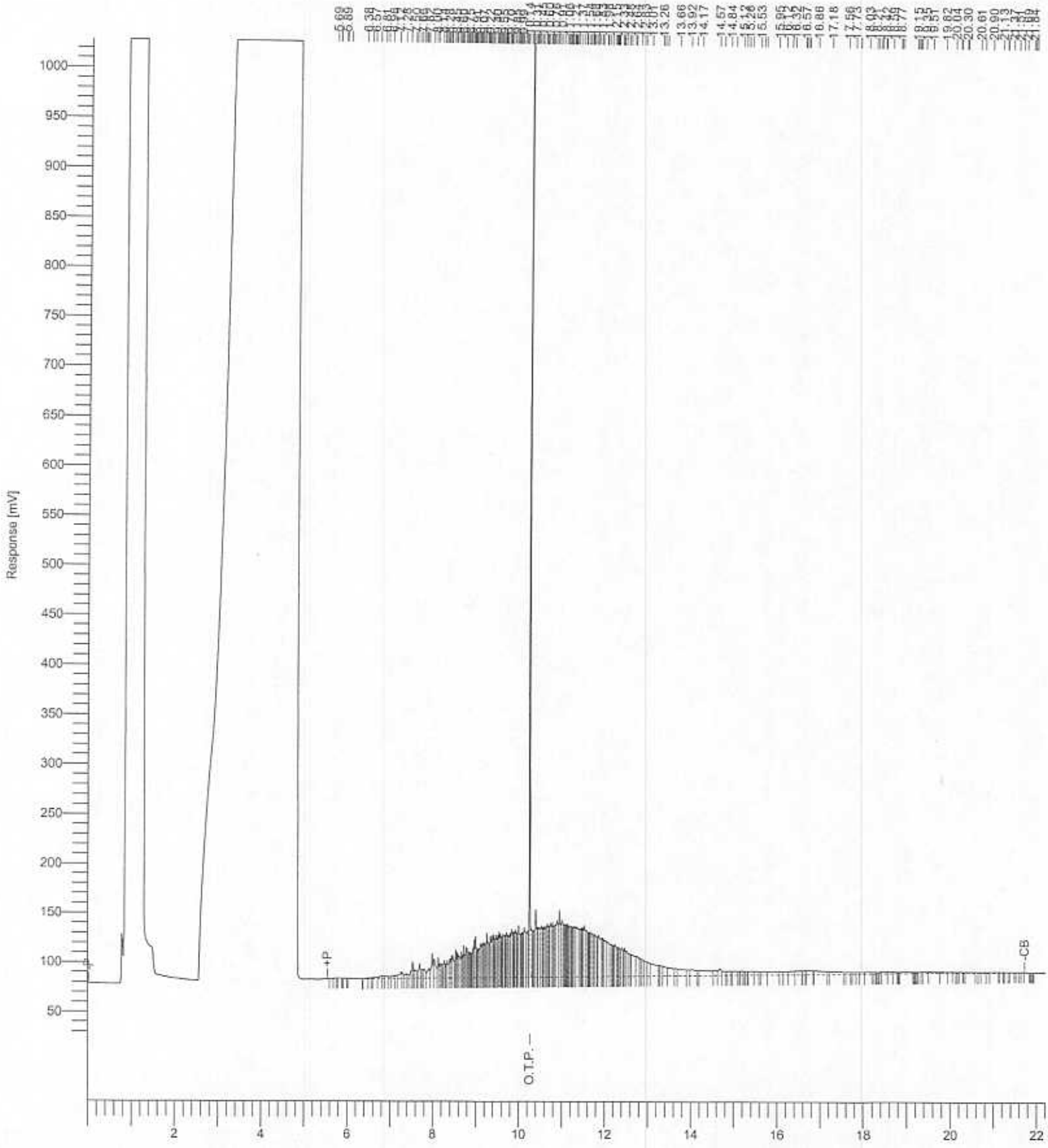


Chromatogram

Sample Name : 070091-003sg
FileName : E:\Diesel4\200507\raw\70714012.raw
Date : 7/15/2005 12:39:50 PM
Method : 7lvi63005
Start Time : 0.00 min
Plot Offset: 28.21 mV

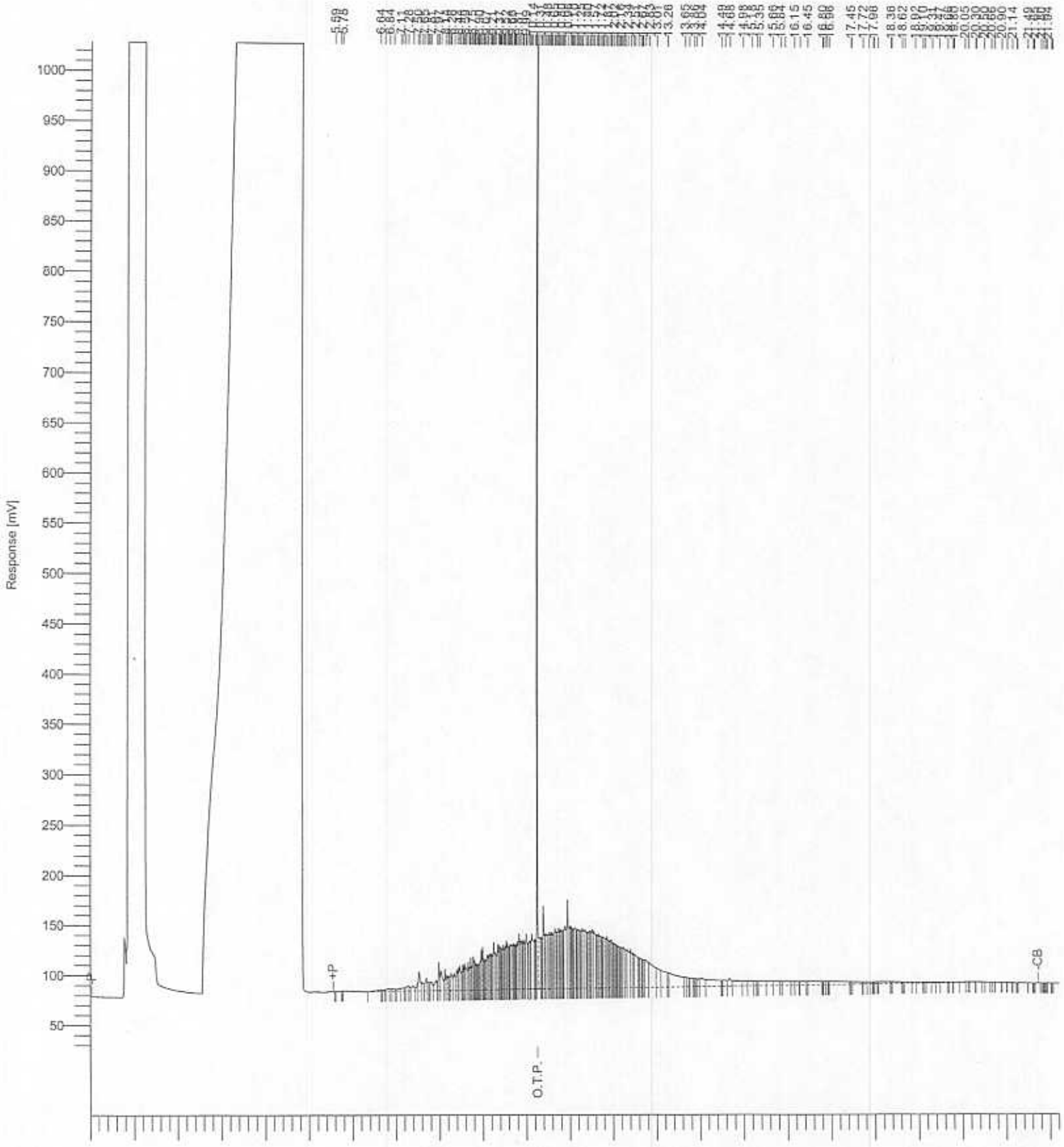
Sample #: 011
Page 1 of 1

Time of Injection: 7/14/2005 2:13:37 PM
End Time : 22.20 min
Plot Scale: 1000.0 mV
Low Point : 28.21 mV
High Point : 1028.21 mV



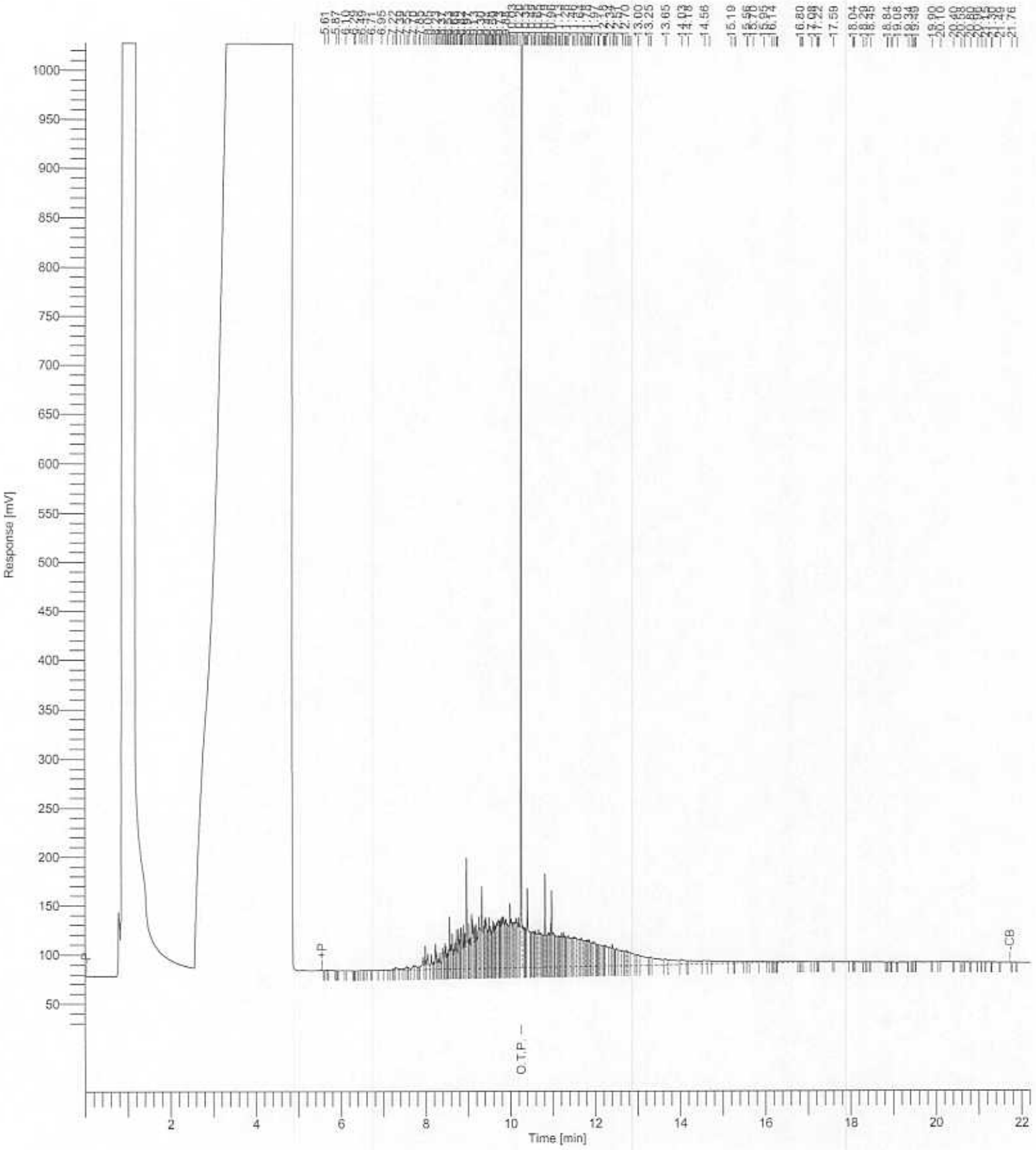
Chromatogram

Sample Name : 070091-004sg Sample #: 012 Page 1 of 1
FileName : E:\Diesel4\200507\raw\70714013.raw
Date : 7/15/2005 12:39:51 PM
Method : 7lvi83005 Time of Injection: 7/14/2005 2:40:42 PM
Start Time : 0.00 min End Time : 22.20 min Low Point : 28.04 mV High Point : 1028.04 mV
Plot Offset: 28.04 mV Plot Scale: 1000.0 mV



Chromatogram

Sample Name : 070091-005sg Sample #: 013 Page 1 of 1
FileName : E:\Diesel4\200507\raw\70714014.raw
Date : 7/15/2005 12:39:52 PM
Method : 7lvi63005 Time of Injection: 7/14/2005 3:07:47 PM
Start Time : 0.00 min End Time : 22.20 min Low Point : 27.92 mV High Point : 1027.92 mV
Plot Offset: 27.92 mV Plot Scale: 1000.0 mV



2005-07-0091

117115

Innovative Technical Solutions, Inc.
~~2855 Mitchell Drive, Suite 111~~ 2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: Port of Oakland / 00-152.28
Project Manager: Rachel Hess
Site Location: 2277 Seventh Street, Oakland

Laboratory Name: STL
Address: 1220 Quarry Ln. Pleasanton, Ca
Contact Name: Surinder Sidhu
Phone: 925 484 1919

Date: 07/06/2005
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHd by 8015B	Analysis: TPHmo by 8015B	Special Instructions/Comments
				Preservative:		1	1	
				Container Type:		1L	1L	
MW-2	15'	07/06/05	1230	1	H_2O	X	X	Silica Gel Clean up for TPHd, mo
MW-4	15'		1115			X	X	
MW-5	15'		1145			X	X	
MW-5D	15'		1150			X	X	
MW-8A	15'		1040			X	X	

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

Sampler: Rogerio Leong
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
ITSI	7/6/05	1350	STL SF	7/6/05	1350

Original – Laboratory Yellow – Field/Office

McCAMPBELL ANALYTICAL INC.
110 2nd Ave South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Date: 07/12/05

ATTN: Rachel Hess

Message: Results for project #00-152.28.

FROM: SONIA

Number of pages faxed including this one: 10

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0507064 **ClientID: ITSI**

Report to:
Rachel Hess
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598

TEL:
FAX:
ProjectNo: #00-152.28; Port of Oakland
PO:

Bill to:
Arvin Acharya
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598

Requested TAT: 5 days

Date Received: 07/06/2005
Date Printed: 07/06/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0507064-001	MW-5	Water	7/6/05 11:45:00 AM	☐	A														

Test Legend:

1	TPH(DMO)WSG_W	2		3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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

0507064

Chain-Of-Custody

ITSI Innovative Technical Solutions, Inc.
~~2855 Mitchell Drive, Suite 111~~ 2730 Shadelands Drive ste100
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: Port of Oakland / 00-152.28
Project Manager: Rachel Hess
Site Location: 2277 Seventh Street, Oakland, Ca

Laboratory Name: McCampbell Analytical Inc.
Address: 110 Second Ave Suite D#7 Contact Name: Angela Rydelius
CA Pacheco 94553 Phone: 925 798 1620

Date: 07/06/2005
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHd by 8015B, TPHmo by 8015B	Preservative:	Container Type:	Special Instructions/Comments
MW-5	15'	07/06/05	1145	1	H2O	X		X	Silica Gel cleanup for TPHd, mo

ICE/t ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB
PRESERVATION: VOAS | O&G | METALS | OTHER

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

Sampler: ROGERIO LEONG

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Leong / ITSI	7/6/05	14:45	Mel Vall / MAI	7/06	17:45

Courier/Airbill No.:

McCampbell Analytical, Inc.

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

ITSI 2730 Shadelands Drive Suite 100 Walnut Creek, CA 94598	Client Project ID: #00-152.28; Port of Oakland	Date Sampled: 07/06/05
		Date Received: 07/06/05
	Client Contact: Rachel Hess	Date Extracted: 07/06/05
	Client P.O.:	Date Analyzed: 07/08/05

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0507064

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0507064-001A	MW-5	W	77,b	ND	1	109

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

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

#) cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; &) low or no surrogate due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0507064

EPA Method: SW8015C	Extraction: SW3510C	BatchID: 17004	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	103	101	2.41	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	103	100	2.60	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17004 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0507064-001A	7/06/05 11:45 AM	7/06/05	7/08/05 1:11 PM				

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

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

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

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

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

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QA/QC Officer

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INVOICE for ANALYTICAL SERVICES

Project Name: #00-152.28; Port of Oakland
PO Number: N/A
Date Sampled: 07/06/05
Date Received: 07/06/05

Invoice N°: 0507064

INV DATE: *July 11, 2005*
Print DATE: *July 11, 2005*

Report To: Rachel Hess
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598

Invoice To: Arvin Acharya
ITSI
2730 Shadelands Drive Suite 100
Walnut Creek, CA 94598

Description	TAT	Matrix	Qty	Mult	Unit Price	Test Total
Tests:						
TPH(d/mo) with Silica Gel Clean-Up	5 days	Water	1	1	$55.60	$55.60
					SubTotal:	$55.60

Invoice Total: $55.60

If paid by **08/12/05** Prompt Pay Invoice Total = $50.04

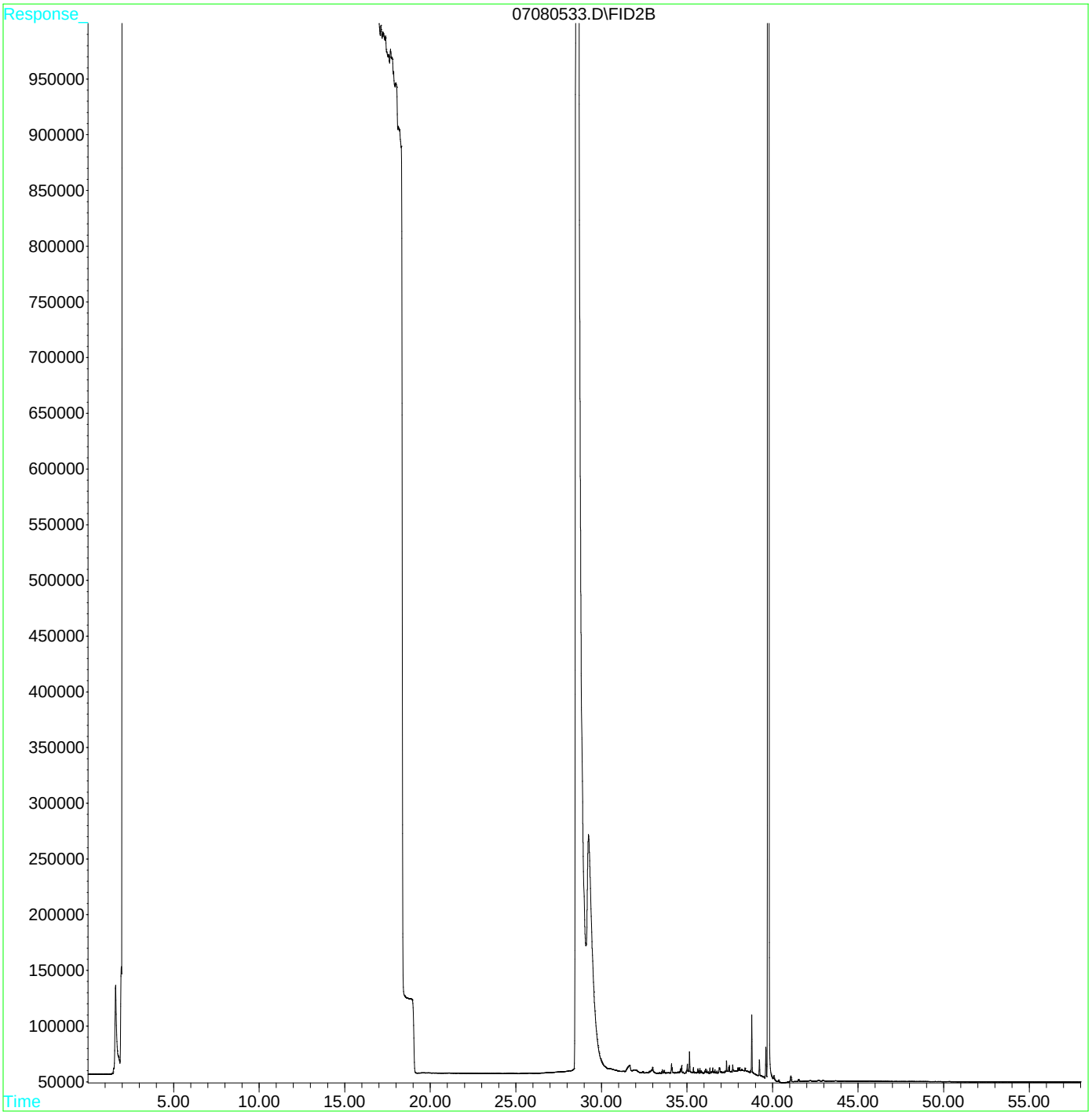
*** ALL FAXED INVOICES ARE FOR YOUR INFORMATION ONLY - PLEASE PAY OFF ORIGINAL**

Please include the invoice number with your check and remit to Accounts Receivable at the letter head address. MAI also accepts credit card (Visa/Master Card/Discover/American Express) payment. Please call Account Receivable for details on this service.

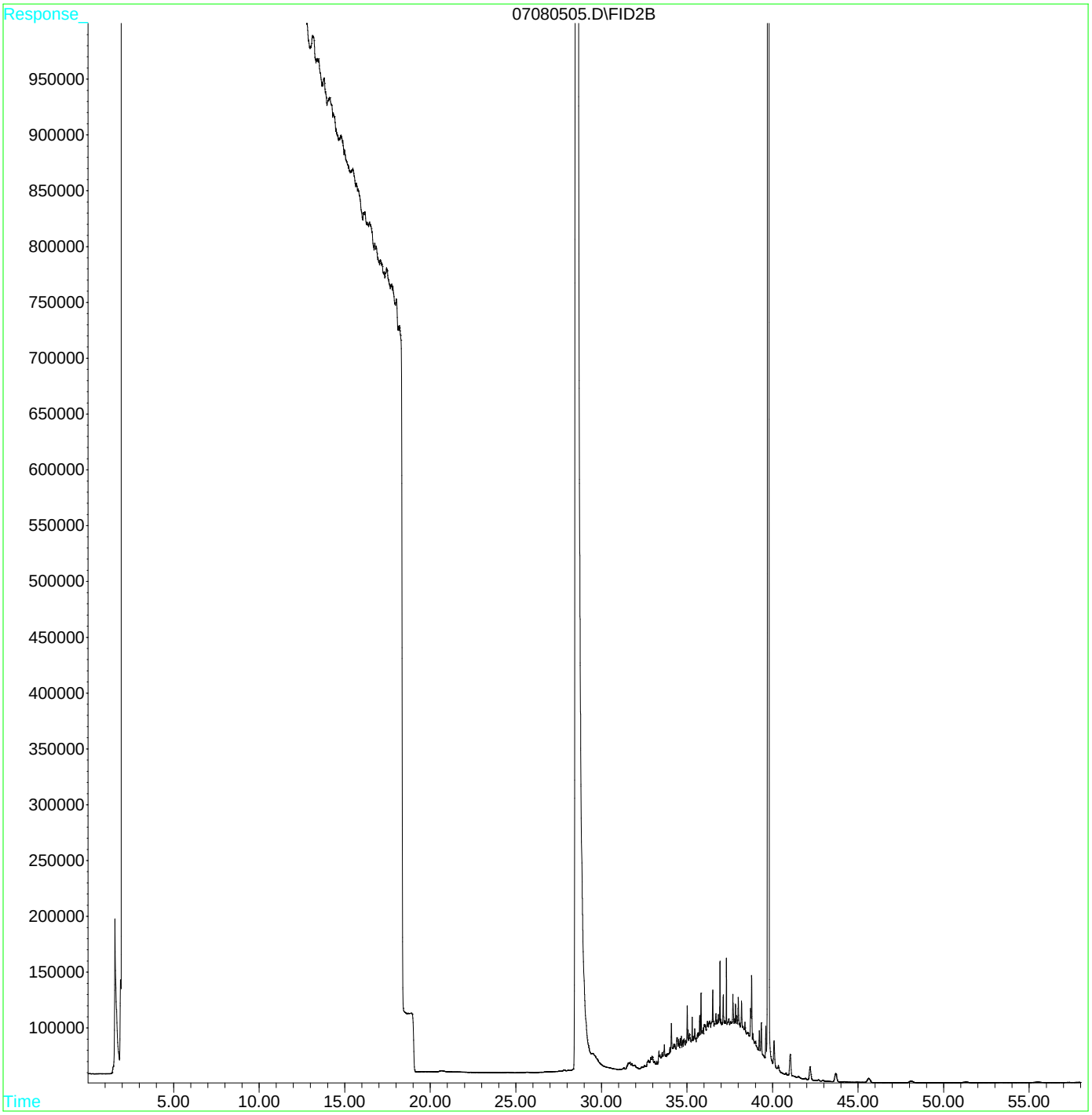
MAI's EDF charge does not include the EDF charge for subcontracted analyses. The minimum EDF charge per workorder is $25.00. For invoice total greater than $5000.00, EDF will be 2% of the total invoice. The EDF charge for subcontracted analyses will be identical to Subcontractor's fee.

Terms are net 30 days from the invoice date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing, please contact Accounts Receivable at McCampbell Analytical.

File : D:\HPCHEM\GC11\DATAB\07080533.D
Operator : Thu
Acquired : 9 Jul 0205 6:09 am using AcqMethod GC11AT.M
Instrument : GC-11
Sample Name: BLK WSG
Misc Info :
Vial Number: 67



File : D:\HPCHEM\GC11\DATAB\07080505.D
Operator : Thu
Acquired : 8 Jul 0205 1:11 pm using AcqMethod GC11AT.M
Instrument : GC-11
Sample Name: 0507064-001A W RE
Misc Info : TPH(D)WSG_W
Vial Number: 53



File : D:\HPCHEM\GC11\DATAB\07080501.D
Operator : Thu
Acquired : 8 Jul 0205 10:54 am using AcqMethod GC11AT.M
Instrument : GC-11
Sample Name: CCV
Misc Info :
Vial Number: 51