

RECEIVED

9:15 am, Nov 30, 2010

Alameda County
Environmental Health



Tesoro Environmental Resource Company
3450 South 344th Way, Suite 201
Auburn, WA 98001-5931
253 896 8700 Phone
253 896 8863 Fax

19 November, 2010

Mr. Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

**Subject: Third Quarter Status Report
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434**

Dear Mr. Wickham:

Enclosed please find a copy of the quarterly status report for the subject site located at 1619 1st Street in Livermore, California. This report is submitted by Arctos Environmental on behalf of Tesoro Environmental Resources Company.

Based on my inquiry of the person or persons directly responsible for gathering the information contained in this report, I believe the information was prepared by qualified personnel who properly gathered and evaluated the information, and that the information submitted is, to the best of my knowledge and belief, true, correct, and complete. Please feel free to call me at 253/896-8700 or Matthew Nelson of Arctos Environmental at 562/988-2755 with questions.

Sincerely,

A handwritten signature in green ink, appearing to read "Jeffrey M. Baker".

Jeffrey M. Baker, P.E.
Supervisor, Environmental
Compliance & Remediation
Tesoro Companies, Inc.

Attachments

CC: Arctos – Matthew Nelson



Arctos Environmental
1332 Peralta Avenue 510 525-2180 PHONE
Berkeley, CA 94702 510 525-2392 FAX

Main Office
○ 3450 E. Spring St., Suite 212 562 988-2755 PHONE
Long Beach, CA 90806 562 988-2759 FAX

19 November 2010

Project No. 01LV

Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

**Subject: Third Quarter 2010 Status Report
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434**

Dear Mr. Wickham:

Arctos Environmental (Arctos), on behalf of Tesoro Environmental Resources Company (Tesoro), has prepared this letter report summarizing project tasks completed during the third quarter 2010 at the subject site (Figure 1).

Executive Summary

Arctos conducted quarterly groundwater monitoring at the site on 2 and 3 August 2010. There was an average 3-foot decrease in water levels since the second quarter 2010. This is the first quarter since the third quarter 2009 that water levels have decreased. Third quarter 2009 groundwater elevations were the lowest since monitoring began in 1993. Petroleum hydrocarbon concentrations in groundwater were consistent with the second quarter 2010 results. Concentrations at downgradient well DW-5, located approximately 220 feet northwest of the site, have increased to levels seen during baseline sampling in November 2009, while concentrations in downgradient well DW-7 continue to be approximately 50 percent less than baseline concentrations.

On 28 June 2010, Arctos performed start-up activities for a soil vapor extraction (SVE) system per an Authority to Construct issued by the Bay Area Air Quality Management District (BAAQMD). During the third quarter 2010, the SVE system operated at approximately 75 percent uptime. During this time, 5,460 pounds (lbs) of hydrocarbons were removed through volatilization and an estimated 10,300 lbs were removed through biodegradation. Start-up of an oxygen injection system will occur in October 2010.

Site Background

The site description and background are included in Arctos's Interim Remedial Action Plan (IRAP) dated 21 March 2008 (Arctos, 2008).

Field Activities

Arctos's subcontractor, Environmental Field Services, LLC, of Patterson, California, performed groundwater monitoring on 2 and 3 August 2010. Samples were collected from wells MW-1 through MW-3, MW-6, MW-11, DW-1 through DW-3, and DW-5 through DW-7 (Figure 2) in accordance with the site monitoring plan (Attachment A). Groundwater monitoring was performed in accordance with the guidelines of the California Underground Storage Tank Regulations, Title 23, Division 3, Chapter 16, California Code of Regulations. Groundwater sampling quality assurance/quality control (QA/QC) procedures are in Attachment A. Field data sheets are in Attachment B.

Analytical Program

Groundwater and vapor samples were analyzed in accordance with the analytical plan in Attachment A and C, respectively.

Groundwater Results

Groundwater elevations were approximately 432 to 440 feet above mean sea level (32 to 38 feet below ground surface). Water levels decreased an average of 3 feet compared to the May 2010 event. This is the first sampling event since the third quarter 2009 event that water levels have decreased (Table 1). The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.016 (1 foot/63 feet; Figure 2). The gradient is consistent with historical data collected since 1993 (Attachment D).

The highest total petroleum hydrocarbons as gasoline (TPHg) and benzene concentrations of 53,000 and 2,800 micrograms per liter ($\mu\text{g/l}$), respectively, were at well MW-11, which is located in the southwest portion of the site adjacent to the underground storage tanks (USTs). The highest methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) concentrations of 730 and 480 $\mu\text{g/l}$, respectively, were at well MW-6, which is located approximately 150 feet downgradient of the site (Figure 2). Onsite well TP-2 typically has the highest MTBE and TBA concentrations, but it was not sampled during this event. Well TP-2 contained 14,000 and 9,900 $\mu\text{g/l}$ of MTBE and TBA, respectively, during the second quarter 2010.

In August 2010, TPHg, benzene, and MTBE were detected in downgradient well DW-7 at concentrations of 3,500, 280, and 130 µg/l, respectively. TPHg and benzene concentrations in well DW-7 continue to be approximately 50 percent less than when it was installed in November 2009. The results indicate that additional monitoring is required at well DW-7 to conduct a trend analysis and evaluate if additional downgradient delineation is required.

The remediation system is expected to reduce concentrations at the site and decrease the mass flux from the source area. Groundwater analytical results are summarized in Tables 2 and 3. Figures 3, 4, and 5 show isoconcentration contours for TPHg, benzene, and MTBE, respectively. Historical analytical results are in Attachment E, and the laboratory reports and the chain-of-custody forms are in Attachment F.

Source Area Remediation

SVE System

Arctos performed start-up activities for the SVE system on 28 June 2010 per the BAAQMD Authority to Construct. On 17 August 2010, Arctos received a Permit to Operate from the BAAQMD. Hydrocarbon-impacted soil exposed during periods of low groundwater levels is being remediated by the SVE system to assist in the groundwater remediation activities at the site.

During the third quarter 2010, the system operated on wells MW-11, TP-1, TP-2, and VW-2 (Figure 2). Water elevations for the third quarter indicated that the screen for well MW-1 was submerged and it was not included in the SVE system operating wells. The SVE wells are described below.

Well Number	Well Location	Well Diameter (inches)	Total Depth (feet)	Screen Interval (feet)	Depth to Water (feet below casing)
MW-1	SW corner in equipment area	4	54	34 - 54	34.6
MW-11	SW corner adjacent to USTs	4	43	28 - 43	31.9
TP-1	NW corner north of dispensers	2	43	28 - 43	33.9
TP-1	NW corner north of dispensers	2	43	28 - 43	33.6
VW-2	NW corner west of dispensers	2	37	22 - 37	33.2

During the start-up period, the system influent was monitored frequently with a field photoionization detector (PID) and by laboratory analysis of soil gas samples. Soil gas samples were initially collected daily, and then reduced to weekly and then biweekly. TPHg concentrations ranged from 7,500 (after 8 days of operation) to 1,100 parts per million by volume (ppmv; after 55 days of operation). During the third quarter 2010, the system operated at an average flow rate of 63 standard cubic feet per minute (scfm) and an

average vacuum of 1.4 inches of mercury (in. Hg). Based on the December 2007 pilot test, the SVE system was anticipated to operate at an extraction rate of 75 to 150 scfm and an applied vacuum of 6 to 12 in. Hg. The operating flow rate and vacuum during the third quarter 2010 were lower than planned due to decreased vadose zone thickness. Water levels in December 2007 were approximately 14 feet lower than in the third quarter 2010. Based on second and third quarter 2010 data, water levels at the site are dropping. If water levels at the site continue to drop, Orion will operate the SVE system at a higher flow rate to increase hydrocarbon mass removal.

Gasoline mass was removed from the subsurface through (1) volatilization caused by the SVE system and (2) in situ bioremediation from increasing oxygen levels. The daily rate of gasoline mass removal by volatilization was calculated from influent soil gas sample results and field flow measurements. Mass removal by biodegradation was calculated using equations from the Environmental Protection Agency (EPA) document *Bioventing Principles and Practice, Volume II: Bioventing Design*, 1995. SVE influent soil gas analytical results and SVE system parameters used for these calculations are summarized in Tables 4 and 5, respectively. The following is a summary of the operating conditions for the system during the third quarter 2010:

Operation Period	Operating Wells	Percent Uptime (%)	Operating Time (days)	Average Mass Removal Rate (pounds/day)	Mass Removed ^(a) (pounds)
July	MW-11, TP-1, TP-2, and VW-2	97	30	106	2,918
August	MW-11, TP-1, TP-2, and VW-2	58	18	106	1,773
September	MW-11, TP-1, TP-2, and VW-2	70	21	32	768

(a) Mass removed by volatilization only.

The system shut down frequently during the quarter because of power surges. To meet peak demands in the morning hours, Pacific Gas & Electric increases the power in the area of the site, which causes the system to shut down. A transformer is scheduled to be installed in October 2010 to allow the system to handle the increase in supplied power and improve system uptime.

Mass removal in September decreased due to a reduction in influent soil gas concentrations. Since system start-up in June 2010, approximately 5,460 pounds of gasoline were removed by the SVE system through volatilization and up to 10,300 pounds of gasoline is estimated to have been degraded by biodegradation. The total hydrocarbon mass removed by the SVE system is estimated to be 15,760 pounds or approximately 2,400 gallons (at a density of 6.5 pounds per gallon). Figures 6, 7, and 8 show soil vapor

influent concentrations, mass removal by volatilization, and mass removal by biodegradation, respectively. Soil vapor sampling procedures are in Attachment C.

Oxygen Injection System

The oxygen injection system has been installed and connected to the well field but has not yet been started up. Start up of the oxygen injection system will occur in the fourth quarter 2010.

Conclusions

Results of the groundwater sampling and SVE system startup activities indicate the following conclusions:

1. Onsite groundwater remediation is required to decrease the mass flux from the source area.
2. Additional deep monitoring wells may be required north of deep monitoring well DW-7 to delineate the downgradient extent of impacted groundwater if concentrations don't continue to show a decreasing trend
3. Power surges at the site require the installation of a transformer to prevent further system shutdowns
4. As water levels drop at the site, the SVE system vacuum could be increased to increase flow rates and mass removal.

Recommendations

Based on the activities proposed in the IRAP and the results of the groundwater monitoring, Arctos recommends the following tasks during the fourth quarter of 2010:

- Conduct start-up of the oxygen injection system
- Conduct quarterly sampling at deep wells DW-5 to DW-7 to confirm initial concentrations and collect data for trend analyses
- Install a transformer at the site to prevent power surges from shutting down the system
- Increase the SVE system vacuum with decreasing water levels to increase flow rates and mass removal.

If you have questions or comments, please call Mike Purchase at 510/525-2180 or Matthew Nelson at 562/988-2755.

Very truly yours,

ARCTOS ENVIRONMENTAL



Matthew J. Nelson, P.E.
Project Engineer



Michael P. Purchase, P.E.
Senior Project Manager

Copy: Jeffrey M. Baker, P.E. – Tesoro Companies, Inc.
Colleen Winey – Zone 7 Water Agency

Attachments: Table 1 – Well and Groundwater Elevations
Table 2 – Groundwater Analytical Results
Table 3 – Groundwater Analytical Results – Injection Wells
Table 4 – SVE Influent Analytical Results
Table 5 – SVE System Parameters
Figure 1 – Site Location Map
Figure 2 – Groundwater Elevation Contours
Figure 3 – TPHg Concentration Contours
Figure 4 – Benzene Concentration Contours
Figure 5 – MTBE Concentration Contours
Figure 6 – Soil Vapor Influent Concentrations
Figure 7 – Mass Removal by Volatilization
Figure 8 – Mass Removal by Biodegradation
Attachment A – Groundwater Sampling QA/QC Procedures
Attachment B – Field Data Sheets
Attachment C – Soil Vapor Sampling QA/QC Procedures
Attachment D – Historical Well and Groundwater Elevations
Attachment E – Historical Groundwater Analytical Results
Attachment F – Laboratory Analytical Reports and Chain-of-Custody Forms
Attachment G – Waste Manifests

References

Arctos Environmental, 2008. *Interim Remedial Action Plan for Groundwater, 1619 1st Street, Livermore, California, Tesoro Station No. 67076, Former Beacon Station No. 3604, ACEH Case No. RO0434, 21 March.*

TABLE 1

**WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-1	8/4/09	51.44	474.29	422.85
	12/8/09	39.87		434.42
	2/11/10	35.20		439.09
	5/3/10	31.23		443.06
	8/2/10	34.56	474.21 ^(c)	439.65
MW-2	8/4/09	51.83	472.98	421.15
	12/8/09	40.82		432.16
	2/11/10	36.54		436.44
	5/3/10	32.44		440.54
	8/2/10	35.34		437.64
MW-3	8/4/09	51.89	473.37	421.48
	12/8/09	39.50		433.87
	2/11/10	35.19		438.18
	5/3/10	31.39		441.98
	8/2/10	34.61		438.76
MW-4	8/4/09	DRY ^(d)	473.64	--
	12/8/09	39.46		434.18
	2/11/10	35.31		438.33
	5/3/10	31.55		442.09
	8/2/10	35.15		438.49
MW-5	8/4/09	DRY	472.67	--
	12/8/09	39.92		432.75
	2/11/10	36.62		436.05
	5/3/10	32.89		439.78
	8/2/10	36.16		436.51
MW-6	8/4/09	DRY	471.93	--
	12/8/09	43.02		428.91
	2/11/10	38.89		433.04
	5/3/10	34.56		437.37
	8/2/10	37.87		434.06
MW-7	8/4/09	DRY	472.33	--
	12/17/09	39.26		433.07
	2/11/10	36.18		436.15

TABLE 1

**WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	5/3/10	31.80	472.33	440.53
	8/2/10	34.31		438.02
MW-8	8/4/09	DRY	471.18	--
	12/17/09	39.92		431.26
	2/11/10	36.72		434.46
	5/3/10	32.81		438.37
	8/2/10	36.08		435.10
MW-9	8/4/09	DRY	470.78	--
	12/8/09	43.61		427.17
	2/11/10	39.48		431.30
	5/3/10	34.96		435.82
	8/2/10	38.00		432.78
MW-10	8/4/09	44.52	471.63	427.11
	12/8/09	42.80		428.83
	2/11/10	39.74		431.89
	5/3/10	33.97		437.66
	8/2/10	36.12		435.51
MW-11	8/4/09	DRY	473.26	--
	12/8/09	40.25		433.01
	2/17/10	35.24		438.02
	5/3/10	31.36		441.90
	8/2/10	31.94		472.96 ^(c)
VW-2	8/4/09	DRY	473.28	--
	12/8/09	DRY		--
	2/11/10	NM ^(e)		--
	5/3/10	31.84		441.44
	8/2/10	33.15		472.57 ^(c)
VW-3	8/4/09	DRY	474.38	--
	12/8/09	DRY		--
	2/11/10	DRY		--
	5/3/10	31.85		442.53
	8/2/10	34.72		439.66
TP-1	8/4/09	DRY	472.82	--
	12/8/09	41.39		431.43

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
TP-1 (cont.)	2/17/10	36.15	472.82	436.67
	5/3/10	32.32		440.50
	8/2/10	33.96	472.64 ^(c)	438.68
TP-2	8/4/09	DRY	472.93	--
	12/8/09	40.08		432.85
	2/17/10	35.48		437.45
	5/3/10	31.85		441.08
	8/2/10	33.57	472.78 ^(c)	439.21
DW-1	8/4/09	52.22	472.85	420.63
	12/8/09	39.79		433.06
	2/11/10	35.57		437.28
	5/3/10	31.70		441.15
	8/2/10	34.76		438.09
DW-2	8/4/09	54.67	471.61	416.94
	12/8/09	42.88		428.73
	2/11/10	38.63		432.98
	5/3/10	34.46		437.15
	8/2/10	37.72		433.89
DW-3	8/4/09	56.32	470.33	414.01
	12/8/09	42.92		427.41
	2/11/10	38.75		431.58
	5/3/10	34.51		435.82
	8/2/10	35.59		434.74
DW-4	8/4/09	56.46	468.48	412.02
	12/8/09	42.26		426.22
	2/11/10	37.98		430.50
	5/3/10	34.04		434.44
	8/2/10	36.94		431.54
DW-5	12/8/09	43.05	471.86	428.81
	12/8/09	43.05		428.81
	2/11/10	38.93		432.93
	5/3/10	34.55		437.31
	8/2/10	37.56		434.30

TABLE 1

**WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
DW-6	12/8/09	43.50	471.77	428.27
	2/11/10	39.22		432.55
	5/3/10	35.15		436.62
	8/2/10	38.35		433.42
DW-7	12/8/09	43.01	470.07	427.06
	2/11/10	38.70		431.37
	5/3/10	34.64		435.43
	8/2/10	37.82		432.25

- (a) Elevation of PVC well casing (north edge) surveyed relative to mean sea level (MSL).
Wells were surveyed by Cross Land Surveying, Inc., per AB 2886 requirements.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (b) Water Table Elevation = (Casing Elevation - Depth to Water)
- (c) Wells were resurveyed by Cross Land Surveying, Inc., per AB 2886 requirements, on 19 October 2010 after remediation system construction.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (d) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.
- (e) NM - Not measured.

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-1	8/4/09	890	ND<0.5 ^(b)	ND<0.5	1.7	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	12/8/09	3,200	16	18	81	110	ND<0.5 ^(b)	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<20	ND<0.5	ND<0.5
	2/11/10	1,300	3.7	1.7	13	6.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	5/5/10	710	2.2	0.92	5.9	2.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	1,200	2.4	3.7	22	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-2	8/4/09	30,000	5,800	170	1,500	370	1,400	ND<9	ND<9	18	670	ND<3,000	ND<90	ND<9	ND<9
	12/8/09	24,000	3,100	200	1,200	830	520	ND<7.0	ND<7.0	8.0	250	ND<700	ND<70	ND<7.0	ND<7.0
	2/12/10	19,000	2,900	440	940	1,300	820	ND<7.0	ND<7.0	9.5	400	ND<700	ND<70	ND<7.0	ND<7.0
	5/3/10	26,000	3,100	870	1,100	2,200	530	ND<7.0	ND<7.0	8.0	370	ND<700	ND<70	ND<7.0	ND<7.0
	8/3/10	19,000	2,000	150	840	730	280	ND<4.0	ND<4.0	4.4	200	ND<400	ND<40	ND<4.0	ND<4.0
MW-3	8/4/09	190	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/8/09	150	3.6	1.1	2.4	2.6	0.82	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
	2/11/10	61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	53	ND<5	ND<0.5	ND<0.5
	5/6/10	ND<50	ND<0.5	1.0	ND<0.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	74	2.4	5.5	0.96	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-4	8/4/09	NS ^(c)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	ND<50	2.4	1.8	2.3	4.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	220	ND<0.5	ND<0.5	2.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	15,000	2,100	96	800	160	340	ND<5	ND<5	ND<5	460	ND<2,000	ND<50	ND<5	ND<5
	2/12/10	21,000	2,500	140	1000	240	540	ND<5	ND<5	6.0	460	ND<500	ND<50	ND<5	ND<5

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-6 (cont.)	5/4/10	17,000	2,100	120	780	260	820	ND<5	ND<5	8.6	450	ND<500	ND<50	ND<5	ND<5
	8/3/10	21,000	2,700	120	690	250	730	ND<5	ND<5	7.4	480	ND<500	ND<50	ND<5	ND<5
MW-7	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	4,500	6.7	3.4	27	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	3,600	7.9	3.6	14	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	1,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	2,700	120	7.0	35	14	44	ND<0.5	ND<0.5	0.52	31	ND<200	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	100,000	6,100	9,000	3,100	20,000	3.3	ND<0.5	ND<0.5	ND<0.5	25	ND<200	ND<20	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/3/10	62,000	3,600	5,900	2,600	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	8/3/10	53,000	2,800	3,800	2,100	10,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
VW-2	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	2,800	130	6.1	170	130	1,300	ND<2.5	ND<2.5	12	1,700	ND<250	ND<25	ND<2.5	ND<2.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-3	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-1	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	10,000	690	19	700	45	1000	ND<2.5	ND<2.5	8.8	2,900	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	15,000	2,100	360	1,100	620	3,400	ND<8.0	ND<8.0	27	4,500	ND<800	ND<80	ND<8.0	ND<8.0
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-2	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	7,200	950	ND<25	77	ND<25	13,000	ND<25	ND<25	130	20,000	ND<2,500	ND<250	ND<25	ND<25
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	6,400	740	ND<25	450	130	14,000	ND<25	ND<25	130	9,900	ND<2,500	ND<250	ND<25	ND<25
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-1	8/5/09	2,100	330	17	87	53	220	ND<0.5	ND<0.5	2.0	310	ND<50	ND<5	ND<0.5	ND<0.5
	12/8/09	6,200	560	63	400	490	140	ND<0.5	ND<0.5	1.1	200	ND<200	ND<8.0	ND<0.5	ND<0.5
	2/12/10	2,000	200	36	130	150	49	ND<0.5	ND<0.5	ND<0.5	58	ND<200	ND<5	ND<0.5	ND<0.5
	5/4/10	1,800	160	27	110	140	21	ND<0.5	ND<0.5	ND<0.5	41	ND<100	ND<5	ND<0.5	ND<0.5
	8/2/10	1,400	53	11	67	78	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
DW-2	8/4/09	6,800	910	19	37	27	200	ND<1	ND<1	2.7	530	ND<200	ND<10	ND<1	ND<1
	12/9/09	6,600	450	14	55	34	210	ND<0.9	ND<0.9	2.6	410	ND<200	ND<9.0	ND<0.9	ND<0.9
	2/11/10	4,500	340	14	44	25	320	ND<0.9	ND<0.9	3.9	520	ND<300	ND<9.0	ND<0.9	ND<0.9

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPH ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-2 (cont.)	5/4/10	2,300	110	7.1	17	16	350	ND<0.9	ND<0.9	4.1	550	ND<200	ND<9.0	ND<0.9	ND<0.9
	8/2/10	3,800	420	22	21	28	300	ND<0.9	ND<0.9	3.5	600	ND<300	ND<20	ND<0.9	ND<0.9
DW-3	8/4/09	1,200	6.8	0.99	4.3	3.4	18	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<5	ND<0.5	ND<0.5
	12/9/09	2,200	24	5.9	56	29	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.2	ND<300	ND<20	ND<0.5	ND<0.5
	2/11/10	700	9.5	2.0	18	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8.0	ND<0.5	ND<0.5
	5/4/10	420	5.5	0.93	8.8	3.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	8/2/10	640	4.0	ND<0.5	5.3	3.9	0.59	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
DW-4	8/5/09	52	1.7	ND<0.5	1.4	0.83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/9/09	ND<50	3.0	ND<0.5	2.0	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	180	3.3	3.7	13	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-5	12/9/09	15,000	140	25	200	960	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	1,600	37	2.5	36	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	5/4/10	2,100	69	2.9	41	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8.0	ND<0.5	ND<0.5
	8/2/10	12,000	240	9.4	350	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
DW-6	12/9/09	6,200	33	4.3	100	43	9.7	ND<1	ND<1	ND<1	10	ND<100	ND<10	ND<1	ND<1
	2/11/10	4,800	18	3.0	44	15	14	ND<0.5	ND<0.5	ND<0.5	9.2	ND<80	ND<10	ND<0.5	ND<0.5
	5/4/10	4,600	13	3.5	29	17	5.6	ND<0.5	ND<0.5	ND<0.5	7.2	ND<80	ND<8.0	ND<0.5	ND<0.5
	8/2/10	4,500	13	4.4	54	14	5.9	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<8.0	ND<0.5	ND<0.5
DW-7	12/9/09	10,000	500	20	310	110	160	ND<2	ND<2	ND<2	270	ND<200	ND<20	ND<2	ND<2
	2/12/10	12,000	590	23	440	120	190	ND<2.0	ND<2.0	2.4	290	ND<200	ND<20	ND<2.0	ND<2.0
	5/4/10	4,100	250	15	89	32	97	ND<0.5	ND<0.5	1.0	160	ND<80	ND<5	ND<0.5	ND<0.5
	8/3/10	3,500	280	13	49	30	130	ND<0.5	ND<0.5	1.3	220	ND<50	ND<5	ND<0.5	ND<0.5

(a) Total petroleum hydrocarbons as gasoline (TPHG), benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), methanol, ethanol, 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l).

(b) ND - Not detected at the reporting limit listed.

(c) NS - Not sampled.

TABLE 3

**GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-1	7/23/08	62,000	2,100	6,800	2,700	11,000	16	ND<15 ^(b)	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	10/13/08	55,000	3,100	3,300	2,300	7,700	ND<15	ND<15	ND<15	ND<15	98	ND<1,500	ND<150	ND<15	ND<15
	5/5/10 ^(c)	33,000	900	1,500	1,400	5,000	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
IP-2	7/23/08	5,500	160	43	130	350	10	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	13,000	1,900	58	600	630	180	ND<0.9	ND<0.9	9.4	46	ND<90	ND<20	ND<0.9	ND<0.9
	5/5/10 ^(c)	2,700	66	220	61	240	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-3	7/23/08	1,100	23	14	7.5	90	32	ND<0.5	ND<0.5	ND<0.5	32	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	1,700	83	4.7	11	54	72	ND<0.5	ND<0.5	0.84	71	ND<50	ND<8	ND<0.5	ND<0.5
	5/5/10 ^(c)	430 ^(d)	6.4	22	4.9	21	3.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
IP-4	7/23/08	7,600	130	45	240	750	940	ND<1.5	ND<1.5	6.9	890	ND<150	ND<15	ND<1.5	ND<1.5
	10/13/08	4,200	110	11	78	310	3,700	ND<1.5	ND<1.5	7.1	15,000	ND<2,000	ND<15	ND<1.5	ND<1.5
	5/6/10 ^(c)	190	5.4	25	6.9	29	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-5	7/23/08	2,000 ^(d)	3.0	17	5.1	31	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	720	14	13	8.7	32	19	ND<0.5	ND<0.5	ND<0.5	26	ND<50	ND<5	ND<0.5	ND<0.5
	5/6/10 ^(c)	270	5.7	25	5.9	29	20	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
IP-6	7/23/08	4,400	260	78	98	340	180	ND<0.5	ND<0.5	1.6	190	ND<80	ND<9	ND<0.5	ND<0.5
	10/13/08	1,400	150	1.6	1.5	3.5	7.4	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<50	ND<0.5	ND<0.5
	5/5/10 ^(c)	8,000 ^(d)	24	100	18	98	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
IP-7	7/23/08	4,200	190	12	99	190	49	ND<0.9	ND<0.9	1.1	58	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	6,000	350	6.6	150	60	97	ND<0.9	ND<0.9	2.5	76	ND<90	ND<50	ND<0.9	ND<0.9
	5/5/10 ^(c)	33,000	49	62	38	69	14	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<9	ND<0.9	ND<0.9
IP-8	12/16/08	120,000	7,800	20,000	3,500	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	5/5/10 ^(c)	83,000	3,900	13,000	2,400	14,000	ND<25	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25
IP-9	12/16/08	110,000	7,800	23,000	2,800	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	5/5/10 ^(c)	92,000	6,000	19,000	2,500	14,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethylbenzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-10	2/11/09	8,100	29	58	170	1,200	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	5/3/10 ^(c)	3,600	73	80	140	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5

- (a) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l).
- (b) ND - Not detected at the reporting limit listed.
- (c) Baseline remediation system values.
- (d) Primarily compounds not found in typical Gasoline.

TABLE 4

**SVE INFLUENT ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Sample ID	Date	TPH ^(a) (ppmv)	Benzene ^(a) (ppmv)	Toluene ^(a) (ppmv)	Ethylbenzene ^(a) (ppmv)	Xylenes ^(a) (ppmv)	MTBE ^(a) (ppmv)	Methane ^(b) (%)	Carbon Dioxide ^(b) (%)	Carbon Monoxide ^(b) (%)	Oxygen ^(b) (%)	Nitrogen ^(b) (%)
SVE-Influent-0	6/29/10	5,300	16	20	45	110	75	-- ^(c)	--	--	--	--
SVE-Influent-1	6/29/10	4,700	15	12	36	90	58	0.58	3.6	ND<0.5 ^(d)	16.4	79.4
SVE-Influent	6/30/10	3,200	12	20	30	76	60	--	--	--	--	--
SVE-Influent	7/1/10	3,400	12	22	34	84	68	ND<0.5	4.0	ND<0.5	15.9	80.1
SVE-Influent	7/6/10	4,000	9.4	24	36	92	87	ND<0.5	4.3	ND<0.5	16.1	79.5
SVE-Influent	7/8/10	7,500	14	25	44	110	87	ND<0.5	5.3	ND<0.5	13.5	81.0
SVE-Influent	7/14/10	4,200	7.0	22	29	82	50	ND<0.5	5.5	ND<0.5	15.5	78.9
SVE-Influent	7/28/10	3,000	3.5	15	20	64	34	ND<0.5	4.0	ND<0.5	17.4	78.6
SVE-Manifold	8/5/10	4,800	4.4	12	20	66	28	ND<0.5	5.3	ND<0.5	12.1	82.4
SVE-Manifold	8/18/10	4,300	4.3	12	19	72	29	ND<0.5	5.2	ND<0.5	13.2	81.5
SVE-Manifold	9/7/10	1,100	2.2	6.2	4.8	26	10	ND<0.5	4.1	ND<0.5	17.6	78.3
SVE-Manifold	9/16/10	1,600	3.2	8.3	7.6	44	13	ND<0.5	4.0	ND<0.5	17.6	78.4
SVE-Manifold	9/29/10	1,800	2.8	5.6	6.1	34	12	ND<0.5	3.6	ND<0.5	15	81.0

(a) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether (MTBE), analyzed by EPA Method 8260; reported in parts per million by volume (ppmv).

(b) Fixed gases analyzed by Method ASTM D-1946.

(c) "--" - Not analyzed.

(d) ND - Not detected at the reporting limit listed.

TABLE 5

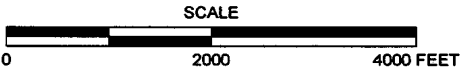
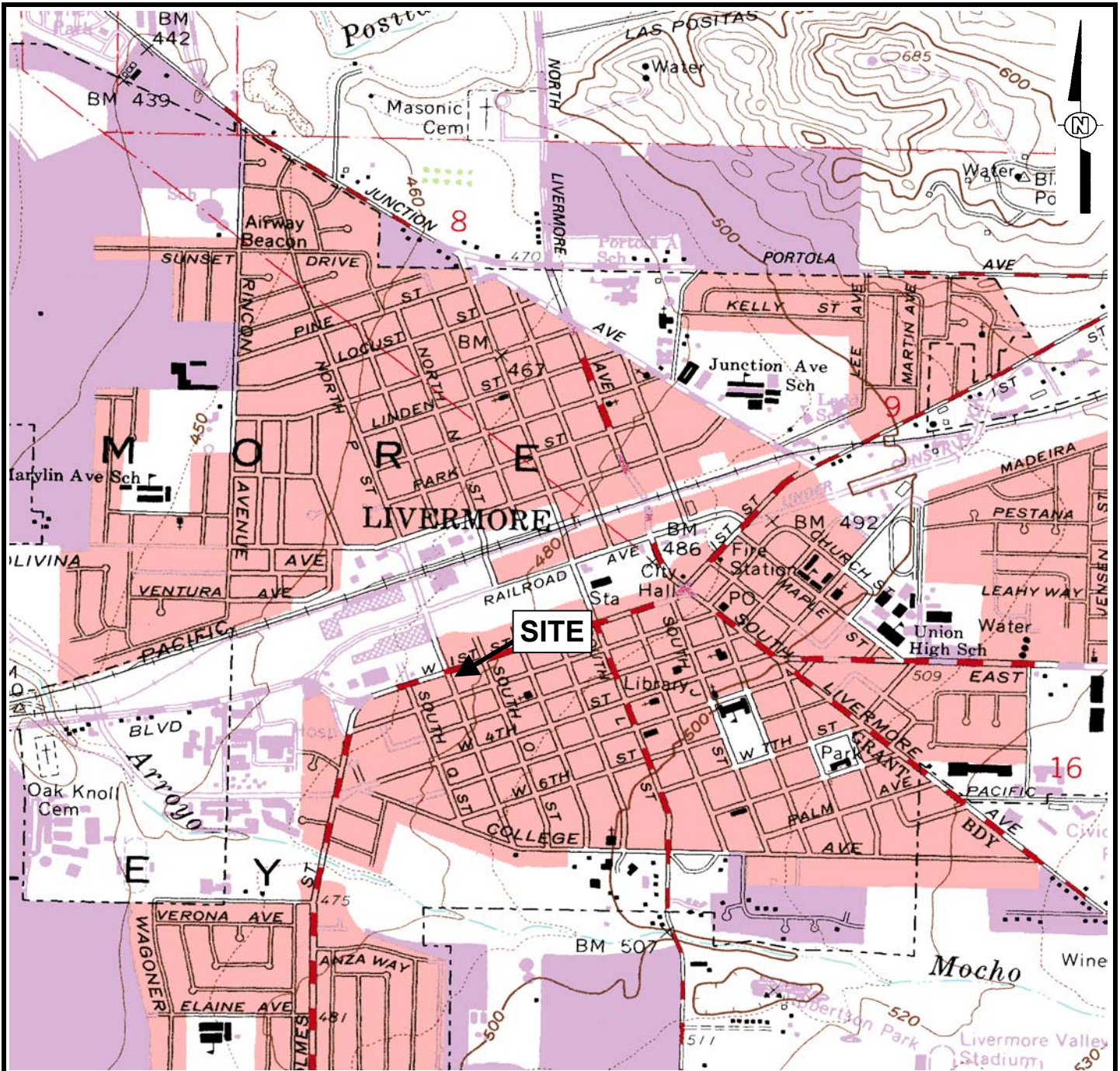
**SVE SYSTEM PARAMETERS
TESORO - LIVERMORE, 67076**

Influent Sample Number	Sample Date	Hours of Operation (hours)	Days of Operation (Days)	TPHg Concentration (ppmv)	Differential Pressure (in. wc)	Temp (°F)	Vacuum (in. Hg)	Standard Flow (scfm)	Volatilization	Biological	
									Mass Removal Rate (lbs/day)	Concentration of Oxygen (%)	Mass Rate Removed (lbs/day)
1	6/29/10	8.7	0.4	5,300	-- ^(a)	--	1.5	63 ^(b)	124	--	NA ^(c)
2	6/29/10	12.9	0.5	4,700	--	--	1.25	63 ^(b)	110	16.4	119
3	6/30/10	31	1	3,200	0.03	71	1.5	63 ^(b)	75	--	NA
4	7/1/10	56	2	3,400	0.05	72	1.5	63 ^(b)	80	15.9	130
5	7/6/10	175	7	4,000	0.04	69	1.5	63 ^(b)	94	16.1	126
6	7/8/10	200	8	7,500	0.03	73	1.5	63 ^(b)	176	13.5	182
7	7/14/10	343	14	4,200	1.25	90.0	1.5	81	127	15.5	179
8	7/28/10	625	26	3,000	0.62	68.0	1.5	59	65	17.4	91
9	8/5/10	793	33	4,800	0.73	68	1.0	65	115	12.1	218
10	8/18/10	985	41	4,300	0.64	71	1.0	60	97	13.2	181
11	9/7/10	1,309	55	1,100	2.05	75	1.6	106	43	17.6	156
12	9/16/10	1,473	61	1,600	0.81	76	1.4	67	40	17.6	99
13	9/29/10	1,628	68	1,800	0.08	89	1.5	21	14	15.4	46

(a) "--" not sampled, analyzed, or collected.

(b) An average flow rate was used due to inaccurate system parameter readings.

(c) NA - not applicable.



REFERENCE
 7.5 MINUTE USGS TOPOGRAPHIC MAP OF
 LIVERMORE, CALIFORNIA QUADRANGLE
 DATE: 1961, PHOTOREVISED 1980
 SCALE = 1:24,000

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
SITE LOCATION MAP			
PROJECT NO. 01LV	DRAWN BY MP	CHECKED BY MP	APPROVED BY JG
FILE NO. Site Map.xls		FIGURE 1	

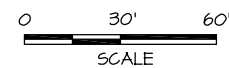
11/11/2010 10:26AM 01LV11B-20409.dwg



Legend

- MN-7 Groundwater Monitoring Well With Groundwater Elevation (Feet, MSL) Measured 2 August 2010
- DW-1 Deep Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) Measured 2 August 2010
- IP-1 Injection Well

- IP-6 Angled Injection Well Screen Location
- VW-2 Vapor Extraction Well with Groundwater Elevation (Feet, MSL) Measured 2 August 2010
- TP-2 Monitoring Well/Vapor Extraction Well with Groundwater Elevation (Feet, MSL) Measured 2 August 2010
- 439 Groundwater Elevation Contour



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
9	4	MY	8/19/09	Second Quarter 2009 Monitoring Report
	5	MY	11/19/09	Third Quarter 2009 Monitoring Report
	6	MY	2/19/10	Fourth Quarter 2009 Monitoring Report
	7	MY	5/19/10	First Quarter 2010 Monitoring Report
	8	MY	8/19/10	Second Quarter 2010 Monitoring Report
9	MY	11/19/10	Third Quarter 2010 Monitoring Report	

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
GROUNDWATER ELEVATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20409.DWG		FIGURE 2	

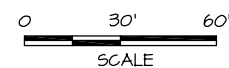


11/11/2010 10:27AM 01LV11B-20509.dwg

Legend

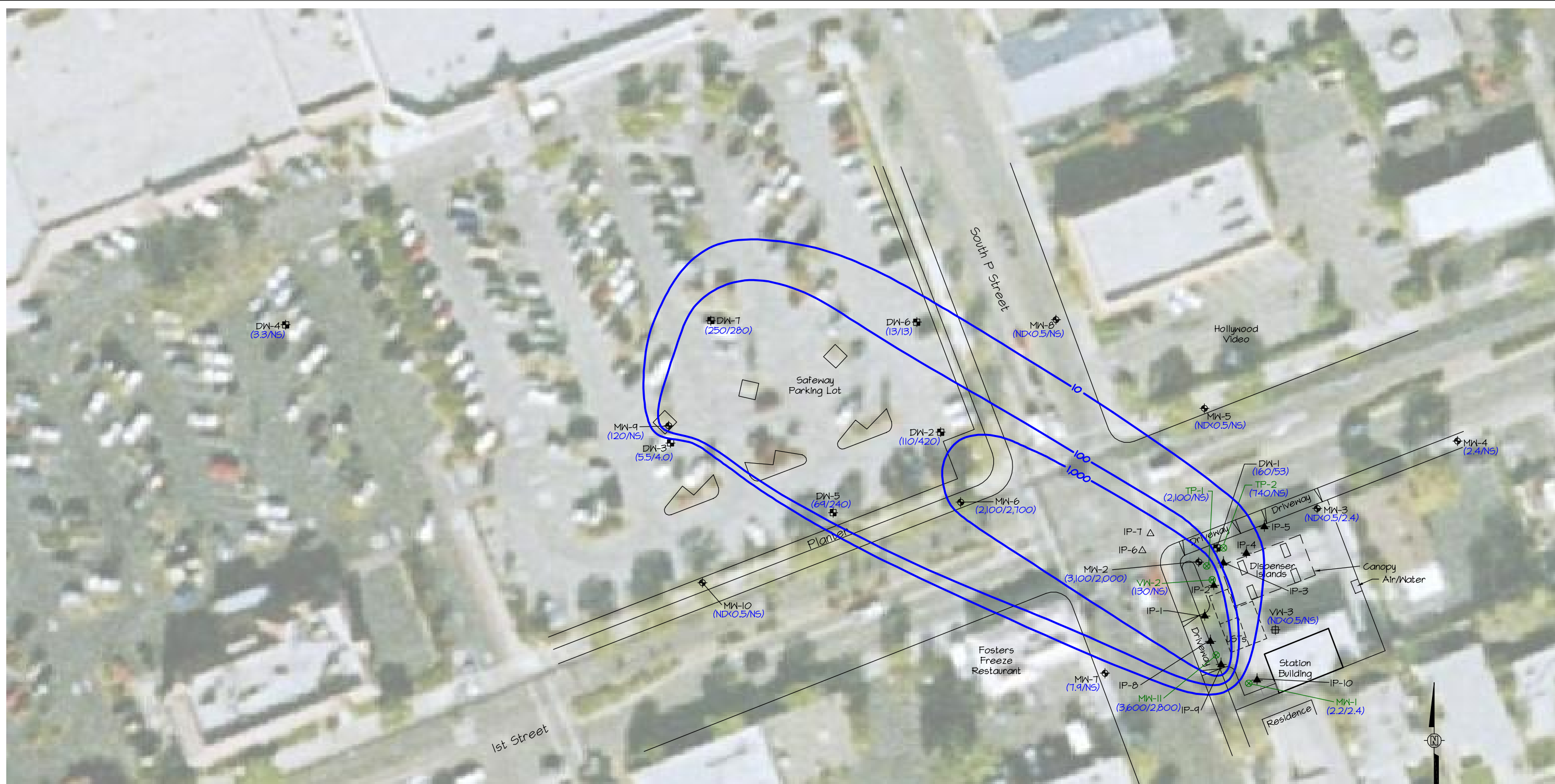
- MW-7 Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 Total Petroleum Hydrocarbons as Gasoline (TPHg) Results in µg/L
- DW-1 Deep Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 TPHg Results in µg/L
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen Location

- VW-2 Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 TPHg Results in µg/L
- TP-2 Monitoring Well/Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 TPHg Results in µg/L
- 1000 TPHg Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (710/1,200) Previous Quarter/Current Quarter TPHg Results in µg/L



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
9	5	MY	11/14/09	Third Quarter 2009 Monitoring Report
	6	MY	2/19/10	Fourth Quarter 2009 Monitoring Report
	7	MY	5/19/10	First Quarter 2010 Monitoring Report
	8	MY	8/19/10	Second Quarter 2010 Monitoring Report
	4	MY	11/19/10	Third Quarter 2010 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
TPHg CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20509.DWG		FIGURE 3	

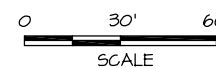


11/11/2010 10:28AM 01LV11B-20609.dwg

Legend

- MW-7 Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 Benzene Results in µg/L
- DW-1 Deep Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 Benzene Results in µg/L
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen Location

- VW-2 Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 Benzene Results in µg/L
- TP-2 Monitoring Well/Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 Benzene Results in µg/L
- Benzene Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (2.2/2.4) Previous Quarter/Current Quarter Benzene Results in µg/L



REVISION		REVISIONS	
NO.	BY	DATE	DESCRIPTION
5	MY	11/19/09	Third Quarter 2009 Monitoring Report
6	MY	2/19/10	Fourth Quarter 2009 Monitoring Report
7	MY	5/19/10	First Quarter 2010 Monitoring Report
8	MY	8/19/10	Second Quarter 2010 Monitoring Report
9	MY	11/19/10	Third Quarter 2010 Monitoring Report

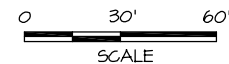
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
BENZENE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20609.DWG		FIGURE 4	

01LV11B-20709.dwg
11/11/2010 10:30AM



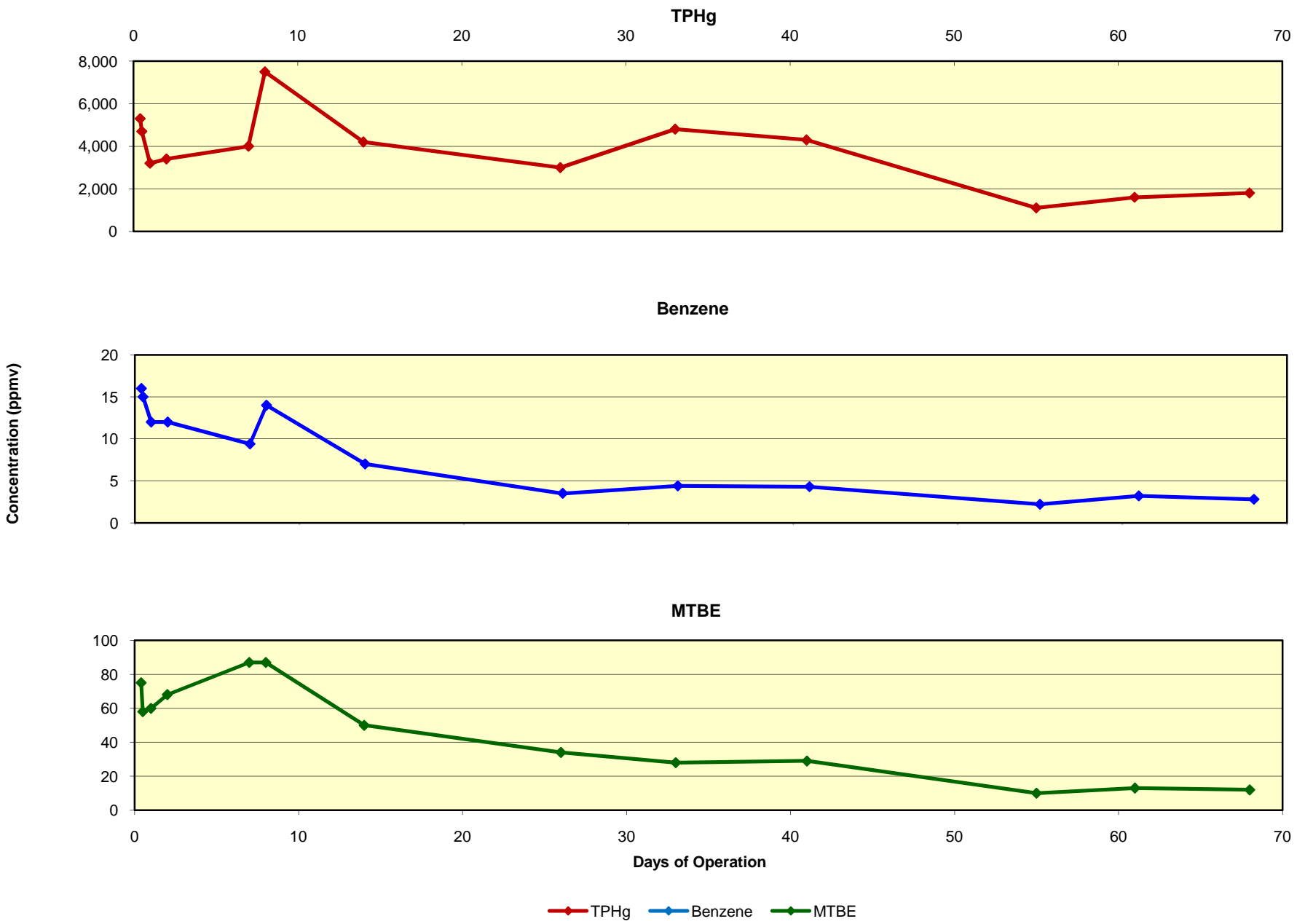
- Legend**
- MW-7 Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 Methyl Tert-Butyl Ether (MTBE) Results in µg/L
 - DW-1 Deep Groundwater Monitoring Well with 3 to 6 May and 2 and 3 August 2010 MTBE Results in µg/L
 - IP-1 Injection Well
 - IP-6 Angled Injection Well Screen Location

- VW-2 Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 MTBE Results in µg/L
- TP-2 Monitoring Well/Vapor Extraction Well with 3 to 6 May and 2 and 3 August 2010 MTBE Results in µg/L
- 1000 MTBE Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (ND<0.5/ND<0.5) Previous Quarter/Current Quarter MTBE Results in µg/L

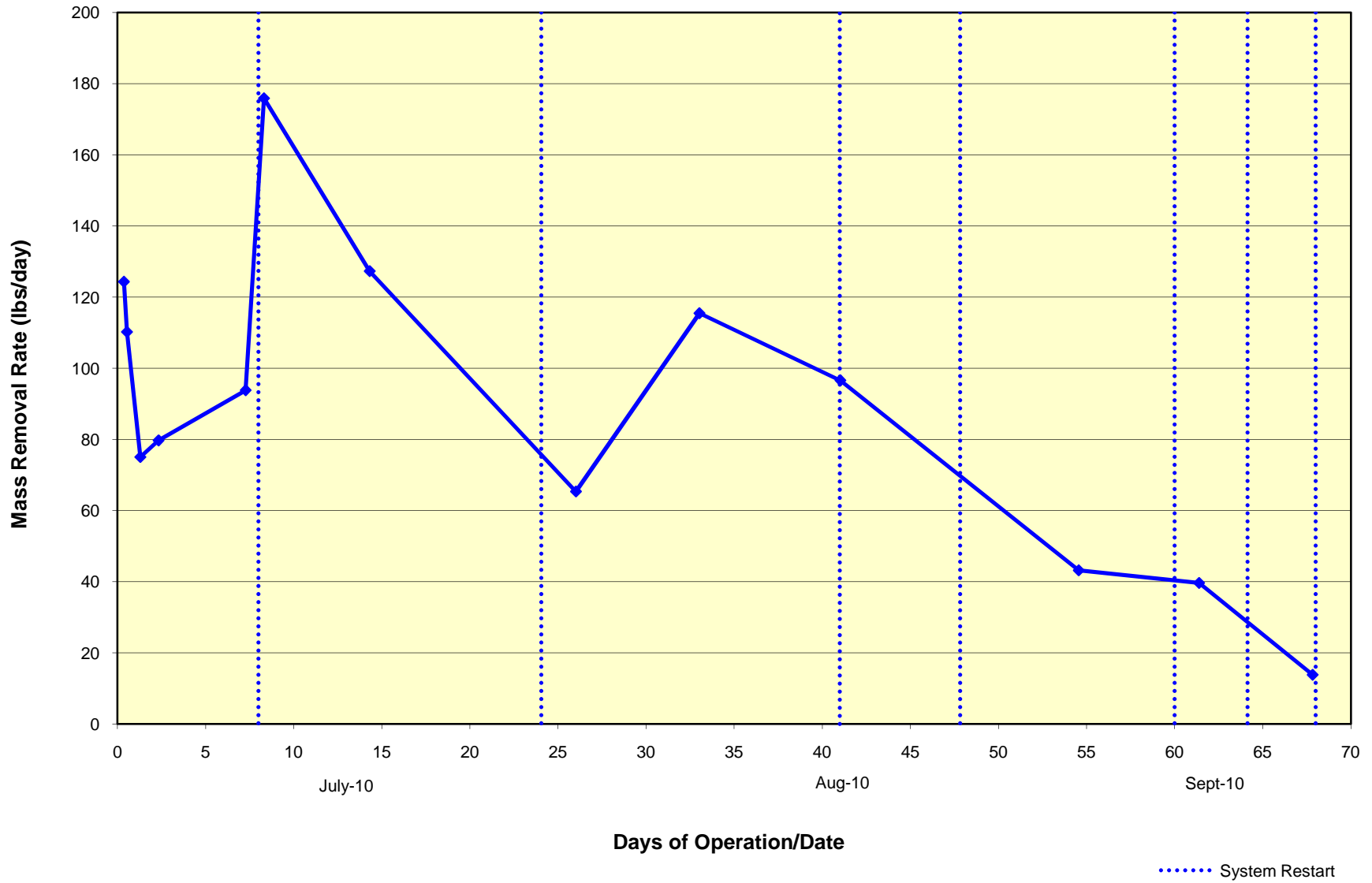


REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
9	5	MY	11/19/09	Third Quarter 2009 Monitoring Report
	6	MY	2/19/10	Fourth Quarter 2009 Monitoring Report
	7	MY	5/19/10	First Quarter 2010 Monitoring Report
	8	MY	8/19/10	Second Quarter 2010 Monitoring Report
	9	MY	11/19/10	Third Quarter 2010 Monitoring Report

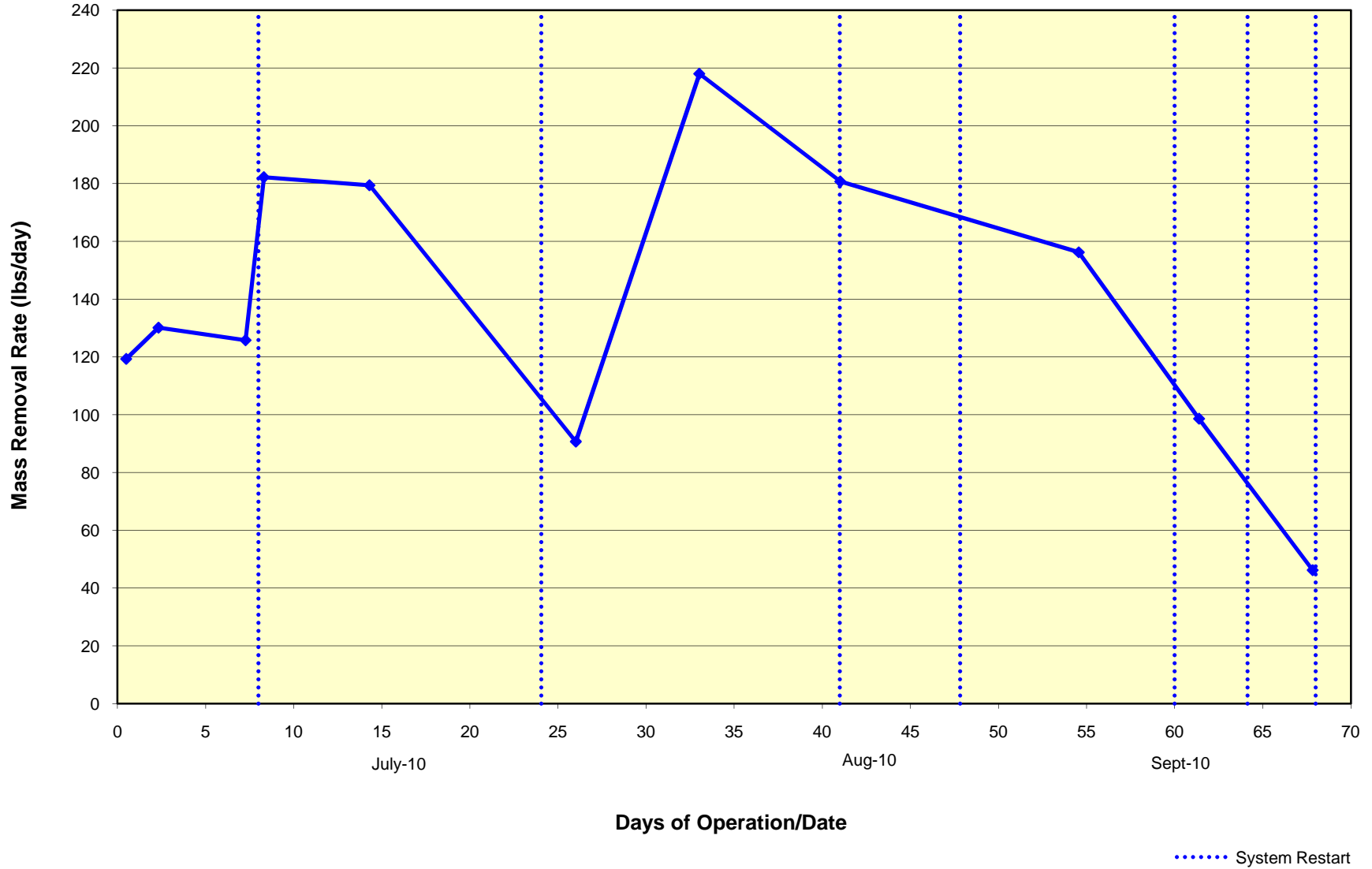
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
MTBE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20709.DWG		FIGURE 5	



HYDROCARBON MASS REMOVED BY VOLATILIZATION = 5,460 lbs



HYDROCARBON MASS REMOVED BY BIODEGRADATION = 10,300 lbs



ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

Monitoring Plan

In accordance with the California State Water Resources Control Board's (SWRCB) Resolution No. 2009-0042, referenced in Alameda Environmental Health's (ACEH) 23 July 2009 letter to Tesoro, Arctos proposed to reduce the monitoring and sampling frequency to semiannually in the second quarter 2009 status report. Select wells will continue to be monitored quarterly to assess the effectiveness of the planned groundwater remediation system according to the following groundwater monitoring plan:

Well Designation	Location	Sampling Frequency
MW-1, MW-3, and MW-11	Upgradient	Quarterly
MW-2 and DW-1	Source area	
MW-6, DW-2, DW-3, DW-5, DW-6, and DW-7	Downgradient	
MW-4 and VW-3	Upgradient	Semiannually (2nd and 4th quarters)
TP-1, TP-2, and VW-2	Source area	
MW-5 and MW-7	Cross gradient	
MW-8, MW-9, MW-10, and DW-4	Downgradient	

Analytical Plan

The groundwater samples were analyzed by Kiff Analytical LLC (Kiff), a State-certified laboratory in Davis, California, for total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tert-butyl ether (MTBE); and other oxygenates using Environmental Protection Agency (EPA) Method 8260B.

Arctos, as Tesoro's Authorized Responsible Party for the site, also electronically submitted the groundwater monitoring results to the State Water Resources Control Board (SWRCB). The data were submitted in the State-mandated Electronic Data Format (EDF), in accordance with Assembly Bill 2886 requirements for underground storage tank (UST) sites in California.

Purge-and-Bail Sampling Procedures

The depth to groundwater and total well depth were measured before sampling using an electronic water well sounder. The sequence of well sampling depended on the level of contamination in each well, if known, and was determined before sampling. Sampling occurred beginning at the well with the lowest contaminant concentration and ending at the well with the highest contaminant concentration. Before sampling, at least 3 casing volumes were purged from each monitoring well using a submersible pump. Throughout

purging, pH, conductivity, turbidity, and temperature were measured and recorded for the evacuated groundwater. These measurements were used to confirm that the well was purged sufficiently. Water samples were generally collected after the measurements of pH, conductivity, and temperature had stabilized to within 10 percent of the previous readings. Copies of the well purging and sampling logs are provided in Attachment B.

Sampling was performed with a new 1-1/2-inch-diameter disposable polyethylene bailer suspended from new nylon line. The bailer was equipped with a bottom-release device. Groundwater was collected with the bailer from just below the water surface in each monitoring well. Water samples were collected from the bailers in new 40-milliliter glass bottles provided by the analytical laboratory. The samples were collected so that no headspace was present in each bottle. The preservatives necessary for the analyses performed were provided in the glass bottles by the analytical laboratory.

The collected water samples were placed in sealable plastic bags and packed on ice in a portable ice chest immediately after collection. Samples were delivered within 24 to 48 hours to the analytical laboratory. Additional QA/QC procedures, including the use of sample identification labels and chain-of-custody forms, were followed to track sample collection and delivery.

General Field Quality Assurance/Control (QA/QC) Procedures

Chain-of-Custody Records

Chain-of-custody records were completed before samples were packaged for shipment. One copy of these records was placed in the project file. A second copy accompanied samples during transportation to the laboratory. The individual in the analytical laboratory who accepted responsibility for samples signed and dated the chain-of-custody record.

Equipment Decontamination Procedures

Field equipment was decontaminated between sampling events using the following procedures:

1. Rinsed with water using a brush to remove soil and mud.
2. Washed with non-phosphate detergent and water using a brush.
3. Rinsed with deionized or distilled water.
4. Rinsed again with deionized or distilled water.
5. Air dried.

Personal Decontamination Procedures

At a minimum, field personnel followed the following decontamination procedures:

1. Wore appropriate gloves.
2. Washed hands thoroughly with soap and water.
3. Avoided unnecessary contact with groundwater.

The site health and safety plan was reviewed for site-specific personal decontamination procedures.

Wastewater and Solid Waste Storage and Disposal

Small volumes of used wash and rinse solutions were collected during field work and transported to a central decontamination area. This wastewater was stored in a holding tank. The Project Manager determined the appropriate disposal method for this wastewater. Waste manifests for this quarter are in Attachment G.

Solid wastes such as used personal protective equipment, paper towels, trash bags, and any other solid debris were collected for disposal. Because the sampled groundwater was not a hazardous waste, the solid wastes were disposed with the onsite trash.

Field Investigation Documentation Procedures

Field personnel followed documentation procedures developed for site investigation work. The procedures served to (1) provide a record of the activities performed in the field and (2) permit identification of samples and tracking of their status in the field, during shipment, and at the laboratory. All documentation was recorded with waterproof ink. Groundwater sampling activities were documented on daily field reports and on well purge and sample logs.

Health and Safety

Arctos used a site-specific health and safety plan (HSP) with procedures that were followed by field personnel for equipment safety, medical surveillance, personal protection, air quality monitoring, exposure control, emergency response, and general work practices during field activities. Before beginning work at the site, a site safety meeting was conducted. Field personnel reviewed the HSP and signed the accompanying acknowledgment form before initiating field activities. Field personnel were required to comply with the HSP throughout performance of site assessment activities.

Analytical QA/QC Procedures

Laboratory analytical QA/QC procedures included (1) preparing and analyzing laboratory samples to assess the performance of the analytical laboratory and (2) conducting data validation in accordance with the protocols described below. QC samples prepared by the laboratory included method blanks, matrix spike and matrix spike duplicates, and laboratory control samples.

The laboratory results were reviewed in general accordance with EPA guidelines for data validation. The data validation process included reviewing laboratory results for the following parameters:

- Completeness of the data package
- Compliance with EPA-required holding times
- Agreement of dilution factors with reported detection limits
- Presence or absence of analytes in the method blanks
- Agreement of duplicate samples
- Percent recovery and relative percent difference results for matrix spike and matrix spike duplicate analyses
- Percent recovery results for laboratory control samples.

ATTACHMENT B
FIELD DATA SHEETS

Field Data Sheet

Date: 8/2/2010

Project Name: Tesoro #67076

Project Number: 01LV

Technician: C. Young/R. Holland

Location: Livermore, CA

Global ID : T0600101410

Well ID	Casing Diameter	Total Depth	DTP	DTW	Thickness	Comments
MW-1	4"	54.55	-	34.56	-	
MW-2	4"	54.1	-	35.34	-	
MW-3	4"	52.9	-	34.61	-	missing bolts - install new bolts.
MW-4	2"	46.8	-	35.15	-	not sampled, missing bolts - install new bolts.
MW-5	2"	46.27	-	36.16	-	not sampled
MW-6	2"	47.65	-	37.87	-	
MW-7	2"	46.8	-	34.31	-	not sampled
MW-8	2"	44.5	-	36.08	-	not sampled
MW-9	2"	44.58	-	38	-	not sampled
MW-10	2"	45.1	-	36.12	-	not sampled
MW-11	4"	42.85	-	31.94	-	
DW-1	4"	64.75	-	34.76	-	
DW-2	4"	59.84	-	37.72	-	
DW-3	4"	59.74	-	35.59	-	
DW-4	4"	70.04	-	36.94	-	not sampled
DW-5	4"	59.8	-	37.56	-	
DW-6	4"	60.15	-	38.35	-	
DW-7	4"	65.2	-	37.82	-	
TP-1	2"	43.22	-	33.96	-	not sampled
TP-2	2"	41.21	-	33.57	-	not sampled
VW-2	2"	36.78	-	33.15	-	not sampled
VW-3	2"	36.34	-	34.72	-	not sampled

Groundwater Sampling Form

Project Name:	<u>Tesoro #67076</u>	Project Number:	<u>01LV</u>
Location:	<u>Livermore, CA</u>	Date:	<u>8/3/10</u>
Well Number:	<u>MW-2</u>	Well Integrity:	<u>Good</u>
Technician:	<u>C.Young / R. Holland</u>	Ambient Conditions:	<u>Sunny</u>

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth to Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2				0.17	
3	-	=	X	0.38	=
4	54.1	35.34	18.76	0.66	12.38
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: Yes

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	Int.	9:55	899	-	-	24.1	6.89	66.7
1	13	10:00	968	-	-	28.3	7.55	67.1
2	26	10:04	918	-	-	21.5	7.12	68.8
3	39	10:07	916	-	-	27	7.01	68.7
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery: Depth to GW (ft.) (I) Initially <u> 35.34 </u> (P) After Purging <u> 45.5 </u> P- 0.8(P-I) = <u> 37.37 </u> 80% Recovery (S) Before Sampling <u> 37 </u> Sampled 80% - 100% <u> Yes </u>	Sample Containers: <table border="0" style="width: 100%;"> <tr> <td style="width: 60%;"></td> <td style="width: 10%; text-align: center;">No.</td> <td style="width: 30%; text-align: center;">Preservation</td> </tr> <tr> <td>500 ml polypropylene</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>1 liter(L), amber glass</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>40ml VOA</td> <td style="text-align: center;"><u> 3 </u></td> <td style="text-align: center;"><u> HCL </u></td> </tr> <tr> <td>250 ml glass</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>125 ml polypropylene</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> </table>		No.	Preservation	500 ml polypropylene	_____	_____	1 liter(L), amber glass	_____	_____	40ml VOA	<u> 3 </u>	<u> HCL </u>	250 ml glass	_____	_____	125 ml polypropylene	_____	_____
	No.	Preservation																	
500 ml polypropylene	_____	_____																	
1 liter(L), amber glass	_____	_____																	
40ml VOA	<u> 3 </u>	<u> HCL </u>																	
250 ml glass	_____	_____																	
125 ml polypropylene	_____	_____																	

Sample Date : 8/3/10 Time: 10:18 Turbidity (NTU): 186
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: _____

Groundwater Sampling Form

Project Name:	<u>Tesoro #67076</u>	Project Number:	<u>01LV</u>
Location:	<u>Livermore, CA</u>	Date:	<u>8/3/10</u>
Well Number:	<u>MW-6</u>	Well Integrity:	<u>Good</u>
Technician:	<u>C.Young / R. Holland</u>	Ambient Conditions:	<u>Sunny</u>

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth To Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2	47.65	37.87	9.78	0.17	1.66
3	-	=	X	0.38	=
4				0.66	
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: Yes

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	Int.	11:59	1089	-	-	22.7	7.26	75
1	2	12:05	1182	-	-	16.1	7.19	71.8
2	4	12:07	1164	-	-	17.5	7.14	70.2
3	6	12:10	1159	-	-	16.6	7.07	70
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery: Depth to GW (ft.) (I) Initially <u>37.87</u> (P) After Purging <u>39.2</u> P- 0.8(P-I) = <u>38.13</u> 80% Recovery (S) Before Sampling <u>38.13</u> Sampled 80% - 100% <u>Yes</u>	Sample Containers: 500 ml polypropylene 1 liter(L), amber glass 40ml VOA <u>3</u> 250 ml glass 125 ml polypropylene
--	---

Sample Date : 8/3/10 Time: 12:21 Turbidity (NTU): 112
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: _____

Groundwater Sampling Form

Project Name:	<u>Tesoro #67076</u>	Project Number:	<u>01LV</u>
Location:	<u>Livermore, CA</u>	Date:	<u>8/3/10</u>
Well Number:	<u>MW-11</u>	Well Integrity:	<u>Good</u>
Technician:	<u>C.Young / R. Holland</u>	Ambient Conditions:	<u>Partly Cloudy</u>

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth to Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2				0.17	
3	-	=	X	0.38	=
4	42.85	31.94	10.91	0.66	7.2
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: Yes

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	<u>Int.</u>	<u>8:53</u>	<u>1298</u>	<u>-</u>	<u>-</u>	<u>31.2</u>	<u>6.74</u>	<u>64.7</u>
1	<u>8</u>	<u>8:55</u>	<u>1324</u>	<u>-</u>	<u>-</u>	<u>20.1</u>	<u>6.89</u>	<u>67.3</u>
2	<u>16</u>	<u>8:58</u>	<u>1380</u>	<u>-</u>	<u>-</u>	<u>25.02</u>	<u>6.91</u>	<u>67.7</u>
3								
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery: Depth to GW (ft.) (I) Initially <u>31.94</u> (P) After Purging <u>42.85</u> P- 0.8(P-I) = <u>34.12</u> 80% Recovery (S) Before Sampling <u>34.12</u> Sampled 80% - 100% <u>Yes</u>	Sample Containers: <table border="0" style="width: 100%;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">No.</td> <td style="width: 20%; text-align: center;">Preservation</td> </tr> <tr> <td>500 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>1 liter(L), amber glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>40ml VOA</td> <td style="text-align: center;"><u>3</u></td> <td style="text-align: center;"><u>HCL</u></td> </tr> <tr> <td>250 ml glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>125 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>		No.	Preservation	500 ml polypropylene			1 liter(L), amber glass			40ml VOA	<u>3</u>	<u>HCL</u>	250 ml glass			125 ml polypropylene		
	No.	Preservation																	
500 ml polypropylene																			
1 liter(L), amber glass																			
40ml VOA	<u>3</u>	<u>HCL</u>																	
250 ml glass																			
125 ml polypropylene																			

Sample Date : 8/3/10 Time: 9:11 Turbidity (NTU): 173
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: Well Dry @ 16 Gallons

Groundwater Sampling Form

Project Name:	Tesoro #67076	Project Number:	01LV
Location:	Livermore, CA	Date:	8/2/10
Well Number:	DW-2	Well Integrity:	Good
Technician:	C.Young / R. Holland	Ambient Conditions:	Sunny

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth To Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2	-	=	X	0.17	=
3	-	=	X	0.38	=
4	59.84	37.72	22.12	0.66	14.59
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: Yes

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	Int.	17:58	843	-	-	38.8	6.95	73.6
1	15	18:02	460	-	-	35.4	6.96	70.7
2	30	18:06	780	-	-	33.3	6.99	70.5
3	45	18:10	417	-	-	30.9	6.98	70.2
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

Depth to GW (ft.)

(I) Initially	37.72	
(P) After Purging	42.25	
P- 0.8(P-I) =	38.62	80% Recovery
(S) Before Sampling	38.5	
Sampled 80% - 100%	Yes	

Sample Containers:

	No.	Preservation
500 ml polypropylene	_____	_____
1 liter(L), amber glass	_____	_____
40ml VOA	3	HCL
250 ml glass	_____	_____
125 ml polypropylene	_____	_____

Sample Date : 8/2/10 Time: 18:20 Turbidity (NTU): 21.1
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: _____

Groundwater Sampling Form

Project Name:	Tesoro #67076	Project Number:	01LV
Location:	Livermore, CA	Date:	8/2/10
Well Number:	DW-3	Well Integrity:	Good
Technician:	C.Young / R. Holland	Ambient Conditions:	Sunny

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth To Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2				0.17	
3	-	=	X	0.38	=
4	59.74	35.59	24.15	0.66	15.93
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: Yes

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	Int.	17:30	440	-	-	45.2	6.9	80.9
1	16	17:34	785	-	-	42.1	6.88	73.7
2	32	17:37	407	-	-	31.7	6.86	72.3
3	48	17:41	777	-	-	34.6	6.9	72.8
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery: Depth to GW (ft.) (I) Initially <u> 35.59 </u> (P) After Purging <u> 44.6 </u> P- 0.8(P-I) = <u> 37.39 </u> 80% Recovery (S) Before Sampling <u> 37.39 </u> Sampled 80% - 100% <u> Yes </u>	Sample Containers: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">No.</td> <td style="width: 20%; text-align: center;">Preservation</td> </tr> <tr> <td>500 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>1 liter(L), amber glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>40ml VOA</td> <td style="text-align: center;">3</td> <td style="text-align: center;">HCL</td> </tr> <tr> <td>250 ml glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>125 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>		No.	Preservation	500 ml polypropylene			1 liter(L), amber glass			40ml VOA	3	HCL	250 ml glass			125 ml polypropylene		
	No.	Preservation																	
500 ml polypropylene																			
1 liter(L), amber glass																			
40ml VOA	3	HCL																	
250 ml glass																			
125 ml polypropylene																			

Sample Date : 8/2/10 Time: 17:50 Turbidity (NTU): 20.1
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: _____

Groundwater Sampling Form

Project Name:	Tesoro #67076	Project Number:	01LV
Location:	Livermore, CA	Date:	8/2/10
Well Number:	DW-5	Well Integrity:	Good
Technician:	C.Young / R. Holland	Ambient Conditions:	Sunny

Well Volume Calculation					
Well Casing Diameter (in.)	Total Well Depth	Depth To Ground-water (GW)	Linear Feet of GW	Gallons Per Linear Foot	1 Well Volume (gal.)
2				0.17	
3	-	=	X	0.38	=
4	59.7	37.56	22.24	0.66	14.67
4.5	-	=	X	0.83	=
6	-	=	X	1.5	=

Groundwater Surface Inspection

Floating Product (ft)(in.): No
 Sheen/Iridescence: No
 Odor: No

Groundwater Purging Purge Method

Submersible Pump Honda Pump Hand Bail Grab Sample

Volumes Purged	Volume Purge (gal.)	Time	Conductivity (uS/cm)	tds (ppm)	ORP	DO %	pH	Temp.(°F)
0	Int.	16:44	430	-	-	19.6	6.9	77.6
1	15	16:50	825	-	-	26	6.87	72.6
2	30	16:54	829	-	-	28.5	6.82	71.6
3	45	16:59	453	-	-	32.2	6.81	71
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery: Depth to GW (ft.) (I) Initially <u> 37.56 </u> (P) After Purging <u> 44.3 </u> P- 0.8(P-I) = <u> 38.9 </u> 80% Recovery (S) Before Sampling <u> 38.9 </u> Sampled 80% - 100% <u> Yes </u>	Sample Containers: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">No.</td> <td style="width: 20%; text-align: center;">Preservation</td> </tr> <tr> <td>500 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>1 liter(L), amber glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>40ml VOA</td> <td style="text-align: center;">3</td> <td style="text-align: center;">HCL</td> </tr> <tr> <td>250 ml glass</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>125 ml polypropylene</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>		No.	Preservation	500 ml polypropylene			1 liter(L), amber glass			40ml VOA	3	HCL	250 ml glass			125 ml polypropylene		
	No.	Preservation																	
500 ml polypropylene																			
1 liter(L), amber glass																			
40ml VOA	3	HCL																	
250 ml glass																			
125 ml polypropylene																			

Sample Date : 8/2/10 Time: 17:06 Turbidity (NTU): >1000
 Sampling Equipment : Disposable Bailer
 Calibrate Date: 8/2/10

Comments: _____

ATTACHMENT C
SOIL VAPOR SAMPLING QA/QC PROCEDURES

ATTACHMENT C

SOIL VAPOR SAMPLING QA/QC PROCEDURES

Vapor Sample Collection

Vapor samples were collected using a vacuum chamber with a Tedlar bag. Sample lines were 1/4-inch-diameter Teflon or new vinyl tubing with a length not exceeding 10 feet. Generally, the length of tubing was the minimum necessary to connect the sample source to the sampling apparatus. Samples bags were made of Tedlar film with a minimum thickness of 0.002 inches.

An airtight rigid vacuum chamber was used when the bags were filled by applying vacuum. The chamber was opaque (to decrease sample degradation due to ultraviolet light) except for a small window that allowed the sampler to check the condition of the bag during sampling. The chamber had the necessary couplings to connect with sample bags, sample line, and vacuum line and a flow control valve to shut off the flow to the bag. The chamber was also equipped with a vacuum relief valve to protect both the bag and container. An oil-less vacuum pump with a minimum capacity of 2 liters per minute was used. If it was necessary to observe the sampling rate, a rotameter (or equivalent) flow meter was used with a range of 0.05 to 1.0 liter per minute. All connections were leak checked before collecting gas samples. To leak check the connections, a Tedlar bag was placed inside the rigid container with the valve on the bag closed. The vacuum pump was turned on and the vacuum monitored until 15 inches of water column (in. wc) was maintained.

The following procedures were followed when collecting a vapor sample for laboratory analysis:

1. Assemble the sample train and leak check the connections.
2. Place an open Tedlar bag inside the vacuum chamber and connect both the Tedlar bag and vacuum line to the sample train.
3. Turn on the vacuum pump and open the desired sample port or wellhead valve.
4. Wait for the sample line to be purged of 3 to 5 casing volumes.
5. Switch the vacuum line from the sample train to the chamber and allow the chamber vacuum to inflate the Tedlar bag.
6. Fill the Tedlar bag to approximately 80 percent capacity.
7. Close the sample port and turn off the vacuum pump.

8. Release the vacuum on the chamber by disconnecting the vacuum line.
9. Open the chamber and close the Tedlar bag.

Once collected, vapor samples were stored and shipped in an opaque container free of sharp edges, metal closures, or staples to protect the integrity of the Tedlar bag. Vapor samples collected in Tedlar bags were analyzed by a State-certified analytical laboratory within 72 hours of collection.

Analytical Plan

The vapor samples were submitted to Kiff Analytical LLC (Kiff), a State-certified laboratory in Davis, California, and analyzed for the following parameters:

- Total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tert-butyl ether (MTBE); and other oxygenates using Environmental Protection Agency (EPA) Method 8260B
- Fixed gases (oxygen, nitrogen, methane, and carbon dioxide) by American Society for Testing and Materials (ASTM) Method D1946 or equivalent.

Analytical QA/QC Procedures

Laboratory analytical QA/QC procedures are described in Attachment A.

ATTACHMENT D
HISTORICAL WELL AND GROUNDWATER ELEVATIONS

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-1	6/1/93	37.50	474.29	436.79
	6/22/93	38.46		435.83
	10/6/93	42.22		432.07
	1/13/94	34.52		439.77
	3/30/94	31.93		442.36
	4/25/94	33.49		440.80
	8/12/94	41.03		433.26
	12/14/94	38.63		435.66
	2/10/95	30.80		443.49
	6/15/95	25.46		448.83
	9/26/95	31.05		443.24
	12/15/95	28.11		446.18
	3/21/96	17.67		456.62
	6/13/96	22.86		451.43
	9/16/96	30.04		444.25
	12/2/96	26.74		447.55
	3/7/97	20.84		453.45
	6/12/97	28.71		445.58
	9/29/97	33.91		440.38
	12/1/97	34.88		439.41
	3/19/98	19.83		454.46
	5/29/98	21.57		452.72
	9/15/98	31.68		442.61
	11/30/98	36.80		437.49
	1/17/99	30.02		444.27
	6/10/99	29.30		444.99
	9/7/99	31.41		442.88
	12/13/99	32.95		441.34
	3/13/00	25.74		448.55
	6/12/00	28.24		446.05
11/10/00	30.56	443.73		
12/31/00	31.71	442.58		
3/27/01	30.43	443.86		
6/30/01	36.61	437.68		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-1	9/26/01	45.10	474.29	429.19
(cont.)	12/18/01	39.39		434.90
	3/18/02	38.24		436.05
	8/21/02	36.71		437.58
	12/3/02	36.85		437.44
	3/4/03	33.72		440.57
	6/10/03	31.31		442.98
	9/9/03	35.05		439.24
	12/23/03	30.15		444.14
	3/23/04	26.61		447.68
	5/10/04	30.31		443.98
	8/4/04	34.77		439.52
	11/4/04	33.93		440.36
	1/12/05	27.82		446.47
	5/2/05	24.87		449.42
	7/19/05	29.26		445.03
	11/21/05	31.15		443.14
	2/9/06	26.24		448.05
	5/16/06	24.87		449.42
	8/9/06	31.64		442.65
	11/8/06	31.16		443.13
	2/14/07	30.00		444.29
	5/17/07	33.75		440.54
	8/2/07	40.00		434.29
	11/12/07	48.55		425.74
	2/14/08	34.74		439.55
	5/8/08	36.15		438.14
	7/23/08	45.76		428.53
	10/13/08	51.00	423.29	
	2/11/09	48.69	425.60	
	4/27/09	41.90	432.39	
	8/4/09	51.44	422.85	
	12/8/09	39.87	434.42	
	2/11/10	35.20	439.09	

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-1	5/3/10	31.23	474.29	443.06
(cont.)	8/2/10	34.56	474.21 ^(c)	439.65
MW-2	6/1/93	38.02	472.98	434.96
	6/22/93	39.07		433.91
	10/6/93	43.72		429.26
	1/13/94	35.85		437.13
	3/30/94	32.82		440.16
	4/25/94	34.76		438.22
	8/12/94	44.33		428.65
	12/14/94	40.00		432.98
	2/10/95	32.16		440.82
	6/15/95	25.93		447.05
	9/26/95	32.42		440.56
	12/15/95	29.41		443.57
	3/21/96	17.47		455.51
	6/13/96	23.69		449.29
	9/16/96	31.24		441.74
	12/2/96	26.90		446.08
	3/7/97	21.33		451.65
	6/12/97	29.94		443.04
	9/29/97	34.22		438.76
	12/1/97	35.94		437.04
	3/19/98	20.34		452.64
	5/29/98	22.63		450.35
	9/15/98	32.30		440.68
	11/30/98	36.90		436.08
	1/17/99	30.17		442.81
	6/10/99	29.98		443.00
	9/7/99	31.85		441.13
	12/13/99	33.72		439.26
	3/13/00	26.54		446.44
	6/12/00	28.44		444.54
	11/10/00	31.31		441.67
	12/31/00	32.68		440.30

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-2 (cont.)	3/27/01	30.81	472.98	442.17
	6/30/01	37.58		435.40
	9/26/01	44.97		428.01
	12/18/01	40.67		432.31
	3/18/02	38.94		434.04
	6/5/02	36.45		436.53
	8/21/02	37.15		435.83
	12/3/02	36.76		436.22
	3/4/03	33.60		439.38
	6/10/03	32.89		440.09
	9/9/03	35.45		437.53
	12/23/03	31.79		441.19
	3/23/04	28.25		444.73
	5/10/04	30.91		442.07
	8/4/04	35.36		437.62
	11/4/04	34.92		438.06
	1/12/05	29.46		443.52
	5/2/05	25.61		447.37
	7/19/05	30.11		442.87
	11/21/05	32.04		440.94
	2/9/06	27.11		445.87
	5/17/06	25.18		447.80
	8/9/06	32.69		440.29
	11/8/06	33.21		439.77
	2/14/07	31.27		441.71
	5/17/07	34.40		438.58
	8/2/07	41.23		431.75
11/12/07	48.22	424.76		
2/14/08	36.31	436.67		
5/8/08	36.70	436.28		
7/23/08	45.78	427.20		
10/13/08	51.30	421.68		
2/11/09	48.90	424.08		
4/27/09	42.62	430.36		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-2 (cont.)	8/4/09	51.83	472.98	421.15
	12/8/09	40.82		432.16
	2/11/10	36.54		436.44
	5/3/10	32.44		440.54
	8/2/10	35.34		437.64
MW-3	6/1/93	36.18	473.37	437.19
	6/22/93	37.11		436.26
	10/6/93	41.15		432.22
	1/13/94	33.95		439.42
	3/30/94	30.97		442.40
	4/25/94	32.46		440.91
	8/12/94	41.72		431.65
	12/14/94	37.62		435.75
	2/10/95	29.96		443.41
	6/15/95	23.66		449.71
	9/26/95	29.62		443.75
	12/15/95	27.10		446.27
	3/21/96	15.85		457.52
	6/13/96	21.31		452.06
	9/16/96	28.62		444.75
	12/2/96	25.55		447.82
	3/7/97	19.77		453.60
	6/12/97	27.67		445.70
	9/29/97	29.60		443.77
	12/1/97	33.37		440.00
	3/19/98	18.76		454.61
	5/29/98	20.64		452.73
	9/15/98	30.70		442.67
	11/30/98	34.96		438.41
1/17/99	28.81	444.56		
6/10/99	28.10	445.27		
9/7/99	30.38	442.99		
12/13/99	31.46	441.91		
3/13/00	24.28	449.09		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-3 (cont.)	6/12/00	26.80	473.37	446.57
	11/10/00	29.47		443.90
	12/31/00	31.38		441.99
	3/27/01	29.94		443.43
	6/30/01	37.54		435.83
	9/26/01	45.17		428.20
	12/18/01	39.41		433.96
	3/18/02	37.73		435.64
	6/5/02	35.35		438.02
	8/21/02	36.21		437.16
	12/3/02	35.62		437.75
	3/4/03	32.75		440.62
	6/10/03	31.26		442.11
	9/9/03	34.72		438.65
	12/23/03	30.47		442.90
	3/23/04	26.67		446.70
	5/10/04	30.25		443.12
	8/4/04	34.70		438.67
	11/4/04	33.94		439.43
	1/12/05	28.21		445.16
	5/2/05	24.56		448.81
	7/19/05	29.39		443.98
	11/21/05	31.30		442.07
	2/9/06	26.21		447.16
	5/16/06	24.36		449.01
	8/9/06	31.90		441.47
	11/8/06	31.30		442.07
	2/14/07	30.20		443.17
	5/17/07	33.64		439.73
	8/2/07	41.74		431.63
11/12/07	47.41	425.96		
2/14/08	34.73	438.64		
5/8/08	35.60	437.77		
7/23/08	45.00	428.37		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-3 (cont.)	10/13/08	50.70	473.37	422.67
	2/11/09	47.81		425.56
	4/27/09	41.18		432.19
	8/4/09	51.89		421.48
	12/8/09	39.50		433.87
	2/11/10	35.19		438.18
	5/3/10	31.39		441.98
	8/2/10	34.61		438.76
MW-4	3/30/94	31.56	473.64	442.08
	4/25/94	32.73		440.91
	8/12/94	41.61		432.03
	12/14/94	38.11		435.53
	2/10/95	30.50		443.14
	6/15/95	23.63		450.01
	9/26/95	29.70		443.94
	12/15/95	27.56		446.08
	3/21/96	15.63		458.01
	6/13/96	21.07		452.57
	9/16/96	28.99		444.65
	12/2/96	26.04		447.60
	3/7/97	19.69		453.95
	6/12/97	28.04		445.60
	9/29/97	29.91		443.73
	12/1/97	33.88		439.76
	3/19/98	18.67		454.97
	5/29/98	20.16		453.48
	9/15/98	30.46		443.18
	11/30/98	34.50		439.14
1/17/99	28.30	445.34		
6/10/99	27.60	446.04		
9/7/99	30.79	442.85		
12/13/99	31.60	442.04		
3/13/00	24.35	449.29		
6/12/00	26.91	446.73		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-4 (cont.)	11/10/00	29.71	473.64	443.93
	12/31/00	31.79		441.85
	3/27/01	29.98		443.66
	6/30/01	36.88		436.76
	9/26/01	43.87		429.77
	12/18/01	39.30		434.34
	3/18/02	37.75		435.89
	6/5/02	35.68		437.96
	8/21/02	36.58		437.06
	12/3/02	35.90		437.74
	3/4/03	32.73		440.91
	6/10/03	31.20		442.44
	9/9/03	34.64		439.00
	12/23/03	31.30		442.34
	3/23/04	26.71		446.93
	5/10/04	30.33		443.31
	8/4/04	34.87		438.77
	11/4/04	34.28		439.36
	1/12/05	28.67		444.97
	5/2/05	24.46		449.18
	7/19/05	29.36		444.28
	11/21/05	31.80		441.84
	2/9/06	26.34		447.30
	5/16/06	24.30		449.34
	8/9/06	32.05		441.59
	11/8/06	32.85		440.79
	2/14/07	30.46		443.18
	5/17/07	33.92		439.72
	8/2/07	40.68		432.96
	11/12/07	DRY ^(d)		--
2/14/08	34.53	439.11		
5/8/08	35.55	438.09		
7/23/08	43.87	429.77		
10/13/08	DRY	--		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-4 (cont.)	2/11/09	DRY	473.64	--
	4/27/09	40.64		433.00
	8/4/09	DRY		--
	12/8/09	39.46		434.18
	2/11/10	35.31		438.33
	5/3/10	31.55		442.09
	8/2/10	35.15		438.49
MW-5	3/30/94	32.07	472.67	440.60
	4/25/94	33.65		439.02
	8/12/94	42.73		429.94
	12/14/94	38.89		433.78
	2/10/95	31.44		441.23
	6/15/95	24.99		447.68
	9/26/95	30.20		442.47
	12/15/95	28.56		444.11
	3/21/96	16.82		455.85
	6/13/96	22.61		450.06
	9/16/96	29.78		442.89
	12/2/96	26.51		446.16
	3/7/97	21.91		450.76
	9/29/97	31.74		440.93
	12/1/97	34.05		438.62
	3/19/98	20.93		451.74
	5/29/98	21.30		451.37
	9/15/98	31.32		441.35
	11/30/98	35.44		437.23
	1/17/99	29.59		443.08
	6/10/99	28.05		444.62
	9/7/99	31.11		441.56
	12/13/99	32.66		440.01
3/13/00	25.87	446.80		
6/12/00	28.15	444.52		
11/10/00	30.05	442.62		
12/31/00	31.81	440.86		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-5 (cont.)	3/27/01	30.57	472.67	442.10
	6/30/01	37.24		435.43
	9/26/01	44.53		428.14
	12/18/01	40.65		432.02
	3/18/02	38.75		433.92
	6/5/02	36.21		436.46
	8/21/02	36.76		435.91
	12/3/02	36.12		436.55
	3/4/03	32.90		439.77
	6/10/03	33.04		439.63
	9/9/03	34.20		438.47
	12/23/03	31.38		441.29
	3/23/04	27.51		445.16
	5/10/04	31.12		441.55
	8/4/04	35.09		437.58
	11/4/04	34.34		438.33
	1/12/05	29.19		443.48
	5/2/05	25.31		447.36
	7/19/05	30.49		442.18
	11/21/05	32.35		440.32
	2/9/06	27.19		445.48
	5/16/06	25.30		447.37
	8/9/06	32.68		439.99
	11/8/06	32.22		440.45
	2/14/07	34.00		438.67
	5/17/07	34.29		438.38
	8/2/07	41.72		430.95
11/12/07	DRY	--		
2/14/08	35.66	437.01		
5/8/08	36.60	436.07		
7/23/08	DRY	--		
10/13/08	DRY	--		
2/11/09	DRY	--		
4/27/09	42.50	430.17		

TABLE D-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
MW-5 (cont.)	8/4/09	DRY	472.67	--
	12/8/09	39.92		432.75
	2/11/10	36.62		436.05
	5/3/10	32.89		439.78
	8/2/10	36.16		436.51
MW-6	3/30/94	33.38	471.93	438.55
	4/25/94	35.49		436.44
	8/12/94	45.14		426.79
	12/14/94	40.99		430.94
	2/10/95	33.34		438.59
	6/15/95	26.88		445.05
	9/26/95	33.55		438.38
	12/15/95	30.32		441.61
	3/21/96	18.89		453.04
	6/13/96	24.62		447.31
	9/16/96	32.64		439.29
	12/2/96	27.42		444.51
	3/7/97	22.13		449.80
	6/12/97	31.02		440.91
	9/29/97	35.77		436.16
	12/1/97	37.14		434.79
	3/19/98	21.10		450.83
	5/29/98	23.26		448.67
	9/15/98	33.50		438.43
	11/30/98	38.73		433.20
	1/17/99	32.05		439.88
	6/10/99	31.44		440.49
	9/7/99	33.94		437.99
12/13/99	35.84	436.09		
3/13/00	28.45	443.48		
6/12/00	30.52	441.41		
11/10/00	32.99	438.94		
12/31/00	34.95	436.98		
3/27/01	32.72	439.21		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-6 (cont.)	6/30/01	39.86	471.93	432.07
	9/26/01	DRY		--
	12/18/01	43.36		428.57
	3/18/02	41.29		430.64
	6/5/02	38.85		433.08
	8/21/02	39.02		432.91
	12/3/02	38.76		433.17
	3/4/03	35.13		436.80
	6/10/03	34.15		437.78
	9/9/03	37.66		434.27
	12/23/03	33.43		438.50
	3/23/04	29.96		441.97
	5/10/04	32.98		438.95
	8/4/04	37.02		434.91
	11/4/04	37.03		434.90
	1/12/05	32.01		439.92
	5/2/05	27.30		444.63
	7/19/05	32.27		439.66
	11/21/05	33.23		438.70
	2/9/06	29.07		442.86
	5/17/06	27.23		444.70
	8/9/06	35.22		436.71
	11/8/06	33.41		438.52
	2/14/07	33.43		438.50
	5/17/07	36.50		435.43
	8/2/07	42.24		429.69
	11/12/07	DRY		--
	2/14/08	38.67		433.26
	5/8/08	38.50		433.43
	7/23/08	DRY		--
10/13/08	DRY	--		
2/11/09	DRY	--		
4/27/09	44.87	427.06		
8/4/09	DRY	--		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-6 (cont.)	12/8/09	43.02	471.93	428.91
	2/11/10	38.89		433.04
	5/3/10	34.56		437.37
	8/2/10	37.87		434.06
MW-7	3/30/94	31.98	472.33	440.35
	4/25/94	33.56		438.77
	8/12/94	43.35		428.98
	12/14/94	39.34		432.99
	2/10/95	32.11		440.22
	6/15/95	25.51		446.82
	9/26/95	31.43		440.90
	12/15/95	28.97		443.36
	3/21/96	17.36		454.97
	6/13/96	23.47		448.86
	9/16/96	31.35		440.98
	12/2/96	27.11		445.22
	3/7/97	21.33		451.00
	6/12/97	29.90		442.43
	9/29/97	34.37		437.96
	12/1/97	36.46		435.87
	3/19/98	20.33		452.00
	5/29/98	22.30		450.03
	9/15/98	32.54		439.79
	11/30/98	37.96		434.37
	1/17/99	31.04		441.29
	6/10/99	29.89		442.44
	9/7/99	32.38		439.95
	12/13/99	33.98		438.35
3/13/00	27.09	445.24		
6/12/00	28.76	443.57		
11/10/00	31.54	440.79		
12/31/00	32.76	439.57		
3/27/01	30.97	441.36		
6/30/01	37.50	434.83		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	9/26/01	45.11	472.33	427.22
	12/18/01	41.13		431.20
	3/18/02	39.22		433.11
	6/5/02	36.55		435.78
	8/21/02	36.81		435.52
	12/3/02	36.52		435.81
	3/4/03	32.60		439.73
	6/10/03	31.33		441.00
	9/9/03	34.71		437.62
	12/23/03	30.80		441.53
	3/23/04	26.41		445.92
	5/10/04	29.86		442.47
	8/4/04	34.06		438.27
	11/4/04	34.12		438.21
	1/12/05	28.83		443.50
	5/2/05	24.66		447.67
	7/19/05	29.07		443.26
	11/21/05	30.42		441.91
	2/9/06	26.15		446.18
	5/16/06	24.44		447.89
	8/9/06	31.77		440.56
	11/8/06	31.14		441.19
	2/14/07	30.39		441.94
	5/17/07	33.31		439.02
	8/2/07	37.09		435.24
	11/12/07	DRY		--
	2/14/08	36.51		435.82
	5/8/08	36.00		436.33
	7/23/08	44.42		427.91
	10/13/08	DRY		--
2/11/09	DRY	--		
4/27/09	41.80	430.53		
8/4/09	DRY	--		
12/17/09	39.26	433.07		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	2/11/10	36.18	472.33	436.15
	5/3/10	31.80		440.53
	8/2/10	34.31		438.02
MW-8	12/23/03	32.01	471.18	439.17
	3/23/04	28.50		442.68
	5/10/04	31.44		439.74
	8/4/04	35.11		436.07
	11/4/04	34.77		436.41
	1/12/05	29.66		441.52
	5/2/05	25.91		445.27
	7/19/05	30.56		440.62
	11/21/05	32.48		438.70
	2/9/06	27.40		443.78
	5/16/06	25.60		445.58
	8/9/06	32.77		438.41
	11/8/06	32.10		439.08
	2/14/07	30.94		440.24
	5/17/07	34.14		437.04
	8/2/07	41.24		429.94
	11/12/07	DRY		--
	2/14/08	35.55		435.63
	5/8/08	36.64		434.54
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
8/4/09	DRY	--		
12/17/09	39.92	431.26		
2/11/10	36.72	434.46		
5/3/10	32.81	438.37		
8/2/10	36.08	435.10		
MW-9	12/23/03	34.03	470.78	436.75
	3/23/04	30.01		440.77
	5/10/04	33.61		437.17

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-9 (cont.)	8/4/04	37.47	470.78	433.31
	11/4/04	37.44		433.34
	5/2/05	27.73		443.05
	7/19/05	32.90		437.88
	11/21/05	34.15		436.63
	2/9/06	29.44		441.34
	5/16/06	27.50		443.28
	8/9/06	35.85		434.93
	11/8/06	34.18		436.60
	2/14/07	34.00		436.78
	5/17/07	36.88		433.90
	8/2/07	44.11		426.67
	11/12/07	DRY		--
	2/14/08	39.32		431.46
	5/8/08	38.90		431.88
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	43.79		426.99
	8/4/09	DRY		--
12/8/09	43.61	427.17		
2/11/10	39.48	431.30		
5/3/10	34.96	435.82		
8/2/10	38.00	432.78		
MW-10	12/23/03	33.80	471.63	437.83
	3/23/04	28.68		442.95
	5/10/04	32.15		439.48
	8/4/04	36.40		435.23
	11/4/04	36.21		435.42
	1/12/05	31.64		439.99
	5/2/05	27.01		444.62
	7/19/05	31.59		440.04
	11/21/05	32.96		438.67
	2/9/06	28.56		443.07

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-10 (cont.)	5/16/06	26.83	471.63	444.80
	8/9/06	34.37		437.26
	11/8/06	33.41		438.22
	2/14/07	32.81		438.82
	5/17/07	35.85		435.78
	8/2/07	43.46		428.17
	11/12/07	DRY		--
	2/14/08	39.71		431.92
	5/8/08	37.55		434.08
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	45.10		426.53
	8/4/09	44.52		427.11
	12/8/09	42.80		428.83
	2/11/10	39.74		431.89
5/3/10	33.97	437.66		
8/2/10	36.12	435.51		
MW-11	12/16/08	DRY	473.26	--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	40.25		433.01
	2/17/10	35.24		438.02
	5/3/10	31.36		441.90
	8/2/10	31.94		472.96 ^(c)
VW-2	8/4/04	34.13	473.28	439.15
	11/4/04	34.75		438.53
	1/12/05	29.35		443.93
	5/2/05	25.34		447.94
	7/19/05	29.76		443.52
	11/21/05	31.81		441.47
	2/9/06	27.21		446.07
	5/17/06	25.26		448.02

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
VW-2 (cont.)	8/9/06	31.74	473.28	441.54
	11/8/06	33.52		439.76
	2/14/07	30.77		442.51
	5/17/07	33.17		440.11
	8/2/07	36.33		436.95
	11/12/07	DRY		--
	2/14/08	35.55		437.73
	5/8/08	35.31		437.97
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	DRY		--
	2/11/10	NM ^(e)		--
	5/3/10	31.84	472.57 ^(c)	441.44
8/2/10	33.15	439.42		
VW-3	8/4/04	32.89	474.38	441.49
	11/4/04	34.78		439.60
	1/12/05	29.51		444.87
	5/2/05	24.79		449.59
	7/19/05	28.91		445.47
	11/21/05	31.07		443.31
	2/9/06	26.60		447.78
	5/16/06	24.19		450.19
	8/9/06	30.53		443.85
	11/8/06	31.62		442.76
	2/14/07	30.48		443.90
	5/17/07	31.70		442.68
	8/2/07	35.55		438.83
	11/12/07	DRY		--
	2/14/08	DRY		--
	5/8/08	34.80		439.58
7/23/08	DRY	--		

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
VW-3 (cont.)	10/13/08	DRY	474.38	--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	DRY		--
	2/11/10	DRY		--
	5/3/10	31.85		442.53
	8/2/10	34.72		439.66
TP-1	7/19/05	29.91	472.82	442.91
	11/21/05	32.28		440.54
	2/9/06	28.02		444.80
	5/17/06	25.18		447.64
	8/9/06	32.81		440.01
	11/8/06	32.02		440.80
	2/14/07	33.59		439.23
	5/17/07	33.52		439.30
	8/2/07	40.30		432.52
	11/12/07	DRY		--
	2/14/08	36.17		436.65
	5/8/08	36.17		436.65
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	41.39		431.43
	2/17/10	36.15		436.67
	5/3/10	32.32	440.50	
8/2/10	33.96	472.64 ^(c)	438.68	
TP-2	7/19/05	29.67	472.93	443.26
	11/21/05	31.43		441.50
	2/9/06	27.27		445.66
	5/17/06	25.00		447.93
	8/9/06	31.74		441.19

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
TP-2 (cont.)	11/8/06	32.80	472.93	440.13
	2/14/07	30.32		442.61
	5/17/07	33.28		439.65
	8/2/07	39.35		433.58
	11/12/07	DRY		--
	2/14/08	35.62		437.31
	5/8/08	36.62		436.31
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	40.08		432.85
	2/17/10	35.48		437.45
	5/3/10	31.85	441.08	
8/2/10	33.57	472.78 ^(c)	439.21	
DW-1	5/22/08	37.30	472.85	435.55
	7/23/08	45.55		427.30
	10/13/08	51.40		421.45
	2/11/09	48.28		424.57
	4/27/09	41.74		431.11
	8/4/09	52.22		420.63
	12/8/09	39.79		433.06
	2/11/10	35.57		437.28
	5/3/10	31.70		441.15
	8/2/10	34.76		438.09
DW-2	5/22/08	39.80	471.61	431.81
	7/23/08	48.25		423.36
	10/13/08	53.40		418.21
	2/11/09	51.50		420.11
	4/27/09	44.71		426.90
	8/4/09	54.67		416.94
	12/8/09	42.88		428.73
	2/11/10	38.63		432.98

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
DW-2 (cont.)	5/3/10	34.46	471.61	437.15
	8/2/10	37.72		433.89
DW-3	5/22/08	40.20	470.33	430.13
	7/23/08	49.09		421.24
	10/13/08	54.62		415.71
	2/11/09	51.96		418.37
	4/27/09	45.17		425.16
	8/4/09	56.32		414.01
	12/8/09	42.92		427.41
	2/11/10	38.75		431.58
	5/3/10	34.51		435.82
	8/2/10	35.59		434.74
DW-4	5/22/08	40.20	468.48	428.28
	7/23/08	49.50		418.98
	10/13/08	54.90		413.58
	2/11/09	51.71		416.77
	4/27/09	45.10		423.38
	8/4/09	56.46		412.02
	12/8/09	42.26		426.22
	2/11/10	37.98		430.50
	5/3/10	34.04		434.44
	8/2/10	36.94		431.54
DW-5	12/8/09	43.05	471.86	428.81
	2/11/10	38.93		432.93
	5/3/10	34.55		437.31
	8/2/10	37.56		434.30
DW-6	12/8/09	43.50	471.77	428.27
	2/11/10	39.22		432.55
	5/3/10	35.15		436.62
	8/2/10	38.35		433.42
DW-7	12/8/09	43.01	470.07	427.06
	2/11/10	38.70		431.37
	5/3/10	34.64		435.43
	8/2/10	37.82		432.25

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-A	1/17/99	30.13	NM	--
MW-B	1/17/99	30.29	NM	--
MW-C	1/17/99	30.60	NM	--
MW-D	1/17/99	31.32	NM	--
MW-E	1/17/99	31.36	NM	--
MW-W	1/17/99	30.91	NM	--
IP-1	7/23/08	45.49	473.16	427.67
	10/13/08	51.30		421.86
	5/3/10 ^(f)	33.80	473.06 ^(c)	439.26
IP-2	7/23/08	46.83	473.21	426.38
	10/13/08	51.40		421.81
	5/3/10 ^(f)	32.00	473.06 ^(c)	441.06
IP-3	7/23/08	45.47	472.97	427.50
	10/13/08	51.11		421.86
	5/3/10 ^(f)	31.68	473.05 ^(c)	441.37
IP-4	7/23/08	44.55	473.02	428.47
	10/13/08	50.89		422.13
	5/3/10 ^(f)	31.61	473.10 ^(c)	441.49
IP-5	7/23/08	44.70	473.06	428.36
	10/13/08	51.06		422.00
	5/3/10 ^(f)	31.60	473.05 ^(c)	441.45
IP-6	7/23/08	49.91	472.73	422.82
	10/13/08	55.63		417.10
	5/3/10 ^(f)	34.98	472.43 ^(c)	437.45
IP-7	7/23/08	51.45	472.86	421.41
	10/13/08	57.23		415.63
	5/3/10 ^(f)	35.75	472.43 ^(c)	436.68
IP-8	12/16/08	50.48	473.13	422.65
	5/3/10 ^(f)	33.34	473.22 ^(c)	439.88
IP-9	12/16/08	52.51	473.47	420.96
	5/3/10 ^(f)	31.79	473.35 ^(c)	441.56

TABLE D-1

**HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076**

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
IP-10	2/11/09	48.77	473.78	425.01
	5/3/10 ^(f)	32.23	473.88 ^(c)	441.65

- (a) Elevation of PVC well casing (north edge) surveyed relative to mean sea level (MSL).
Wells were surveyed by Cross Land Surveying, Inc., per AB 2886 requirements.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (b) Water Table Elevation = (Casing Elevation - Depth to Water)
- (c) Wells were resurveyed by Cross Land Surveying, Inc., per AB 2886 requirements, on 19 October 2010 after remediation system construction.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (d) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.
- (e) NM - Not measured.
- (f) Baseline remediation system values.

ATTACHMENT E
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPH ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1	6/1/93	27,000	2,200	400	ND<0.5 ^(c)	4,900	-- ^(d)	--	--	--	--	--	--	--	--
	6/22/93	87,000	8,000	10,000	260	10,000	--	--	--	--	--	--	--	--	--
	10/6/93	40,000	4,700	6,500	740	5,300	--	--	--	--	--	--	--	--	--
	1/13/94	9,400	1,300	9,500	110	850	--	--	--	--	--	--	--	--	--
	3/30/94	NS ^(e)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/94	11,000	1,500	1,800	290	1,700	--	--	--	--	--	--	--	--	--
	8/12/94	11,000	550	330	260	1,400	--	--	--	--	--	--	--	--	--
	12/14/94	11,000	1,000	1,200	320	1,500	--	--	--	--	--	--	--	--	--
	2/10/95	9,300	1,200	1,500	280	1,500	--	--	--	--	--	--	--	--	--
	6/15/95	140	5.6	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	410	140	ND<0.5	ND<0.5	43	--	--	--	--	--	--	--	--	--
	12/15/95	740	250	ND<1.3	ND<1.3	87	--	--	--	--	--	--	--	--	--
	3/21/96	ND<50	0.52	ND<0.5	ND<0.5	0.51	--	--	--	--	--	--	--	--	--
	6/13/96	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/16/96	720	70	ND<0.5	1.0	5.1	ND<5	--	--	--	--	--	--	--	--
	12/2/96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/7/97	600	6.7	ND<0.5	1.2	1.8	ND<5	--	--	--	--	--	--	--	--
	6/12/97	18,000	180	800	410	1,800	ND<5	--	--	--	--	--	--	--	--
	9/29/97	350	120	1.5	ND<0.5	12	ND<5	--	--	--	--	--	--	--	--
	12/1/97	ND<50	7.0	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	5/29/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/15/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
11/30/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
1/17/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
6/10/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
9/7/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1 (cont.)	3/13/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/12/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/10/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	12/31/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	3/27/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	6/30/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	9/26/01	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	12/18/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	11/4/04	4,500	2.5	5.8	79	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	78	0.8	0.7	0.86	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<40	ND<5	ND<0.5	ND<0.5
	7/19/05	290	ND<0.5	ND<0.5	4.0	4.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	370	ND<0.5	ND<0.5	0.75	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	140	ND<0.5	ND<0.5	0.67	1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	100	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	400	ND<0.5	ND<0.5	1.7	1.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	410	ND<0.5	ND<0.5	2.2	2.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	2,300	ND<0.5	0.66	17	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	--	--
	8/2/07	580	5.7	0.64	6.8	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	750	0.85	2.7	4.2	9.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	2/14/08	1,700	3.3	17	38	83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	620	1.8	ND<0.5	12	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	270	0.52	ND<0.5	3.9	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	10/13/08	730	ND<0.5	ND<0.5	0.68	0.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	2/11/09	2,100	4.1	8.1	18	36	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
4/27/09	2,800	9.9	34	94	170	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<8.0	ND<0.5	ND<0.5	
8/4/09	890	ND<0.5	ND<0.5	1.7	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<8.0	ND<0.5	ND<0.5	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1 (cont.)	12/8/09	3,200	16	18	81	110	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<20	ND<0.5	ND<0.5
	2/11/10	1,300	3.7	1.7	13	6.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<20	ND<0.5	ND<0.5
	5/5/10	710	2.2	0.92	5.9	2.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/3/10	1,200	2.4	3.7	22	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
MW-2	6/1/93	170,000	20,000	21,000	3,300	18,000	--	--	--	--	--	--	--	--	--
	6/22/93	160,000	19,000	22,000	3,500	18,000	--	--	--	--	--	--	--	--	--
	10/6/93	110,000	17,000	17,000	3,000	15,000	--	--	--	--	--	--	--	--	--
	1/13/94	93,000	20,000	19,000	2,300	14,000	--	--	--	--	--	--	--	--	--
	3/30/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/94	41,000	9,600	7,300	840	7,800	--	--	--	--	--	--	--	--	--
	8/12/94	59,000	11,000	11,000	2,300	11,000	--	--	--	--	--	--	--	--	--
	12/14/94	63,000	13,000	13,000	2,200	12,000	--	--	--	--	--	--	--	--	--
	2/10/95	63,000	12,000	12,000	2,200	11,000	--	--	--	--	--	--	--	--	--
	6/15/95	61,000	11,000	12,000	1,900	11,000	--	--	--	--	--	--	--	--	--
	9/26/95	61,000	9,400	11,000	2,300	12,000	--	--	--	--	--	--	--	--	--
	12/15/95	48,000	8,000	8,300	2,200	12,000	--	--	--	--	--	--	--	--	--
	3/21/96	48,000	8,000	7,700	2,400	12,000	--	--	--	--	--	--	--	--	--
	6/13/96	33,000	7,300	8,800	1,900	12,000	ND<250	--	--	--	--	--	--	--	--
	9/16/96	8,600	510	640	180	1,300	ND<250	--	--	--	--	--	--	--	--
	12/2/96	29,000	4,400	4,000	1,300	6,100	ND<130	--	--	--	--	--	--	--	--
	3/7/97	13,000	1,800	1,100	270	2,000	ND<250	--	--	--	--	--	--	--	--
	6/12/97	68,000	7,800	6,600	2,300	11,000	ND<500	--	--	--	--	--	--	--	--
	9/29/97	15,000	1,500	97	740	1,800	ND<250	--	--	--	--	--	--	--	--
	12/1/97	13,000	900	37	860	2,400	ND<250	--	--	--	--	--	--	--	--
3/19/98	42,000	5,000	3,600	2,000	8,300	ND<250	--	--	--	--	--	--	--	--	
5/29/98	68,000	5,600	4,700	2,400	11,000	ND<250	--	--	--	--	--	--	--	--	
9/15/98	36,000	3,900	1,200	1,400	7,800	ND<250	--	--	--	--	--	--	--	--	
11/30/98	16,000	2,200	59	1,200	1,500	ND<250	--	--	--	--	--	--	--	--	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-2 (cont.)	1/17/99	30,000	4,000	2,200	2,100	9,500	ND<250	--	--	--	--	--	--	--	--
	6/10/99	70,000	6,300	1,800	3,600	14,000	ND<500	--	--	--	--	--	--	--	--
	9/7/99	42,000	3,800	840	1,900	8,000	150	--	--	--	--	--	--	--	--
	12/13/99	14,000	1,400	87	690	110	34	--	--	--	--	--	--	--	--
	3/13/00	38,000	2,400	2,300	1,600	6,400	2,400	--	--	--	--	--	--	--	--
	6/12/00	56,000	4,000	950	2,300	7,200	ND<50	--	--	--	--	--	--	--	--
	11/10/00	35,000	5,100	850	1,500	3,200	230	--	--	--	--	--	--	--	--
	12/31/00	21,000	3,200	420	1,300	1,200	440	--	--	--	--	--	--	--	--
	3/27/01	3,500	420	64	16	280	120	--	--	--	--	--	--	--	--
	6/30/01	1,200	88	4.5	65	37	29	--	--	--	--	--	--	--	--
	9/26/01	53,000	8,500	1,500	2,400	4,600	270	--	--	--	--	--	--	--	--
	12/18/01	26,000	5,400	900	1,500	2,200	430	--	--	--	--	--	--	--	--
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/18/02	4,200	240	7.3	200	53	89	--	--	--	--	--	--	--	--
	6/5/02	25,000	3,500	390	1,400	2,400	550	--	--	--	--	--	--	--	--
	8/21/02	10,000	1,200	32	620	300	160	--	--	--	--	--	--	--	--
	12/3/02	3,700	110	2.5	130	11	29	--	--	--	--	--	--	--	--
	3/4/03	8,700	1,100	77	350	540	230	ND<0.5	ND<0.5	ND<10	21	ND<150	ND<5	ND<0.5	ND<0.5
	6/10/03	6,300	660	35	190	120	410	ND<2.5	ND<2.5	ND<5	ND<25	ND<250	ND<25	ND<2.5	ND<2.5
	9/9/03	6,900	500	ND<20	360	29	9,500	ND<20	ND<20	60	ND<200	ND<2,000	ND<200	ND<20	ND<20
	12/23/03	22,000	4,900	1,300	720	2,300	1,700	ND<20	ND<20	21	ND<200	ND<2,000	ND<200	ND<20	ND<20
	3/23/04	45,000	5,200	1,500	1,800	5,000	750	ND<20	ND<20	34	ND<200	ND<2,000	ND<200	ND<20	ND<20
	5/10/04	7,300	1,000	51	240	290	1,800	ND<5	ND<5	14	ND<50	ND<500	ND<50	ND<5	ND<5
8/4/04	45,000	7,200	1,900	1,800	5,100	2,500	ND<25	ND<25	31	ND<250	ND<2,500	ND<250	ND<25	ND<25	
11/4/04	27,000	4,400	1,100	840	2,200	3,500	ND<9	ND<9	29	ND<50	ND<900	ND<90	ND<9	ND<9	
1/12/05	16,000	1,900	640	570	1,500	1,900	ND<4	ND<4	19	28 ^(f)	ND<400	ND<40	ND<4	ND<4	
5/2/05	44,000	5,200	1,100	1,800	4,800	2,200	ND<20	ND<20	30	ND<200	ND<2,000	ND<200	ND<20	ND<20	
7/20/05	21,000	3,000	500	1,000	1,500	4,400	ND<7	ND<7	32	74 ^(f)	ND<700	ND<70	ND<7	ND<7	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-2 (cont.)	11/22/05	33,000	4,400	880	1,200	2,600	2,200	ND<9	ND<9	19	480	ND<900	ND<90	ND<9	ND<9
	2/9/06	25,000	3,300	720	1,300	2,200	2,500	ND<7	ND<7	27	490	ND<700	ND<70	ND<7	ND<7
	5/17/06	22,000	3,200	240	1,200	2,100	4,600	ND<7	ND<7	46	1,000	ND<700	ND<70	ND<7	ND<7
	8/9/06	34,000	4,200	830	1,300	2,400	2,900	ND<9	ND<9	25	1,600	ND<900	ND<90	ND<9	ND<9
	11/8/06	27,000	3,600	300	1,200	1,800	1,500	ND<9	ND<9	15	1,100	ND<900	ND<90	ND<9	ND<9
	2/14/07	36,000	4,600	740	1,600	2,100	1,800	ND<5	ND<5	20	910	ND<700	ND<50	ND<5	ND<5
	5/17/07	37,000	7,400	680	1,900	2,400	3,000	ND<9	ND<9	24	2,600	ND<4,000	ND<90	--	--
	8/2/07	37,000	4,200	500	1,800	2,200	1,300	ND<9	ND<9	18	1,200	ND<2,000	ND<90	ND<9	ND<9
	11/12/07	25,000	5,900	120	1,700	820	1,400	ND<15	ND<15	16	720	ND<1,500	ND<150	ND<15	ND<15
	2/14/08	31,000	5,400	450	1,900	2,000	1,200	ND<15	ND<15	16	410	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	29,000	3,200	620	1,400	1,700	580	ND<5	ND<5	10	210	ND<1000	ND<50	ND<5	ND<5
	7/23/08	25,000	3,800	220	1,600	1000	780	ND<5	ND<5	14	470	ND<900	ND<50	ND<5	ND<5
	10/13/08	31,000	7,600	160	1,800	440	1,600	ND<9	ND<9	20	710	ND<1,500	ND<90	ND<9	ND<9
	2/11/09	22,000	4,400	120	1,500	430	650	ND<9	ND<9	12	330	ND<3,000	ND<90	ND<9	ND<9
	4/28/09	28,000	3,400	600	1,500	1,700	380	ND<8.0	ND<8.0	8.1	150	ND<1000	ND<80	ND<8.0	ND<8.0
	8/4/09	30,000	5,800	170	1,500	370	1,400	ND<9.0	ND<9.0	18	670	ND<3,000	ND<90	ND<9.0	ND<9.0
	12/8/09	24,000	3,100	200	1,200	830	520	ND<7	ND<7	8.0	250	ND<700	ND<70	ND<7	ND<7
2/12/10	19,000	2,900	440	940	1,300	820	ND<7	ND<7	9.5	400	ND<700	ND<70	ND<7	ND<7	
5/3/10	26,000	3,100	870	1,100	2,200	530	ND<7	ND<7	8.0	370	ND<700	ND<70	ND<7	ND<7	
8/3/10	19,000	2,000	150	840	730	280	ND<4.0	ND<4.0	4.4	200	ND<400	ND<40	ND<4.0	ND<4.0	
MW-3	6/1/93	270	4.6	ND<0.5	ND<0.5	1.9	--	--	--	--	--	--	--	--	--
	6/22/93	160	8.2	ND<0.5	ND<0.5	0.72	--	--	--	--	--	--	--	--	--
	10/6/93	740	57	110	24	120	--	--	--	--	--	--	--	--	--
	1/13/94	83	2.6	0.67	0.78	4.2	--	--	--	--	--	--	--	--	--
	3/30/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/94	60	0.75	3.2	0.5	3.6	--	--	--	--	--	--	--	--	--
	8/12/94	310	7.3	14	2.6	13	--	--	--	--	--	--	--	--	--
	12/14/94	75	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-3 (cont.)	2/10/95	96	1.4	ND<0.5	ND<0.5	1.8	--	--	--	--	--	--	--	--	--	
	6/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--	
	9/26/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--	
	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--	
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/2/05	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.81	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--	
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/12/07	190	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/14/08	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.83	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	57	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	7/23/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
10/13/08	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	61	ND<5	ND<0.5	ND<0.5		
2/11/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
4/27/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.64	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5		
8/4/09	190	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5		
12/8/09	150	3.6	1.1	2.4	2.6	0.82	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<50	ND<0.5	ND<0.5		
2/11/10	61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5.0	53	ND<5.0	ND<0.5	ND<0.5		
5/6/10	ND<50	ND<0.5	1.0	ND<0.5	ND<0.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5		
8/3/10	74	2.4	5.5	0.96	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5		

TABLE E-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-4	3/30/94	120	4.2	15	2.5	26	--	--	--	--	--	--	--	--	--
	4/25/94	65	ND<0.5	1.8	ND<0.5	2.1	--	--	--	--	--	--	--	--	--
	8/12/94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/14/94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	2/10/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	6/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	1.8	1.1	1.4	4.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-4 (cont.)	12/8/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	ND<50	2.4	1.8	2.3	4.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	3/30/94	7,500	1,300	20	ND<13	160	--	--	--	--	--	--	--	--	--
	4/25/94	6,500	1,100	41	130	740	--	--	--	--	--	--	--	--	--
	8/12/94	4,000	420	2.9	41	98	--	--	--	--	--	--	--	--	--
	12/14/94	4,800	660	ND<2.5	33	13	--	--	--	--	--	--	--	--	--
	2/10/95	5,200	490	ND<13	23	19	--	--	--	--	--	--	--	--	--
	6/15/95	460	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	1,400	61	ND<0.5	3.1	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	2,100	77	1.5	10	1.5	--	--	--	--	--	--	--	--	--
	3/21/96	930	35	2.0	2.0	18	--	--	--	--	--	--	--	--	--
	6/13/96	610	38	0.72	1.9	2.0	ND<5	--	--	--	--	--	--	--	--
	9/16/96	380	29	ND<0.5	0.95	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/2/96	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/7/97	520	74	ND<0.5	0.58	1.5	ND<5	--	--	--	--	--	--	--	--
	6/12/97	140	5.3	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/29/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/1/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	5/29/98	540	4.1	ND<0.5	ND<0.5	0.52	ND<5	--	--	--	--	--	--	--	--
	9/15/98	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/30/98	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
1/17/99	500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
6/10/99	66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
9/7/99	820	46	1.7	10	21	ND<5	--	--	--	--	--	--	--	--	
12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-5 (cont.)	3/13/00	270	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
	6/12/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--	
	11/10/00	2,200	42	1.1	25	30	8.6	--	--	--	--	--	--	--	--	
	12/31/00	1,300	21	ND<0.5	4.3	2.6	10	--	--	--	--	--	--	--	--	
	3/27/01	1,200	11	ND<0.5	2.6	ND<0.5	21	--	--	--	--	--	--	--	--	
	6/30/01	1,400	4.8	ND<0.5	1.5	0.56	14	--	--	--	--	--	--	--	--	
	9/26/01	660	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	--	--	--	--	--	--	--	--	
	12/18/01	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/18/02	890	0.65	ND<0.5	ND<0.5	ND<0.5	3.1	--	--	--	--	--	--	--	--	
	6/5/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8/21/02	2,100	20	ND<0.5	63	4.0	7.0	--	--	--	--	--	--	--	--	
	12/3/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	3/4/03	490	10	ND<0.5	2.2	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	6/10/03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	9/9/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	12/23/03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	3/23/04	440	2.3	ND<0.5	1.0	5.9	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/10/04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8/4/04	160	ND<0.5	ND<0.5	ND<0.5	0.71	0.94	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/4/04	290	0.74	ND<0.5	0.58	1.3	0.61	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/12/05	300	ND<0.5	ND<0.5	0.51	1.6	0.73	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/2/05	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
7/20/05	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
11/21/05	210	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
2/9/06	ND<50	ND<0.5	ND<0.5	0.63	1.0	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
5/16/06	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.79	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
8/9/06	220	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
11/8/06	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-5 (cont.)	2/14/07	200	ND<0.5	ND<0.5	ND<0.5	1.1	2.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	85	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	980	ND<0.5	ND<0.5	2.1	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	580	ND<0.5	ND<0.5	1.8	ND<0.5	0.6	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	220	ND<0.5	ND<0.5	2.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-6	3/30/94	63,000	21,000	8,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	4/25/94	77,000	22,000	12,000	2,300	16,000	--	--	--	--	--	--	--	--	--
	8/12/94	65,000	12,000	8,100	2,200	16,000	--	--	--	--	--	--	--	--	--
	12/14/94	65,000	18,000	9,500	2,200	14,000	--	--	--	--	--	--	--	--	--
	2/10/95	63,000	21,000	8,400	2,000	14,000	--	--	--	--	--	--	--	--	--
	6/15/95	75,000	20,000	11,000	2,100	15,000	--	--	--	--	--	--	--	--	--
	9/26/95	62,000	15,000	9,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	12/15/95	61,000	15,000	9,000	2,300	15,000	--	--	--	--	--	--	--	--	--
	3/21/96	65,000	18,000	9,800	2,400	16,000	--	--	--	--	--	--	--	--	--
	6/13/96	29,000	8,600	3,300	2,200	12,000	ND<250	--	--	--	--	--	--	--	--
	9/16/96	42,000	6,400	1,800	2,100	11,000	ND<250	--	--	--	--	--	--	--	--
	12/2/96	28,000	3,000	1,100	970	8,300	ND<500	--	--	--	--	--	--	--	--
	3/7/97	12,000	2,000	190	520	2,300	ND<250	--	--	--	--	--	--	--	--
6/12/97	37,000	3,900	470	1,600	6,200	ND<100	--	--	--	--	--	--	--	--	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-6 (cont.)	9/29/97	34,000	3,500	370	1,600	5,200	ND<100	--	--	--	--	--	--	--	--	
	12/1/97	20,000	2,100	ND<10	1,200	2,200	ND<100	--	--	--	--	--	--	--	--	
	3/19/98	24,000	2,900	460	1,100	3,400	ND<100	--	--	--	--	--	--	--	--	
	5/29/98	38,000	3,500	700	1,800	5,200	ND<100	--	--	--	--	--	--	--	--	
	9/15/98	22,000	1,900	110	1,400	3,000	ND<100	--	--	--	--	--	--	--	--	
	11/30/98	9,900	770	16	820	710	ND<100	--	--	--	--	--	--	--	--	
	1/17/99	14,000	2,200	160	1,700	3,600	ND<100	--	--	--	--	--	--	--	--	
	6/10/99	22,000	1,600	160	1,400	2,900	5.5	--	--	--	--	--	--	--	--	
	9/7/99	17,000	1,400	33	1,300	1,800	ND<50	--	--	--	--	--	--	--	--	
	12/13/99	16,000	790	9.2	840	780	ND<25	--	--	--	--	--	--	--	--	
	3/13/00	16,000	790	85	780	1,600	ND<25	--	--	--	--	--	--	--	--	
	6/12/00	24,000	1,100	150	1,300	2,300	5,600	--	--	--	--	--	--	--	--	
	11/10/00	13,000	440	7.0	760	350	1000	--	--	--	--	--	--	--	--	
	12/31/00	12,000	680	8.0	820	190	1,400	--	--	--	--	--	--	--	--	
	3/27/01	14,000	330	17	940	670	380	--	--	--	--	--	--	--	--	
	6/30/01	750	45	0.93	47	14	54	--	--	--	--	--	--	--	--	
	9/26/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12/18/01	43,000	3,800	350	1,900	3,000	900	--	--	--	--	--	--	--	--	
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	3/18/02	33,000	2,600	120	1,800	2,800	740	--	--	--	--	--	--	--	--	
	6/5/02	10,000	1,100	16	700	180	600	--	--	--	--	--	--	--	--	
	8/21/02	10,000	1,200	23	710	290	370	--	--	--	--	--	--	--	--	
	12/3/02	16,000	1,700	63	970	630	1,500	--	--	--	--	--	--	--	--	
	3/4/03	16,000	1,700	25	1,200	40	7,700	ND<20	ND<20	ND<70	ND<200	ND<2,000	ND<200	ND<200	ND<20	ND<20
	6/10/03	9,500	860	15	380	47	2,600	ND<5	ND<5	18	ND<50	ND<500	ND<50	ND<50	ND<5	ND<5
	9/9/03	11,000	1000	16	630	120	2,500	ND<5	ND<5	20	52	ND<500	ND<50	ND<50	ND<5	ND<5
12/23/03	18,000	2,100	41	1,100	390	4,900	ND<10	ND<10	42	ND<100	ND<1000	ND<100	ND<100	ND<10	ND<10	
3/23/04	24,000	1,400	71	1,500	2,000	7,500	ND<20	ND<20	66	ND<200	ND<2,000	ND<200	ND<200	ND<20	ND<20	
5/10/04	6,500	550	ND<10	71	43	3,700	ND<10	ND<10	31	ND<100	ND<1000	ND<100	ND<100	ND<10	ND<10	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPH ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-6 (cont.)	8/4/04	8,200	990	19	300	120	3,300	ND<5	ND<5	23	ND<50	ND<500	ND<50	ND<5	ND<5
	11/4/04	9,600	1,100	30	320	160	2,200	ND<4	ND<4	18	22	ND<400	ND<40	ND<4	ND<4
	1/12/05	12,000	1,100	34	600	500	3,600	ND<4	ND<4	31	30	ND<400	ND<40	ND<4	ND<4
	5/2/05	14,000	630	22	610	920	4,000	ND<10	ND<10	32	120	ND<3,000	ND<100	ND<10	ND<10
	7/20/05	9,800	1,200	21	340	150	1,800	ND<2.5	ND<2.5	14	140	ND<500	ND<25	ND<2.5	ND<2.5
	11/21/05	6,600	150	26	580	640	100	ND<1	ND<1	ND<1	13	ND<100	ND<10	ND<1	ND<1
	2/9/06	7,100	340	11	370	360	910	ND<2	ND<2	9.3	120	ND<200	ND<20	ND<2	ND<2
	5/17/06	7,100	270	5.1	320	290	930	ND<2	ND<2	8.4	260	ND<200	ND<20	ND<2	ND<2
	8/9/06	5,800	440	7.5	120	45	670	ND<2	ND<2	7.3	380	ND<2,000	ND<50	ND<2	ND<2
	11/8/06	9,200	990	37	390	140	310	ND<2	ND<2	3.2	110	ND<200	ND<20	ND<2	ND<2
	2/14/07	5,900	480	10	73	23	1,600	ND<2	ND<2	14	1,100	ND<500	ND<20	ND<2	ND<2
	5/17/07	3,700	240	3.4	30	10	770	ND<0.5	ND<0.5	9.2	800	ND<2,000	ND<5	--	--
	8/2/07	15,000	1,800	120	980	510	310	ND<2.5	ND<2.5	3.0	180	ND<250	ND<25	ND<2.5	ND<2.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	14,000	2,000	63	750	190	810	ND<2.5	ND<2.5	7.7	600	ND<250	ND<25	ND<2.5	ND<2.5
	5/8/08	15,000	1,700	59	700	130	540	ND<2.5	ND<2.5	5.9	410	ND<2,000	ND<25	ND<2.5	ND<2.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/09	16,000	2,200	160	860	230	320	ND<2.5	ND<2.5	3.8	580	ND<1000	ND<25	ND<2.5	ND<2.5
8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/9/09	15,000	2,100	96	800	160	340	ND<5.0	ND<5.0	ND<5.0	460	ND<2,000	ND<50	ND<5.0	ND<5.0	
2/12/10	21,000	2,500	140	1000	240	540	ND<5.0	ND<5.0	6.0	460	ND<500	ND<50	ND<5.0	ND<5.0	
5/4/10	17,000	2,100	120	780	260	820	ND<5.0	ND<5.0	8.6	450	ND<500	ND<50	ND<5.0	ND<5.0	
8/3/10	21,000	2,700	120	690	250	730	ND<5.0	ND<5.0	7.4	480	ND<500	ND<50	ND<5.0	ND<5.0	
MW-7	3/30/94	43,000	7,200	2,400	1,600	11,000	--	--	--	--	--	--	--	--	--
	4/25/94	30,000	3,900	1000	940	6,900	--	--	--	--	--	--	--	--	--
	8/12/94	30,000	3,800	1,400	1,300	7,500	--	--	--	--	--	--	--	--	--
	12/14/94	31,000	3,600	1,200	900	6,400	--	--	--	--	--	--	--	--	--

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	2/10/95	27,000	4,000	900	890	5,100	--	--	--	--	--	--	--	--	--
	6/15/95	17,000	920	680	740	4,100	--	--	--	--	--	--	--	--	--
	9/26/95	7,000	200	150	170	810	--	--	--	--	--	--	--	--	--
	12/15/95	11,000	350	170	540	1,900	--	--	--	--	--	--	--	--	--
	3/21/96	12,000	320	100	730	2,500	--	--	--	--	--	--	--	--	--
	6/13/96	5,900	98	19	370	620	ND<50	--	--	--	--	--	--	--	--
	9/16/96	7,800	140	43	440	590	ND<25	--	--	--	--	--	--	--	--
	12/2/96	6,300	87	29	290	430	ND<50	--	--	--	--	--	--	--	--
	3/7/97	4,500	35	19	360	470	ND<25	--	--	--	--	--	--	--	--
	6/12/97	3,900	29	5.2	170	48	ND<5	--	--	--	--	--	--	--	--
	9/29/97	6,100	56	9.0	340	190	ND<25	--	--	--	--	--	--	--	--
	12/1/97	6,500	24	ND<2.5	400	250	ND<25	--	--	--	--	--	--	--	--
	3/19/98	2,000	20	ND<2.5	73	79	ND<25	--	--	--	--	--	--	--	--
	5/29/98	5,700	22	7.3	290	350	ND<25	--	--	--	--	--	--	--	--
	9/15/98	1,700	15	ND<2.5	44	5.1	ND<25	--	--	--	--	--	--	--	--
	11/30/98	4,800	42	12	270	640	ND<25	--	--	--	--	--	--	--	--
	1/17/99	3,400	33	ND<5	200	190	ND<50	--	--	--	--	--	--	--	--
	6/10/99	1,700	7.8	1.5	23	4.1	ND<5	--	--	--	--	--	--	--	--
	9/7/99	1,900	9.7	2.1	70	2.9	ND<5	--	--	--	--	--	--	--	--
	12/13/99	1,900	8.0	1.1	10	1.1	ND<5	--	--	--	--	--	--	--	--
	3/13/00	1,500	7.5	ND<0.5	6.7	2.9	ND<5	--	--	--	--	--	--	--	--
	6/12/00	1,200	5.4	ND<0.5	5.2	1.0	ND<5	--	--	--	--	--	--	--	--
	11/10/00	1000	3.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
12/31/00	620	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	
3/27/01	1,200	4.8	ND<0.5	6.7	0.94	ND<0.5	--	--	--	--	--	--	--	--	
6/30/01	2,800	10	1.7	75	170	ND<0.5	--	--	--	--	--	--	--	--	
9/26/01	1,900	16	0.89	2.3	25	ND<0.5	--	--	--	--	--	--	--	--	
12/18/01	3,000	13	0.88	3.4	3.4	ND<0.5	--	--	--	--	--	--	--	--	
1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	3/18/02	3,100	7.3	1.5	38	110	ND<0.5	--	--	--	--	--	--	--	--
	6/5/02	1,800	7.6	1.0	39	20	ND<0.5	--	--	--	--	--	--	--	--
	8/21/02	3,300	7.6	0.7	85	36	ND<0.5	--	--	--	--	--	--	--	--
	12/3/02	1,700	5.4	ND<0.5	15	5.5	ND<0.5	--	--	--	--	--	--	--	--
	3/4/03	440	1.8	ND<0.5	0.54	2.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/10/03	550	0.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	9/9/03	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/23/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	2,600	2.5	ND<0.5	36	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	1,600	2.0	ND<0.5	16	16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	830	1.6	ND<0.5	15	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	710	ND<0.5	ND<0.5	0.75	0.52	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/20/05	1,400	1.1	ND<0.5	9.2	8.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	1,100	0.56	ND<0.5	3.4	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	270	ND<0.5	ND<0.5	1.2	0.98	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	930	0.84	ND<0.5	10	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	650	ND<0.5	ND<0.5	1.2	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	800	ND<0.5	ND<0.5	1.0	0.62	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	800	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	700	ND<0.5	ND<0.5	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	3,200	1.3	ND<0.5	50	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/14/08	1,600	1.2	ND<0.5	4.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
5/8/08	1,400	2.2	0.74	2.8	0.93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
7/23/08	2,300	3.9	1.4	8.9	5.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE E-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	4/28/09	4,500	7.4	3.8	33	7.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	4,500	6.7	3.4	27	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<8.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	3,600	7.9	3.6	14	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<8.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	9/5/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--
	12/23/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	7.3	ND<0.5	ND<0.5
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	0.86	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.57	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	1.2	1.9	ND<0.5	0.66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE E-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-8 (cont.)	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12/17/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5	
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5	
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	9/5/03	3,400	23	1.5	110	10	10	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	
	12/23/03	1,100	2.4	ND<0.5	0.8	0.8	2.1	ND<0.5	ND<0.5	ND<0.5	5.9	ND<50	ND<5	ND<0.5	ND<0.5	
	3/23/04	760	8.5	ND<0.5	4.9	0.95	18	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/10/04	1,100	4.4	ND<0.5	1.3	0.67	11	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/4/04	1,200	3.4	0.59	16	7.6	6.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/4/04	610	0.52	ND<0.5	1.3	ND<0.5	2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/12/05	1,400	1.6	0.55	5.5	1.1	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/2/05	1,500	10	0.55	6.7	1.1	27	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	7/20/05	1,800	5.5	0.69	12	1.6	10	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/21/05	1,200	0.94	ND<0.5	1.4	ND<0.5	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/9/06	1,200	2.8	0.51	6.4	0.84	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/16/06	1,600	3.8	0.57	12	1.8	4.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/9/06	760	ND<0.5	ND<0.5	1.0	ND<0.5	2.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/8/06	1,700	1.7	0.53	6.7	1.4	1.7	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/14/07	1000	ND<0.5	ND<0.5	0.51	ND<0.5	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/17/07	870	ND<0.5	ND<0.5	0.54	ND<0.5	0.93	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--	
	8/2/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	3,300	68	2.1	110	7.8	16	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/08	1,200	8.2	0.52	4.0	0.74	5.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5	
7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPH ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-9 (cont.)	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	1,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	2,700	120	7.0	35	14	44	ND<0.5	ND<0.5	0.52	31	ND<200	ND<5.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	9/5/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--
	12/23/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	0.61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-10 (cont.)	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	12/16/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	100,000	6,100	9,000	3,100	20,000	3.3	ND<0.5	ND<0.5	ND<0.5	25	ND<200	ND<20	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/3/10	62,000	3,600	5,900	2,600	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	8/3/10	53,000	2,800	3,800	2,100	10,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
VW-2	8/4/04	5,700	480	ND<20	600	ND<20	12,000	ND<20	ND<20	110	ND<90	ND<2,000	ND<200	ND<20	ND<20
	11/4/04	5,800	340	ND<20	38	ND<20	10,000	ND<20	ND<20	120	ND<90	ND<2,000	ND<200	ND<20	ND<20
	1/12/05	3,800	210	ND<5	90	54	2,900	ND<5	ND<5	33	26 ^(f)	ND<500	ND<50	ND<5	ND<5
	5/2/05	2,600	84	ND<2	13	7.0	960	ND<2	ND<2	12	57	ND<500	ND<20	ND<2	ND<2
	7/20/05	6,200	240	13	290	480	6,600	ND<2	ND<2	56	59 ^(f)	ND<2,000	ND<20	ND<2	ND<2
	11/21/05	3,100	100	ND<9	22	10	5,300	ND<9	ND<9	54	76 ^(f)	ND<900	ND<90	ND<9	ND<9
	2/9/06	3,500	140	ND<25	130	36	12,000	ND<25	ND<25	65	2,800	ND<2,500	ND<250	ND<25	ND<25
	5/17/06	1,800	90	2.6	39	11	1,200	ND<2.5	ND<2.5	12	700	ND<250	ND<25	ND<2.5	ND<2.5
	8/9/06	4,300	86	3.5	200	16	2,500	ND<2.5	ND<2.5	28	2,800	ND<5,000	ND<25	ND<2.5	ND<2.5
	11/8/06	3,200	46	3.1	10	4.8	1,500	ND<3	ND<3	11	7,100	ND<800	ND<30	ND<3	ND<3
	2/14/07	3,300	75	4.6	50	82	580	ND<2	ND<2	7.0	4,100	ND<500	ND<20	ND<2	ND<2
	5/17/07	3,500	51	7.3	17	24	100	ND<2.5	ND<2.5	ND<2.5	7,100	ND<250	ND<25	--	--
	8/2/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/14/08	5,700	180	14	150	120	530	ND<2.5	ND<2.5	4.1	5,000	ND<250	ND<25	ND<2.5	ND<2.5	

TABLE E-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
VW-2 (cont.)	5/8/08	3,000	40	3.8	32	34	270	ND<1.5	ND<1.5	2.7	4,500	ND<250	ND<15	ND<1.5	ND<1.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	2,800	130	6.1	170	130	1,300	ND<2.5	ND<2.5	12	1,700	ND<250	ND<25	ND<2.5	ND<2.5
8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
VW-3	8/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/20/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	1,100
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
VW-3 (cont.)	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-1	7/20/05	42,000	2,800	1,100	1,700	4,800	12,000	ND<20	ND<20	92	130	ND<2,000	ND<200	ND<20	ND<20
	11/22/05	36,000	2,100	290	1,400	2,600	11,000	ND<20	ND<20	70	810	ND<2,000	ND<200	ND<20	ND<20
	2/9/06	19,000	1,400	230	990	1,700	8,900	ND<15	ND<15	72	2,200	ND<1,500	ND<150	ND<15	ND<15
	5/17/06	20,000	1,400	200	920	1,800	9,200	ND<20	ND<20	37	2,500	ND<10,000	ND<200	ND<20	ND<20
	8/9/06	28,000	1,600	150	1,200	2,200	13,000	ND<15	ND<15	84	4,900	ND<2,500	ND<150	ND<15	ND<15
	11/8/06	20,000	1,100	78	990	1,600	6,800	ND<15	ND<15	47	4,400	ND<8,000	ND<150	ND<15	ND<15
	2/14/07	15,000	820	37	810	1,000	8,300	ND<15	ND<15	58	8,500	ND<4,000	ND<150	ND<15	ND<15
	5/17/07	16,000	850	35	810	1,200	6,700	ND<10	ND<10	42	12,000	ND<2,000	ND<100	--	--
	8/2/07	15,000	2,000	100	970	630	3,400	ND<7	ND<7	25	4,000	ND<700	ND<70	ND<7	ND<7
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	18,000	1,100	49	1,200	910	7,000	ND<15	ND<15	58	4,200	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	12,000	890	54	770	380	2,500	ND<5	ND<5	22	3,400	ND<2,500	ND<50	ND<5	ND<5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	10,000	690	19	700	45	1000	ND<2.5	ND<2.5	8.8	2,900	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	15,000	2,100	360	1,100	620	3,400	ND<8.0	ND<8.0	27	4,500	ND<800	ND<80	ND<8.0	ND<8.0
8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
TP-2	7/20/05	26,000	1,800	1,100	1,100	2,500	63,000	ND<150	ND<150	400	ND<700	ND<15,000	ND<1,500	ND<150	ND<150
	11/22/05	16,000	1,200	140	840	820	52,000	ND<90	ND<90	340	1,200	ND<9,000	ND<900	ND<90	ND<90

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
TP-2 (cont.)	2/9/06	2,700	94	2.9	28	14	1,200	ND<2.5	ND<2.5	13	1,600	ND<250	ND<25	ND<2.5	ND<2.5	
	5/17/06	31,000	2,200	1,100	1,500	3,300	87,000	ND<90	ND<90	680	4,800	ND<15,000	ND<1,500	ND<90	ND<90	
	8/9/06	14,000	1,400	86	1,200	830	56,000	ND<2.5	ND<2.5	350	2,800	ND<4,000	ND<25	ND<2.5	ND<2.5	
	11/8/06	16,000	1,300	ND<90	930	370	38,000	ND<90	ND<90	280	3,600	ND<40,000	ND<900	ND<90	ND<90	
	2/14/07	22,000	1,900	230	1,700	1,600	53,000	ND<90	ND<90	400	2,800	ND<20,000	ND<900	ND<90	ND<90	
	5/17/07	ND<25,000	2,400	51	1,500	510	69,000	ND<2	ND<0.5	550	4,300	ND<25,000	ND<5	--	--	
	8/2/07	10,000	1,200	ND<25	640	140	14,000	ND<25	ND<25	110	16,000	ND<10,000	ND<250	ND<25	ND<25	
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	12,000	920	28	850	740	17,000	ND<25	ND<25	120	5,900	ND<4,000	ND<250	ND<25	ND<25	
	5/8/08	7,400	710	10	510	110	6,400	ND<8	ND<8	64	5,200	ND<12,000	ND<80	ND<8	ND<8	
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	7,200	950	ND<25	77	ND<25	13,000	ND<25	ND<25	130	20,000	ND<2,500	ND<250	ND<25	ND<25	
2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5/6/10	6,400	740	ND<25	450	130	14,000	ND<25	ND<25	130	9,900	ND<2,500	ND<250	ND<25	ND<25		
8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
DW-1	5/22/08	5,100	470	150	210	570	100	ND<0.9	ND<0.9	0.98	76	ND<90	ND<9	ND<0.9	ND<0.9	
	7/23/08	560	43	5.2	18	40	16	ND<0.5	ND<0.5	ND<0.5	21	ND<100	ND<5	ND<0.5	ND<0.5	
	10/13/08	2,800	370	15	120	78	140	ND<0.5	ND<0.5	1.2	220	ND<300	ND<80	ND<0.5	ND<0.5	
	2/11/09	520	45	5.3	32	31	42	ND<0.5	ND<0.5	ND<0.5	43	ND<100	ND<8	ND<0.5	ND<0.5	
	4/28/09	2,700	250	36	160	190	86	ND<0.5	ND<0.5	0.84	120	ND<50	ND<5.0	ND<0.5	ND<0.5	
	8/5/09	2,100	330	17	87	53	220	ND<0.5	ND<0.5	2.0	310	ND<50	ND<5.0	ND<0.5	ND<0.5	
	12/8/09	6,200	560	63	400	490	140	ND<0.5	ND<0.5	1.1	200	ND<200	ND<8.0	ND<0.5	ND<0.5	
	2/12/10	2,000	200	36	130	150	49	ND<0.5	ND<0.5	ND<0.5	58	ND<200	ND<5.0	ND<0.5	ND<0.5	
	5/4/10	1,800	160	27	110	140	21	ND<0.5	ND<0.5	ND<0.5	41	ND<100	ND<5.0	ND<0.5	ND<0.5	
	8/2/10	1,400	53	11	67	78	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5	

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-2	5/22/08	11,000	1,300	170	460	230	620	ND<2.5	ND<2.5	9.6	870	ND<400	ND<25	ND<2.5	ND<2.5
	7/23/08	7,600	980	44	180	55	420	ND<2	ND<2	5.7	720	ND<200	ND<20	ND<2	ND<2
	10/13/08	7,300	910	23	120	18	280	ND<1.5	ND<1.5	3.1	650	ND<2,000	ND<50	ND<1.5	ND<1.5
	2/11/09	8,000	1,100	31	230	46	290	ND<2.5	ND<2.5	3.9	600	ND<800	ND<25	ND<2.5	ND<2.5
	4/28/09	5,800	500	27	110	55	330	ND<1.0	ND<1.0	4.4	600	ND<400	ND<10	ND<1.0	ND<1.0
	8/4/09	6,800	910	19	37	27	200	ND<1.0	ND<1.0	2.7	530	ND<200	ND<10	ND<1.0	ND<1.0
	12/9/09	6,600	450	14	55	34	210	ND<0.9	ND<0.9	2.6	410	ND<200	ND<9.0	ND<0.9	ND<0.9
	2/11/10	4,500	340	14	44	25	320	ND<0.9	ND<0.9	3.9	520	ND<300	ND<9.0	ND<0.9	ND<0.9
	5/4/10	2,300	110	7.1	17	16	350	ND<0.9	ND<0.9	4.1	550	ND<200	ND<9.0	ND<0.9	ND<0.9
8/2/10	3,800	420	22	21	28	300	ND<0.9	ND<0.9	3.5	600	ND<300	ND<20	ND<0.9	ND<0.9	
DW-3	5/22/08	4,700	8.7	2.1	120	200	0.86	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,800	8.1	1.4	94	100	2.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	4,100	59	10	160	70	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<80	ND<0.5	ND<0.5
	2/11/09	1,700	21	1.7	35	21	9.8	ND<0.5	ND<0.5	ND<0.5	16	ND<50	ND<10	ND<0.5	ND<0.5
	4/27/09	1,800	16	2.3	26	10	3.0	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/4/09	1,200	6.8	0.99	4.3	3.4	18	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<5.0	ND<0.5	ND<0.5
	12/9/09	2,200	24	5.9	56	29	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.2	ND<300	ND<20	ND<0.5	ND<0.5
	2/11/10	700	9.5	2.0	18	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<8.0	ND<0.5	ND<0.5
	5/4/10	420	5.5	0.93	8.8	3.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<5.0	ND<0.5	ND<0.5
8/2/10	640	4.0	ND<0.5	5.3	3.9	0.59	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5	
DW-4	5/22/08	1,200	4.2	8.6	16	200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	91	0.79	ND<0.5	6.5	7.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	43	ND<0.5	ND<0.5
	2/11/09	ND<50	0.68	ND<0.5	1.4	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/09	ND<50	0.50	ND<0.5	1.1	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/5/09	52	1.7	ND<0.5	1.4	0.83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	12/9/09	ND<50	3.0	ND<0.5	2.0	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-4 (cont.)	5/6/10	180	3.3	3.7	13	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
	8/2/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-5	12/9/09	15,000	140	25	200	960	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	1,600	37	2.5	36	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<5.0	ND<0.5	ND<0.5
	5/4/10	2,100	69	2.9	41	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<8.0	ND<0.5	ND<0.5
	8/2/10	12,000	240	9.4	350	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<10	ND<0.5	ND<0.5
DW-6	12/9/09	6,200	33	4.3	100	43	9.7	ND<1.0	ND<1.0	ND<1.0	10	ND<100	ND<10	ND<1.0	ND<1.0
	2/11/10	4,800	18	3.0	44	15	14	ND<0.5	ND<0.5	ND<0.5	9.2	ND<80	ND<10	ND<0.5	ND<0.5
	5/4/10	4,600	13	3.5	29	17	5.6	ND<0.5	ND<0.5	ND<0.5	7.2	ND<80	ND<8.0	ND<0.5	ND<0.5
	8/2/10	4,500	13	4.4	54	14	5.9	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<8.0	ND<0.5	ND<0.5
DW-7	12/9/09	10,000	500	20	310	110	160	ND<2.0	ND<2.0	ND<2.0	270	ND<200	ND<20	ND<2.0	ND<2.0
	2/12/10	12,000	590	23	440	120	190	ND<2.0	ND<2.0	2.4	290	ND<200	ND<20	ND<2.0	ND<2.0
	5/4/10	4,100	250	15	89	32	97	ND<0.5	ND<0.5	1.0	160	ND<80	ND<5.0	ND<0.5	ND<0.5
	8/3/10	3,500	280	13	49	30	130	ND<0.5	ND<0.5	1.3	220	ND<50	ND<5.0	ND<0.5	ND<0.5
MW-A	1/17/99	5,800	1,700	85	65	320	ND<5	--	--	--	--	--	--	--	--
MW-B	1/17/99	4,400	240	30	21	39	ND<5	--	--	--	--	--	--	--	--
MW-C	1/17/99	1,800	0.8	ND<0.5	ND<0.5	0.55	ND<5	--	--	--	--	--	--	--	--
MW-D	1/17/99	5,600	1,600	130	66	220	ND<5	--	--	--	--	--	--	--	--
MW-E	1/17/99	5,700	1,600	180	180	310	ND<50	--	--	--	--	--	--	--	--
	6/10/99	5,000	1,300	130	320	450	ND<25	NS	NS	NS	NS	NS	NS	NS	NS
MW-W	1/17/99	23,000	7,600	760	1,400	5,000	ND<50	--	--	--	--	--	--	--	--
	6/10/99	16,000	4,100	420	1,300	4,000	ND<50	NS	NS	NS	NS	NS	NS	NS	NS
IP-1	7/23/08	62,000	2,100	6,800	2,700	11,000	16	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	10/13/08	55,000	3,100	3,300	2,300	7,700	ND<15	ND<15	ND<15	ND<15	98	ND<1,500	ND<150	ND<15	ND<15
	5/5/10 ^(g)	33,000	900	1,500	1,400	5,000	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
IP-2	7/23/08	5,500	160	43	130	350	10	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	13,000	1,900	58	600	630	180	ND<0.9	ND<0.9	9.4	46	ND<90	ND<20	ND<0.9	ND<0.9
	5/5/10 ^(g)	2,700	66	220	61	240	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
IP-3	7/23/08	1,100	23	14	7.5	90	32	ND<0.5	ND<0.5	ND<0.5	32	ND<50	ND<5	ND<0.5	ND<0.5

TABLE E-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - Livermore, 67076**

Monitoring Well	Sample Date ^(a)	TPH _g ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethylbenzene ^(b) (µg/l)	Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
IP-3 (cont.)	10/13/08	1,700	83	4.7	11	54	72	ND<0.5	ND<0.5	0.84	71	ND<50	ND<8	ND<0.5	ND<0.5
	5/5/10 ^(g)	430 ^(h)	6.4	22	4.9	21	3.9	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<5.0	ND<0.5	ND<0.5
IP-4	7/23/08	7,600	130	45	240	750	940	ND<1.5	ND<1.5	6.9	890	ND<150	ND<15	ND<1.5	ND<1.5
	10/13/08	4,200	110	11	78	310	3,700	ND<1.5	ND<1.5	7.1	15,000	ND<2,000	ND<15	ND<1.5	ND<1.5
	5/6/10 ^(g)	190	5.4	25	6.9	29	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
IP-5	7/23/08	2,000 ^(h)	3.0	17	5.1	31	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	720	14	13	8.7	32	19	ND<0.5	ND<0.5	ND<0.5	26	ND<50	ND<5	ND<0.5	ND<0.5
	5/6/10 ^(g)	270	5.7	25	5.9	29	20	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<5.0	ND<0.5	ND<0.5
IP-6	7/23/08	4,400	260	78	98	340	180	ND<0.5	ND<0.5	1.6	190	ND<80	ND<9	ND<0.5	ND<0.5
	10/13/08	1,400	150	1.6	1.5	3.5	7.4	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<50	ND<0.5	ND<0.5
	5/5/10 ^(g)	8,000 ^(h)	24	100	18	98	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<80	ND<5.0	ND<0.5	ND<0.5
IP-7	7/23/08	4,200	190	12	99	190	49	ND<0.9	ND<0.9	1.1	58	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	6,000	350	6.6	150	60	97	ND<0.9	ND<0.9	2.5	76	ND<90	ND<50	ND<0.9	ND<0.9
	5/5/10 ^(g)	33,000	49	62	38	69	14	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<9.0	ND<0.9	ND<0.9
IP-8	12/16/08	120,000	7,800	20,000	3,500	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	5/5/10 ^(g)	83,000	3,900	13,000	2,400	14,000	ND<25	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25
IP-9	12/16/08	110,000	7,800	23,000	2,800	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	5/5/10 ^(g)	92,000	6,000	19,000	2,500	14,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
IP-10	2/11/09	8,100	29	58	170	1,200	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	5/3/10 ^(g)	3,600	73	80	140	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<20	ND<0.5	ND<0.5

(a) Samples collected before July 2005 collected by others; data provided by Delta Environmental Consultants, Inc., Second Quarter 2005 Groundwater Monitoring Report dated 31 July 2005.

(b) Total petroleum hydrocarbons as gasoline (TPH_g), benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l).

(c) ND - Not detected at the reporting limit listed.

(d) "--" Not analyzed.

(e) NS - Not sampled.

(f) TBA results may be biased slightly high. A fraction of MTBE (typically less than 10 percent) converts to TBA during the analysis of water samples. This conversion effect is considered to be mathematically significant in samples that contain MTBE/TBA ratios of over 20:1.

(g) Baseline remediation system values.

(h) Primarily compounds not found in typical Gasoline.

ATTACHMENT F

**LABORATORY ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY FORMS**



Laboratory Results

Matt Nelson
Orion Environmental
3450 East Spring Street, Suite 212
Long Beach, CA 90806

Subject : 11 Water Samples
Project Name : TESORO LIVERMORE #67076
Project Number : 01LV

Dear Mr. Nelson,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff

Subject : 11 Water Samples
Project Name : TESORO LIVERMORE #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample DW-2.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for samples DW-6, DW-5 and DW-2.

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-6**

Matrix : Water

Lab Number : 74040-01

Sample Date :08/02/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	13	0.50	ug/L	EPA 8260B	08/06/10 06:38
Toluene	4.4	0.50	ug/L	EPA 8260B	08/06/10 06:38
Ethylbenzene	54	0.50	ug/L	EPA 8260B	08/06/10 06:38
Total Xylenes	14	0.50	ug/L	EPA 8260B	08/06/10 06:38
Methyl-t-butyl ether (MTBE)	5.9	0.50	ug/L	EPA 8260B	08/06/10 06:38
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:38
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:38
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:38
Tert-Butanol	12	5.0	ug/L	EPA 8260B	08/06/10 06:38
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 06:38
Ethanol	< 8.0	8.0	ug/L	EPA 8260B	08/06/10 06:38
TPH as Gasoline	4500	90	ug/L	EPA 8260B	08/07/10 02:17
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:38
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:38
1,2-Dichloroethane-d4 (Surr)	93.0		% Recovery	EPA 8260B	08/06/10 06:38
Toluene - d8 (Surr)	95.3		% Recovery	EPA 8260B	08/06/10 06:38

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-5**

Matrix : Water

Lab Number : 74040-02

Sample Date :08/02/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	240	0.50	ug/L	EPA 8260B	08/06/10 02:55
Toluene	9.4	0.50	ug/L	EPA 8260B	08/06/10 02:55
Ethylbenzene	350	0.50	ug/L	EPA 8260B	08/06/10 02:55
Total Xylenes	280	0.50	ug/L	EPA 8260B	08/06/10 02:55
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 02:55
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 02:55
Ethanol	< 10	10	ug/L	EPA 8260B	08/06/10 02:55
TPH as Gasoline	12000	250	ug/L	EPA 8260B	08/09/10 22:53
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 02:55
1,2-Dichloroethane-d4 (Surr)	95.9		% Recovery	EPA 8260B	08/06/10 02:55
Toluene - d8 (Surr)	95.5		% Recovery	EPA 8260B	08/06/10 02:55

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-3**

Matrix : Water

Lab Number : 74040-03

Sample Date :08/02/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	4.0	0.50	ug/L	EPA 8260B	08/06/10 03:33
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
Ethylbenzene	5.3	0.50	ug/L	EPA 8260B	08/06/10 03:33
Total Xylenes	3.9	0.50	ug/L	EPA 8260B	08/06/10 03:33
Methyl-t-butyl ether (MTBE)	0.59	0.50	ug/L	EPA 8260B	08/06/10 03:33
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 03:33
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 03:33
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 03:33
TPH as Gasoline	640	50	ug/L	EPA 8260B	08/06/10 03:33
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 03:33
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	08/06/10 03:33
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	08/06/10 03:33

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-2**

Matrix : Water

Lab Number : 74040-04

Sample Date :08/02/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	420	0.90	ug/L	EPA 8260B	08/06/10 15:01
Toluene	22	0.90	ug/L	EPA 8260B	08/06/10 15:01
Ethylbenzene	21	0.90	ug/L	EPA 8260B	08/06/10 15:01
Total Xylenes	28	0.90	ug/L	EPA 8260B	08/06/10 15:01
Methyl-t-butyl ether (MTBE)	300	0.90	ug/L	EPA 8260B	08/06/10 15:01
Diisopropyl ether (DIPE)	< 0.90	0.90	ug/L	EPA 8260B	08/06/10 15:01
Ethyl-t-butyl ether (ETBE)	< 0.90	0.90	ug/L	EPA 8260B	08/06/10 15:01
Tert-amyl methyl ether (TAME)	3.5	0.90	ug/L	EPA 8260B	08/06/10 15:01
Tert-Butanol	600	5.0	ug/L	EPA 8260B	08/06/10 15:01
Methanol	< 300	300	ug/L	EPA 8260B	08/06/10 15:01
Ethanol	< 20	20	ug/L	EPA 8260B	08/06/10 15:01
TPH as Gasoline	3800	90	ug/L	EPA 8260B	08/06/10 15:01
1,2-Dichloroethane	< 0.90	0.90	ug/L	EPA 8260B	08/06/10 15:01
1,2-Dibromoethane	< 0.90	0.90	ug/L	EPA 8260B	08/06/10 15:01
1,2-Dichloroethane-d4 (Surr)	92.8		% Recovery	EPA 8260B	08/06/10 15:01
Toluene - d8 (Surr)	95.2		% Recovery	EPA 8260B	08/06/10 15:01

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-1**

Matrix : Water

Lab Number : 74040-05

Sample Date :08/02/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	53	0.50	ug/L	EPA 8260B	08/06/10 04:10
Toluene	11	0.50	ug/L	EPA 8260B	08/06/10 04:10
Ethylbenzene	67	0.50	ug/L	EPA 8260B	08/06/10 04:10
Total Xylenes	78	0.50	ug/L	EPA 8260B	08/06/10 04:10
Methyl-t-butyl ether (MTBE)	8.5	0.50	ug/L	EPA 8260B	08/06/10 04:10
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:10
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:10
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:10
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 04:10
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 04:10
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 04:10
TPH as Gasoline	1400	50	ug/L	EPA 8260B	08/06/10 04:10
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:10
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:10
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	08/06/10 04:10
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/06/10 04:10

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **MW-1**

Matrix : Water

Lab Number : 74040-06

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2.4	0.50	ug/L	EPA 8260B	08/06/10 04:47
Toluene	3.7	0.50	ug/L	EPA 8260B	08/06/10 04:47
Ethylbenzene	22	0.50	ug/L	EPA 8260B	08/06/10 04:47
Total Xylenes	23	0.50	ug/L	EPA 8260B	08/06/10 04:47
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 04:47
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 04:47
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 04:47
TPH as Gasoline	1200	50	ug/L	EPA 8260B	08/06/10 04:47
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 04:47
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	08/06/10 04:47
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/06/10 04:47

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **MW-11**

Matrix : Water

Lab Number : 74040-07

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2800	15	ug/L	EPA 8260B	08/07/10 14:20
Toluene	3800	15	ug/L	EPA 8260B	08/07/10 14:20
Ethylbenzene	2100	15	ug/L	EPA 8260B	08/07/10 14:20
Total Xylenes	10000	15	ug/L	EPA 8260B	08/07/10 14:20
Methyl-t-butyl ether (MTBE)	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
Diisopropyl ether (DIPE)	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
Ethyl-t-butyl ether (ETBE)	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
Tert-amyl methyl ether (TAME)	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
Tert-Butanol	< 70	70	ug/L	EPA 8260B	08/07/10 14:20
Methanol	< 1500	1500	ug/L	EPA 8260B	08/07/10 14:20
Ethanol	< 150	150	ug/L	EPA 8260B	08/07/10 14:20
TPH as Gasoline	53000	1500	ug/L	EPA 8260B	08/07/10 14:20
1,2-Dichloroethane	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
1,2-Dibromoethane	< 15	15	ug/L	EPA 8260B	08/07/10 14:20
1,2-Dichloroethane-d4 (Surr)	97.8		% Recovery	EPA 8260B	08/07/10 14:20
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	08/07/10 14:20

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **MW-3**

Matrix : Water

Lab Number : 74040-08

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2.4	0.50	ug/L	EPA 8260B	08/06/10 05:24
Toluene	5.5	0.50	ug/L	EPA 8260B	08/06/10 05:24
Ethylbenzene	0.96	0.50	ug/L	EPA 8260B	08/06/10 05:24
Total Xylenes	8.8	0.50	ug/L	EPA 8260B	08/06/10 05:24
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 05:24
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 05:24
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 05:24
TPH as Gasoline	74	50	ug/L	EPA 8260B	08/06/10 05:24
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 05:24
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	08/06/10 05:24
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/06/10 05:24

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **MW-2**

Matrix : Water

Lab Number : 74040-09

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2000	4.0	ug/L	EPA 8260B	08/07/10 17:03
Toluene	150	4.0	ug/L	EPA 8260B	08/07/10 17:03
Ethylbenzene	840	4.0	ug/L	EPA 8260B	08/07/10 17:03
Total Xylenes	730	4.0	ug/L	EPA 8260B	08/07/10 17:03
Methyl-t-butyl ether (MTBE)	280	4.0	ug/L	EPA 8260B	08/07/10 17:03
Diisopropyl ether (DIPE)	< 4.0	4.0	ug/L	EPA 8260B	08/07/10 17:03
Ethyl-t-butyl ether (ETBE)	< 4.0	4.0	ug/L	EPA 8260B	08/07/10 17:03
Tert-amyl methyl ether (TAME)	4.4	4.0	ug/L	EPA 8260B	08/07/10 17:03
Tert-Butanol	200	20	ug/L	EPA 8260B	08/07/10 17:03
Methanol	< 400	400	ug/L	EPA 8260B	08/07/10 17:03
Ethanol	< 40	40	ug/L	EPA 8260B	08/07/10 17:03
TPH as Gasoline	19000	400	ug/L	EPA 8260B	08/07/10 17:03
1,2-Dichloroethane	< 4.0	4.0	ug/L	EPA 8260B	08/07/10 17:03
1,2-Dibromoethane	< 4.0	4.0	ug/L	EPA 8260B	08/07/10 17:03
1,2-Dichloroethane-d4 (Surr)	93.5		% Recovery	EPA 8260B	08/07/10 17:03
Toluene - d8 (Surr)	95.9		% Recovery	EPA 8260B	08/07/10 17:03

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **DW-7**

Matrix : Water

Lab Number : 74040-10

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	280	0.50	ug/L	EPA 8260B	08/06/10 06:01
Toluene	13	0.50	ug/L	EPA 8260B	08/06/10 06:01
Ethylbenzene	49	0.50	ug/L	EPA 8260B	08/06/10 06:01
Total Xylenes	30	0.50	ug/L	EPA 8260B	08/06/10 06:01
Methyl-t-butyl ether (MTBE)	130	0.50	ug/L	EPA 8260B	08/06/10 06:01
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:01
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:01
Tert-amyl methyl ether (TAME)	1.3	0.50	ug/L	EPA 8260B	08/06/10 06:01
Tert-Butanol	220	5.0	ug/L	EPA 8260B	08/06/10 06:01
Methanol	< 50	50	ug/L	EPA 8260B	08/06/10 06:01
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 06:01
TPH as Gasoline	3500	50	ug/L	EPA 8260B	08/06/10 06:01
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:01
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/10 06:01
1,2-Dichloroethane-d4 (Surr)	99.0		% Recovery	EPA 8260B	08/06/10 06:01
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	08/06/10 06:01

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Sample : **MW-6**

Matrix : Water

Lab Number : 74040-11

Sample Date :08/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2700	5.0	ug/L	EPA 8260B	08/06/10 15:35
Toluene	120	5.0	ug/L	EPA 8260B	08/06/10 15:35
Ethylbenzene	690	5.0	ug/L	EPA 8260B	08/06/10 15:35
Total Xylenes	250	5.0	ug/L	EPA 8260B	08/06/10 15:35
Methyl-t-butyl ether (MTBE)	730	5.0	ug/L	EPA 8260B	08/06/10 15:35
Diisopropyl ether (DIPE)	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 15:35
Ethyl-t-butyl ether (ETBE)	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 15:35
Tert-amyl methyl ether (TAME)	7.4	5.0	ug/L	EPA 8260B	08/06/10 15:35
Tert-Butanol	480	25	ug/L	EPA 8260B	08/06/10 15:35
Methanol	< 500	500	ug/L	EPA 8260B	08/06/10 15:35
Ethanol	< 50	50	ug/L	EPA 8260B	08/06/10 15:35
TPH as Gasoline	21000	500	ug/L	EPA 8260B	08/06/10 15:35
1,2-Dichloroethane	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 15:35
1,2-Dibromoethane	< 5.0	5.0	ug/L	EPA 8260B	08/06/10 15:35
1,2-Dichloroethane-d4 (Surr)	94.8		% Recovery	EPA 8260B	08/06/10 15:35
Toluene - d8 (Surr)	95.3		% Recovery	EPA 8260B	08/06/10 15:35

QC Report : Method Blank Data

Project Name : **TESORO LIVERMORE #67076**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Methanol	< 50	50	ug/L	EPA 8260B	08/06/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/06/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/06/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/06/2010
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	08/06/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	08/06/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/07/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Methanol	< 50	50	ug/L	EPA 8260B	08/07/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/07/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/07/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	98.5		%	EPA 8260B	08/07/2010
Toluene - d8 (Surr)	99.1		%	EPA 8260B	08/07/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/09/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	08/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	08/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	08/05/2010

QC Report : Method Blank DataProject Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	08/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	08/05/2010
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	08/05/2010
Toluene - d8 (Surr)	98.5		%	EPA 8260B	08/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
-----------	----------------	------------------------	-------	-----------------	---------------

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	74046-05	0.063	39.8	40.0	37.6	37.3	ug/L	EPA 8260B	8/5/10	94.1	93.1	1.08	80-120	25
1,2-Dibromoethane	74053-03	<0.50	39.9	39.8	32.8	33.5	ug/L	EPA 8260B	8/6/10	82.1	84.0	2.35	80-120	25
1,2-Dichloroethane	74053-03	<0.50	39.9	39.8	33.4	33.6	ug/L	EPA 8260B	8/6/10	83.7	84.4	0.792	75.7-122	25
Benzene	74053-03	<0.50	39.9	39.8	35.9	36.0	ug/L	EPA 8260B	8/6/10	90.0	90.5	0.570	80-120	25
Diisopropyl ether	74053-03	<0.50	40.0	39.9	36.3	36.4	ug/L	EPA 8260B	8/6/10	90.7	91.1	0.388	80-120	25
Ethanol	74053-03	<5.0	100	100	105	99.4	ug/L	EPA 8260B	8/6/10	105	99.4	5.21	55.1-159	25
Ethyl-tert-butyl ether	74053-03	<0.50	40.0	39.9	33.9	33.8	ug/L	EPA 8260B	8/6/10	84.8	84.8	0.0104	76.5-120	25
Ethylbenzene	74053-03	<0.50	39.9	39.8	36.6	36.6	ug/L	EPA 8260B	8/6/10	91.8	91.9	0.105	80-120	25
Methanol	74053-03	200	999	997	1050	972	ug/L	EPA 8260B	8/6/10	85.0	77.1	9.70	53.2-147	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	74053-03	1.3	39.9	39.8	33.1	33.3	ug/L	EPA 8260B	8/6/10	79.7	80.3	0.781	69.7-121	25
P + M Xylene	74053-03	<0.50	39.9	39.8	35.9	36.2	ug/L	EPA 8260B	8/6/10	89.9	90.8	0.981	76.8-120	25
Tert-Butanol	74053-03	<5.0	200	199	187	183	ug/L	EPA 8260B	8/6/10	93.5	91.7	1.98	80-120	25
Tert-amyl-methyl ether	74053-03	<0.50	40.1	40.1	34.8	35.0	ug/L	EPA 8260B	8/6/10	86.6	87.2	0.665	78.9-120	25
Toluene	74053-03	<0.50	39.9	39.8	36.4	36.3	ug/L	EPA 8260B	8/6/10	91.3	91.2	0.133	80-120	25
1,2-Dibromoethane	74072-02	<0.50	39.9	39.9	33.5	33.2	ug/L	EPA 8260B	8/7/10	83.9	83.3	0.689	80-120	25
1,2-Dichloroethane	74072-02	<0.50	39.9	39.9	34.5	33.6	ug/L	EPA 8260B	8/7/10	86.4	84.3	2.52	75.7-122	25
Benzene	74072-02	6.9	39.9	39.9	43.3	42.8	ug/L	EPA 8260B	8/7/10	91.1	90.0	1.31	80-120	25
Diisopropyl ether	74072-02	<0.50	40.0	40.0	38.0	37.5	ug/L	EPA 8260B	8/7/10	94.9	93.7	1.22	80-120	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethanol	74072-02	<5.0	100	100	119	98.2	ug/L	EPA 8260B	8/7/10	119	98.0	19.4	55.1-159	25
Ethyl-tert-butyl ether	74072-02	<0.50	40.0	40.0	33.6	33.2	ug/L	EPA 8260B	8/7/10	84.1	83.1	1.21	76.5-120	25
Ethylbenzene	74072-02	15	39.9	39.9	52.9	51.9	ug/L	EPA 8260B	8/7/10	93.6	91.3	2.51	80-120	25
Methanol	74072-02	<50	999	999	670	552	ug/L	EPA 8260B	8/7/10	67.1	55.2	19.4	53.2-147	25
Methyl-t-butyl ether	74072-02	<0.50	39.9	39.9	31.4	31.0	ug/L	EPA 8260B	8/7/10	78.7	77.8	1.12	69.7-121	25
P + M Xylene	74072-02	1.5	39.9	39.9	39.5	39.0	ug/L	EPA 8260B	8/7/10	95.1	93.8	1.36	76.8-120	25
Tert-Butanol	74072-02	<5.0	200	200	196	190	ug/L	EPA 8260B	8/7/10	98.3	95.2	3.21	80-120	25
Tert-amyl-methyl ether	74072-02	<0.50	40.1	40.1	34.6	33.8	ug/L	EPA 8260B	8/7/10	86.3	84.3	2.29	78.9-120	25
Toluene	74072-02	1.1	39.9	39.9	38.3	37.5	ug/L	EPA 8260B	8/7/10	93.2	91.0	2.38	80-120	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	74053-03	0.060	39.8	39.8	37.2	37.3	ug/L	EPA 8260B	8/9/10	93.5	93.4	0.0356	80-120	25
1,2-Dibromoethane	74051-01	<0.50	40.0	40.0	40.9	40.2	ug/L	EPA 8260B	8/5/10	102	101	1.71	80-120	25
1,2-Dichloroethane	74051-01	<0.50	40.0	40.0	40.8	40.2	ug/L	EPA 8260B	8/5/10	102	101	1.28	75.7-122	25
Benzene	74051-01	<0.50	40.0	40.0	40.2	39.6	ug/L	EPA 8260B	8/5/10	101	99.0	1.57	80-120	25
Diisopropyl ether	74051-01	<0.50	40.1	40.1	41.4	40.6	ug/L	EPA 8260B	8/5/10	103	101	1.82	80-120	25
Ethanol	74051-01	<5.0	100	100	99.7	100	ug/L	EPA 8260B	8/5/10	99.2	100	0.720	55.1-159	25
Ethyl-tert-butyl ether	74051-01	<0.50	40.1	40.1	42.7	42.0	ug/L	EPA 8260B	8/5/10	106	105	1.69	76.5-120	25
Ethylbenzene	74051-01	<0.50	40.0	40.0	40.9	40.9	ug/L	EPA 8260B	8/5/10	102	102	0.0833	80-120	25
Methanol	74051-01	<50	1000	1000	1040	1020	ug/L	EPA 8260B	8/5/10	104	102	1.36	53.2-147	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	74051-01	6.3	40.0	40.0	48.1	47.6	ug/L	EPA 8260B	8/5/10	104	103	1.31	69.7-121	25
P + M Xylene	74051-01	<0.50	40.0	40.0	41.0	40.3	ug/L	EPA 8260B	8/5/10	102	101	1.52	76.8-120	25
Tert-Butanol	74051-01	<5.0	200	200	206	205	ug/L	EPA 8260B	8/5/10	103	102	0.376	80-120	25
Tert-amyl-methyl ether	74051-01	<0.50	40.2	40.2	44.3	42.6	ug/L	EPA 8260B	8/5/10	110	106	3.90	78.9-120	25
Toluene	74051-01	<0.50	40.0	40.0	41.3	40.6	ug/L	EPA 8260B	8/5/10	103	101	1.71	80-120	25
1,2-Dibromoethane	74053-03	<0.50	40.0	40.0	40.3	38.5	ug/L	EPA 8260B	8/5/10	101	96.2	4.55	80-120	25
1,2-Dichloroethane	74053-03	<0.50	40.0	40.0	42.1	40.7	ug/L	EPA 8260B	8/5/10	105	102	3.30	75.7-122	25
Benzene	74053-03	<0.50	40.0	40.0	40.5	39.4	ug/L	EPA 8260B	8/5/10	101	98.5	2.84	80-120	25
Diisopropyl ether	74053-03	<0.50	40.1	40.1	46.0	45.1	ug/L	EPA 8260B	8/5/10	115	112	2.01	80-120	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethanol	74053-03	<5.0	100	100	103	106	ug/L	EPA 8260B	8/5/10	103	105	2.29	55.1-159	25
Ethyl-tert-butyl ether	74053-03	<0.50	40.1	40.1	44.4	43.5	ug/L	EPA 8260B	8/5/10	111	109	2.02	76.5-120	25
Ethylbenzene	74053-03	<0.50	40.0	40.0	42.4	42.2	ug/L	EPA 8260B	8/5/10	106	106	0.495	80-120	25
Methanol	74053-03	<50	1000	1000	996	932	ug/L	EPA 8260B	8/5/10	99.4	93.0	6.64	53.2-147	25
Methyl-t-butyl ether	74053-03	2.3	40.0	40.0	46.3	45.4	ug/L	EPA 8260B	8/5/10	110	108	2.07	69.7-121	25
P + M Xylene	74053-03	<0.50	40.0	40.0	42.6	42.3	ug/L	EPA 8260B	8/5/10	107	106	0.759	76.8-120	25
Tert-Butanol	74053-03	<5.0	200	200	206	208	ug/L	EPA 8260B	8/5/10	103	104	1.08	80-120	25
Tert-amyl-methyl ether	74053-03	<0.50	40.2	40.2	44.7	43.9	ug/L	EPA 8260B	8/5/10	111	109	1.79	78.9-120	25
Toluene	74053-03	<0.50	40.0	40.0	40.9	40.0	ug/L	EPA 8260B	8/5/10	102	99.9	2.24	80-120	25

QC Report : Laboratory Control Sample (LCS)

Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	8/5/10	93.9	80-120
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	8/6/10	84.6	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	8/6/10	84.6	75.7-122
Benzene	40.0	ug/L	EPA 8260B	8/6/10	91.6	80-120
Diisopropyl ether	40.1	ug/L	EPA 8260B	8/6/10	93.1	80-120
Ethanol	100	ug/L	EPA 8260B	8/6/10	95.8	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	8/6/10	85.3	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	8/6/10	93.0	80-120
Methanol	1000	ug/L	EPA 8260B	8/6/10	95.8	53.2-147
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	8/6/10	81.1	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	8/6/10	92.3	76.8-120
Tert-Butanol	200	ug/L	EPA 8260B	8/6/10	92.4	80-120
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	8/6/10	88.6	78.9-120
Toluene	40.0	ug/L	EPA 8260B	8/6/10	92.6	80-120
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	8/7/10	86.8	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	8/7/10	85.7	75.7-122
Benzene	40.0	ug/L	EPA 8260B	8/7/10	93.4	80-120
Diisopropyl ether	40.1	ug/L	EPA 8260B	8/7/10	94.9	80-120
Ethanol	100	ug/L	EPA 8260B	8/7/10	99.9	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	8/7/10	87.8	76.5-120

QC Report : Laboratory Control Sample (LCS)Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Ethylbenzene	40.0	ug/L	EPA 8260B	8/7/10	94.6	80-120
Methanol	1000	ug/L	EPA 8260B	8/7/10	70.5	53.2-147
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	8/7/10	81.8	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	8/7/10	94.4	76.8-120
Tert-Butanol	200	ug/L	EPA 8260B	8/7/10	95.0	80-120
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	8/7/10	88.5	78.9-120
Toluene	40.0	ug/L	EPA 8260B	8/7/10	94.9	80-120
Toluene	40.0	ug/L	EPA 8260B	8/9/10	93.7	80-120
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	8/5/10	98.0	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	8/5/10	98.2	75.7-122
Benzene	40.0	ug/L	EPA 8260B	8/5/10	98.2	80-120
Diisopropyl ether	40.1	ug/L	EPA 8260B	8/5/10	99.0	80-120
Ethanol	100	ug/L	EPA 8260B	8/5/10	95.0	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	8/5/10	102	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	8/5/10	100	80-120
Methanol	1000	ug/L	EPA 8260B	8/5/10	96.6	53.2-147
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	8/5/10	100	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	8/5/10	100	76.8-120
TPH as Gasoline	503	ug/L	EPA 8260B	8/5/10	94.2	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	8/5/10	98.0	80-120
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	8/5/10	105	78.9-120

QC Report : Laboratory Control Sample (LCS)Project Name : **TESORO LIVERMORE #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	8/5/10	101	80-120
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	8/5/10	97.6	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	8/5/10	103	75.7-122
Benzene	40.0	ug/L	EPA 8260B	8/5/10	100	80-120
Diisopropyl ether	40.1	ug/L	EPA 8260B	8/5/10	111	80-120
Ethanol	100	ug/L	EPA 8260B	8/5/10	94.0	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	8/5/10	105	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	8/5/10	104	80-120
Methanol	1000	ug/L	EPA 8260B	8/5/10	132	53.2-147
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	8/5/10	102	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	8/5/10	104	76.8-120
Tert-Butanol	200	ug/L	EPA 8260B	8/5/10	101	80-120
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	8/5/10	106	78.9-120
Toluene	40.0	ug/L	EPA 8260B	8/5/10	98.8	80-120



2795 2nd Street, Suite 300
 Davis, CA 95618
 Lab: 530.297.4800
 Fax: 530.297.4802

SRG # / Lab No. 74040

Project Contact (Hardcopy, or PDF To): MATTHEW NELSON
 California EDF Report? Yes No
 Company / Address: 1332 PERATA AVE. BERKELEY, CA 94702
 Sampling Company Log Code: ERSP
 Phone Number: 510-988-2755
 Global ID: 10600101410
 Fax Number: _____
 EDF Deliverable To (Email Address): _____
 Project #: _____ P.O. #: _____
 Bill to: MATTHEW NELSON
 Project Name: TESORO LIVERMORE # 67076
 Sampler Print Name: RICK HOLLAND
 Sampler Signature: [Signature]

Chain-of-Custody Record and Analysis Request

Sample Designation	Sampling		Container				Preservative			Matrix			Analysis Request	TAT	
	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	HCl	HNO ₃	None	Water	Soil			Air
MW-6	8-3	12:21	X					X			X			X	11
[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]	[Large scribble]

Analysis Request										TAT
CIRCLE METHOD										<input type="checkbox"/>
MTBE @ 0.5 ppb (EPA 8260B)	<input checked="" type="checkbox"/>	12 hr								
BTEX (EPA 8260B)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
TPH Gas (EPA 8260B)	<input checked="" type="checkbox"/>	24 hr								
5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
7 Oxygenates (5 oxy + EIOH, MeOH) (EPA 8260B)	<input checked="" type="checkbox"/>	48 hr								
Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Volatile Halocarbons (EPA 8260B)	<input type="checkbox"/>	72hr								
Volatile Organics Full List (EPA 8260B)	<input type="checkbox"/>	<input type="checkbox"/>								
Volatile Organics (EPA 524.2 Drinking Water)	<input type="checkbox"/>	<input type="checkbox"/>								
TPH as Diesel (EPA 8015M)	<input type="checkbox"/>	1 wk								
TPH as Motor Oil (EPA 8015M)	<input type="checkbox"/>									
CAM 17 Metals (EPA 200.7 / 6010)	<input type="checkbox"/>									
5 Waste Oil Metals (Cd, Cr, Ni, Pb, Zn) (EPA 200.7 / 6010)	<input type="checkbox"/>									
Mercury (EPA 245.1 / 7470 / 7471)	<input type="checkbox"/>									
Total Lead (EPA 200.7 / 6010)	<input type="checkbox"/>									
W.E.T. Lead (STLC)	<input type="checkbox"/>									

Relinquished by: [Signature] Date: 8-3-10 Time: 13:00
 Received by: _____
 Relinquished by: _____ Date: _____ Time: _____
 Received by: _____
 Relinquished by: _____ Date: 08/04/10 Time: 1145
 Received by Laboratory: [Signature] KIFF Analytical LLC

Remarks: _____

2795 2nd Street, Suite 300

SAMPLE RECEIPT CHECKLIST

RECEIVER
TJB
Initials

SRG#: 74040 Date: 080410
Project ID: Tesoro Livermore #67076
Method of Receipt: Courier Over-the-counter Shipper

COC Inspection

Is COC present? Yes No
Custody seals on shipping container? Intact Broken Not present N/A
Is COC Signed by Relinquisher? Yes No Dated? Yes No
Is sampler name legibly indicated on COC? Yes No
Is analysis or hold requested for all samples Yes No
Is the turnaround time indicated on COC? Yes No
Is COC free of whiteout and uninitialed cross-outs? Yes No, Whiteout No, Cross-outs

Sample Inspection

Coolant Present: Yes No (includes water)
Temperature °C 3.0 Therm. ID# IR-5 Initial TJB Date/Time 080410/1457 N/A
Are there custody seals on sample containers? Intact Broken Not present
Do containers match COC? Yes No No, COC lists absent sample(s) No, Extra sample(s) present
Are there samples matrices other than soil, water, air or carbon? Yes No
Are any sample containers broken, leaking or damaged? Yes No
Are preservatives indicated? Yes, on sample containers Yes, on COC Not indicated N/A
Are preservatives correct for analyses requested? Yes No N/A
Are samples within holding time for analyses requested? Yes No
Are the correct sample containers used for the analyses requested? Yes No
Is there sufficient sample to perform testing? Yes No
Does any sample contain product, have strong odor or are otherwise suspected to be hot? Yes No
Receipt Details
Matrix WA Container type VOA # of containers received 33
Matrix _____ Container type _____ # of containers received _____
Matrix _____ Container type _____ # of containers received _____
Date and Time Sample Put into Temp Storage Date: 080410 Time: 1539

Quicklog

Are the Sample ID's indicated: On COC On sample container(s) On Both Not indicated
If Sample ID's are listed on both COC and containers, do they all match? Yes No N/A
Is the Project ID indicated: On COC On sample container(s) On Both Not indicated
If project ID is listed on both COC and containers, do they all match? Yes No N/A
Are the sample collection dates indicated: On COC On sample container(s) On Both Not indicated
If collection dates are listed on both COC and containers, do they all match? Yes No N/A
Are the sample collection times indicated: On COC On sample container(s) On Both Not indicated
If collection times are listed on both COC and containers, do they all match? Yes No N/A

COMMENTS: No TAT selected. TJB 080410 1147

ATTACHMENT G
WASTE MANIFESTS

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. N/A		Manifest Document No. TESORO # 67076		2. Page 1 of 1					
3. Generator's Name and Mailing Address Tesoro Environmental Resources Company 3450 S. 344th Way Auburn, WA 98001				11619 First St. Livermore, CA							
4. Generator's Phone ()				5. Transporter 1 Company Name EXCEL Environmental Services		6. US EPA ID Number CAL000207350					
7. Transporter 2 Company Name				8. US EPA ID Number		A. State Transporter's ID					
9. Designated Facility Name and Site Address ROT 5300 CLAWS Rd. Riverbank CA. 95367				10. US EPA ID Number CAL000190816		B. Transporter 1 Phone 800-376-6008					
						C. State Transporter's ID					
						D. Transporter 2 Phone					
						E. State Facility's ID					
						F. Facility's Phone 209-863-8181					
11. WASTE DESCRIPTION				12. Containers		13. Total Quantity	14. Unit Wt./Vol.				
				No.		Type					
				a.		NON-HAZARDOUS Waste Water		001	TT	350 GAL.	G
				b.							
				c.							
d.											
G. Additional Descriptions for Materials Listed Above NON-HAZ WATER				H. Handling Codes for Wastes Listed Above							
15. Special Handling Instructions and Additional Information Gloves ERG 171											
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.											
Printed/Typed Name Peter Arroyo				Signature 		Date Month Day Year 8 3 10					
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name Tim Biggett		Signature 					
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name		Signature					
19. Discrepancy Indication Space											
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.				Printed/Typed Name		Signature					
						Date Month Day Year					

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY