TESORO

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19 August, 2010

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

Subject: **Second Quarter 2010 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,

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

Attachments

CC: Arctos – Matthew Nelson

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ARCTOS

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19 August 2010
Project No. 01LV

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

Subject: Second 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 second quarter 2010 at the subject site (Figure 1).

Executive Summary

Arctos conducted quarterly and semiannual groundwater monitoring at the site on 3 to 6 May 2010. There was an average 4-foot increase in water levels since the first quarter 2010 and an average 20-foot increase since the third quarter 2009. Third quarter 2009 groundwater elevations were the lowest since monitoring began in 1993. Petroleum hydrocarbon concentrations in groundwater were consistent with the first quarter 2010 results. Concentrations at the most downgradient well DW-7, located approximately 410 feet northwest of the site, have decreased approximately 50 percent since installation in November 2009.

On 24 May 2010, construction began for phase two of the remediation system, which included sound wall installation, soil vapor extraction (SVE) and oxygen injection system installation, and completion of equipment area piping construction. Remediation system construction was completed on 25 June 2010. Arctos performed start-up activities for the SVE system on 28 June 2010 per the Bay Area Air Quality Management District (BAAQMD) Authority to Construct.

On 24 June 2010, Arctos conducted a baseline soil gas survey of source area vapor extraction wells MW-11, TP-1, TP-2, VW-2, and VW-3. Samples were collected from the

SVE wells and analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tert-butyl ether (MTBE), and tert-butyl alcohol (TBA) in a mobile laboratory. A sample was not collected from SVE well MW-1 because the well screen was submerged at the time.

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 3 to 6 May 2010. Samples were collected from wells MW-1 through MW-11, DW-1 through DW-7, TP-1, TP-2, VW-2, and VW-3 (Figure 2) in accordance with the site monitoring plan (Attachment A). Baseline samples were also collected from injection wells IP-1 through IP-10 (Figure 2). 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.

On 24 June 2010, Arctos performed a soil gas survey on source area wells MW-11, TP-1, TP-2, VW-2, and VW-3 to evaluate baseline soil vapor concentrations before SVE system start-up. Samples were analyzed in a State-certified mobile laboratory operated by TEG Northern California Inc., of Rancho Cordova, California, for TPHg; BTEX; MTBE; and TBA using EPA Method 8260B. Samples were also analyzed by Kiff Analytical LLC, a State-certified laboratory in Davis, California, for fixed gases using ASTM Standard D-1946. Due to increased water elevations this quarter, the screen for well MW-1 was submerged and a vapor sample could not be collected. Soil vapor sampling procedures are in Attachment C.

Analytical Program

Groundwater samples were analyzed in accordance with the analytical plan in Attachment A.

Groundwater Results

Groundwater elevations were approximately 435 to 443 feet above mean sea level (31 to 35 feet below ground surface). Water levels increased an average of 4 feet compared to the February 2010 event and 20 feet compared to the August 2009 event (Table 1). The

water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.011 (1 foot/91 feet; Figure 2). The gradient is consistent with historical data collected since 1993 (Attachment D).

The highest TPHg and benzene concentrations of 92,000 and 6,000 micrograms per liter (µg/l), respectively, were at injection well IP-9, which is located in the southwest portion of the site adjacent to the underground storage tanks (USTs). The highest MTBE and TBA concentrations of 14,000 and 9,900 µg/l, respectively, were at well TP-2, which is located in the northwest corner of the station downgradient of the dispensers (Figure 2).

In May 2010, TPHg, benzene, and MTBE were detected in downgradient well DW-7 at concentrations of 4,100, 250, and 97 µg/l, respectively. TPHg, benzene, and MTBE concentrations in well DW-7 have decreased by approximately 50 percent since 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 further 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, and Figure 6 shows hydrocarbon concentrations for the injection wells. Historical analytical results are in Attachment E, and the laboratory reports and the chain-of-custody forms are in Attachment F.

Vapor Results

The highest TPHg, benzene, and MTBE concentrations of 3,600, 24, and 18 µg/l, respectively, were at well TP-2, which is located in the northwest corner of the station downgradient of the dispensers. TBA was not detected in any of the wells sampled. The lowest oxygen and highest carbon dioxide percentages of 16 and 4.29 percent by volume, respectively, were at well MW-11, which is located in the southwest portion of the site adjacent to the USTs. Background oxygen and carbon dioxide percentages of 21.9 and nondetect less than 0.5 percent by volume, respectively, were at well VW-3. The decreased oxygen and increased carbon dioxide percentages, compared to background, at well MW-11 indicate that aerobic biodegradation of petroleum hydrocarbons is occurring. Soil vapor analytical results are summarized in Table 4.

Remediation System

Construction for phase two of the onsite groundwater remediation system began on 24 May 2010. Cornerstone Environmental Contractors, Inc. (Cornerstone), of Lafayette, California, completed this construction phase including sound wall installation, SVE and

oxygen injection system installation, and equipment area piping construction. Remediation system construction was completed on 25 June 2010. Arctos performed start-up activities for the SVE system on 28 June 2010 per the BAAQMD Authority to Construct. The system is currently operating on wells MW-11, TP-1, TP-2, and VW-2. Due to increased water elevations this quarter, the screen for well MW-1 was submerged and it was not included in the SVE system operating wells. SVE system start-up activities will be summarized in the third quarter 2010 status report.

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 is expected in the third quarter 2010.

Well Abandonment

On 25 May 2010 Arctos's subcontractor, Gregg Drilling & Testing, of Martinez, California, abandoned former remediation well RW-4, which was in conflict with the sound barrier wall footing as described in the first quarter 2010 status report. The completed scope of work included the following tasks:

- Obtained a well destruction permit from the Zone 7 Water Agency
- Overdrilled the well boring and removed well casing, screening material, and sealing material using a hollow-stem auger rig
- Backfilled the former well boring with a Portland cement slurry using a tremie pipe
- Disposed of soil cuttings, wastewater, and former well materials (see Attachment G for waste manifests).

Conclusions

Results of the groundwater sampling and remediation system installation activities indicate the following conclusions:

1. Onsite groundwater remediation is required to decrease the mass flux from the source area.

2. An additional deep monitoring well 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.

ARCTOS

Recommendations

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

- Complete start-up of the SVE system and conduct start-up of oxygen injection system
- Conduct quarterly sampling at deep wells DW-5 to DW-7 to confirm initial concentrations and collect data for trend analyses.

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

REGISTERED PROFESSIONAL ENGINEER
MATTHEW J. NELSON
NO. C74689
Exp. 12/31/11
CIVIL
STATE OF CALIFORNIA

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 – Soil Vapor Analytical Results
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 – Injection Well Hydrocarbon Concentrations in Groundwater
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
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
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
MW-4	8/4/09	DRY[c]	473.64	--[d]
	12/8/09	39.46		434.18
	2/11/10	35.31		438.33
	5/3/10	31.55		442.09
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
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
MW-7	8/4/09	DRY	472.33	--
	12/17/09	39.26		433.07
	2/11/10	36.18		436.15
	5/3/10	31.80		440.53
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

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-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
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
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
VW-2	8/4/09	DRY	473.28	--
	12/8/09	DRY		--
	2/11/10	NM[(d)]		--
	5/3/10	31.84		441.44
VW-3	8/4/09	DRY	474.38	--
	12/8/09	DRY		--
	2/11/10	DRY		--
	5/3/10	31.85		442.53
TP-1	8/4/09	DRY	472.82	--
	12/8/09	41.39		431.43
	2/17/10	36.15		436.67
	5/3/10	32.32		440.50
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
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

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-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
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
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
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
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
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

(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) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.

(d) 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	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
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	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
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
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
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
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
	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

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-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	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	ND<0.5	ND<0.5
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
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
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
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
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

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-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
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	1,000	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	ND<8	27	4,500	ND<800	ND<80	ND<8	ND<8
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
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	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
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	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	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	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	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

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)
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
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	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	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	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	ND<2	2.4	290	ND<200	ND<20	ND<2	ND<2
	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

(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) 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

SOIL VAPOR ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Sample Location	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)	TBA[a] (µg/l)	Oxygen[b]	Carbon Dioxide[b]
MW-1	6/24/10	NS[c]	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	6/24/10	2,300	13	10	7.4	20.5	ND<0.1[d]	ND<1.0	16	4.29
TP-1	6/24/10	350	0.15	0.25	0.46	1.11	ND<0.1	ND<1.0	21.7	ND<0.5
TP-2	6/24/10	3,600	24	0.59	27	28.1	18	ND<1.0	20.3	0.93
VW-2	6/24/10	3,100	0.91	0.68	1.8	2.1	ND<0.1	ND<1.0	17	2.96
VW-3	6/24/10[e]	120	0.33	ND<0.2	1.8	2.32	ND<0.1	ND<1.0	21.9	ND<0.5

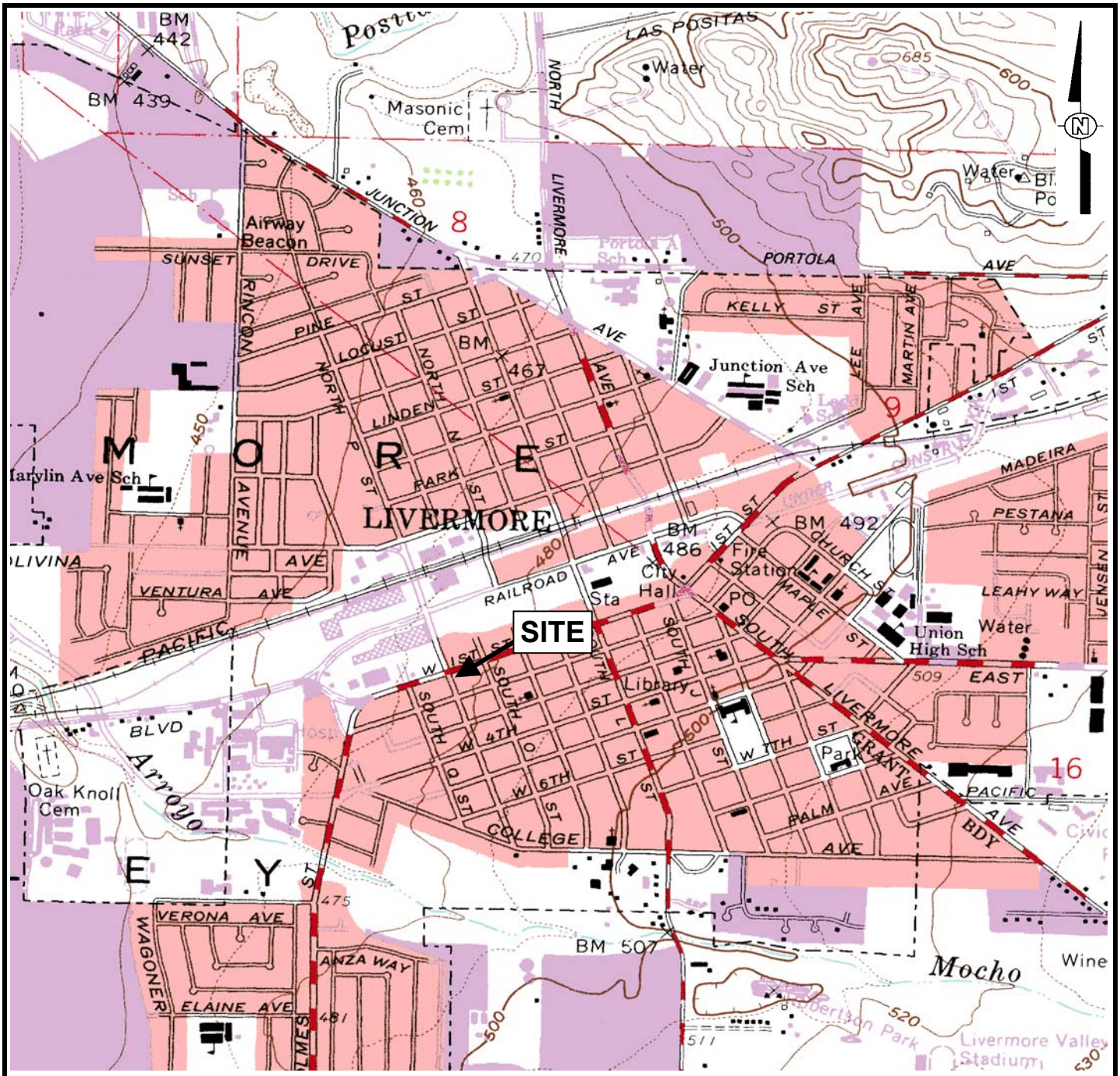
(a) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes, methyl tert-butyl ether (MTBE), and tert-butyl alcohol (TBA) anaylzed using EPA Method 8260.

(b) Results are in % by volume.

(c) NS - Not sampled. A sample was not collected due to a submerged screen.

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

(e) Duplicate sample also collected; highest value presented in table (see laboratory report for results).



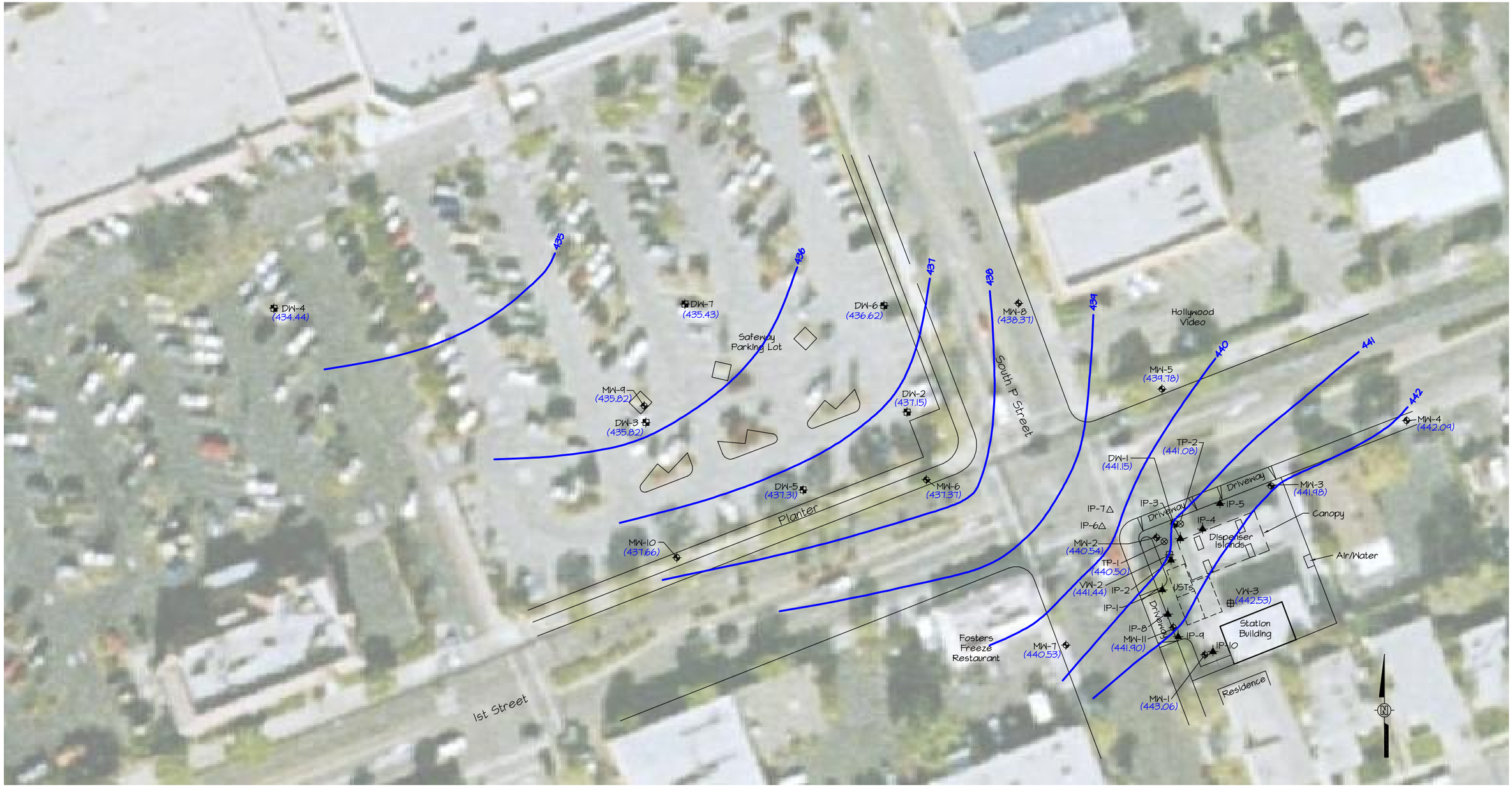
SCALE

0 2000 4000 FEET

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	



Legend

- MW-7 ⊕ Groundwater Monitoring Well With Groundwater Elevation (Feet, MSL) Measured 3 May 2010
- DW-1 ⊞ Deep Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) Measured 3 May 2010
- IP-1 ▲ Injection Well
- IP-6 △ Angled Injection Well Screen Location
- VW-2 ⊞ Vapor Extraction Well
- TP-2 ⊗ Temporary Monitoring Well
- 442 Goundwater Elevation Contour

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
8	3	MY	4/30/09	First Quarter 2009 Monitoring Report
	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

GROUNDWATER ELEVATION CONTOURS

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LV11B-20408.DWG

FIGURE 2

6/24/2010 1:19PM 01LV11B-20408.dwg

Legend

MW-7 ⊕ Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 Total Petroleum Hydrocarbons as Gasoline (TPHg) Results in µg/L

DW-1 ⊕ Deep Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 TPHg Results in µg/L

IP-1 ▲ Injection Well

IP-6 △ Angled Injection Well Screen Location

VW-2 ⊞ Vapor Extraction Well with 11 and 12 February and 3 to 6 May 2010 TPHg Results in µg/L

TP-2 ⊗ Temporary Monitoring Well with 11 and 12 February and 3 to 6 May 2010 TPHg Results in µg/L

1000 TPHg Concentration Contour (µg/L), Queried Where Uncertain

ND Not Detected

NS Not Sampled

(1,300/710) Previous Quarter/Current Quarter TPHg Results in µg/L

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
8	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

TPHg CONCENTRATION CONTOURS

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LV11B-20508.DWG

FIGURE 3

6/24/2010 1:20PM 01LV11B-20508.dwg

Legend

MW-7 ⊕ Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 Benzene Results in µg/L

DW-1 ✚ Deep Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 Benzene Results in µg/L

IP-1 ▲ Injection Well

IP-6 △ Angled Injection Well Screen Location

VW-2 ⊞ Vapor Extraction Well with 11 and 12 February and 3 to 6 May 2010 Benzene Results in µg/L

TP-2 ⊗ Temporary Monitoring Well with 11 and 12 February and 3 to 6 May 2010 Benzene Results in µg/L

1,000 Benzene Concentration Contour (µg/L), Queried Where Uncertain

ND Not Detected

NS Not Sampled

(3.7/2.2) Previous Quarter/Current Quarter Benzene Results in µg/L

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
8	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

BENZENE CONCENTRATION CONTOURS

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LV11B-20608.DWG

FIGURE 4

6/24/2010 1:22PM 01LV11B-20608.dwg

DW-4 (NS/ND<0.5)
DW-7 (190/97)
DW-6 (14/5.6)
MW-8 (NS/ND<0.5)
Hollywood Video
100
Safeway Parking Lot
South P Street
MW-9 (NS/44)
DW-3 (ND<0.5/ND<0.5)
DW-2 (320/350)
MW-5 (NS/ND<0.5)
TP-2 (NS/14,000)
MW-4 (NS/ND<0.5)
DW-1 (49/21)
IP-5
Driveway
MW-3 (0.52/ND<0.5)
DW-5 (ND<0.5/ND<0.5)
MW-6 (540/820)
IP-7
IP-6
1,000
Driveway
IP-4
Canopy
Air/Water
Dispenser Islands
MW-2 (820/530)
TP-1 (NS/3,400)
IP-3
VW-2 (NS/1,300)
VW-3 (NS/ND<0.5)
IP-2
Planter
MW-10 (NS/ND<0.5)
USTs
Driveway
Fosters Freeze Restaurant
IP-1
Station Building
MW-7 (NS/ND<0.5)
IP-8
IP-10
MW-11 (NS/ND<15)
MW-1 (ND<0.5/ND<0.5)
Residence
IP-9
1st Street
N

Legend

MW-7 ⊕ Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 Methyl Tert-Butyl Ether (MTBE) Results in µg/L

DW-1 ⊞ Deep Groundwater Monitoring Well with 11 and 12 February and 3 to 6 May 2010 MTBE Results in µg/L

IP-1 ▲ Injection Well

IP-6 △ Angled Injection Well Screen Location

VW-2 ⊞ Vapor Extraction Well with 11 and 12 February and 3 to 6 May 2010 MTBE Results in µg/L

TP-2 ⊗ Temporary Monitoring Well with 11 and 12 February and 3 to 6 May 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

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
8	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

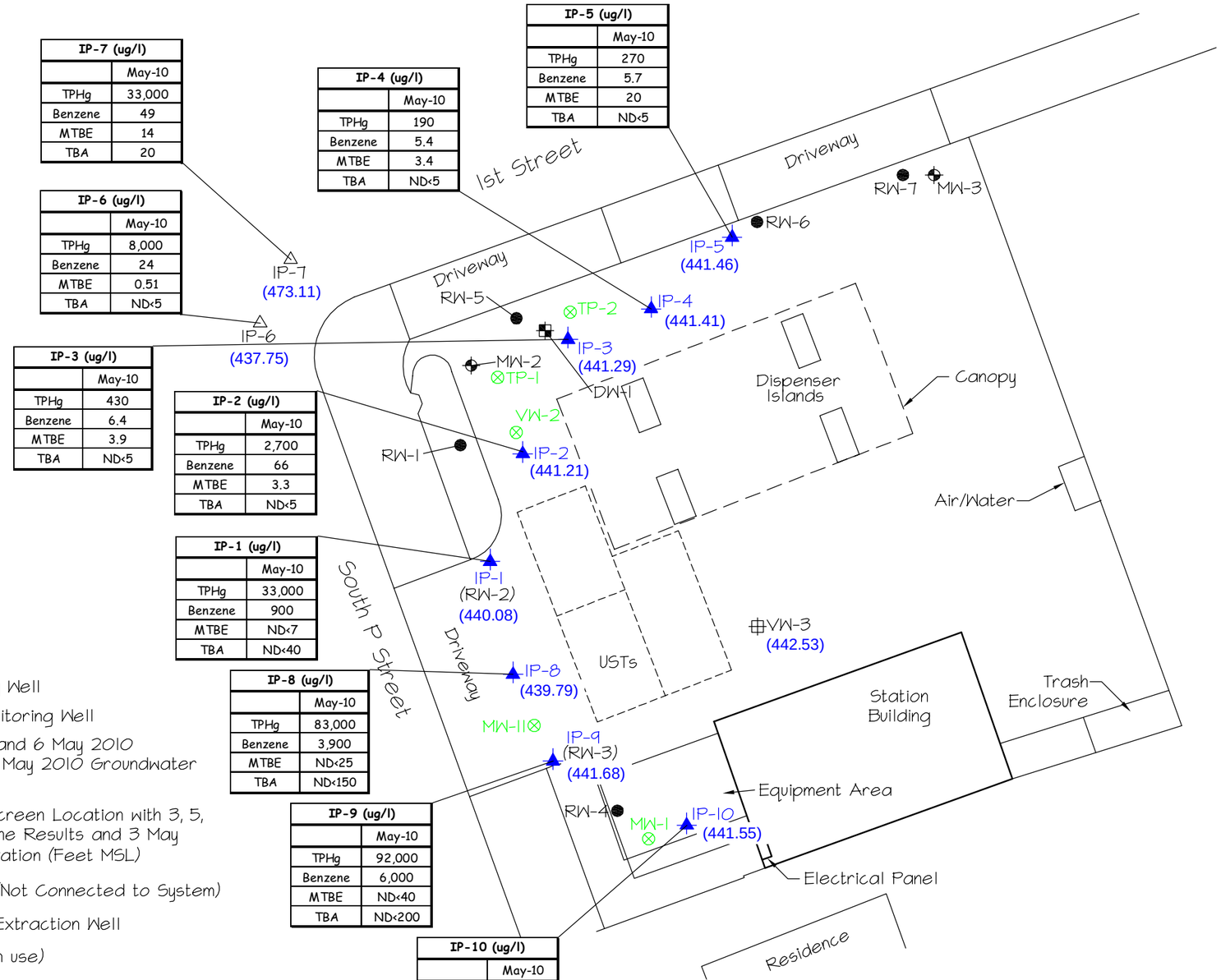
MTBE CONCENTRATION CONTOURS

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LV11B-20708.DWG

FIGURE 5

01LV11B-20708.dwg 6/22/2010 4:02PM



IP-7 (ug/l)	
	May-10
TPHg	33,000
Benzene	49
MTBE	14
TBA	20

IP-6 (ug/l)	
	May-10
TPHg	8,000
Benzene	24
MTBE	0.51
TBA	ND<5

IP-3 (ug/l)	
	May-10
TPHg	430
Benzene	6.4
MTBE	3.9
TBA	ND<5

IP-4 (ug/l)	
	May-10
TPHg	190
Benzene	5.4
MTBE	3.4
TBA	ND<5

IP-5 (ug/l)	
	May-10
TPHg	270
Benzene	5.7
MTBE	20
TBA	ND<5

IP-2 (ug/l)	
	May-10
TPHg	2,700
Benzene	66
MTBE	3.3
TBA	ND<5

IP-1 (ug/l)	
	May-10
TPHg	33,000
Benzene	900
MTBE	ND<7
TBA	ND<40

IP-8 (ug/l)	
	May-10
TPHg	83,000
Benzene	3,900
MTBE	ND<25
TBA	ND<150

IP-9 (ug/l)	
	May-10
TPHg	92,000
Benzene	6,000
MTBE	ND<40
TBA	ND<200

IP-10 (ug/l)	
	May-10
TPHg	3,600
Benzene	73
MTBE	ND<0.5
TBA	ND<5

Legend

- MW-1 ⊕ Groundwater Monitoring Well
- DW-1 ⊞ Deep Groundwater Monitoring Well
- IP-1 (440.08) ▲ Injection Well with 3, 5, and 6 May 2010 Baseline Results and 3 May 2010 Groundwater Elevation (Feet MSL)
- IP-6 (437.75) △ Angled Injection Well Screen Location with 3, 5, and 6 May 2010 Baseline Results and 3 May 2010 Groundwater Elevation (Feet MSL)
- VW-3 ⊞ Vapor Extraction Well (Not Connected to System)
- TP-2 ⊗ Monitoring Well/Vapor Extraction Well
- RW-1 ● Remediation Well (Not in use)

IP-1 (ug/l)	
	May-10
TPHg	33,000
Benzene	900
MTBE	ND<7
TBA	ND<40

- Current Groundwater Sampling Event
- Total Petroleum Hydrocarbons as Gasoline (µg/L) as analyzed using EPA Method 8260
- Benzene (µg/L) as analyzed using EPA Method 8260
- Methyl Tert-Butyl Ether (µg/L) as analyzed using EPA Method 8260
- Tert-Butyl Alcohol (µg/L) as analyzed using EPA Methold 8260

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	8/19/10	Second Quarter 2010 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

INJECTION WELL HYDROCARBON CONCENTRATIONS IN GROUNDWATER

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MN	JPG

FILE NO. 01LV11B0600.DWG

FIGURE 6

7/7/2010 3:37PM 01LV11B0600.dwg

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 ACEH's 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 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: 5/3/2010 Project Name: Tesoro #67076 Project Number: 01LV

Technician: C. Young Location: Livermore, CA Global ID : T0600101410

Well ID	Casing Diameter	Total Depth	DTP	DTW	Thickness	Comments
MW-1	4"	54.55	-	31.23	-	
MW-2	4"	54.1	-	32.44	-	
MW-3	4"	52.9	-	31.39	-	
MW-4	2"	46.8	-	31.55	-	
MW-5	2"	46.27	-	32.89	-	
MW-6	2"	47.65	-	34.56	-	
MW-7	2"	46.8	-	31.8	-	
MW-8	2"	44.5	-	32.81	-	
MW-9	2"	44.58	-	34.96	-	
MW-10	2"	45.1	-	33.97	-	
MW-11	4"	42.85	-	31.36	-	
DW-1	4"	64.75	-	31.7	-	
DW-2	4"	59.84	-	34.46	-	
DW-3	4"	59.74	-	34.51	-	
DW-4	4"	70.04	-	34.04	-	
DW-5	4"	59.8	-	34.55	-	
DW-6	4"	60.15	-	35.15	-	
DW-7	4"	65.2	-	34.64	-	
TP-1	2"	43.22	-	32.32	-	
TP-2	2"	41.21	-	31.85	-	
VW-2	2"	36.78	-	31.84	-	
VW-3	2"	36.34	-	31.85	-	

Field Data Sheet

Date: 5/3/2010 Project Name: Tesoro #67076 Project Number: 01LV

Technician: C. Young Location: Livermore, CA Global ID : T0600101410

Well ID	Casing Diameter	Total Depth	DTP	DTW	Thickness	Comments
IP-1	2"	64.6	-	33.08	-	
IP-2	2"	64.6	-	32	-	
IP-3	2"	64.62	-	31.68	-	
IP-4	2"	64.7	-	31.61	-	
IP-5	2"	64.29	-	31.6	-	
IP-6	2"	71.49	-	34.98	-	
IP-7	2"	72.33	-	35.75	-	
IP-8	2"	64.71	-	33.34	-	
IP-9	2"	64.86	-	31.79	-	
IP-10	2"	62.94	-	32.23	-	

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	MW-1	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	54.55	-	31.23	=	23.32	X	0.66	=	15.39
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.	807	891	446	-97.1	-	7.56	63.85
1	15.5	812	852	426	-83.2	-	7.08	66.14
2	31	815	921	460	-83	-	6.89	67.23
3	46.5	820	893	447	-85.6	-	6.91	67.08
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.23	
(P) After Purging	44.74	
P- 0.8(P-I) =	33.93	80% Recovery
(S) Before Sampling	33.93	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 8:42 **Turbidity (NTU):** 187

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/3/10
Well Number:	MW-2	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		**54.10-**		**32.44=**		**21.66X**		**0.66**		**14.29**
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.	1503	943	471	-162.7	-	7.18	74.25
1	14.5	1508	913	456	-165	-	6.97	74.04
2	29	1513	906	453	-181.9	-	7.01	73.75
3	43.5	1518	906	453	-184.9	-	7.03	74.31
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	32.44	
(P) After Purging	32.6	
P- 0.8(P-I) =	33.48	80% Recovery
(S) Before Sampling	33.48	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/3/10 **Time:** 15:40 **Turbidity (NTU):** 47.4

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	MW-3	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		52.90	-	31.39	=	21.51	X	0.66	=	14.19
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.	733	858	429	-25.3	-	7.07	65.05
1	14.5	736	884	447	-24.3	-	6.95	67.88
2	29	741	867	434	-24.3	-	6.85	67.61
3	43.5	746	889	445	-19.4	-	6.83	67.63
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.39	
(P) After Purging	37.7	
P- 0.8(P-I) =	32.65	80% Recovery
(S) Before Sampling	32.65	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/6/10 **Time:** 7:53 **Turbidity (NTU):** 100

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	MW-4	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	46.80	-	31.55	=	15.25	X 0.17	2.59
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	819	958	479	-3.1	-	7.35	62.67
1	3	823	974	488	-9.6	-	7.14	65.93
2	6	826	980	490	-20.1	-	7.05	68.81
3	9	830	1007	504	-29.8	-	7.02	68.14
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.55	
(P) After Purging	39.11	
P- 0.8(P-I) =	33.06	80% Recovery
(S) Before Sampling	33.06	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 8:42 **Turbidity (NTU):** 258

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: Re-sampled for Ferrous Iron @ 10:00 5/5/10

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	MW-5	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	46.27	-	32.89	=	13.38 X	0.17	2.27
3		-		=	X	0.38	=
4		-		=	X	0.66	=
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.	817	1103	552	-81.2	-	6.97	67.31
1	2.5	821	1185	593	-54.6	-	6.62	66.8
2	5	825	1179	589	-53	-	6.6	67.52
3	7.5	831	1172	586	-57.8	-	6.63	64.95
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)		
(I) Initially	32.89		
(P) After Purging	34.2		
P- 0.8(P-I) =	33.15	80% Recovery	
(S) Before Sampling	33.15		
(P-S) / (P-) X 100 =	80	% Total Recovery	

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/6/10 **Time:** 8:53 **Turbidity (NTU):** 113

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	MW-6	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	47.65-	34.56=	13.09X	0.17	2.22
3	-	=	X	0.38	=
4	-	=	X	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.	941	1063	532	-70.6	-	6.73	68.29
1	2.5	945	1087	543	-73.9	-	6.55	69.25
2	5	949	1000	550	-74.6	-	6.54	69.55
3	7.5	951	1112	556	-72.2	-	6.55	70.03
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.56	
(P) After Purging	36.44	
P- 0.8(P-I) =	34.93	80% Recovery
(S) Before Sampling	34.93	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 10:05 **Turbidity (NTU):** 506

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	MW-7	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		46.80	-	31.80	=	15.00	X	0.17		2.55
3			-		=		X	0.38		=
4			-		=		X	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.	1112	961	481	-154.9	-	6.73	69.18
1	3	1117	1014	507	-150.1	-	6.68	68.81
2	6	1123	983	492	-126.9	-	6.8	68.24
3	9	1127	1003	505	-131.1	-	6.71	68.05
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.8	
(P) After Purging	34.5	
P- 0.8(P-I) =	32.34	80% Recovery
(S) Before Sampling	32.34	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
250 ml polypropylene		

Sample Date : 5/6/10 **Time:** 11:57 **Turbidity (NTU):** 360

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	MW-8	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	44.50	-	32.81	=	11.69 X	0.17	1.98
3		-		=	X	0.38	=
4		-		=	X	0.66	=
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.	906	908	454	-63.9	-	7.4	68.25
1	2	909	941	470	-39.5	-	6.86	69.7
2	4	912	946	473	-27.2	-	6.83	69.07
3	6	915	954	477	-25.1	-	6.79	67.71
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	32.81	
(P) After Purging	37.2	
P- 0.8(P-I) =	33.68	80% Recovery
(S) Before Sampling	33.68	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/6/10 **Time:** 9:27 **Turbidity (NTU):** 48.3

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	MW-9	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	44.58-	34.96=	9.62X	0.17	1.63
3	-	=	X	0.38	=
4	-	=	X	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.	1315	1184	592	-115.7	-	7.12	75.83
1	2	1316	1196	598	-111	-	6.86	74.54
2	4	1318	1183	592	-107.9	-	6.74	75.71
3	6	1320	1171	585	-81.9	-	6.88	76.65
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.96	
(P) After Purging	38.02	
P- 0.8(P-I) =	35.37	80% Recovery
(S) Before Sampling	34.96	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 13:34 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	MW-10	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	45.10-	33.97=	11.13X	0.17	1.89
3	-	=	X	0.38	=
4	-	=	X	0.66	=
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.	1006	1207	603	-52.4	-	7.23	69.14
1	2	1010	1227	614	-42.9	-	7.11	69.81
2	4	1014	1230	615	-19.3	-	7.2	68.04
3	6	1018	1215	608	-8.2	-	7.15	69.72
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	33.97	
(P) After Purging	40.29	
P- 0.8(P-I) =	35.23	80% Recovery
(S) Before Sampling	33.97	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/6/10 **Time:** 11:50 **Turbidity (NTU):** 308

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/3/10
Well Number:	MW-11	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	42.85	-	31.36	=	11.49	X	0.66	=	7.58
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.	1412	1237	619	-181.5	-	7.07	75.94
1	8	1415	1241	620	-193.2	-	6.96	71.55
2	16	1418	1251	625	-190.2	-	6.89	71.14
3	19	1422	1243	621	-172.8	-	6.85	73.06
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.36	
(P) After Purging	42.85	
P- 0.8(P-I) =	33.65	80% Recovery
(S) Before Sampling	33.65	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/3/10 **Time:** 14:36 **Turbidity (NTU):** 164

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: well dry @ 19 gallons

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-1	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**Ambient Conditions:**	cloudy

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	64.75	-	31.70	=	33.05	X 0.66	21.81
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.	718	860	430	-62.9	-	7.2	64.12
1	22	726	870	435	-71.1	-	7.23	67.5
2	44	735	874	437	-81.3	-	7.22	67.55
3	66	743	870	440	-65.2	-	7.21	67.16
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.7	
(P) After Purging	44.65	
P- 0.8(P-I) =	34.29	80% Recovery
(S) Before Sampling	34.29	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 7:55 **Turbidity (NTU):** 19.1

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: Re-sampled for Ferrous Iron @10:00 on 5/5/10

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-2	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	-	34.46	=	25.38	X	0.66	=	16.75
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.	1022	972	485	-156.5	-	7.18	71.84
1	17	1028	961	480	-177.6	-	6.9	70.87
2	34	1033	961	481	-166.8	-	6.86	70.93
3	51	1039	966	483	-158.3	-	6.85	70.66
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.46	
(P) After Purging	37.54	
P- 0.8(P-I) =	35.07	80% Recovery
(S) Before Sampling	35.07	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 10:44 **Turbidity (NTU):** 91.2

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-3	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		59.74	-	34.51	=	25.23	X	0.66		16.65
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.	1242	941	470	-213.8	-	7.47	73.3
1	17	1245	899	449	-181.7	-	7.46	72.44
2	34	1251	908	454	-185.1	-	7.37	72.49
3	51	1256	926	463	-172.8	-	7.17	72.07
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.51	
(P) After Purging	39.63	
P- 0.8(P-I) =	35.53	80% Recovery
(S) Before Sampling	35.53	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/4/10 **Time:** 13:03 **Turbidity (NTU):** 21.2

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/6/10
Well Number:	DW-4	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		70.04	-	34.04	=	36.00	X	0.66	=	23.76
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.	1034	832	416	-14.6	-	7.2	69.59
1	24	1038	812	406	-16	-	6.99	70.21
2	48	1043	808	404	-16	-	6.96	70.21
3	72	1049	816	408	-24.2	-	6.9	70.34
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.04	
(P) After Purging	54.2	
P- 0.8(P-I) =	38.07	80% Recovery
(S) Before Sampling	38.07	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/6/10 **Time:** 10:55 **Turbidity (NTU):** 35.8

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-5	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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		59.80	-	34.55	=	25.25	X	0.66		16.66
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.	1503	901	451	-172.9	-	7.44	72.48
1	17	1507	911	455	-176.2	-	7.1	71.8
2	34	1513	903	452	-162.8	-	6.96	72
3	51	1518	909	454	-157.5	-	6.92	71.36
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)		
(I) Initially	34.55		
(P) After Purging	39.63		
P- 0.8(P-I) =	35.56	80% Recovery	
(S) Before Sampling	35.56		
(P-S) / (P-) X 100 =	80	% Total Recovery	

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/4/10 **Time:** 15:25 **Turbidity (NTU):** 316

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-6	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	**60.15**	**-**	**35.15**	**=**	**25.00**	**X**	**0.66**	**=**	**16.5**
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.	1433	894	447	-157.9	-	7.35	74.37
1	16.5	1438	891	445	-151.7	-	7.04	72.19
2	33	1442	895	448	-145.3	-	6.98	71.64
3	49.5	1447	895	447	-140.4	-	6.95	71.89
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	35.15	
(P) After Purging	37.91	
P- 0.8(P-I) =	35.7	80% Recovery
(S) Before Sampling	35.7	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/4/10 **Time:** 14:50 **Turbidity (NTU):** 39.5

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/4/10
Well Number:	DW-7	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	**65.20**	**-**	**34.64**	**=**	**30.56**	**X**	**0.66**	**=**	**20.16**
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.	1145	991	496	-122.6	-	7.34	75.1
1	20.5	1152	968	484	-125.2	-	6.94	72.12
2	41	1156	965	483	-115.2	-	6.87	72.07
3	61.5	1202	961	480	-110.8	-	6.83	72.5
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.64	
(P) After Purging	39.18	
P- 0.8(P-I) =	35.54	80% Recovery
(S) Before Sampling	35.54	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/4/10 **Time:** 12:14 **Turbidity (NTU):** 127

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	TP-1	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	43.02-	32.32=	10.70X	0.17	1.81
3	-	=	X	0.38	=
4	-	=	X	0.66	=
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.	1127	1137	569	-120.2	-	6.48	69.1
1	2	1131	1163	581	-123.4	-	6.46	69.9
2	4	1135	1167	583	-144.4	-	6.53	70.72
3	6	1139	1166	583	-136.6	-	6.51	69.43
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	32.32	
(P) After Purging	35.13	
P- 0.8(P-I) =	32.74	80% Recovery
(S) Before Sampling	32.74	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 12:15 **Turbidity (NTU):** 232

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	TP-2	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	41.21-	31.85=	9.38X	0.17	1.59
3	-	=	X	0.38	=
4	-	=	X	0.66	=
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.	1532	1170	588	-153.3	-	7.13	71.54
1	2	1537	1199	598	-150.1	-	6.75	69.25
2	4	1544	1194	597	-147.1	-	6.75	69.52
3	6	1548	1203	601	-136.1	-	6.65	69.43
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)		
(I) Initially	31.85		
(P) After Purging	38.11		
P- 0.8(P-I) =	33.1	80% Recovery	
(S) Before Sampling	33.1		
(P-S) / (P-) X 100 =	80	% Total Recovery	

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 15:59 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	VW-2	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	36.78	-	31.84	=	4.94	X 0.17	0.83
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	1305	1092	546	-54.2	-	6.48	67.52
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.84	
(P) After Purging	-	
P- 0.8(P-I) =	-	80% Recovery
(S) Before Sampling	31.84	
(P-S) / (P-) X 100 =	-	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 13:05 **Turbidity (NTU):** 200

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	VW-3	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	36.34-	31.85=	4.49X	0.17	0.76
3	-	=	X	0.38	=
4	-	=	X	0.66	=
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.	1749	1506	753	-114.4	-	6.85	68.63
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.85	
(P) After Purging	-	
P- 0.8(P-I) =	-	80% Recovery
(S) Before Sampling	31.85	
(P-S) / (P-) X 100 =	-	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 17:49 **Turbidity (NTU):** 672

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-1	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.60	-	33.08	=	31.52 X	0.17	5.35
3		-		=	X	0.38	=
4		-		=	X	0.66	=
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.	1012	879	440	-146.1	-	7.24	67.15
1	5.5	1014	907	454	-157.7	-	7.03	65.52
2	11	1015	888	444	-135.8	-	7.01	68.28
3	16.5	-	-	-	-	-	-	-
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	33.08	
(P) After Purging	64.60 (dry)	
P- 0.8(P-I) =	39.38	80% Recovery
(S) Before Sampling	39.38	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 10:50 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: well dry @ 6.5 gallons

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-2	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.60	-	32.00	=	32.60	X 0.17	= 5.54
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	1035	905	454	-62.8	-	7.31	62.15
1	6	1037	877	438	-69.9	-	7.15	67.29
2	12	1039	875	438	-76.9	-	7.11	68.11
3	18	1041	877	439	-85.2	-	7.14	68.01
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	32	
(P) After Purging	61.75	
P- 0.8(P-I) =	37.95	80% Recovery
(S) Before Sampling	32	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 11:18 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-3	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.62	-	31.68	=	32.94	X 0.17	= 5.6
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	1423	866	433	-60.4	-	7.73	70.49
1	6	1425	881	440	-60.9	-	7.6	69.01
2	12	1427	880	440	-47.5	-	7.36	68.52
3	18	1430	877	438	-44.4	-	7.29	68.63
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.68	
(P) After Purging	42.9	
P- 0.8(P-I) =	33.92	80% Recovery
(S) Before Sampling	31.68	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/5/10 **Time:** 14:52 **Turbidity (NTU):** 30.6

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-4	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.70	-	31.61	=	33.09	X 0.17	=	5.62
3		-		=		X 0.38	=	
4		-		=		X 0.66	=	
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.	1629	885	443	-79.7	-	7.61	70.71
1	6	1631	883	441	-72.9	-	7.44	69.26
2	12	1634	879	439	-63	-	7.3	69.14
3	18	1636	880	440	-60.9	-	7.25	68.99
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.61	
(P) After Purging	43.2	
P- 0.8(P-I) =	33.92	80% Recovery
(S) Before Sampling	31.61	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 16:55 **Turbidity (NTU):** 321

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-5	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.29	-	31.60	=	32.69	X 0.17	= 5.55
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	1643	889	444	-55.9	-	7.29	68.35
1	6	1646	884	442	-65.3	-	7.19	68.75
2	12	1650	880	440	-67.2	-	7.11	69.17
3	18	1653	881	441	-64.4	-	7.08	69.22
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.6	
(P) After Purging	51.4	
P- 0.8(P-I) =	35.56	80% Recovery
(S) Before Sampling	31.6	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 17:02 **Turbidity (NTU):** 552

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-6	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	71.49	-	34.98	=	36.51	X 0.17	6.2
3		-		=		X 0.38	=
4		-		=		X 0.66	=
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.	1229	197	98	-130.8	-	9.7	73.11
1	6.5	1235	884	442	-54.4	-	7.3	70.53
2	13	1237	895	447	-43.2	-	7.07	71.03
3	19.5	1239	899	449	-40.1	-	7.01	70.98
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	34.98	
(P) After Purging	52.31	
P- 0.8(P-I) =	38.44	80% Recovery
(S) Before Sampling	38.44	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 12:50 **Turbidity (NTU):** 517

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-7	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	72.33	-	35.75	=	36.58 X	0.17	6.21
3		-		=	X	0.38	=
4		-		=	X	0.66	=
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.	1403	929	465	-59.1	-	7.37	72.82
1	6.5	1409	830	413	-69.1	-	7.64	72.08
2	9	1411	801	400	-70.3	-	8.04	72.28
3	-	-	-	-	-	-	-	-
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	35.75	
(P) After Purging	72.33(dry)	
P- 0.8(P-I) =	43.06	80% Recovery
(S) Before Sampling	35.75	
(P-S) / (P-) X 100 =	100	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/5/10 **Time:** 14:44 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: well dry @ 9 gallons

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-8	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.71	-	33.34	=	31.37 X	0.17	5.33
3		-		=	X	0.38	=
4		-		=	X	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.	932	994	497	-146.7	-	6.98	67.65
1	5.5	934	988	494	-175.6	-	6.96	68.18
2	11	936	992	496	-165.7	-	6.97	68.53
3	16.5	938	984	493	-153.6	-	6.97	68.95
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)		
(I) Initially	33.34		
(P) After Purging	55.44		
P- 0.8(P-I) =	37.76	80% Recovery	
(S) Before Sampling	37.76		
(P-S) / (P-) X 100 =	80	% Total Recovery	

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 9:49 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/5/10
Well Number:	IP-9	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	64.86	-	31.79	=	33.07 X	0.17	5.62
3		-		=	X	0.38	=
4		-		=	X	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.	914	968	484	-156.8	-	7.56	66.01
1	6	916	571	285	-161.1	-	7.24	67.49
2	12	920	974	487	-139.6	-	7.06	69.25
3	18	923	975	490	-133.4	-	6.98	69.51
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	31.79	
(P) After Purging	64.86	
P- 0.8(P-I) =	38.4	80% Recovery
(S) Before Sampling	38.4	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
250 ml polypropylene		
1 liter(L), amber glass		
40ml VOA	5	HCL
250 ml glass		
125 ml polypropylene		

Sample Date : 5/5/10 **Time:** 9:42 **Turbidity (NTU):** 647

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments: well dry @ 14 gallons

Groundwater Sampling Form

Project Name:	Tesoro #67076	**Project Number:**	01LV
Location:	Livermore, CA	**Date:**	5/3/10
Well Number:	IP-10	**Well Integrity:**	Good
Technician:	C.Young / A. Carothers	**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	62.94	-	32.23	=	30.71	X 0.17	= 5.22
3		-		=		X 0.38	=
4		-		=		X 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.	1304	904	451	-121.7	-	6.88	73.29
1	5.5	1306	872	436	-138.9	-	6.98	70.65
2	11	1308	872	436	-134.7	-	6.99	70.77
3	16.5	1311	903	452	-122.9	-	7.05	70.88
4								
5								
6								
7								
8								
9								
10								

Groundwater Sampling

Water Level Recovery:

	Depth to GW (ft.)	
(I) Initially	32.23	
(P) After Purging	59.1	
P- 0.8(P-I) =	37.6	80% Recovery
(S) Before Sampling	37.6	
(P-S) / (P-) X 100 =	80	% Total Recovery

Sample Containers:

	No.	Preservation
500 ml polypropylene	1	None
1 liter(L), amber glass		
40ml VOA	7	HCL
250 ml glass	1	H2S04
250 ml polypropylene	2	None

Sample Date : 5/3/10 **Time:** 13:44 **Turbidity (NTU):** >1000

Sampling Equipment : Disposable Bailer

Calibrate Date: 5/3/10

Comments:

ATTACHMENT C

SOIL VAPOR SAMPLING QA/QC PROCEDURES

ATTACHMENT C
SOIL VAPOR SAMPLING QA/QC PROCEDURES

Health and Safety

Arctos prepared a health and safety plan (HSP) before initiating field activities. The HSP presented procedures for personnel and equipment safety, medical surveillance, personal protection, air-quality monitoring, exposure control, emergency response procedures, and general work practices.

Before beginning work at the site, a site safety meeting was conducted. Field personnel reviewed the HSP and signed the accompanying acknowledgment form. Field personnel were required to comply with the HSP throughout performance of site assessment activities. Based on the site history and potential chemicals of concern, field activities were initiated in Level D personal protective equipment (PPE).

Soil Vapor Sampling Procedures

Soil vapor sampling was conducted in general accordance with the Regional Water Quality Control Board – Los Angeles Region's (RWQCB) May 1996 *Interim Site Assessment and Cleanup Guidebook* (RWQCB, 1996).

Sampling for Large-Diameter Wells

Soil gas survey protocols for large-diameter wells (including groundwater wells, vapor extraction wells, or vapor monitoring wells greater than ¼-inch diameter) conformed to RWQCB sampling and analytical procedures (RWQCB, 1996). Before samples were collected, each well was isolated from the extraction system piping. The soil vapor extraction system was shut down 24 to 48 hours before sample collection (for a static soil gas survey). Vapor samples were collected from sample ports at the top of the wellhead or located in a header pipe downstream of the well and upstream of an isolation valve.

To obtain representative soil vapor samples, a minimum of 3 casing volumes of vapor were purged from each well using an oil-less vacuum pump. Vapor samples were collected after purging in Tedlar bags with a vacuum chamber. Samples were collected upsteam of the vacuum pump.

Vapor samples collected in Tedlar bags were immediately transferred to an onsite mobile laboratory operated by a State-certified analytical laboratory for analysis. Vapor samples collected in Tedlar bags were also sent to an offsite State-certified laboratory for analysis within appropriate holding times. The samples were analyzed following the analytical program described in the work plan. Typically, samples were analyzed for volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B, TO-14, or TO-15 using a gas chromatograph with a mass spectrometer (GC/MS).

Field Duplicate Samples

Duplicate samples were collected during the soil gas survey from anticipated or confirmed areas of impact. A minimum 5 to 10 percent of the total or at least one duplicate sample were collected each day. Duplicate samples were collected and analyzed following the same procedures previously described.

Analytical QA/QC Procedures

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

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 laboratory reporting limits
- ☐ Reporting limits less than or equal to residential CHHSLs for site-specific chemicals of concern
- ☐ Presence or absence of analytes in the method blanks, equipment blanks, and ambient 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.

References:

California Regional Water Quality Control Board, Los Angeles and Ventura Counties Region 4 (RWQCB), 1996. *Interim Site Assessment & Cleanup Guidebook*, May.

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

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	12/31/00	31.71	474.29	442.58
(cont.)	3/27/01	30.43		443.86
	6/30/01	36.61		437.68
	9/26/01	45.10		429.19
	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

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	10/13/08	51.00	474.29	423.29
(cont.)	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
	5/3/10	31.23		443.06
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

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	6/10/99	29.98	472.98	443.00
(cont.)	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
	3/27/01	30.81		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

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	2/14/07	31.27	472.98	441.71
(cont.)	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
	8/4/09	51.83		421.15
	12/8/09	40.82		432.16
	2/11/10	36.54		436.44
	5/3/10	32.44		440.54
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

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	9/29/97	29.60	473.37	443.77
(cont.)	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
	6/12/00	26.80		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

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	5/2/05	24.56	473.37	448.81
(cont.)	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
	10/13/08	50.70		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
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

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	12/2/96	26.04	473.64	447.60
(cont.)	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
	11/10/00	29.71		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

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	8/4/04	34.87	473.64	438.77
(cont.)	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[c]		--[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		--
	2/11/09	DRY		--
	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
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

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	3/21/96	16.82	472.67	455.85
(cont.)	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
	3/27/01	30.57		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

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	3/23/04	27.51	472.67	445.16
(cont.)	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
	8/4/09	DRY		--
	12/8/09	39.92		432.75
	2/11/10	36.62		436.05
	5/3/10	32.89		439.78
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

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	9/26/95	33.55	471.93	438.38
(cont.)	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
	6/30/01	39.86		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

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	6/10/03	34.15	471.93	437.78
(cont.)	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		--
	12/8/09	43.02		428.91
	2/11/10	38.89		433.04
	5/3/10	34.56		437.37
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

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	12/14/94	39.34	472.33	432.99
(cont.)	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
	9/26/01	45.11		427.22
	12/18/01	41.13		431.20
	3/18/02	39.22		433.11
	6/5/02	36.55		435.78

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	8/21/02	36.81	472.33	435.52
(cont.)	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
	2/11/10	36.18		436.15
	5/3/10	31.80		440.53

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-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	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	39.92		431.26
	2/11/10	36.72		434.46
	5/3/10	32.81		438.37
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
	8/4/04	37.47		433.31
	11/4/04	37.44		433.34

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	5/2/05	27.73	470.78	443.05
(cont.)	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
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
	5/16/06	26.83		444.80

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	8/9/06	34.37	471.63	437.26
(cont.)	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	DRY		--
	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
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
	2/11/10	NM[(d)]		--
	5/3/10	31.36		441.90
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
	8/9/06	31.74		441.54
	11/8/06	33.52		439.76

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	2/14/07	30.77	473.28	442.51
(cont.)	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		--
	5/3/10	31.84		441.44
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		--
	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)
VW-3	2/11/09	DRY	474.38	--
(cont.)	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	DRY		--
	2/11/10	DRY		--
	5/3/10	31.85		442.53
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
	2/11/10	NM		--
	5/3/10	32.32		440.50
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
	11/8/06	32.80		440.13
	2/14/07	30.32		442.61

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	5/17/07	33.28	472.93	439.65
(cont.)	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		--
	12/17/09	40.08		432.85
	2/11/10	NM		--
	5/3/10	31.85		441.08
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
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
	5/3/10	34.46		437.15
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

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-3	2/11/09	51.96	470.33	418.37
(cont.)	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
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
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
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
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
IP-1	7/23/08	45.49	473.16	427.67
	10/13/08	51.30		421.86
	5/3/10[(e)]	33.08		440.08
IP-2	7/23/08	46.83	473.21	426.38
	10/13/08	51.40		421.81
	5/3/10[(e)]	32.00		441.21
IP-3	7/23/08	45.47	472.97	427.50
	10/13/08	51.11		421.86
	5/3/10[(e)]	31.68		441.29
IP-4	7/23/08	44.55	473.02	428.47
	10/13/08	50.89		422.13
	5/3/10[(e)]	31.61		441.41

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-5	7/23/08	44.70	473.06	428.36
	10/13/08	51.06		422.00
	5/3/10[(e)]	31.60		441.46
IP-6	7/23/08	49.91	472.73	427.50
	10/13/08	55.63		422.31
	5/3/10[(e)]	34.98		437.75
IP-7	7/23/08	51.45	472.86	426.23
	10/13/08	57.23		420.99
	5/3/10[(e)]	35.75		437.11
IP-8	12/16/08	50.48	473.13	422.65
	5/3/10[(e)]	33.34		439.79
IP-9	12/16/08	52.51	473.47	420.96
	5/3/10[(e)]	31.79		441.68
IP-10	2/11/09	48.77	473.78	425.01
	5/3/10[(e)]	32.23		441.55
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	--

(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) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.

(d) NM = Not measured.

(e) 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]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Total 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	--	--	--	--	--	--	--	--

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)	Total 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	9/7/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
(cont.)	12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	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	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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

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)	Total 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	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
(cont.)	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	ND<50	ND<8	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	ND<50	ND<8	ND<0.5	ND<0.5
	12/8/09	3,200	16	18	81	110	ND<0.5	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	1,300	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
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	--	--	--	--	--	--	--	--

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)	Total 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	3/19/98	42,000	5,000	3,600	2,000	8,300	ND<250	--	--	--	--	--	--	--	--
(cont.)	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	--	--	--	--	--	--	--	--
	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

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)	Total 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	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
(cont.)	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
	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	1,000	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	ND<8	8.1	150	ND<1000	ND<80	ND<8	ND<8
	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	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
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	--	--	--	--	--	--	--	--	--

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)	Total 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	10/6/93	740	57	110	24	120	--	--	--	--	--	--	--	--	--
(cont.)	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	--	--	--	--	--	--	--	--	--
	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	0.81	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	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	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

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)	Total 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	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
(cont.)	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	0.64	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/09	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	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
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	--	--

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)	Total 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	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
(cont.)	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	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/09	NS	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
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	--	--	--	--	--	--	--	--

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)	Total 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	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
(cont.)	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	--	--	--	--	--	--	--	--
	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
	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

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)	Total 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	5/10/04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
(cont.)	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
	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	ND<50	ND<5	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	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	22	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
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	--	--	--	--	--	--	--	--	--

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)	Total 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	12/14/94	65,000	18,000	9,500	2,200	14,000	--	--	--	--	--	--	--	--	--
(cont.)	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	--	--	--	--	--	--	--	--
	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	1,000	--	--	--	--	--	--	--	--
	12/31/00	12,000	680	8.0	820	190	1,400	--	--	--	--	--	--	--	--
	3/27/01	14,000	330	17	940	670	380	--	--	--	--	--	--	--	--

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)	Total 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	6/30/01	750	45	0.93	47	14	54	--	--	--	--	--	--	--	--
(cont.)	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<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<5	ND<5
	9/9/03	11,000	1,000	16	630	120	2,500	ND<5	ND<5	20	52	ND<500	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<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<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<10	ND<10
	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	--	--

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)	Total 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	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
(cont.)	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	ND<5	ND<5	460	ND<2,000	ND<50	ND<5	ND<5
	2/12/10	21,000	2,500	140	1,000	240	540	ND<5	ND<5	6.0	460	ND<500	ND<50	ND<5	ND<5
	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
MW-7	3/30/94	43,000	7,200	2,400	1,600	11,000	--	--	--	--	--	--	--	--	--
	4/25/94	30,000	3,900	1,000	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	--	--	--	--	--	--	--	--	--
	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	--	--	--	--	--	--	--	--

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)	Total 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	12/1/97	6,500	24	ND<2.5	400	250	ND<25	--	--	--	--	--	--	--	--
(cont.)	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	1,000	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
	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

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)	Total 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	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
(cont.)	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
	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
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	ND<50	ND<5	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	ND<80	ND<8	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	ND<0.5	ND<0.5
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

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)	Total 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	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
(cont.)	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
	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	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
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

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)	Total 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	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
(cont.)	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	2.0	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	1,000	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
	11/12/07	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
	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	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
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

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)	Total 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	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
(cont.)	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
	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	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
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

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)	Total 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-11	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
(cont.)	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<1500	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
	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	6.4	170	130	1,300	ND<2.5	ND<2.5	12	1,700	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)	Total 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	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
	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
	5/8/08	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
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

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)	Total 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-1	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
(cont.)	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	ND<8	27	ND<800	ND<800	ND<80	ND<8	ND<8
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
	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
	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

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)	Total 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	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
(cont.)	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	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
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	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	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	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
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	ND<1	4.4	600	ND<400	ND<10	ND<1	ND<1
	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	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	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	ND<9	ND<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

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)	Total 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-3	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
(cont.)	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	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	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	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
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	ND<50	ND<5	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	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
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	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	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	ND<2	2.4	290	ND<200	ND<20	ND<2	ND<2
	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
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[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

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)	Total 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-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	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[g]	430[h]	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[g]	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[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	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[g]	8,000[h]	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[g]	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[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	ND<50	ND<20	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	--	--	--	--	--	--	--	--

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)	Total 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-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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--

(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 (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).

(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

KIFF Analytical LLC

Report Number : 72883
Date : 05/07/2010

Laboratory Results

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 3 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Dear Mr. Purchase,

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

KIFF Analytical LLC

Report Number : 72883
Date : 05/07/2010

Subject : 3 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

California Laboratory Services provided analytical testing associated with these samples, but is not accredited by the National Environmental Laboratory Accreditation Program (NELAP).

Repeat analysis by EPA Method 8260B yielded inconsistent results for sample MW-2R. The concentrations appear to vary between the bottles. The highest valid results have been reported.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for sample IP-10.

Matrix Spike/Matrix Spike Duplicate results associated with sample IP-10 for the analyte P + M Xylene were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Report Number : 72883
Date : 05/07/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-10** Matrix : Water Lab Number : 72883-01
Sample Date :05/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Nitrate as NO3	**< 0.50**	0.50	mg/L	EPA 300.0	05/04/2010
Sulfate	**11**	0.50	mg/L	EPA 300.0	05/04/2010
Benzene	**73**	0.50	ug/L	EPA 8260B	05/04/2010
Toluene	**80**	0.50	ug/L	EPA 8260B	05/04/2010
Ethylbenzene	**140**	0.50	ug/L	EPA 8260B	05/04/2010
Total Xylenes	**240**	0.50	ug/L	EPA 8260B	05/04/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/04/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/04/2010
Ethanol	**< 20**	20	ug/L	EPA 8260B	05/04/2010
TPH as Gasoline	**3600**	150	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane-d4 (Surr)	91.9		% Recovery	EPA 8260B	05/04/2010
4-Bromofluorobenzene (Surr)	99.0		% Recovery	EPA 8260B	05/04/2010
Toluene - d8 (Surr)	86.8		% Recovery	EPA 8260B	05/04/2010

KIFF Analytical LLC

Report Number : 72883
Date : 05/07/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-11** Matrix : Water Lab Number : 72883-02
Sample Date :05/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Nitrate as NO3	**< 0.50**	0.50	mg/L	EPA 300.0	05/04/2010
Sulfate	**6.4**	0.50	mg/L	EPA 300.0	05/04/2010
Benzene	**3600**	15	ug/L	EPA 8260B	05/06/2010
Toluene	**5900**	15	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**2600**	15	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**12000**	15	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 70**	70	ug/L	EPA 8260B	05/06/2010
Methanol	**< 1500**	1500	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 150**	150	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**62000**	1500	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 15**	15	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 15**	15	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 15**	15	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72883
Date : 05/07/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-2** Matrix : Water Lab Number : 72883-03
Sample Date :05/03/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Nitrate as NO3	**< 0.50**	0.50	mg/L	EPA 300.0	05/04/2010
Sulfate	**1.3**	0.50	mg/L	EPA 300.0	05/04/2010
Benzene	**3100**	7.0	ug/L	EPA 8260B	05/05/2010
Toluene	**870**	7.0	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	**1100**	7.0	ug/L	EPA 8260B	05/05/2010
Total Xylenes	**2200**	7.0	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	**530**	7.0	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	**8.0**	7.0	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	**370**	40	ug/L	EPA 8260B	05/05/2010
Methanol	**< 700**	700	ug/L	EPA 8260B	05/05/2010
Ethanol	**< 70**	70	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	**26000**	700	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
Trichloroethene	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	98.1		% Recovery	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	05/05/2010

Report Number : 72883

Date : 05/07/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	95.3		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	99.0		%	EPA 8260B	05/05/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/04/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/04/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/04/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	05/04/2010
4-Bromofluorobenzene (Surr)	97.9		%	EPA 8260B	05/04/2010
Toluene - d8 (Surr)	95.4		%	EPA 8260B	05/04/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/04/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/04/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/04/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/04/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/04/2010
1,2-Dichloroethane-d4 (Surr)	99.4		%	EPA 8260B	05/04/2010
4-Bromofluorobenzene (Surr)	97.0		%	EPA 8260B	05/04/2010
Toluene - d8 (Surr)	100		%	EPA 8260B	05/04/2010

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72883

Date : 05/07/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/04/2010
Nitrate as NO3	< 0.50	0.50	mg/L	EPA 300.0	05/04/2010
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72883

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

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
Nitrate as NO3														
	72883-01	< 0.50	2.21	2.21	2.02	2.01	mg/L	EPA 300.0	5/4/10	91.4	90.9	0.536	85.0-115	10
Sulfate														
	72883-01	11	2.50	2.50	13.6	13.6	mg/L	EPA 300.0	5/4/10	93.9	92.4	0.269	85.0-115	10
1,2-Dibromoethane														
	72891-12	<0.50	39.9	39.7	38.8	39.1	ug/L	EPA 8260B	5/5/10	97.3	98.5	1.26	80-120	25
1,2-Dichloroethane														
	72891-12	<0.50	39.9	39.7	39.9	39.9	ug/L	EPA 8260B	5/5/10	100	100	0.477	75.7-122	25
Benzene														
	72891-12	<0.50	39.9	39.7	40.3	40.2	ug/L	EPA 8260B	5/5/10	101	101	0.432	80-120	25
Diisopropyl ether														
	72891-12	<0.50	39.4	39.1	39.5	39.9	ug/L	EPA 8260B	5/5/10	100	102	1.48	80-120	25
Ethanol														
	72891-12	<5.0	100	99.5	122	126	ug/L	EPA 8260B	5/5/10	122	127	4.28	55.1-159	25
Ethyl-tert-butyl ether														
	72891-12	<0.50	39.8	39.6	37.8	38.2	ug/L	EPA 8260B	5/5/10	95.0	96.5	1.58	76.5-120	25
Ethylbenzene														
	72891-12	<0.50	39.9	39.7	41.6	41.6	ug/L	EPA 8260B	5/5/10	104	105	0.702	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72883

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

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
Methanol														
	72891-12	110	1000	994	1360	1520	ug/L	EPA 8260B	5/5/10	125	142	12.6	53.2-147	25
Methyl-t-butyl ether														
	72891-12	41	40.1	39.9	76.8	76.6	ug/L	EPA 8260B	5/5/10	89.2	89.1	0.156	69.7-121	25
P + M Xylene														
	72891-12	<0.50	39.9	39.7	41.8	41.9	ug/L	EPA 8260B	5/5/10	104	106	0.948	76.8-120	25
Tert-Butanol														
	72891-12	<5.0	199	198	207	203	ug/L	EPA 8260B	5/5/10	104	102	1.52	80-120	25
Tert-amyl-methyl ether														
	72891-12	<0.50	40.8	40.5	39.8	40.0	ug/L	EPA 8260B	5/5/10	97.8	98.8	1.06	78.9-120	25
Tetrachloroethene														
	72891-12	<0.50	39.9	39.7	40.1	40.1	ug/L	EPA 8260B	5/5/10	100	101	0.744	77.0-120	25
Toluene														
	72891-12	<0.50	39.9	39.7	40.3	40.3	ug/L	EPA 8260B	5/5/10	101	102	0.669	80-120	25
Trichloroethene														
	72891-12	<0.50	39.9	39.7	38.8	38.8	ug/L	EPA 8260B	5/5/10	97.3	97.8	0.506	80-120	25
1,2-Dibromoethane														
	72883-01	<0.50	40.0	40.0	35.9	36.4	ug/L	EPA 8260B	5/4/10	89.7	91.1	1.56	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore**

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
1,2-Dichloroethane														
	72883-01	<0.50	40.0	40.0	36.9	38.2	ug/L	EPA 8260B	5/4/10	92.3	95.5	3.36	75.7-122	25
Benzene														
	72883-01	73	40.0	40.0	110	110	ug/L	EPA 8260B	5/4/10	94.6	93.6	1.01	80-120	25
Diisopropyl ether														
	72883-01	<0.50	39.5	39.5	40.8	41.4	ug/L	EPA 8260B	5/4/10	103	105	1.44	80-120	25
Ethanol														
	72883-01	14	100	100	105	104	ug/L	EPA 8260B	5/4/10	90.9	90.6	0.324	55.1-159	25
Ethyl-tert-butyl ether														
	72883-01	<0.50	39.9	39.9	38.4	39.5	ug/L	EPA 8260B	5/4/10	96.2	98.9	2.81	76.5-120	25
Ethylbenzene														
	72883-01	140	40.0	40.0	173	168	ug/L	EPA 8260B	5/4/10	91.5	80.5	12.8	80-120	25
Methanol														
	72883-01	<50	1000	1000	1080	1080	ug/L	EPA 8260B	5/4/10	108	108	0.172	53.2-147	25
Methyl-t-butyl ether														
	72883-01	<0.50	40.2	40.2	39.0	39.4	ug/L	EPA 8260B	5/4/10	97.0	98.0	1.09	69.7-121	25
P + M Xylene														
	72883-01	170	40.0	40.0	209	203	ug/L	EPA 8260B	5/4/10	85.3	71.4	17.8	76.8-120	25
Tert-Butanol														
	72883-01	<5.0	199	199	198	200	ug/L	EPA 8260B	5/4/10	99.4	100	0.776	80-120	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

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
Tert-amyl-methyl ether														
	72883-01	<0.50	40.8	40.8	37.5	39.2	ug/L	EPA 8260B	5/4/10	91.9	96.1	4.42	78.9-120	25
Tetrachloroethene														
	72883-01	<0.50	40.0	40.0	35.4	35.3	ug/L	EPA 8260B	5/4/10	88.6	88.2	0.458	77.0-120	25
Toluene														
	72883-01	80	40.0	40.0	116	115	ug/L	EPA 8260B	5/4/10	88.6	85.5	3.52	80-120	25
Trichloroethene														
	72883-01	<0.50	40.0	40.0	35.0	35.6	ug/L	EPA 8260B	5/4/10	87.6	88.9	1.45	80-120	25
1,2-Dibromoethane														
	72878-01	<0.50	40.0	40.0	40.5	41.5	ug/L	EPA 8260B	5/4/10	101	104	2.42	80-120	25
1,2-Dichloroethane														
	72878-01	<0.50	40.0	40.0	38.5	37.5	ug/L	EPA 8260B	5/4/10	96.3	93.8	2.72	75.7-122	25
Benzene														
	72878-01	<0.50	40.0	40.0	41.4	39.6	ug/L	EPA 8260B	5/4/10	104	99.0	4.52	80-120	25
Diisopropyl ether														
	72878-01	<0.50	39.5	39.5	37.9	39.0	ug/L	EPA 8260B	5/4/10	96.0	98.9	3.02	80-120	25
Ethanol														
	72878-01	<5.0	100	100	105	106	ug/L	EPA 8260B	5/4/10	104	105	0.708	55.1-159	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

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
Ethyl-tert-butyl ether														
	72878-01	<0.50	39.9	39.9	37.5	39.3	ug/L	EPA 8260B	5/4/10	94.1	98.6	4.67	76.5-120	25
Ethylbenzene														
	72878-01	<0.50	40.0	40.0	42.2	40.4	ug/L	EPA 8260B	5/4/10	106	101	4.40	80-120	25
Methanol														
	72878-01	<50	1000	1000	1140	912	ug/L	EPA 8260B	5/4/10	113	91.1	21.8	53.2-147	25
Methyl-t-butyl ether														
	72878-01	<0.50	40.2	40.2	36.4	38.3	ug/L	EPA 8260B	5/4/10	90.6	95.4	5.12	69.7-121	25
P + M Xylene														
	72878-01	<0.50	40.0	40.0	41.7	40.1	ug/L	EPA 8260B	5/4/10	104	100	3.90	76.8-120	25
Tert-Butanol														
	72878-01	<5.0	199	199	202	200	ug/L	EPA 8260B	5/4/10	101	100	0.775	80-120	25
Tert-amyl-methyl ether														
	72878-01	<0.50	40.8	40.8	37.2	39.9	ug/L	EPA 8260B	5/4/10	91.2	97.8	7.06	78.9-120	25
Tetrachloroethene														
	72878-01	<0.50	40.0	40.0	39.5	39.0	ug/L	EPA 8260B	5/4/10	98.8	97.5	1.35	77.0-120	25
Toluene														
	72878-01	<0.50	40.0	40.0	39.8	40.0	ug/L	EPA 8260B	5/4/10	99.6	100	0.365	80-120	25
Trichloroethene														
	72878-01	<0.50	40.0	40.0	39.9	38.3	ug/L	EPA 8260B	5/4/10	99.9	95.8	4.18	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72883

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

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														
	72881-05	0.050	40.0	40.0	41.2	39.4	ug/L	EPA 8260B	5/4/10	103	98.4	4.45	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/5/10	106	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	5/5/10	104	75.7-122
Benzene	40.0	ug/L	EPA 8260B	5/5/10	103	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	5/5/10	101	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	105	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/5/10	95.0	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/5/10	106	80-120
Methanol	1000	ug/L	EPA 8260B	5/5/10	110	53.2-147
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/5/10	93.3	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	5/5/10	106	76.8-120
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	98.5	80-120
Tert-amyl-methyl ether	40.8	ug/L	EPA 8260B	5/5/10	99.0	78.9-120
Tetrachloroethene	40.0	ug/L	EPA 8260B	5/5/10	103	77.0-120
Toluene	40.0	ug/L	EPA 8260B	5/5/10	104	80-120
Trichloroethene	40.0	ug/L	EPA 8260B	5/5/10	106	80-120
1,2-Dibromoethane	39.8	ug/L	EPA 8260B	5/4/10	97.3	80-120
1,2-Dichloroethane	39.8	ug/L	EPA 8260B	5/4/10	97.8	75.7-122
Benzene	39.8	ug/L	EPA 8260B	5/4/10	102	80-120
Diisopropyl ether	39.3	ug/L	EPA 8260B	5/4/10	110	80-120
Ethanol	99.8	ug/L	EPA 8260B	5/4/10	95.4	55.1-159
Ethyl-tert-butyl ether	39.7	ug/L	EPA 8260B	5/4/10	106	76.5-120
Ethylbenzene	39.8	ug/L	EPA 8260B	5/4/10	104	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methanol	997	ug/L	EPA 8260B	5/4/10	103	53.2-147
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	5/4/10	105	69.7-121
P + M Xylene	39.8	ug/L	EPA 8260B	5/4/10	104	76.8-120
Tert-Butanol	198	ug/L	EPA 8260B	5/4/10	97.9	80-120
Tert-amyl-methyl ether	40.6	ug/L	EPA 8260B	5/4/10	99.2	78.9-120
Tetrachloroethene	39.8	ug/L	EPA 8260B	5/4/10	96.9	77.0-120
Toluene	39.8	ug/L	EPA 8260B	5/4/10	99.8	80-120
Trichloroethene	39.8	ug/L	EPA 8260B	5/4/10	95.0	80-120
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	5/4/10	100	80-120
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	5/4/10	92.9	75.7-122
Benzene	39.9	ug/L	EPA 8260B	5/4/10	99.5	80-120
Diisopropyl ether	39.4	ug/L	EPA 8260B	5/4/10	97.1	80-120
Ethanol	100	ug/L	EPA 8260B	5/4/10	105	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	5/4/10	92.2	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	5/4/10	102	80-120
Methanol	999	ug/L	EPA 8260B	5/4/10	111	53.2-147
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/4/10	88.4	69.7-121
P + M Xylene	39.9	ug/L	EPA 8260B	5/4/10	101	76.8-120
TPH as Gasoline	502	ug/L	EPA 8260B	5/4/10	104	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	5/4/10	96.3	80-120
Tert-amyl-methyl ether	40.7	ug/L	EPA 8260B	5/4/10	91.3	78.9-120
Tetrachloroethene	39.9	ug/L	EPA 8260B	5/4/10	98.4	77.0-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72883

QC Report : Laboratory Control Sample (LCS)

Date : 05/07/2010

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	39.9	ug/L	EPA 8260B	5/4/10	99.0	80-120
Trichloroethene	39.9	ug/L	EPA 8260B	5/4/10	96.0	80-120
TPH as Gasoline	505	ug/L	EPA 8260B	5/4/10	102	70.0-130
Nitrate as NO3	2.21	mg/L	EPA 300.0	5/4/10	94.3	85.0-115
Sulfate	2.50	mg/L	EPA 300.0	5/4/10	97.1	85.0-115

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

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

SRG # / Lab No. 72883

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase	California EDF Report? ☐ Yes ☐ No
Company / Address: Orion Environmental, Inc. 1332 Peralta Ave., Berkeley, CA 95702	Sampling Company Log Code:
Phone Number: 510-525-2180	Global ID:
Fax Number: 562-988-2759	EDF Deliverable To (Email Address):
Project #: / P.O. #:	Bill to: Mike Purchase
Project Name: Tesoro - Livermore	Sampler Signature:
Project Address: 1619 1st Street Livermore, CA	

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Preservative: HCl	HNO_3	None	H_2SO_4	$ZnAc_2$ & NaOH	Matrix: Water	Soil	Air	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	Nitrate (SM 4500-NO_3 or EPA 300.0)	Sulfate (EPA 300.0)	Ferrous iron (SM 3500-Fe D)	BOD (Biochemical Oxygen Demand) (SM 5510 B)	Total Alkalinity (SM 2320 B)	COD (Chemical Oxygen Demand) (SM 5520 D)	Methane (RSK 175M)	TOC (Total Organic Carbon) (SM 5310 D)	For Lab Use Only
IP-10	5/3/10	1344	5		5	1		5		5	1		X			X	X	X	X	X	X	X	X	X	X	X	X	X	01
MW-11	↓	1436	↓		↓	↓		↓		↓	↓		↓			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	02
MW-2	↓	1540	↓		↓	↓		↓		↓	↓		↓			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	03

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☐ 1 wk

Relinquished by:	Date	Time	Received by:
	5/3/10	1606	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
	050310	1606	Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER LJR Initials

SRG#: 72883 Date: 050310

Project ID: Tesoro - Livermore

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 4.0 Therm. ID# IR-5 Initial LJR Date/Time 050310/1904 ☐ 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 15
Matrix WA	Container type glass	# of containers received 3
Matrix WA	Container type poly	# of containers received 15

Date and Time Sample Put into Temp Storage Date: 050310 Time: 1907

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:

KIFF Analytical LLC

Subcontract Laboratory Report Attachments

2795 Second Street, Suite 300 Davis, CA 95618
tel 530.297.4800 fax 530.297.4808
www.kiffanalytical.com

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

May 11, 2010

CLS Work Order #: CTE0055
COC #: 72883

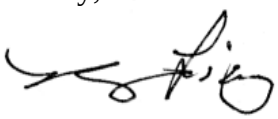
Scott Forbes
KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project Name: Tesoro Livermore

Enclosed are the results of analyses for samples received by the laboratory on 05/04/10 08:23. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0055
COC #: 72883

CTE0055

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

California Laboratory Services
3249 Fitzgerald Road
Rancho Cordova, CA 95742
916-638-7301

COC No. 72883 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes
Company/Address: Kiff Analytical
Phone No.: 530-297-4800
FAX No.: 530-297-4808
Project Number:
P.O. No.: 72883
Project Name: Tesoro - Livermore
Project Address:

EDF Report? NO

Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
Deliverables to (Email Address): inbox@kiffanalytical.com

Analysis Request | TAT | For Lab Use Only

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 1-L Poly None	250ml Poly None	Matrix: Water	Biochemical Oxygen Demand	Iron, Ferrous	Standard
IP-10	05/03/10	13:44	1	1	X	X	X	X
MW-11	05/03/10	14:36	1	1	X	X	X	X
MW-2	05/03/10	15:40	1	1	X	X	X	X

	Date	Time		
Relinquished by:	5/04/10	0823	Received by:	Remarks: 5.1°C
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by Laboratory: JonR 5-4-10 8:23	Bill to: Accounts Payable

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0055
COC #: 72883

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IP-10 (CTE0055-01) Water Sampled: 05/03/10 13:44 Received: 05/04/10 08:23									
Biochemical Oxygen Demand	**14**	3.0	mg/L	1	CT03076	05/04/10	05/09/10	SM5210B	
Ferrous Iron	ND	0.10	"	"	CT03084	05/04/10	05/04/10	SM3500-Fe D	
MW-11 (CTE0055-02) Water Sampled: 05/03/10 14:36 Received: 05/04/10 08:23									
Biochemical Oxygen Demand	**72**	3.0	mg/L	1	CT03076	05/04/10	05/09/10	SM5210B	
Ferrous Iron	**0.59**	0.10	"	"	CT03084	05/04/10	05/04/10	SM3500-Fe D	
MW-2 (CTE0055-03) Water Sampled: 05/03/10 15:40 Received: 05/04/10 08:23									
Biochemical Oxygen Demand	**38**	3.0	mg/L	1	CT03076	05/04/10	05/09/10	SM5210B	
Ferrous Iron	**0.44**	0.10	"	"	CT03084	05/04/10	05/04/10	SM3500-Fe D	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0055
COC #: 72883

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CT03076 - General										
Blank (CT03076-BLK1)				Prepared: 05/04/10 Analyzed: 05/09/10						
Biochemical Oxygen Demand	ND	3.0	mg/L							
LCS (CT03076-BS1)				Prepared: 05/04/10 Analyzed: 05/09/10						
Biochemical Oxygen Demand	201	3.0	mg/L	167		121	83-138			
LCS Dup (CT03076-BSD1)				Prepared: 05/04/10 Analyzed: 05/09/10						
Biochemical Oxygen Demand	189	3.0	mg/L	167		113	83-138	6	21	
Batch CT03084 - General Preparation										
Blank (CT03084-BLK1)				Prepared & Analyzed: 05/04/10						
Ferrous Iron	ND	0.10	mg/L							
LCS (CT03084-BS1)				Prepared & Analyzed: 05/04/10						
Ferrous Iron	0.231	0.10	mg/L	0.250		92	80-120			
LCS Dup (CT03084-BSD1)				Prepared & Analyzed: 05/04/10						
Ferrous Iron	0.231	0.10	mg/L	0.250		92	80-120	0	25	
Matrix Spike (CT03084-MS1)		**Source: CTE0055-02**		Prepared & Analyzed: 05/04/10						
Ferrous Iron	0.860	0.10	mg/L	0.250	0.594	106	75-125			
Matrix Spike Dup (CT03084-MSD1)		**Source: CTE0055-02**		Prepared & Analyzed: 05/04/10						
Ferrous Iron	0.854	0.10	mg/L	0.250	0.594	104	75-125	0.7	30	

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CTE0055**
Davis, CA 95616	Project Manager: Scott Forbes	COC #: 72883

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Calscience Environmental Laboratories, Inc.

May 11, 2010

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 10-05-0241**
Client Reference: Tesoro - Livermore

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 5/5/2010 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Amanda Porter

Calscience Environmental
Laboratories, Inc.
Amanda Porter
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/05/10
Work Order No: 10-05-0241
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-10	**10-05-0241-1-A**	**05/03/10 13:44**	**Aqueous**	**GC 52**	**N/A**	**05/05/10 00:00**	**100505L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1100	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11	**10-05-0241-2-A**	**05/03/10 14:36**	**Aqueous**	**GC 52**	**N/A**	**05/05/10 00:00**	**100505L01**

Parameter	Result	RL	DF	Qual	Units
Methane	2690	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-05-0241-3-A**	**05/03/10 15:40**	**Aqueous**	**GC 52**	**N/A**	**05/05/10 00:00**	**100505L01**

Parameter	Result	RL	DF	Qual	Units
Methane	5260	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-964**	**N/A**	**Aqueous**	**GC 52**	**N/A**	**05/05/10 00:00**	**100505L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/05/10
Work Order No: 10-05-0241

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-10	**10-05-0241-1**	**05/03/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	54	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	406	5.0	1		mg/L	N/A	05/07/10	SM 2320B
Carbon, Total Organic	4.1	0.50	1		mg/L	N/A	05/05/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-11	**10-05-0241-2**	**05/03/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	200	20	1		mg/L	05/10/10	05/10/10	EPA 410.4
Alkalinity, Total (as CaCO3)	557	5.0	1		mg/L	N/A	05/07/10	SM 2320B
Carbon, Total Organic	18	2.5	5		mg/L	N/A	05/05/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-2	**10-05-0241-3**	**05/03/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	70	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	474	5.0	1		mg/L	N/A	05/07/10	SM 2320B
Carbon, Total Organic	7.7	0.50	1		mg/L	N/A	05/05/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	20	1		mg/L	05/10/10	05/10/10	EPA 410.4
Chemical Oxygen Demand	ND	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	05/07/10	SM 2320B
Carbon, Total Organic	ND	0.50	1		mg/L	N/A	05/05/10	SM 5310 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0241

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	SM 5310 D	10-05-0227-4	05/05/10	N/A	83	83	75-125	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0241

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	10-05-0240-1	05/07/10	276	276	0	0-25	
Chemical Oxygen Demand	EPA 410.4	10-05-0422-1	05/10/10	330	340	2	0-25	
Chemical Oxygen Demand	EPA 410.4	10-05-0476-4	05/07/10	13	13	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Kiff Analytical	Date Received: N/A
2795 2nd Street, Suite 300	Work Order No: 10-05-0241
Davis, CA 95616-6593	Preparation: N/A
	Method: RSK-175M

Project: Tesoro - Livermore

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-964	**Aqueous**	**GC 52**	**N/A**	**05/05/10**	**100505L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	91	95	79-109	4	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0241

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Carbon, Total Organic	SM 5310 D	099-05-097-3,885	05/05/10	N/A	5.00	4.74	95	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-05-0241

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
714-895-5494

6241

COC No. **72883** Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes

EDF Report? NO

Company/Address: Kiff Analytical

Phone No.: 530-297-4800 FAX No.: 530-297-4808

Project Number: P.O. No.: 72883

Project Name: Tesoro - Livermore

Project Address:

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

Deliverables to (Email Address): inbox@kiffanalytical.com

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 250ml Glass H2SO4	250ml Poly None	VOA 40 ml HCl	Matrix: Water	Analysis Request: Alkalinity SM 2320 (1)	Chemical Oxygen Demand	Hydrocarbons in Water by RSK 175 (1)	Total Organic Carbon	TAT: 4-Days	For Lab Use Only
IP-10	05/03/10	13:44	1	2	2	X	X	X	X	X	X	1
MW-11	05/03/10	14:36	1	2	2	X	X	X	X	X	X	2
MW-2	05/03/10	15:40	1	2	2	X	X	X	X	X	X	3

Relinquished by:	Date	Time	Received by:
Kiff Analytical	050410	1900	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 5/5/10	Time 0900	Received by Laboratory:

Remarks: Please refer to attached Test Detail.

Bill to: Accounts Payable

0241

Test Detail for Kiff Work Order: 72883

Alkalinity SM 2320 (1)
Alkalinity, Total (as CaCO3)

Hydrocarbons in Water by RSK 175 (1)
Methane

(0241)

Trac

On Time Delivery For Less

800-334-5000

Call For A Pickup!

Account Number [redacted] B10255836248

Date 01/04/19

B10255836248

FROM (Company)

KIFF ANALYTICAL*

Street Address

2795 2ND STREET Suite 300

City

DAVIS

State CA | Zip Code (Required) 95616 | Phone Number (530) 297-4800

PLEASE PRINT IN BLOCK LETTERS with Blue / Black Ink

TO (Company) WE CANNOT DELIVER TO A P.O. BOX

CAL SCIENCE ENVIRONMENTAL

Street Address

7440 LINCOLN WAY

Suite # | City GARDEN GROVE

State CA | Zip Code (Required) 92841 | Phone Number 714-895-5494

Recipient's Name

SAMPLE RECEIVING

Shipper's Ref. #

SUB

Service Options

*If no box is checked, Sunrise Service will be applied.
**Minimum charge weight is 300 lbs. Delivery by 5:00 P.M.
Note: delivery times for all services may be later in some areas. Check service guide or visit our website for details.

- [ ] SUNRISE - BY 10:30 AM*
- [ ] SUNRISE GOLD - BY 8:00 AM*
- [ ] HEAVYWEIGHT**
- [ ] Saturday Delivery - Extra Charge (see Service Guide for details)
- [ ] HOLD FOR PICKUP
- [x] This shipment requires a delivery signature
- [ ] Declared Value $ (maximum $25,000) [redacted]

Billing Information

If none is selected, shipper will be invoiced.

- [x] Bill Shipper's Account
- [ ] Bill Other Acct # [redacted]

Weight

- [ ] 8 oz. Letter or

Weight lbs. (Subject to verification)

Dim weight charge if greater than actual weight

L in. X W in. X H in. ÷200 = ____

- [ ] C.O.D. Amount $, Limit $10,000 (affix C.O.D. tag to package)
- [ ] Secured Payment (Money Order or Certified Check)
- [ ] Unsecured Payment (Company Check or Personal Check)

Driver # | Pick-up Time | Shipper's Signature

Driver's Initials | Shipper's Name E ROBERTS

WWW.CALOVER.COM

B10255836248

Trac

ontrac.com 800.334.5000

ORG 92841

GARDEN GROVE

SAC 04 S/350

33 lbs

200140

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-05-0241

SAMPLE RECEIPT FORM

Cooler 1 **of** 1

CLIENT: Kiff **DATE:** 05/05/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.1 °C + 0.5 °C (CF) = 2.6 °C ☑ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** JP

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Initial:** JP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** JP

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑3 VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☑2 250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** JP

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JP

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** JP

KIFF Analytical LLC

Report Number : 72893
Date : 05/10/2010

Laboratory Results

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 3 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Dear Mr. Purchase,

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

KIFF Analytical LLC

Report Number : 72893
Date : 05/10/2010

Subject : 3 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for samples DW-3, DW-6 and DW-5.

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

Matrix Spike/Matrix Spike Duplicate results associated with samples DW-3, DW-6, and DW-5 for the analyte Ethylbenzene were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Report Number : 72893
Date : 05/10/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-3** Matrix : Water Lab Number : 72893-01
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.5**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**0.93**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**8.8**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**3.4**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**420**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72893
Date : 05/10/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-6** Matrix : Water Lab Number : 72893-02
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**13**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**3.5**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**29**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**17**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**5.6**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**7.2**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 8.0**	8.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**4600**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	93.6		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	97.0		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	92.9		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72893
Date : 05/10/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-5** Matrix : Water Lab Number : 72893-03
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**69**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**2.9**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**41**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**18**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 8.0**	8.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**2100**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	97.3		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	05/06/2010

Report Number : 72893

QC Report : Method Blank Data

Date : 05/10/2010

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	98.5		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	94.0		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Report Number : 72893

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/10/2010

Project Name : **Tesoro - Livermore**

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
1,2-Dibromoethane	72901-04	<0.50	40.0	40.0	34.8	35.1	ug/L	EPA 8260B	5/5/10	87.1	87.8	0.788	80-120	25
1,2-Dichloroethane	72901-04	<0.50	40.0	40.0	34.8	34.4	ug/L	EPA 8260B	5/5/10	87.1	86.1	1.08	75.7-122	25
Benzene	72901-04	52	40.0	40.0	88.4	86.5	ug/L	EPA 8260B	5/5/10	90.0	85.4	5.30	80-120	25
Diisopropyl ether	72901-04	<0.50	39.5	39.5	33.1	33.1	ug/L	EPA 8260B	5/5/10	83.9	83.9	0.00553	80-120	25
Ethanol	72901-04	19	100	100	152	153	ug/L	EPA 8260B	5/5/10	132	134	0.847	55.1-159	25
Ethyl-tert-butyl ether	72901-04	<0.50	39.9	39.9	31.5	31.7	ug/L	EPA 8260B	5/5/10	78.9	79.5	0.849	76.5-120	25
Ethylbenzene	72901-04	220	40.0	40.0	274	265	ug/L	EPA 8260B	5/5/10	125	102	20.7	80-120	25
Methanol	72901-04	<50	1000	1000	1450	1440	ug/L	EPA 8260B	5/5/10	145	143	1.06	53.2-147	25
Methyl-t-butyl ether	72901-04	1.0	40.2	40.2	32.6	32.6	ug/L	EPA 8260B	5/5/10	78.4	78.5	0.0802	69.7-121	25
P + M Xylene	72901-04	16	40.0	40.0	57.1	55.6	ug/L	EPA 8260B	5/5/10	102	98.5	3.78	76.8-120	25

Report Number : 72893

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/10/2010

Project Name : **Tesoro - Livermore**

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
Tert-Butanol														
	72901-04	<5.0	199	199	201	204	ug/L	EPA 8260B	5/5/10	101	102	1.34	80-120	25
Tert-amyl-methyl ether														
	72901-04	<0.50	40.8	40.8	33.0	33.4	ug/L	EPA 8260B	5/5/10	80.8	81.7	1.13	78.9-120	25
Tetrachloroethene														
	72901-04	<0.50	40.0	40.0	33.6	33.1	ug/L	EPA 8260B	5/5/10	84.0	82.8	1.40	77.0-120	25
Toluene														
	72901-04	8.1	40.0	40.0	42.7	42.0	ug/L	EPA 8260B	5/5/10	86.5	84.6	2.17	80-120	25
Trichloroethene														
	72901-04	<0.50	40.0	40.0	34.3	33.7	ug/L	EPA 8260B	5/5/10	85.8	84.2	1.86	80-120	25

Report Number : 72893

QC Report : Laboratory Control Sample (LCS)

Date : 05/10/2010

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	5/5/10	101	80-120
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	5/5/10	103	75.7-122
Benzene	39.9	ug/L	EPA 8260B	5/5/10	102	80-120
Diisopropyl ether	39.4	ug/L	EPA 8260B	5/5/10	101	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	102	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	5/5/10	94.8	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	5/5/10	93.9	80-120
Methanol	999	ug/L	EPA 8260B	5/5/10	118	53.2-147
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/5/10	88.0	69.7-121
P + M Xylene	39.9	ug/L	EPA 8260B	5/5/10	99.3	76.8-120
TPH as Gasoline	505	ug/L	EPA 8260B	5/5/10	98.2	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	101	80-120
Tert-amyl-methyl ether	40.7	ug/L	EPA 8260B	5/5/10	96.2	78.9-120
Tetrachloroethene	39.9	ug/L	EPA 8260B	5/5/10	98.1	77.0-120
Toluene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120
Trichloroethene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120

KIFF Analytical LLC

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

SRG # / Lab No. 72893

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): mike Purchase

Company / Address: Orion Environmental, Inc. 1332 Peralta Ave., Berkeley, CA 95702

Phone Number: 510-525-2180

FAx Number: 562-988-2759

Project #: | P.O. #:

Project Name: Tesoro - Livermore

Project Address: 1619 1st Street Livermore, CA

California EDF Report? ☐ Yes ☐ No

Sampling Company Log Code:

Global ID:

EDF Deliverable To (Email Address):

Bill to: Mike Purchase

Sampler Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Preservative: HCl	HNO_3	None	H_2SO_4	$ZnAc_2$ & NaOH	Matrix: Water	Soil	Air	Analysis Request: BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	TAT	For Lab Use Only
DW-3	5/4/10	1303	3					3					x			x	x	x	x	x		01
DW-6	↓	1450	x					x					x			x	x	x	x	x		02
DW-5	↓	1525	x					x					x			x	x	x	x	x		03
		1																				

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

Relinquished by:	Date	Time	Received by:
	5/4/10	1558	
	05041 0	1558	Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: LJR (Initials)

SRG#: 72893 Date: 050410

Project ID: Tesoro-Livermore

Method of Receipt: [X] Courier [ ] Over-the-counter [ ] Shipper

COC Inspection

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

Sample Inspection

Coolant Present: [X] Yes [ ] No (includes water)

Temperature °C 2.0 Therm. ID# IR-5 Initial LJR Date/Time 050410/1908 [ ] N/A

Are there custody seals on sample containers?	[ ] Intact	[ ] Broken	[X] Not present
Do containers match COC? [X] 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	[X] No	
Are any sample containers broken, leaking or damaged?	[ ] Yes	[X] No	
Are preservatives indicated? [ ] Yes, on sample containers	[X] Yes, on COC	[ ] Not indicated	[ ] N/A
Are preservatives correct for analyses requested?	[X] Yes	[ ] No	[ ] N/A
Are samples within holding time for analyses requested?	[X] Yes	[ ] No	
Are the correct sample containers used for the analyses requested?	[X] Yes	[ ] No	
Is there sufficient sample to perform testing?	[X] Yes	[ ] No	

Does any sample contain product, have strong odor or are otherwise suspected to be hot? [ ] Yes [X] No

Receipt Details

Matrix WA	Container type VOA	# of containers received 15
Matrix	Container type	# of containers received
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 050410 Time: 1921

Quicklog

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

COMMENTS:

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Laboratory Results

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 6 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Dear Mr. Purchase,

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

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Subject : 6 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for samples DW-1, DW-2, MW-9 and DW-7.

California Laboratory Services provided analytical testing associated with these samples, but is not accredited by the National Environmental Laboratory Accreditation Program (NELAP).

Matrix Spike/Matrix Spike Duplicate results associated with samples DW-1 and MW-9 for the analyte Ethylbenzene were affected by the analyte concentrations already present in the un-spiked sample.

Matrix Spike/Matrix Spike Duplicate results associated with samples DW-1, DW-2, DW-7, MW-4, MW-6 and MW-9 for the analyte Nitrate as N were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-1** Matrix : Water Lab Number : 72894-01
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**50**	1.0	mg/L	EPA 300.0	05/06/2010
Nitrate as N	**1.2**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**160**	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	**27**	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	**110**	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	**140**	0.50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	**21**	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	**41**	5.0	ug/L	EPA 8260B	05/05/2010
Methanol	**< 100**	100	ug/L	EPA 8260B	05/05/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	**1800**	50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	97.1		% Recovery	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	97.9		% Recovery	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	05/05/2010

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-4** Matrix : Water Lab Number : 72894-02
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**69**	1.0	mg/L	EPA 300.0	05/05/2010
Nitrate as N	**1.2**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**2.4**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**1.8**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**2.3**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**4.8**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	94.3		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-6** Matrix : Water Lab Number : 72894-03
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**< 0.50**	0.50	mg/L	EPA 300.0	05/05/2010
Nitrate as N	**< 0.10**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**2100**	5.0	ug/L	EPA 8260B	05/06/2010
Toluene	**120**	5.0	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**780**	5.0	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**260**	5.0	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**820**	5.0	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**8.6**	5.0	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**450**	25	ug/L	EPA 8260B	05/06/2010
Methanol	**< 500**	500	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 50**	50	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**17000**	500	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-2** Matrix : Water Lab Number : 72894-04
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**2.1**	0.50	mg/L	EPA 300.0	05/05/2010
Nitrate as N	**< 0.10**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**110**	0.90	ug/L	EPA 8260B	05/06/2010
Toluene	**7.1**	0.90	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**17**	0.90	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**16**	0.90	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**350**	0.90	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**4.1**	0.90	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**550**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 200**	200	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 9.0**	9.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**2300**	90	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	97.3		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	98.2		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-9** Matrix : Water Lab Number : 72894-05
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**1.8**	0.50	mg/L	EPA 300.0	05/05/2010
Nitrate as N	**< 0.10**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**120**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**7.0**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**35**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**14**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**44**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**0.52**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**31**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 200**	200	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**2700**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	97.7		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	97.1		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	05/06/2010

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Report Number : 72894
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-7** Matrix : Water Lab Number : 72894-06
Sample Date :05/04/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Sulfate	**0.84**	0.50	mg/L	EPA 300.0	05/10/2010
Nitrate as N	**< 0.10**	0.10	mg/L	EPA 300.0	05/05/2010
Benzene	**250**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**15**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**89**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**32**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**97**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**1.0**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**160**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**4100**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	95.6		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	98.0		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	05/06/2010

Report Number : 72894

Date : 05/11/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	95.0		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/05/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	94.0		%	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.2		%	EPA 8260B	05/06/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	98.5		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	94.0		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/05/2010

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72894

QC Report : Method Blank Data

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	05/05/2010
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	05/05/2010
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	05/06/2010
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	05/10/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72894

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
1,2-Dibromoethane	72891-12	<0.50	39.6	39.9	39.9	43.3	ug/L	EPA 8260B	5/5/10	101	108	7.49	80-120	25
1,2-Dichloroethane	72891-12	<0.50	39.6	39.9	42.8	44.8	ug/L	EPA 8260B	5/5/10	108	112	3.97	75.7-122	25
Benzene	72891-12	<0.50	39.6	39.9	39.3	39.7	ug/L	EPA 8260B	5/5/10	99.3	99.5	0.197	80-120	25
Diisopropyl ether	72891-12	<0.50	39.1	39.4	38.6	39.8	ug/L	EPA 8260B	5/5/10	98.9	101	2.16	80-120	25
Ethanol	72891-12	<5.0	99.3	100	98.2	89.7	ug/L	EPA 8260B	5/5/10	98.8	89.7	9.76	55.1-159	25
Ethyl-tert-butyl ether	72891-12	<0.50	39.5	39.8	38.6	39.7	ug/L	EPA 8260B	5/5/10	97.6	99.6	2.03	76.5-120	25
Ethylbenzene	72891-12	<0.50	39.6	39.9	38.8	38.8	ug/L	EPA 8260B	5/5/10	97.9	97.3	0.620	80-120	25
Methanol	72891-12	<50	992	1000	1120	981	ug/L	EPA 8260B	5/5/10	112	98.1	13.6	53.2-147	25
Methyl-t-butyl ether	72891-12	46	39.8	40.1	80.0	84.8	ug/L	EPA 8260B	5/5/10	85.7	96.8	12.2	69.7-121	25
P + M Xylene	72891-12	<0.50	39.6	39.9	37.7	37.5	ug/L	EPA 8260B	5/5/10	95.3	94.0	1.40	76.8-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Tert-Butanol														
	72891-12	<5.0	197	199	191	192	ug/L	EPA 8260B	5/5/10	96.8	96.4	0.485	80-120	25
Tert-amyl-methyl ether														
	72891-12	<0.50	40.4	40.8	39.9	41.2	ug/L	EPA 8260B	5/5/10	98.7	101	2.51	78.9-120	25
Tetrachloroethene														
	72891-12	<0.50	39.6	39.9	38.4	39.0	ug/L	EPA 8260B	5/5/10	96.8	97.6	0.812	77.0-120	25
Toluene														
	72891-12	<0.50	39.6	39.9	39.3	39.4	ug/L	EPA 8260B	5/5/10	99.2	98.8	0.388	80-120	25
Trichloroethene														
	72891-12	<0.50	39.6	39.9	38.0	38.7	ug/L	EPA 8260B	5/5/10	95.9	96.9	1.10	80-120	25
1,2-Dibromoethane														
	72891-12	<0.50	40.0	40.0	41.4	43.0	ug/L	EPA 8260B	5/6/10	103	107	3.87	80-120	25
1,2-Dichloroethane														
	72891-12	<0.50	40.0	40.0	39.0	38.2	ug/L	EPA 8260B	5/6/10	97.5	95.6	1.92	75.7-122	25
Benzene														
	72891-12	<0.50	40.0	40.0	41.9	41.0	ug/L	EPA 8260B	5/6/10	105	102	2.12	80-120	25
Diisopropyl ether														
	72891-12	<0.50	39.5	39.5	38.6	39.6	ug/L	EPA 8260B	5/6/10	97.8	100	2.44	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72894

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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														
	72891-12	<5.0	100	100	108	114	ug/L	EPA 8260B	5/6/10	108	113	5.16	55.1-159	25
Ethyl-tert-butyl ether														
	72891-12	<0.50	39.9	39.9	37.1	40.3	ug/L	EPA 8260B	5/6/10	93.0	101	8.16	76.5-120	25
Ethylbenzene														
	72891-12	<0.50	40.0	40.0	42.8	42.2	ug/L	EPA 8260B	5/6/10	107	105	1.61	80-120	25
Methanol														
	72891-12	120	1000	1000	1240	1000	ug/L	EPA 8260B	5/6/10	111	87.9	23.6	53.2-147	25
Methyl-t-butyl ether														
	72891-12	39	40.2	40.2	76.0	81.2	ug/L	EPA 8260B	5/6/10	91.4	104	13.1	69.7-121	25
P + M Xylene														
	72891-12	<0.50	40.0	40.0	42.7	41.6	ug/L	EPA 8260B	5/6/10	107	104	2.46	76.8-120	25
Tert-Butanol														
	72891-12	<5.0	199	199	208	202	ug/L	EPA 8260B	5/6/10	104	102	2.57	80-120	25
Tert-amyl-methyl ether														
	72891-12	<0.50	40.8	40.8	37.0	40.0	ug/L	EPA 8260B	5/6/10	90.6	97.9	7.76	78.9-120	25
Tetrachloroethene														
	72891-12	<0.50	40.0	40.0	40.2	40.3	ug/L	EPA 8260B	5/6/10	100	101	0.365	77.0-120	25
Toluene														
	72891-12	<0.50	40.0	40.0	41.2	41.5	ug/L	EPA 8260B	5/6/10	103	104	0.610	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Trichloroethene	72891-12	<0.50	40.0	40.0	40.8	39.8	ug/L	EPA 8260B	5/6/10	102	99.6	2.31	80-120	25
1,2-Dibromoethane	72901-04	<0.50	40.0	40.0	34.8	35.1	ug/L	EPA 8260B	5/5/10	87.1	87.8	0.788	80-120	25
1,2-Dichloroethane	72901-04	<0.50	40.0	40.0	34.8	34.4	ug/L	EPA 8260B	5/5/10	87.1	86.1	1.08	75.7-122	25
Benzene	72901-04	52	40.0	40.0	88.4	86.5	ug/L	EPA 8260B	5/5/10	90.0	85.4	5.30	80-120	25
Diisopropyl ether	72901-04	<0.50	39.5	39.5	33.1	33.1	ug/L	EPA 8260B	5/5/10	83.9	83.9	0.00553	80-120	25
Ethanol	72901-04	19	100	100	152	153	ug/L	EPA 8260B	5/5/10	132	134	0.847	55.1-159	25
Ethyl-tert-butyl ether	72901-04	<0.50	39.9	39.9	31.5	31.7	ug/L	EPA 8260B	5/5/10	78.9	79.5	0.849	76.5-120	25
Ethylbenzene	72901-04	220	40.0	40.0	274	265	ug/L	EPA 8260B	5/5/10	125	102	20.7	80-120	25
Methanol	72901-04	<50	1000	1000	1450	1440	ug/L	EPA 8260B	5/5/10	145	143	1.06	53.2-147	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72894

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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														
	72901-04	1.0	40.2	40.2	32.6	32.6	ug/L	EPA 8260B	5/5/10	78.4	78.5	0.0802	69.7-121	25
P + M Xylene														
	72901-04	16	40.0	40.0	57.1	55.6	ug/L	EPA 8260B	5/5/10	102	98.5	3.78	76.8-120	25
Tert-Butanol														
	72901-04	<5.0	199	199	201	204	ug/L	EPA 8260B	5/5/10	101	102	1.34	80-120	25
Tert-amyl-methyl ether														
	72901-04	<0.50	40.8	40.8	33.0	33.4	ug/L	EPA 8260B	5/5/10	80.8	81.7	1.13	78.9-120	25
Tetrachloroethene														
	72901-04	<0.50	40.0	40.0	33.6	33.1	ug/L	EPA 8260B	5/5/10	84.0	82.8	1.40	77.0-120	25
Toluene														
	72901-04	8.1	40.0	40.0	42.7	42.0	ug/L	EPA 8260B	5/5/10	86.5	84.6	2.17	80-120	25
Trichloroethene														
	72901-04	<0.50	40.0	40.0	34.3	33.7	ug/L	EPA 8260B	5/5/10	85.8	84.2	1.86	80-120	25
Sulfate														
	72894-03	< 0.50	2.50	2.50	2.77	2.75	mg/L	EPA 300.0	5/5/10	91.1	90.3	0.738	85.0-115	10
Nitrate as N														
	72894-03	< 0.10	0.500	0.500	0.417	0.410	mg/L	EPA 300.0	5/5/10	81.7	80.4	1.56	85.0-115	10

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72894

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Sulfate														
	72677-07	< 0.50	2.50	2.50	2.46	2.46	mg/L	EPA 300.0	5/6/10	90.6	90.4	0.207	85.0-115	10
Sulfate														
	72960-01	4.0	2.50	2.50	6.16	6.24	mg/L	EPA 300.0	5/10/10	87.8	90.8	1.19	85.0-115	10

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/5/10	109	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	5/5/10	114	75.7-122
Benzene	40.0	ug/L	EPA 8260B	5/5/10	98.9	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	5/5/10	99.8	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	80.3	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/5/10	98.6	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/5/10	96.8	80-120
Methanol	1000	ug/L	EPA 8260B	5/5/10	87.0	53.2-147
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/5/10	100	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	5/5/10	94.6	76.8-120
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	94.5	80-120
Tert-amyl-methyl ether	40.8	ug/L	EPA 8260B	5/5/10	100	78.9-120
Tetrachloroethene	40.0	ug/L	EPA 8260B	5/5/10	98.6	77.0-120
Toluene	40.0	ug/L	EPA 8260B	5/5/10	98.9	80-120
Trichloroethene	40.0	ug/L	EPA 8260B	5/5/10	112	80-120
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	5/6/10	102	80-120
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	5/6/10	94.0	75.7-122
Benzene	40.2	ug/L	EPA 8260B	5/6/10	102	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	5/6/10	98.0	80-120
Ethanol	101	ug/L	EPA 8260B	5/6/10	123	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	5/6/10	91.2	76.5-120
Ethylbenzene	40.2	ug/L	EPA 8260B	5/6/10	105	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methanol	1010	ug/L	EPA 8260B	5/6/10	130	53.2-147
Methyl-t-butyl ether	40.4	ug/L	EPA 8260B	5/6/10	86.6	69.7-121
P + M Xylene	40.2	ug/L	EPA 8260B	5/6/10	105	76.8-120
TPH as Gasoline	506	ug/L	EPA 8260B	5/6/10	105	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	5/6/10	100	80-120
Tert-amyl-methyl ether	41.0	ug/L	EPA 8260B	5/6/10	92.0	78.9-120
Tetrachloroethene	40.2	ug/L	EPA 8260B	5/6/10	101	77.0-120
Toluene	40.2	ug/L	EPA 8260B	5/6/10	103	80-120
Trichloroethene	40.2	ug/L	EPA 8260B	5/6/10	99.2	80-120
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	5/5/10	101	80-120
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	5/5/10	103	75.7-122
Benzene	39.9	ug/L	EPA 8260B	5/5/10	102	80-120
Diisopropyl ether	39.4	ug/L	EPA 8260B	5/5/10	101	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	102	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	5/5/10	94.8	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	5/5/10	93.9	80-120
Methanol	999	ug/L	EPA 8260B	5/5/10	118	53.2-147
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/5/10	88.0	69.7-121
P + M Xylene	39.9	ug/L	EPA 8260B	5/5/10	99.3	76.8-120
TPH as Gasoline	505	ug/L	EPA 8260B	5/5/10	98.2	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	101	80-120
Tert-amyl-methyl ether	40.7	ug/L	EPA 8260B	5/5/10	96.2	78.9-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tetrachloroethene	39.9	ug/L	EPA 8260B	5/5/10	98.1	77.0-120
Toluene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120
Trichloroethene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120
Sulfate	2.50	mg/L	EPA 300.0	5/5/10	97.8	85.0-115
Nitrate as N	0.500	mg/L	EPA 300.0	5/5/10	96.1	85.0-115
Sulfate	2.50	mg/L	EPA 300.0	5/6/10	91.5	85.0-115
Sulfate	2.50	mg/L	EPA 300.0	5/10/10	89.9	85.0-115

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

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

SRG # / Lab No. 72894

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase
Company / Address: Orion Environmental, Inc. 1332 Peralta Ave., Berkeley, CA 95702
Phone Number: 510-525-2180
Fax Number: 562-988-2759
Project #: P.O. #:
Project Name: Tesoro - Livermore
Project Address: 1619 1st Street Livermore, CA

California EDF Report? ☐ Yes ☐ No
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Bill to: Mike Purchase
Sampler Signature:

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☑ 1 wk

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: H_2SO_4	Preservative: $ZnAc_2$ & NaOH	Matrix: Water	Matrix: Soil	Matrix: Air	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	Nitrate (SM 4500-NO_3 or EPA 300.0)	Sulfate (EPA 300.0)	Ferrous Iron (SM 3500-Fe D)	BOD (Biochemical Oxygen Demand) (SM 5510 B)	Total Alkalinity (SM 2320 B)	COD (Chemical Oxygen Demand) (SM 5520 D)	Methane (RSK 175M)	TOC (Total Organic Carbon) (SM 5310 D)	For Lab Use Only
DW-1	5/4/10	0755	5		5	1		5		5	1		X			X	X	X	X	X	X	X	X	X	X	X	X	01
MW-4		0842	X		X	X		X		X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	02
MW-6		1005	X		X	X		X		X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	03
DW-2		1044	X		X	X		X		X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	04
MW-9		1334	X		X	X		X		X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	05
DW-7	↓	1214	X		X	X		X		X	X		X			X	X	X	X	X	X	X	X	X	X	X	X	06

Relinquished by: — Date 5/4/10 — Time 1559 — Received by:
Relinquished by: — Date — Time — Received by:
Relinquished by: — Date 050410 — Time 1558 — Received by Laboratory: Ken Kiff Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER LJR Initials

SRG#: 72894 Date: 050410

Project ID: Tesoro-Livermore

Method of Receipt: [X] Courier [ ] Over-the-counter [ ] Shipper

COC Inspection

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

Sample Inspection

Coolant Present: [X] Yes [ ] No (includes water)

Temperature °C 2.0 Therm. ID# IR-5 Initial LJR Date/Time 050410/1908 [ ] N/A

Are there custody seals on sample containers?	[ ] Intact	[ ] Broken	[X] Not present	
Do containers match COC? [X] 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	[X] No		
Are any sample containers broken, leaking or damaged?	[ ] Yes	[X] No		
Are preservatives indicated? [ ] Yes, on sample containers	[X] Yes, on COC	[ ] Not indicated	[ ] N/A	
Are preservatives correct for analyses requested?	[X] Yes	[ ] No	[ ] N/A	
Are samples within holding time for analyses requested?	[X] Yes	[ ] No		
Are the correct sample containers used for the analyses requested?	[X] Yes	[ ] No		
Is there sufficient sample to perform testing?	[X] Yes	[ ] No		

Does any sample contain product, have strong odor or are otherwise suspected to be hot? [ ] Yes [X] No

Receipt Details

Matrix WA	Container type VOA	# of containers received 30
Matrix WA	Container type poly	# of containers received 30
Matrix WA	Container type glass	# of containers received 6

Date and Time Sample Put into Temp Storage Date: 050410 Time: 1921

Quicklog

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

COMMENTS:

Leaders in Analytical Science and Service

KIFF Analytical LLC

Subcontract Laboratory Report Attachments

2795 Second Street, Suite 300 Davis, CA 95618
tel 530.297.4800 fax 530.297.4808
www.kiffanalytical.com

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

May 12, 2010

CLS Work Order #: CTE0104
COC #: 72894

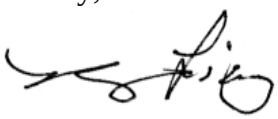
Scott Forbes
KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project Name: Tesoro Livermore

Enclosed are the results of analyses for samples received by the laboratory on 05/05/10 08:24. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

05/12/10 10:24

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0104
COC #: 72894

REVISED

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

California Laboratory Services
3249 Fitzgerald Road
Rancho Cordova, CA 95742
916-638-7301

COC No. 72894 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes
Company/Address: Kiff Analytical
Phone No.: 530-297-4800
FAX No.: 530-297-4808
Project Number:
P.O. No.: 72894
Project Name: Tesoro - Livermore
Project Address:

EDF Report? NO

Recommended but not mandatory to complete this section:
Sampling Company Log Code: EFSP
Global ID: T0600101410
Deliverables to (Email Address): inbox@kiffanalytical.com

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 1-L Poly None	250ml Poly None	Matrix: Water	Analysis Request: Biochemical Oxygen Demand	Iron, Ferrous	TAT: Standard	For Lab Use Only
DW-1	05/04/10	07:55	1	1	X	X		X	
MW-4	05/04/10	08:42	1	1	X	X		X	
MW-6	05/04/10	10:05	1	1	X	X	X	X	
DW-2	05/04/10	10:44	1	1	X	X	X	X	
MW-9	05/04/10	13:34	1	1	X	X	X	X	
DW-7	05/04/10	12:14	1	1	X	X	X	X	

Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:

Remarks:

Bill to: Accounts Payable

CALIFORNIA LABORATORY SERVICES

 05/12/10 10:24

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0104
COC #: 72894

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DW-1 (CTE0104-01) Water Sampled: 05/04/10 07:55 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	**3.9**	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
MW-4 (CTE0104-02) Water Sampled: 05/04/10 08:42 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	ND	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
MW-6 (CTE0104-03) Water Sampled: 05/04/10 10:05 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	**16**	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
Ferrous Iron	**1.0**	0.10	"	"	CT03110	05/05/10	05/05/10	SM3500-Fe D	
DW-2 (CTE0104-04) Water Sampled: 05/04/10 10:44 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	**10**	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
Ferrous Iron	ND	0.10	"	"	CT03110	05/05/10	05/05/10	SM3500-Fe D	
MW-9 (CTE0104-05) Water Sampled: 05/04/10 13:34 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	ND	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
Ferrous Iron	**0.72**	0.10	"	"	CT03110	05/05/10	05/05/10	SM3500-Fe D	
DW-7 (CTE0104-06) Water Sampled: 05/04/10 12:14 Received: 05/05/10 08:24									
Biochemical Oxygen Demand	ND	3.0	mg/L	1	CT03158	05/06/10	05/11/10	SM5210B	
Ferrous Iron	ND	0.10	"	"	CT03110	05/05/10	05/05/10	SM3500-Fe D	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0104
COC #: 72894

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CT03110 - General Preparation										
Blank (CT03110-BLK1)				Prepared & Analyzed: 05/05/10						
Ferrous Iron	ND	0.10	mg/L							
LCS (CT03110-BS1)				Prepared & Analyzed: 05/05/10						
Ferrous Iron	0.259	0.10	mg/L	0.250		104	80-120			
LCS Dup (CT03110-BSD1)				Prepared & Analyzed: 05/05/10						
Ferrous Iron	0.254	0.10	mg/L	0.250		102	80-120	2	25	
Matrix Spike (CT03110-MS1)		**Source: CTE0104-06**		Prepared & Analyzed: 05/05/10						
Ferrous Iron	0.265	0.10	mg/L	0.250	0.00500	104	75-125			
Matrix Spike Dup (CT03110-MSD1)		**Source: CTE0104-06**		Prepared & Analyzed: 05/05/10						
Ferrous Iron	0.265	0.10	mg/L	0.250	0.00500	104	75-125	0	30	
Batch CT03158 - General										
Blank (CT03158-BLK1)				Prepared: 05/06/10 Analyzed: 05/11/10						
Biochemical Oxygen Demand	ND	3.0	mg/L							
LCS (CT03158-BS1)				Prepared: 05/06/10 Analyzed: 05/11/10						
Biochemical Oxygen Demand	171	3.0	mg/L	167		103	83-138			
LCS Dup (CT03158-BSD1)				Prepared: 05/06/10 Analyzed: 05/11/10						
Biochemical Oxygen Demand	177	3.0	mg/L	167		106	83-138	3	21	

CALIFORNIA LABORATORY SERVICES

05/12/10 10:24

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CTE0104**
Davis, CA 95616	Project Manager: Scott Forbes	COC #: 72894

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Calscience
Environmental
Laboratories, Inc.

May 12, 2010

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 10-05-0409**
Client Reference: Tesoro - Livermore

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 5/6/2010 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Amanda Porter

Calscience Environmental
Laboratories, Inc.
Amanda Porter
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/06/10
Work Order No: 10-05-0409
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-1	**10-05-0409-1-A**	**05/04/10 07:55**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	125	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**10-05-0409-2-A**	**05/04/10 08:42**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	**10-05-0409-3-A**	**05/04/10 10:05**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	3700	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-2	**10-05-0409-4-A**	**05/04/10 10:44**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1760	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-9	**10-05-0409-5-A**	**05/04/10 13:34**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	384	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-7	**10-05-0409-6-A**	**05/04/10 12:14**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	2100	8.00	8		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/06/10
Work Order No: 10-05-0409
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-965**	**N/A**	**Aqueous**	**GC 52**	**N/A**	**05/06/10 00:00**	**100506L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/06/10
Work Order No: 10-05-0409

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
DW-1	**10-05-0409-1**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	21	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	346	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	2.9	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-4	**10-05-0409-2**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	467	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	1.8	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-6	**10-05-0409-3**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	52	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	588	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	7.9	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
DW-2	**10-05-0409-4**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	30	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	463	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	5.6	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 05/06/10
Work Order No: 10-05-0409

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-9	**10-05-0409-5**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	42	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	521	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	4.1	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
DW-7	**10-05-0409-6**	**05/04/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	29	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	202	5.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	5.1	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	5.0	1		mg/L	05/07/10	05/07/10	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	05/10/10	SM 2320B
Carbon, Total Organic	ND	0.50	1		mg/L	N/A	05/06/10	SM 5310 D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0409

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	SM 5310 D	10-05-0443-3	05/06/10	N/A	92	92	75-125	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0409

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	10-05-0740-1	05/10/10	280	282	1	0-25	
Bicarbonate (as CaCO3)	SM 2320B	10-05-0740-1	05/10/10	280	282	1	0-25	
Carbonate (as CaCO3)	SM 2320B	10-05-0740-1	05/10/10	ND	ND	NA	0-25	
Hydroxide (as CaCO3)	SM 2320B	10-05-0740-1	05/10/10	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	10-05-0476-4	05/07/10	13	13	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0409
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-965	**Aqueous**	**GC 52**	**N/A**	**05/06/10**	**100506L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	94	92	79-109	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 10-05-0409

Project: Tesoro - Livermore

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Carbon, Total Organic	SM 5310 D	099-05-097-3,886	05/06/10	N/A	5.00	4.74	95	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-05-0409

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

0409

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
714-895-5494

COC No. **72894** Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes

EDF Report? NO

Company/Address: Kiff Analytical

Recommended but not mandatory to complete this section:

Sampling Company Log Code: EFSP

Phone No.: 530-297-4800 FAX No.: 530-297-4808

Global ID: T0600101410

Project Number: P.O. No.: 72894

Deliverables to (Email Address): inbox@kiffanalytical.com

Project Name: Tesoro - Livermore

Project Address:

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 250ml Glass H2SO4	250ml Poly None	VOA 40 ml HCl	Matrix: Water	Analysis Request: Alkalinity SM 2320 (1)	Chemical Oxygen Demand	Hydrocarbons in Water by RSK 175 (1)	Total Organic Carbon	TAT: 4-Days	For Lab Use Only
DW-1	05/04/10	07:55	1	2	2	X	X	X	X	X	X	1
MW-4	05/04/10	08:42	1	2	2	X	X	X	X	X	X	2
MW-6	05/04/10	10:05	1	2	2	X	X	X	X	X	X	3
DW-2	05/04/10	10:44	1	2	2	X	X	X	X	X	X	4
MW-9	05/04/10	13:34	1	2	2	X	X	X	X	X	X	5
DW-7	05/04/10	12:14	1	2	2	X	X	X	X	X	X	6

Relinquished by:	Date	Time	Received by:
Donna Albano / K-PP- Analytical	050510	1900	
Relinquished by:	Date	Time	Received by:
Relinquished by: ONTRAC	Date 5/6/10	Time 10:30	Received by Laboratory:

Remarks: Please refer to attached Test Detail.

Bill to: Accounts Payable

0907

Test Detail for Kiff Work Order: 72894

Alkalinity SM 2320 (1)
Alkalinity, Total (as CaCO3)

Hydrocarbons in Water by RSK 175 (1)
Methane

0409

Trac
On Time Delivery For Less

800-334-5000
Call For A Pickup!

Account Number [redacted] B10255836293

Date 08/5/04 136680

B10255836293

FROM (Company)
KIFF ANALYTICAL*

Street Address
2795 2ND STREET Suite 300

City
DAVIS

State CA | Zip Code (Required) 95616 | Phone Number (530) 297-4800

PLEASE PRINT IN BLOCK LETTERS with Blue / Black Ink

TO (Company) WE CANNOT DELIVER TO A P.O. BOX
CAL SCIENCE ENVIRONMENTAL

Street Address
7440 LINCOLN WAY

Suite # | City GARDEN GROVE

State CA | Zip Code (Required) 92841 | Phone Number 714-895-5494

Recipient's Name
SAMPLE RECEIVING

Shipper's Ref. #
SMB

Service Options
If no box is checked, Sunrise Service will be applied.
*Minimum charge weight is 300 lbs. - Delivery by 5:00 P.M.
Note: delivery times for all services may be later in some areas. Check service guide or visit our website for details.

- ☒ SUNRISE - BY 10:30 AM*
- ☐ SUNRISE GOLD - BY 8:00 AM*
- ☐ HEAVYWEIGHT**
- ☐ Saturday Delivery - Extra Charge (see Service Guide for details)
- ☐ HOLD FOR PICKUP
- ☐ This shipment requires a delivery signature
- ☐ Declared Value $ (maximum $25,000) [redacted]

Billing Information
If none is selected, shipper will be invoiced.
- ☒ Bill Shipper's Account
- ☐ Bill Other Acct # [redacted]

Weight
☐ 8 oz. Letter or
Weight lbs. (Subject to verification)

Dim weight charge if greater than actual weight
L in. X W in. X H in. ÷200 = ____

- ☐ C.O.D. Amount $, Limit $10,000 (affix C.O.D. tag to package)
- ☐ Secured Payment (Money Order or Certified Check)
- ☐ Unsecured Payment (Company Check or Personal Check)

Driver #: | Pickup Time: | Shipper's Signature

Driver's Initials: | Shipper's Name: A Abalahi

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-05-0409

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: KIFF DATE: 05/06/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.2 °C + 0.5 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: PS

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑2 VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☑2 250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JP

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Laboratory Results

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 10 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Dear Mr. Purchase,

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

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Subject : 10 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for samples IP-6 and IP-3.

California Laboratory Services provided analytical testing associated with these samples, but is not accredited by the National Environmental Laboratory Accreditation Program (NELAP).

Matrix Spike/Matrix Spike Duplicate results associated with samples MW-1 and IP-6 for the analyte Ethylbenzene were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-1** Matrix : Water Lab Number : 72909-01
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2.2**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**0.92**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**5.9**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**2.8**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**710**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	99.2		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	96.1		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-9** Matrix : Water Lab Number : 72909-02
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**6000**	40	ug/L	EPA 8260B	05/07/2010
Toluene	**19000**	40	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**2500**	40	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**14000**	40	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 200**	200	ug/L	EPA 8260B	05/07/2010
Methanol	**< 4000**	4000	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 400**	400	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**92000**	4000	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Trichloroethene	**< 40**	40	ug/L	EPA 8260B	05/07/2010
Tetrachloroethene	**< 40**	40	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 40**	40	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	05/07/2010
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-8** Matrix : Water Lab Number : 72909-03
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3900**	25	ug/L	EPA 8260B	05/07/2010
Toluene	**13000**	25	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**2400**	25	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**14000**	25	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 150**	150	ug/L	EPA 8260B	05/07/2010
Methanol	**< 2500**	2500	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 250**	250	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**83000**	2500	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Trichloroethene	**< 25**	25	ug/L	EPA 8260B	05/07/2010
Tetrachloroethene	**< 25**	25	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 25**	25	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	05/07/2010
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-1** Matrix : Water Lab Number : 72909-04
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**900**	7.0	ug/L	EPA 8260B	05/10/2010
Toluene	**1500**	7.0	ug/L	EPA 8260B	05/10/2010
Ethylbenzene	**1400**	7.0	ug/L	EPA 8260B	05/10/2010
Total Xylenes	**5000**	7.0	ug/L	EPA 8260B	05/10/2010
Methyl-t-butyl ether (MTBE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Diisopropyl ether (DIPE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Ethyl-t-butyl ether (ETBE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Tert-amyl methyl ether (TAME)	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Tert-Butanol	**< 40**	40	ug/L	EPA 8260B	05/10/2010
Methanol	**< 700**	700	ug/L	EPA 8260B	05/10/2010
Ethanol	**< 70**	70	ug/L	EPA 8260B	05/10/2010
TPH as Gasoline	**33000**	700	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Trichloroethene	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
Tetrachloroethene	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
1,2-Dibromoethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane-d4 (Surr)	95.7		% Recovery	EPA 8260B	05/10/2010
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	05/10/2010
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	05/10/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-2** Matrix : Water Lab Number : 72909-05
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**66**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**220**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**61**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**240**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**3.3**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**2700**	50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **TP-1** Matrix : Water Lab Number : 72909-06
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2100**	8.0	ug/L	EPA 8260B	05/07/2010
Toluene	**360**	8.0	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**1100**	8.0	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**620**	8.0	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**3400**	8.0	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**27**	8.0	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**4500**	40	ug/L	EPA 8260B	05/07/2010
Methanol	**< 800**	800	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 80**	80	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**15000**	800	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
Trichloroethene	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
Tetrachloroethene	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	05/07/2010
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-6** Matrix : Water Lab Number : 72909-07
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**24**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**100**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**18**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**98**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**0.51**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**8000**	250	ug/L	EPA 8260B	05/07/2010
(Note: Primarily compounds not found in typical Gasoline)					
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **VW-2** Matrix : Water Lab Number : 72909-08
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**130**	2.5	ug/L	EPA 8260B	05/06/2010
Toluene	**6.1**	2.5	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**170**	2.5	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**130**	2.5	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**1300**	2.5	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**12**	2.5	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**1700**	15	ug/L	EPA 8260B	05/06/2010
Methanol	**< 250**	250	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 25**	25	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**2800**	250	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 2.5**	2.5	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-3** Matrix : Water Lab Number : 72909-09
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**6.4**	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	**22**	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**4.9**	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**21**	0.50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**3.9**	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**430**	50	ug/L	EPA 8260B	05/06/2010
(Note: Primarily compounds not found in typical Gasoline)					
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	05/06/2010

KIFF Analytical LLC

Report Number : 72909
Date : 05/11/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-7** Matrix : Water Lab Number : 72909-10
Sample Date :05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**49**	0.90	ug/L	EPA 8260B	05/06/2010
Toluene	**62**	0.90	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	**38**	0.90	ug/L	EPA 8260B	05/06/2010
Total Xylenes	**69**	0.90	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	**14**	0.90	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	**20**	5.0	ug/L	EPA 8260B	05/06/2010
Methanol	**< 90**	90	ug/L	EPA 8260B	05/06/2010
Ethanol	**< 9.0**	9.0	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	**33000**	2500	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Trichloroethene	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
Tetrachloroethene	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	**< 0.90**	0.90	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	99.6		% Recovery	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	05/06/2010

Report Number : 72909

Date : 05/11/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	95.0		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/10/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/10/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/10/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/10/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	05/10/2010
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	05/10/2010
Toluene - d8 (Surr)	102		%	EPA 8260B	05/10/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/06/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/06/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/06/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/06/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72909

Date : 05/11/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/06/2010
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	05/06/2010
4-Bromofluorobenzene (Surr)	94.0		%	EPA 8260B	05/06/2010
Toluene - d8 (Surr)	99.2		%	EPA 8260B	05/06/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/05/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/05/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/05/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/05/2010
1,2-Dichloroethane-d4 (Surr)	98.5		%	EPA 8260B	05/05/2010
4-Bromofluorobenzene (Surr)	94.0		%	EPA 8260B	05/05/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/05/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72909

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
1,2-Dibromoethane	72891-12	<0.50	39.6	39.9	39.9	43.3	ug/L	EPA 8260B	5/5/10	101	108	7.49	80-120	25
1,2-Dichloroethane	72891-12	<0.50	39.6	39.9	42.8	44.8	ug/L	EPA 8260B	5/5/10	108	112	3.97	75.7-122	25
Benzene	72891-12	<0.50	39.6	39.9	39.3	39.7	ug/L	EPA 8260B	5/5/10	99.3	99.5	0.197	80-120	25
Diisopropyl ether	72891-12	<0.50	39.1	39.4	38.6	39.8	ug/L	EPA 8260B	5/5/10	98.9	101	2.16	80-120	25
Ethanol	72891-12	<5.0	99.3	100	98.2	89.7	ug/L	EPA 8260B	5/5/10	98.8	89.7	9.76	55.1-159	25
Ethyl-tert-butyl ether	72891-12	<0.50	39.5	39.8	38.6	39.7	ug/L	EPA 8260B	5/5/10	97.6	99.6	2.03	76.5-120	25
Ethylbenzene	72891-12	<0.50	39.6	39.9	38.8	38.8	ug/L	EPA 8260B	5/5/10	97.9	97.3	0.620	80-120	25
Methanol	72891-12	<50	992	1000	1120	981	ug/L	EPA 8260B	5/5/10	112	98.1	13.6	53.2-147	25
Methyl-t-butyl ether	72891-12	46	39.8	40.1	80.0	84.8	ug/L	EPA 8260B	5/5/10	85.7	96.8	12.2	69.7-121	25
P + M Xylene	72891-12	<0.50	39.6	39.9	37.7	37.5	ug/L	EPA 8260B	5/5/10	95.3	94.0	1.40	76.8-120	25

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QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Tert-Butanol														
	72891-12	<5.0	197	199	191	192	ug/L	EPA 8260B	5/5/10	96.8	96.4	0.485	80-120	25
Tert-amyl-methyl ether														
	72891-12	<0.50	40.4	40.8	39.9	41.2	ug/L	EPA 8260B	5/5/10	98.7	101	2.51	78.9-120	25
Tetrachloroethene														
	72891-12	<0.50	39.6	39.9	38.4	39.0	ug/L	EPA 8260B	5/5/10	96.8	97.6	0.812	77.0-120	25
Toluene														
	72891-12	<0.50	39.6	39.9	39.3	39.4	ug/L	EPA 8260B	5/5/10	99.2	98.8	0.388	80-120	25
Trichloroethene														
	72891-12	<0.50	39.6	39.9	38.0	38.7	ug/L	EPA 8260B	5/5/10	95.9	96.9	1.10	80-120	25
Toluene														
	72901-01	0.41	39.9	39.9	38.4	38.4	ug/L	EPA 8260B	5/6/10	95.1	95.2	0.139	80-120	25
1,2-Dibromoethane														
	72958-01	<0.50	39.9	39.6	42.8	42.0	ug/L	EPA 8260B	5/10/10	107	106	1.16	80-120	25
1,2-Dichloroethane														
	72958-01	<0.50	39.9	39.6	43.2	41.5	ug/L	EPA 8260B	5/10/10	108	105	3.10	75.7-122	25
Benzene														
	72958-01	3.5	39.9	39.6	41.8	39.9	ug/L	EPA 8260B	5/10/10	96.0	91.8	4.36	80-120	25

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QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Diisopropyl ether														
	72958-01	<0.50	39.4	39.1	38.3	37.0	ug/L	EPA 8260B	5/10/10	97.2	94.6	2.62	80-120	25
Ethanol														
	72958-01	<5.0	100	99.3	91.9	73.3	ug/L	EPA 8260B	5/10/10	91.8	73.8	21.7	55.1-159	25
Ethyl-tert-butyl ether														
	72958-01	<0.50	39.8	39.5	38.1	37.0	ug/L	EPA 8260B	5/10/10	95.6	93.6	2.17	76.5-120	25
Ethylbenzene														
	72958-01	5.9	39.9	39.6	44.3	41.8	ug/L	EPA 8260B	5/10/10	96.1	90.6	5.89	80-120	25
Methanol														
	72958-01	<50	1000	992	960	796	ug/L	EPA 8260B	5/10/10	96.1	80.3	17.9	53.2-147	25
Methyl-t-butyl ether														
	72958-01	<0.50	40.1	39.8	39.1	37.9	ug/L	EPA 8260B	5/10/10	97.4	95.2	2.32	69.7-121	25
P + M Xylene														
	72958-01	19	39.9	39.6	56.1	52.1	ug/L	EPA 8260B	5/10/10	93.2	83.9	10.4	76.8-120	25
Tert-Butanol														
	72958-01	<5.0	199	197	197	190	ug/L	EPA 8260B	5/10/10	98.8	96.0	2.87	80-120	25
Tert-amyl-methyl ether														
	72958-01	<0.50	40.8	40.4	40.0	38.2	ug/L	EPA 8260B	5/10/10	98.2	94.4	3.91	78.9-120	25
Tetrachloroethene														
	72958-01	<0.50	39.9	39.6	39.9	37.8	ug/L	EPA 8260B	5/10/10	100	95.3	4.81	77.0-120	25

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2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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														
	72958-01	0.93	39.9	39.6	39.9	38.0	ug/L	EPA 8260B	5/10/10	97.7	93.7	4.15	80-120	25
Trichloroethene														
	72958-01	<0.50	39.9	39.6	38.6	37.2	ug/L	EPA 8260B	5/10/10	96.7	93.9	3.01	80-120	25
1,2-Dibromoethane														
	72891-12	<0.50	40.0	40.0	41.4	43.0	ug/L	EPA 8260B	5/6/10	103	107	3.87	80-120	25
1,2-Dichloroethane														
	72891-12	<0.50	40.0	40.0	39.0	38.2	ug/L	EPA 8260B	5/6/10	97.5	95.6	1.92	75.7-122	25
Benzene														
	72891-12	<0.50	40.0	40.0	41.9	41.0	ug/L	EPA 8260B	5/6/10	105	102	2.12	80-120	25
Diisopropyl ether														
	72891-12	<0.50	39.5	39.5	38.6	39.6	ug/L	EPA 8260B	5/6/10	97.8	100	2.44	80-120	25
Ethanol														
	72891-12	<5.0	100	100	108	114	ug/L	EPA 8260B	5/6/10	108	113	5.16	55.1-159	25
Ethyl-tert-butyl ether														
	72891-12	<0.50	39.9	39.9	37.1	40.3	ug/L	EPA 8260B	5/6/10	93.0	101	8.16	76.5-120	25
Ethylbenzene														
	72891-12	<0.50	40.0	40.0	42.8	42.2	ug/L	EPA 8260B	5/6/10	107	105	1.61	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72909

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Methanol														
	72891-12	120	1000	1000	1240	1000	ug/L	EPA 8260B	5/6/10	111	87.9	23.6	53.2-147	25
Methyl-t-butyl ether														
	72891-12	39	40.2	40.2	76.0	81.2	ug/L	EPA 8260B	5/6/10	91.4	104	13.1	69.7-121	25
P + M Xylene														
	72891-12	<0.50	40.0	40.0	42.7	41.6	ug/L	EPA 8260B	5/6/10	107	104	2.46	76.8-120	25
Tert-Butanol														
	72891-12	<5.0	199	199	208	202	ug/L	EPA 8260B	5/6/10	104	102	2.57	80-120	25
Tert-amyl-methyl ether														
	72891-12	<0.50	40.8	40.8	37.0	40.0	ug/L	EPA 8260B	5/6/10	90.6	97.9	7.76	78.9-120	25
Tetrachloroethene														
	72891-12	<0.50	40.0	40.0	40.2	40.3	ug/L	EPA 8260B	5/6/10	100	101	0.365	77.0-120	25
Toluene														
	72891-12	<0.50	40.0	40.0	41.2	41.5	ug/L	EPA 8260B	5/6/10	103	104	0.610	80-120	25
Trichloroethene														
	72891-12	<0.50	40.0	40.0	40.8	39.8	ug/L	EPA 8260B	5/6/10	102	99.6	2.31	80-120	25
1,2-Dibromoethane														
	72901-04	<0.50	40.0	40.0	34.8	35.1	ug/L	EPA 8260B	5/5/10	87.1	87.8	0.788	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 72909

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
1,2-Dichloroethane														
	72901-04	<0.50	40.0	40.0	34.8	34.4	ug/L	EPA 8260B	5/5/10	87.1	86.1	1.08	75.7-122	25
Benzene														
	72901-04	52	40.0	40.0	88.4	86.5	ug/L	EPA 8260B	5/5/10	90.0	85.4	5.30	80-120	25
Diisopropyl ether														
	72901-04	<0.50	39.5	39.5	33.1	33.1	ug/L	EPA 8260B	5/5/10	83.9	83.9	0.00553	80-120	25
Ethanol														
	72901-04	19	100	100	152	153	ug/L	EPA 8260B	5/5/10	132	134	0.847	55.1-159	25
Ethyl-tert-butyl ether														
	72901-04	<0.50	39.9	39.9	31.5	31.7	ug/L	EPA 8260B	5/5/10	78.9	79.5	0.849	76.5-120	25
Ethylbenzene														
	72901-04	220	40.0	40.0	274	265	ug/L	EPA 8260B	5/5/10	125	102	20.7	80-120	25
Methanol														
	72901-04	<50	1000	1000	1450	1440	ug/L	EPA 8260B	5/5/10	145	143	1.06	53.2-147	25
Methyl-t-butyl ether														
	72901-04	1.0	40.2	40.2	32.6	32.6	ug/L	EPA 8260B	5/5/10	78.4	78.5	0.0802	69.7-121	25
P + M Xylene														
	72901-04	16	40.0	40.0	57.1	55.6	ug/L	EPA 8260B	5/5/10	102	98.5	3.78	76.8-120	25
Tert-Butanol														
	72901-04	<5.0	199	199	201	204	ug/L	EPA 8260B	5/5/10	101	102	1.34	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/11/2010

Project Name : **Tesoro - Livermore**

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
Tert-amyl-methyl ether														
	72901-04	<0.50	40.8	40.8	33.0	33.4	ug/L	EPA 8260B	5/5/10	80.8	81.7	1.13	78.9-120	25
Tetrachloroethene														
	72901-04	<0.50	40.0	40.0	33.6	33.1	ug/L	EPA 8260B	5/5/10	84.0	82.8	1.40	77.0-120	25
Toluene														
	72901-04	8.1	40.0	40.0	42.7	42.0	ug/L	EPA 8260B	5/5/10	86.5	84.6	2.17	80-120	25
Trichloroethene														
	72901-04	<0.50	40.0	40.0	34.3	33.7	ug/L	EPA 8260B	5/5/10	85.8	84.2	1.86	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/5/10	109	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	5/5/10	114	75.7-122
Benzene	40.0	ug/L	EPA 8260B	5/5/10	98.9	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	5/5/10	99.8	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	80.3	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/5/10	98.6	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/5/10	96.8	80-120
Methanol	1000	ug/L	EPA 8260B	5/5/10	87.0	53.2-147
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/5/10	100	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	5/5/10	94.6	76.8-120
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	94.5	80-120
Tert-amyl-methyl ether	40.8	ug/L	EPA 8260B	5/5/10	100	78.9-120
Tetrachloroethene	40.0	ug/L	EPA 8260B	5/5/10	98.6	77.0-120
Toluene	40.0	ug/L	EPA 8260B	5/5/10	98.9	80-120
Trichloroethene	40.0	ug/L	EPA 8260B	5/5/10	112	80-120
Toluene	40.0	ug/L	EPA 8260B	5/6/10	102	80-120
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/10/10	106	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	5/10/10	107	75.7-122
Benzene	40.0	ug/L	EPA 8260B	5/10/10	97.7	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	5/10/10	99.1	80-120

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Ethanol	100	ug/L	EPA 8260B	5/10/10	91.4	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/10/10	96.7	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/10/10	97.7	80-120
Methanol	1000	ug/L	EPA 8260B	5/10/10	89.7	53.2-147
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/10/10	96.3	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	5/10/10	95.8	76.8-120
Tert-Butanol	199	ug/L	EPA 8260B	5/10/10	95.3	80-120
Tert-amyl-methyl ether	40.8	ug/L	EPA 8260B	5/10/10	98.9	78.9-120
Tetrachloroethene	40.0	ug/L	EPA 8260B	5/10/10	101	77.0-120
Toluene	40.0	ug/L	EPA 8260B	5/10/10	98.4	80-120
Trichloroethene	40.0	ug/L	EPA 8260B	5/10/10	101	80-120
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	5/6/10	102	80-120
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	5/6/10	94.0	75.7-122
Benzene	40.2	ug/L	EPA 8260B	5/6/10	102	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	5/6/10	98.0	80-120
Ethanol	101	ug/L	EPA 8260B	5/6/10	123	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	5/6/10	91.2	76.5-120
Ethylbenzene	40.2	ug/L	EPA 8260B	5/6/10	105	80-120
Methanol	1010	ug/L	EPA 8260B	5/6/10	130	53.2-147
Methyl-t-butyl ether	40.4	ug/L	EPA 8260B	5/6/10	86.6	69.7-121
P + M Xylene	40.2	ug/L	EPA 8260B	5/6/10	105	76.8-120
TPH as Gasoline	506	ug/L	EPA 8260B	5/6/10	105	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tert-Butanol	200	ug/L	EPA 8260B	5/6/10	100	80-120
Tert-amyl-methyl ether	41.0	ug/L	EPA 8260B	5/6/10	92.0	78.9-120
Tetrachloroethene	40.2	ug/L	EPA 8260B	5/6/10	101	77.0-120
Toluene	40.2	ug/L	EPA 8260B	5/6/10	103	80-120
Trichloroethene	40.2	ug/L	EPA 8260B	5/6/10	99.2	80-120
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	5/5/10	101	80-120
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	5/5/10	103	75.7-122
Benzene	39.9	ug/L	EPA 8260B	5/5/10	102	80-120
Diisopropyl ether	39.4	ug/L	EPA 8260B	5/5/10	101	80-120
Ethanol	100	ug/L	EPA 8260B	5/5/10	102	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	5/5/10	94.8	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	5/5/10	93.9	80-120
Methanol	999	ug/L	EPA 8260B	5/5/10	118	53.2-147
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/5/10	88.0	69.7-121
P + M Xylene	39.9	ug/L	EPA 8260B	5/5/10	99.3	76.8-120
TPH as Gasoline	505	ug/L	EPA 8260B	5/5/10	98.2	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	5/5/10	101	80-120
Tert-amyl-methyl ether	40.7	ug/L	EPA 8260B	5/5/10	96.2	78.9-120
Tetrachloroethene	39.9	ug/L	EPA 8260B	5/5/10	98.1	77.0-120
Toluene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120
Trichloroethene	39.9	ug/L	EPA 8260B	5/5/10	100	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

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

SRG # / Lab No. 72909

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase
Company / Address: Orion Environmental, Inc. 1332 Peralta Ave., Berkeley, CA 95702
Phone Number: 510-525-2180
Fax Number: 562-988-2759
Project #: P.O. #:
Project Name: Tesoro - Livermore
Project Address: 1619 1st Street Livermore, CA

California EDF Report? ☐ Yes ☐ No
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Bill to: Mike Purchase
Sampler Signature:

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: H_2SO_4	Preservative: $ZnAc_2$ & NaOH	Matrix: Water	Matrix: Soil	Matrix: Air	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	For Lab Use Only
MW-1	5/5/10	0842	3					3					X			X	X	X	X	X	01
IP-9		0942																			02
IP-8		0949																			03
IP-1		1050																			04
IP-2		1118																			05
TP-1		1215																			06
IP-6		1250																			07
VW-2		1305																			08
IP-3 (8)		1452																			09
IP-7		1444																			10

Relinquished by:	Date	Time	Received by:
	5/5/10	1508	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
	050510	1502	Kiff Analytical LLC

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

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

SRG # / Lab No. 72909

Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase
Company / Address: Orion Environmental, Inc. 1332 Peralta Ave., Berkeley, CA 95702
Phone Number: 510-525-2180
Fax Number: 562-988-2759
Project #: P.O. #:
Project Name: Tesoro - Livermore
Project Address: 1619 1st Street Livermore, CA

California EDF Report? ☐ Yes ☐ No
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Bill to: Mike Purchase
Sampler Signature:

Sample Designation	Date	Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Preservative: HCl	HNO_3	None	H_2SO_4	$ZnAc_2$ & NaOH	Matrix: Water	Soil	Air	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	Ferrous Iron (Sm 3500-FE D)	For Lab Use Only
DW-1	5/5/10	1000			X					X			X								X	11
MW-4	5/5/10	1000			X					X			X								X	12

Analysis Request

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☐ 1 wk

Relinquished by:	Date	Time	Received by:
	5/5/10	1500	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	050510	1502	Kiff Analytical LLC

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: TJB (Initials)

SRG#: 72909 Date: 050510

Project ID: Tesoro - Livermore

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~~ TJB	☒ No, Whiteout	☐ No, Cross-outs

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 2.0 Therm. ID# IR-5 Initial TJB Date/Time 050510/1745 ☐ 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 50
Matrix WA	Container type 250 Poly	# of containers received 2
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 050510 Time: 1755

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:

Leaders in Analytical Science and Service

KIFF Analytical LLC

Subcontract Laboratory Report Attachments

2795 Second Street, Suite 300 Davis, CA 95618
tel 530.297.4800 fax 530.297.4808
www.kiffanalytical.com

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

May 13, 2010

CLS Work Order #: CTE0156
COC #: 72909

Scott Forbes
KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project Name: Tesoro Livermore

Enclosed are the results of analyses for samples received by the laboratory on 05/06/10 08:31. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness. Any comments and exceptions are addressed under the Notes and Definitions section.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

05/13/10 08:51

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CTE0156**
Davis, CA 95616	Project Manager: Scott Forbes	COC #: 72909

CTE0156

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

California Laboratory Services
3249 Fitzgerald Road
Rancho Cordova, CA 95742
916-638-7301

COC No. 72909 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes

EDF Report? NO

Company/Address: Kiff Analytical

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Phone No.: 530-297-4800 FAX No.: 530-297-4808

Global ID:

Project Number: P.O. No.: 72909

Deliverables to (Email Address): inbox@kiffanalytical.com

Project Name: Tesoro - Livermore

Project Address:

Analysis Request

TAT

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 250ml Poly None	Matrix: Water	Analysis Request: Iron, Ferrous	TAT: Standard	For Lab Use Only
DW-1	05/05/10	10:00	1	X	X	X	
MW-4	05/05/10	10:00	1	X	X	X	

	Date	Time	Received by:
Relinquished by:	050610	0831	
Relinquished by:			Received by:
Relinquished by:	5/6/10	831	Received by Laboratory:

Remarks: 5.0/C

Bill to: Accounts Payable

CALIFORNIA LABORATORY SERVICES

05/13/10 08:51

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0156
COC #: 72909

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DW-1 (CTE0156-01) Water Sampled: 05/05/10 10:00 Received: 05/06/10 08:31									
Ferrous Iron	ND	0.10	mg/L	1	CT03153	05/06/10	05/06/10	SM3500-Fe D	
MW-4 (CTE0156-02) Water Sampled: 05/05/10 10:00 Received: 05/06/10 08:31									
Ferrous Iron	ND	0.10	mg/L	1	CT03153	05/06/10	05/06/10	SM3500-Fe D	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CTE0156
COC #: 72909

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CT03153 - General Preparation										
Blank (CT03153-BLK1)				Prepared & Analyzed: 05/06/10						
Ferrous Iron	ND	0.10	mg/L							
LCS (CT03153-BS1)				Prepared & Analyzed: 05/06/10						
Ferrous Iron	0.236	0.10	mg/L	0.250		95	80-120			
LCS Dup (CT03153-BSD1)				Prepared & Analyzed: 05/06/10						
Ferrous Iron	0.231	0.10	mg/L	0.250		92	80-120	2	25	
Matrix Spike (CT03153-MS1)		**Source: CTE0156-01**		Prepared & Analyzed: 05/06/10						
Ferrous Iron	0.231	0.10	mg/L	0.250	0.00	92	75-125			
Matrix Spike Dup (CT03153-MSD1)		**Source: CTE0156-01**		Prepared & Analyzed: 05/06/10						
Ferrous Iron	0.236	0.10	mg/L	0.250	0.00	95	75-125	2	30	

CALIFORNIA LABORATORY SERVICES

05/13/10 08:51

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CTE0156**
Davis, CA 95616	Project Manager: Scott Forbes	COC #: 72909

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Laboratory Results

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

Subject : 10 Water Samples
Project Name : Tesoro - Livermore
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

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Subject : 10 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample IP-5.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for sample MW-7.

Matrix Spike/Matrix Spike Duplicate results associated with sample IP-4 for the analyte Benzene were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-3** Matrix : Water Lab Number : 72926-01
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**1.0**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**0.95**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	99.9		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-5** Matrix : Water Lab Number : 72926-02
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**2.2**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**220**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-8** Matrix : Water Lab Number : 72926-03
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-4** Matrix : Water Lab Number : 72926-04
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3.3**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**3.7**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**13**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**20**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**180**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Trichloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tetrachloroethene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/07/2010
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-7** Matrix : Water Lab Number : 72926-05
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**7.9**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**3.6**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**14**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**6.4**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 8.0**	8.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**3600**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	94.7		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	92.8		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-10** Matrix : Water Lab Number : 72926-06
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	99.5		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/07/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-5** Matrix : Water Lab Number : 72926-07
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.7**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**25**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**5.9**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**29**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**20**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 80**	80	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**270**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	98.4		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/07/2010

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Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **TP-2** Matrix : Water Lab Number : 72926-08
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**740**	25	ug/L	EPA 8260B	05/08/2010
Toluene	**< 25**	25	ug/L	EPA 8260B	05/08/2010
Ethylbenzene	**450**	25	ug/L	EPA 8260B	05/08/2010
Total Xylenes	**130**	25	ug/L	EPA 8260B	05/08/2010
Methyl-t-butyl ether (MTBE)	**14000**	25	ug/L	EPA 8260B	05/08/2010
Diisopropyl ether (DIPE)	**< 25**	25	ug/L	EPA 8260B	05/08/2010
Ethyl-t-butyl ether (ETBE)	**< 25**	25	ug/L	EPA 8260B	05/08/2010
Tert-amyl methyl ether (TAME)	**130**	25	ug/L	EPA 8260B	05/08/2010
Tert-Butanol	**9900**	150	ug/L	EPA 8260B	05/08/2010
Methanol	**< 2500**	2500	ug/L	EPA 8260B	05/08/2010
Ethanol	**< 250**	250	ug/L	EPA 8260B	05/08/2010
TPH as Gasoline	**6400**	2500	ug/L	EPA 8260B	05/08/2010
1,2-Dichloroethane	**< 25**	25	ug/L	EPA 8260B	05/08/2010
1,2-Dibromoethane	**< 25**	25	ug/L	EPA 8260B	05/08/2010
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	05/08/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/08/2010

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Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-4** Matrix : Water Lab Number : 72926-09
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.4**	0.50	ug/L	EPA 8260B	05/10/2010
Toluene	**25**	0.50	ug/L	EPA 8260B	05/10/2010
Ethylbenzene	**6.9**	0.50	ug/L	EPA 8260B	05/10/2010
Total Xylenes	**29**	0.50	ug/L	EPA 8260B	05/10/2010
Methyl-t-butyl ether (MTBE)	**3.4**	0.50	ug/L	EPA 8260B	05/10/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/10/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/10/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/10/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/10/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/10/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/10/2010
TPH as Gasoline	**190**	50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/10/2010
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	05/10/2010

KIFF Analytical LLC

Report Number : 72926
Date : 05/12/2010

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **VW-3** Matrix : Water Lab Number : 72926-10
Sample Date :05/06/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
Methanol	**< 50**	50	ug/L	EPA 8260B	05/07/2010
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/07/2010

Report Number : 72926

Date : 05/12/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/08/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/08/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/08/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/08/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/08/2010
1,2-Dichloroethane-d4 (Surr)	108		%	EPA 8260B	05/08/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/08/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Tetrachloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Trichloroethene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	05/07/2010
4-Bromofluorobenzene (Surr)	92.0		%	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	98.0		%	EPA 8260B	05/07/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/10/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/10/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/10/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/10/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/10/2010
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	05/10/2010
Toluene - d8 (Surr)	98.3		%	EPA 8260B	05/10/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/07/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Methanol	< 50	50	ug/L	EPA 8260B	05/07/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/07/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/07/2010
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010

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Report Number : 72926

Date : 05/12/2010

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/07/2010
1,2-Dichloroethane-d4 (Surr)	99.0		%	EPA 8260B	05/07/2010
Toluene - d8 (Surr)	101		%	EPA 8260B	05/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

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QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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
1,2-Dibromoethane	72938-03	<0.50	38.3	39.1	42.8	43.7	ug/L	EPA 8260B	5/8/10	112	112	0.289	80-120	25
1,2-Dichloroethane	72938-03	<0.50	38.3	39.1	44.6	45.5	ug/L	EPA 8260B	5/8/10	116	116	0.125	75.7-122	25
Benzene	72938-03	<0.50	38.3	39.1	38.9	40.3	ug/L	EPA 8260B	5/8/10	102	103	1.58	80-120	25
Diisopropyl ether	72938-03	<0.50	37.8	38.5	38.4	39.7	ug/L	EPA 8260B	5/8/10	101	103	1.61	80-120	25
Ethanol	72938-03	<5.0	96.1	97.9	88.8	82.1	ug/L	EPA 8260B	5/8/10	92.4	83.8	9.75	55.1-159	25
Ethyl-tert-butyl ether	72938-03	<0.50	38.2	39.0	38.5	40.0	ug/L	EPA 8260B	5/8/10	101	103	1.99	76.5-120	25
Ethylbenzene	72938-03	<0.50	38.3	39.1	37.9	39.4	ug/L	EPA 8260B	5/8/10	98.8	101	2.18	80-120	25
Methanol	72938-03	52	960	978	930	926	ug/L	EPA 8260B	5/8/10	91.5	89.3	2.38	53.2-147	25
Methyl-t-butyl ether	72938-03	<0.50	38.5	39.2	39.7	41.0	ug/L	EPA 8260B	5/8/10	103	104	1.20	69.7-121	25
P + M Xylene	72938-03	<0.50	38.3	39.1	37.1	38.5	ug/L	EPA 8260B	5/8/10	96.9	98.5	1.66	76.8-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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
Tert-Butanol														
	72938-03	<5.0	191	195	187	196	ug/L	EPA 8260B	5/8/10	97.8	100	2.86	80-120	25
Tert-amyl-methyl ether														
	72938-03	<0.50	39.1	39.9	40.6	41.7	ug/L	EPA 8260B	5/8/10	104	104	0.645	78.9-120	25
Toluene														
	72938-03	<0.50	38.3	39.1	38.5	39.9	ug/L	EPA 8260B	5/8/10	100	102	1.73	80-120	25
1,2-Dibromoethane														
	72918-08	<0.50	40.0	40.0	40.9	40.9	ug/L	EPA 8260B	5/7/10	102	102	0.119	80-120	25
1,2-Dichloroethane														
	72918-08	<0.50	40.0	40.0	37.8	37.8	ug/L	EPA 8260B	5/7/10	94.5	94.4	0.0565	75.7-122	25
Benzene														
	72918-08	<0.50	40.0	40.0	40.7	40.1	ug/L	EPA 8260B	5/7/10	102	100	1.40	80-120	25
Diisopropyl ether														
	72918-08	<0.50	39.5	39.5	39.7	38.9	ug/L	EPA 8260B	5/7/10	100	98.6	1.98	80-120	25
Ethanol														
	72918-08	<5.0	100	100	106	111	ug/L	EPA 8260B	5/7/10	106	110	3.86	55.1-159	25
Ethyl-tert-butyl ether														
	72918-08	<0.50	39.9	39.9	38.5	39.2	ug/L	EPA 8260B	5/7/10	96.6	98.3	1.78	76.5-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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
Ethylbenzene														
	72918-08	<0.50	40.0	40.0	42.6	42.2	ug/L	EPA 8260B	5/7/10	106	105	0.877	80-120	25
Methanol														
	72918-08	110	1000	1000	986	955	ug/L	EPA 8260B	5/7/10	87.1	84.0	3.65	53.2-147	25
Methyl-t-butyl ether														
	72918-08	<0.50	40.2	40.2	37.9	39.0	ug/L	EPA 8260B	5/7/10	94.4	97.2	2.84	69.7-121	25
P + M Xylene														
	72918-08	<0.50	40.0	40.0	42.5	41.6	ug/L	EPA 8260B	5/7/10	106	104	2.07	76.8-120	25
Tert-Butanol														
	72918-08	<5.0	199	199	204	202	ug/L	EPA 8260B	5/7/10	102	102	0.536	80-120	25
Tert-amyl-methyl ether														
	72918-08	<0.50	40.8	40.8	39.0	39.0	ug/L	EPA 8260B	5/7/10	95.6	95.5	0.0809	78.9-120	25
Toluene														
	72918-08	<0.50	40.0	40.0	41.3	40.4	ug/L	EPA 8260B	5/7/10	103	101	2.11	80-120	25
1,2-Dibromoethane														
	72932-09	<0.50	40.0	40.0	40.8	42.3	ug/L	EPA 8260B	5/10/10	102	106	3.60	80-120	25
1,2-Dichloroethane														
	72932-09	1.5	40.0	40.0	38.0	38.8	ug/L	EPA 8260B	5/10/10	91.3	93.1	1.94	75.7-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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
Benzene														
	72932-09	210	40.0	40.0	240	242	ug/L	EPA 8260B	5/10/10	70.7	76.8	8.36	80-120	25
Diisopropyl ether														
	72932-09	0.91	39.5	39.5	38.4	38.3	ug/L	EPA 8260B	5/10/10	95.0	94.8	0.127	80-120	25
Ethanol														
	72932-09	<5.0	100	100	69.8	80.0	ug/L	EPA 8260B	5/10/10	69.6	79.7	13.6	55.1-159	25
Ethyl-tert-butyl ether														
	72932-09	<0.50	39.9	39.9	36.1	37.3	ug/L	EPA 8260B	5/10/10	90.5	93.6	3.36	76.5-120	25
Ethylbenzene														
	72932-09	36	40.0	40.0	71.1	69.6	ug/L	EPA 8260B	5/10/10	88.8	85.1	4.25	80-120	25
Methanol														
	72932-09	<50	1000	1000	668	638	ug/L	EPA 8260B	5/10/10	66.7	63.7	4.65	53.2-147	25
Methyl-t-butyl ether														
	72932-09	<0.50	40.2	40.2	35.0	36.4	ug/L	EPA 8260B	5/10/10	87.1	90.6	3.88	69.7-121	25
P + M Xylene														
	72932-09	35	40.0	40.0	71.1	69.3	ug/L	EPA 8260B	5/10/10	90.2	85.7	5.12	76.8-120	25
Tert-Butanol														
	72932-09	30	199	199	231	229	ug/L	EPA 8260B	5/10/10	101	99.3	1.28	80-120	25
Tert-amyl-methyl ether														
	72932-09	<0.50	40.8	40.8	36.4	38.6	ug/L	EPA 8260B	5/10/10	89.0	94.4	5.88	78.9-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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														
	72932-09	5.9	40.0	40.0	45.3	45.1	ug/L	EPA 8260B	5/10/10	98.4	98.0	0.410	80-120	25
1,2-Dibromoethane														
	72918-05	<0.50	40.0	40.0	41.1	40.8	ug/L	EPA 8260B	5/7/10	103	102	0.712	80-120	25
1,2-Dichloroethane														
	72918-05	<0.50	40.0	40.0	41.3	40.5	ug/L	EPA 8260B	5/7/10	103	101	1.96	75.7-122	25
Benzene														
	72918-05	<0.50	40.0	40.0	41.3	40.3	ug/L	EPA 8260B	5/7/10	103	101	2.52	80-120	25
Diisopropyl ether														
	72918-05	<0.50	39.5	39.5	40.0	39.6	ug/L	EPA 8260B	5/7/10	101	100	0.856	80-120	25
Ethanol														
	72918-05	<5.0	100	100	105	105	ug/L	EPA 8260B	5/7/10	104	105	0.518	55.1-159	25
Ethyl-tert-butyl ether														
	72918-05	<0.50	39.9	39.9	38.3	37.6	ug/L	EPA 8260B	5/7/10	96.0	94.3	1.81	76.5-120	25
Ethylbenzene														
	72918-05	<0.50	40.0	40.0	38.5	37.3	ug/L	EPA 8260B	5/7/10	96.2	93.3	3.13	80-120	25
Methanol														
	72918-05	67	1000	1000	1240	1240	ug/L	EPA 8260B	5/7/10	118	118	0.0162	53.2-147	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/12/2010

Project Name : **Tesoro - Livermore**

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														
	72918-05	4.8	40.2	40.2	40.8	40.4	ug/L	EPA 8260B	5/7/10	89.6	88.5	1.23	69.7-121	25
P + M Xylene														
	72918-05	<0.50	40.0	40.0	40.7	39.6	ug/L	EPA 8260B	5/7/10	102	99.1	2.67	76.8-120	25
Tert-Butanol														
	72918-05	5.4	199	199	211	210	ug/L	EPA 8260B	5/7/10	103	102	0.783	80-120	25
Tert-amyl-methyl ether														
	72918-05	<0.50	40.8	40.8	39.8	39.0	ug/L	EPA 8260B	5/7/10	97.4	95.6	1.86	78.9-120	25
Toluene														
	72918-05	<0.50	40.0	40.0	40.8	39.9	ug/L	EPA 8260B	5/7/10	102	99.8	2.07	80-120	25
Tetrachloroethene														
	72918-08	<0.50	40.0	40.0	40.5	39.4	ug/L	EPA 8260B	5/7/10	101	98.6	2.70	77.0-120	25
Trichloroethene														
	72918-08	<0.50	40.0	40.0	39.6	39.0	ug/L	EPA 8260B	5/7/10	99.1	97.5	1.64	80-120	25

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/8/10	104	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	5/8/10	111	75.7-122
Benzene	40.0	ug/L	EPA 8260B	5/8/10	100	80-120
Diisopropyl ether	39.5	ug/L	EPA 8260B	5/8/10	100	80-120
Ethanol	100	ug/L	EPA 8260B	5/8/10	98.7	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/8/10	98.4	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/8/10	98.9	80-120
Methanol	1000	ug/L	EPA 8260B	5/8/10	108	53.2-147
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/8/10	98.0	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	5/8/10	96.6	76.8-120
Tert-Butanol	199	ug/L	EPA 8260B	5/8/10	98.5	80-120
Tert-amyl-methyl ether	40.8	ug/L	EPA 8260B	5/8/10	99.8	78.9-120
Toluene	40.0	ug/L	EPA 8260B	5/8/10	100	80-120
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	5/7/10	103	80-120
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	5/7/10	94.2	75.7-122
Benzene	40.2	ug/L	EPA 8260B	5/7/10	102	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	5/7/10	98.9	80-120
Ethanol	101	ug/L	EPA 8260B	5/7/10	110	55.1-159
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	5/7/10	92.9	76.5-120
Ethylbenzene	40.2	ug/L	EPA 8260B	5/7/10	106	80-120
Methanol	1010	ug/L	EPA 8260B	5/7/10	120	53.2-147
Methyl-t-butyl ether	40.4	ug/L	EPA 8260B	5/7/10	88.4	69.7-121

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
P + M Xylene	40.2	ug/L	EPA 8260B	5/7/10	105	76.8-120
TPH as Gasoline	503	ug/L	EPA 8260B	5/7/10	102	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	5/7/10	99.2	80-120
Tert-amyl-methyl ether	41.0	ug/L	EPA 8260B	5/7/10	92.7	78.9-120
Toluene	40.2	ug/L	EPA 8260B	5/7/10	103	80-120
Tetrachloroethene	40.2	ug/L	EPA 8260B	5/7/10	102	77.0-120
Trichloroethene	40.2	ug/L	EPA 8260B	5/7/10	99.1	80-120
1,2-Dibromoethane	40.1	ug/L	EPA 8260B	5/10/10	103	80-120
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	5/10/10	91.3	75.7-122
Benzene	40.1	ug/L	EPA 8260B	5/10/10	100	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	5/10/10	96.2	80-120
Ethanol	100	ug/L	EPA 8260B	5/10/10	104	55.1-159
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	5/10/10	91.8	76.5-120
Ethylbenzene	40.1	ug/L	EPA 8260B	5/10/10	101	80-120
Methanol	1000	ug/L	EPA 8260B	5/10/10	110	53.2-147
Methyl-t-butyl ether	40.3	ug/L	EPA 8260B	5/10/10	89.0	69.7-121
P + M Xylene	40.1	ug/L	EPA 8260B	5/10/10	101	76.8-120
TPH as Gasoline	503	ug/L	EPA 8260B	5/10/10	100	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	5/10/10	99.3	80-120
Tert-amyl-methyl ether	40.9	ug/L	EPA 8260B	5/10/10	91.5	78.9-120
Toluene	40.1	ug/L	EPA 8260B	5/10/10	101	80-120

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	39.9	ug/L	EPA 8260B	5/7/10	102	80-120
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	5/7/10	103	75.7-122
Benzene	39.9	ug/L	EPA 8260B	5/7/10	103	80-120
Diisopropyl ether	39.4	ug/L	EPA 8260B	5/7/10	98.9	80-120
Ethanol	100	ug/L	EPA 8260B	5/7/10	115	55.1-159
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	5/7/10	94.3	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	5/7/10	95.0	80-120
Methanol	999	ug/L	EPA 8260B	5/7/10	129	53.2-147
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/7/10	89.0	69.7-121
P + M Xylene	39.9	ug/L	EPA 8260B	5/7/10	101	76.8-120
TPH as Gasoline	503	ug/L	EPA 8260B	5/7/10	99.4	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	5/7/10	101	80-120
Tert-amyl-methyl ether	40.7	ug/L	EPA 8260B	5/7/10	93.5	78.9-120
Toluene	39.9	ug/L	EPA 8260B	5/7/10	102	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

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Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 72926

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): ~~Mike Purchase~~ Mathew Nelson	California EDF Report? ☐ Yes ☐ No
Company / Address: Orion Environmental, Inc. ~~1332 Peralta Ave., Berkeley, CA 95702~~ 3450 E Spring St, Suite 212, long beach, CA	Sampling Company Log Code:
Phone Number: ~~510-525-2180~~ 562-988-2755	Global ID:
Fax Number: ~~562-988-2759~~	EDF Deliverable To (Email Address):
Project #: / P.O. #:	Bill to: ~~Mike Purchase~~ Mathew Nelson
Project Name: Tesoro - Livermore	Sampler Signature:
Project Address: 1619 1st Street Livermore, CA	

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ ~~1 wk~~

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: H_2SO_4	Preservative: $ZnAc_2$ & NaOH	Matrix: Water	Matrix: Soil	Matrix: Air	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	TCE and PCE (EPA 8260B)	For Lab Use Only
MW-3	5/6/10	0753	5					5					X				X	X	X		01
MW-5		0853															X	X	X		02
MW-8		0927															X	X	X		03
DW-4		1055															X	X	X	X	04
MW-7		1157															X	X	X		05
MW-10		1150															X	X	X		06
TP-5		1702																			07
TP-2		1559																			08
TP-4		1655																			09
VW-3		1749																			10

Relinquished by:	Date	Time	Received by:
	5/6/10	1202	
Relinquished by:	Date	Time	Received by:
	5/6/10	1350	
Relinquished by:	Date	Time	Received by Laboratory:
	050610	1350	Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 031308

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: RLM (Initials)

SRG#: 72926 Date: 050610

Project ID: Tesoro-Livermore

Method of Receipt: [X] Courier [ ] Over-the-counter [ ] Shipper

COC Inspection

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

Sample Inspection

Coolant Present: [X] Yes [ ] No (includes water)

Temperature °C 2.8 Therm. ID# IR-5 Initial RLM Date/Time 050610 / 1620 [ ] N/A

Are there custody seals on sample containers?	[ ] Intact	[ ] Broken	[X] Not present
Do containers match COC? [X] 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	[X] No	
Are any sample containers broken, leaking or damaged?	[ ] Yes	[X] No	
Are preservatives indicated? [ ] Yes, on sample containers	[X] Yes, on COC	[X] Not indicated	[ ] N/A
Are preservatives correct for analyses requested?	[X] Yes	[ ] No	[ ] N/A
Are samples within holding time for analyses requested?	[X] Yes	[ ] No	
Are the correct sample containers used for the analyses requested?	[X] Yes	[ ] No	
Is there sufficient sample to perform testing?	[X] Yes	[ ] No	

Does any sample contain product, have strong odor or are otherwise suspected to be hot? [ ] Yes [X] No

Receipt Details

Matrix WA	Container type VOA	# of containers received 50
Matrix	Container type	# of containers received
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 050610 Time: 1625

Quicklog

Are the Sample ID's indicated:	[ ] On COC	[ ] On sample container(s)	[X] On Both	[ ] Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	[X] Yes	[ ] No		[ ] N/A
Is the Project ID indicated:	[ ] On COC	[ ] On sample container(s)	[X] On Both	[ ] Not indicated
If project ID is listed on both COC and containers, do they all match?	[X] Yes	[ ] No		[ ] N/A
Are the sample collection dates indicated:	[ ] On COC	[ ] On sample container(s)	[X] On Both	[ ] Not indicated
If collection dates are listed on both COC and containers, do they all match?	[ ] Yes	[X] No MQ 5/6		[ ] N/A
Are the sample collection times indicated:	[ ] On COC	[ ] On sample container(s)	[X] On Both	[ ] Not indicated
If collection times are listed on both COC and containers, do they all match?	[X] Yes	[ ] No		[ ] N/A

COMMENTS:

For VOA sample labels of 72926-07 -08, -09, -10 all labels say sample date is 5/5/10. COC sample date is 5/6/10. RLM 050610

ATTACHMENT G

WASTE MANIFESTS

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N/A

Manifest Document No.

2. Page 1 of 1

3. Generator's Name and Mailing Address
Tesar Environmental Resource
3450 S. 344th Way Auburn, WA 98001

Tesoro #67076
1619 First Street
Livermore, CA

4. Generator's Phone ( )

5. Transporter 1 Company Name
EXCEL Environmental Services

6. US EPA ID Number
CAL 000207350

A. State Transporter's ID

B. Transporter 1 Phone 800-336-6008

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ROT
5300 Claus Rd.
Riverbank, CA 95367

10. US EPA ID Number
CAL000170816

E. State Facility's ID

F. Facility's Phone 209-862-8181

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS Waste Water	001	TT	630	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

GENERATOR

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 | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Peter Arroyo | Signature | Date: Month 5 Day 6 Year 10

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tim Liggett | Signature | Date: Month 5 Day 6 Year 10

FACILITY

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

Manifest

TPST Soil Recyclers of CA
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPST:	Load #
		394/732	A07	35458	0011

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TESORO ENVIRONMENTAL RESOURCE COMPANY 3450 S. 344TH WAY, SUITE 201 AUBURN, WA 98001	253-896-8708 Person to Contact: FAX#:	Customer Account Number with TPST:
Consultant's Name and Billing Address:	**Consultant's Phone #:** **Person to Contact:** **FAX#:**	**Customer Account Number with TPST:**
Generation Site (Transport from): *(name & address)* TESORO 67076 (FORMER) 1619 FIRST ST. LIVERMORE, CA 94550	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF CALIFORNIA 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001 Person to Contact: DELLENA JEFFREY FAX#: (760) 246-8804	Facility Permit Numbers
Transporter Name and Mailing Address: BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 181440	Transporter's Phone #: 949-460-5200 Person to Contact: LARRY MOOTHART FAX#: 949-460-5213	Transporter's US EPA ID No.: CAR000183913 Transporter's DOT No.: Customer Account Number with TPST: 450647

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑	7 dms		46760	37140	3620
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑					1.81

List any exception to items listed above: Scale Ticket# 51646

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ❑ Consultant ❑	Signature and date:	Month	Day	Year
Larry Moothart of BESI on behalf of generator		6	8	10

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Kevin Dunlap		6	8	10

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
D. JEFFREY/J. PROVANSAL	6-18-10

Please print or type.

GENERATOR/CONSULTANTS COPY