



Tesoro Companies, Inc.
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August 18, 2014

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

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By Alameda County Environmental Health at 2:16 pm, Sep 12, 2014

Subject: Fourth Quarter 2013 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 *Fourth Quarter 2013 Status Report* for the subject site, dated 5 March 2014. 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 Scott Stromberg of Arctos Environmental at 510/525-2180 with questions.

Sincerely,

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

Attachments

CC: Arctos – Scott Stromberg



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5 March 2014
Project No. 01LV

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

**Subject: Fourth Quarter 2013 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 fourth quarter 2013 at the subject site (Figure 1).

Executive Summary

A quarterly groundwater monitoring event was conducted on 7 November 2013. On average, there was approximately a 1-foot increase in water levels since the third quarter 2013. The highest onsite petroleum hydrocarbon concentrations were along the western side of the property at wells IP-1, IP-8, and TP-1. The highest offsite petroleum hydrocarbon concentrations were at wells DW-2 and DW-8 located west to northwest of the site. The soil vapor extraction (SVE) system and oxygen injection system remained shut-off during the fourth quarter 2013.

The expanded onsite and offsite ISCO pilot test was conducted during the second quarter 2013. A description of the expanded ISCO pilot test including the results of the pilot test will be submitted in a separate report. Results of fourth quarter 2013 monitoring indicate that hydrocarbon concentrations in groundwater have increased compared to periods of similar water level. These increases are likely a result of desorption of hydrocarbon mass associated with the ISCO pilot test and are likely temporary. Hydrocarbon concentrations are expected to begin to decrease.

During the first quarter 2014, Tesoro will continue to monitor groundwater wells in the vicinity of the ISCO pilot test to evaluate the effectiveness of the ISCO pilot test on and off site.

Site Background

The site description and background are included in Arctos's "In Situ Chemical Oxidation (ISCO) Pilot Test Report" dated 16 March 2012 (Arctos, 2012).

Groundwater Monitoring

Arctos's subcontractor, Confluence Environmental, of Sacramento, California, performed a quarterly groundwater monitoring event on 7 November 2013. Samples were collected from wells MW-1 through MW-12, DW-1 through DW-9, IP-1, IP-5, IP-8 through IP-10, TP-1, TP-2, and VW-3 (Figure 2) in accordance with the site monitoring plan (Attachment A) and the ISCO pilot test work plan. Groundwater monitoring was performed in accordance with the guidelines of the California Underground Storage Tank Regulations, Title 23, Division 3, Chapter 16, California Code of Regulations. Groundwater sampling quality assurance/quality control (QA/QC) procedures are in Attachment A. Field data sheets are in Attachment B.

Analytical Program

Groundwater samples collected from wells MW-1, MW-3 through MW-5, DW-4, VW-3, TP-1, and TP-2 were analyzed in accordance with the analytical plan in Attachment A. Groundwater samples collected from the remaining wells were tested for additional analytes in accordance with the ISCO pilot test work plan (Arctos, 2011).

Groundwater Results

Groundwater elevations were approximately 432 to 440 feet above mean sea level (MSL; 34 to 38 feet below ground surface [bgs]). Water levels increased an average of 1.1 feet compared to the third quarter 2013 and were an average of 4.1 feet higher than water levels in the fourth quarter 2012 (Table 1). The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.02 (1 foot/50 feet; Figure 2). The gradient is consistent with historical data collected since 1993 (Attachment C).

During the fourth quarter 2013, the highest onsite petroleum concentrations were located in the northwest corner of the site. The highest onsite concentration of total petroleum hydrocarbons as gasoline (TPHg) of 7,400 micrograms per liter ($\mu\text{g/l}$) was detected at IP-1. Benzene was detected onsite at a maximum concentration of 400 mg/l at IP-8. Methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) were detected onsite at maximum concentrations of 43 and 23 $\mu\text{g/l}$ at TP-1 and IP-8, respectively.

Historically, a direct relationship between dissolved-phase hydrocarbons and water levels has been observed at shallow source area wells and an indirect relationship has historically been observed at deep source area wells. During the previous three quarters, concentrations at shallow and deep source area wells decreased compared to periods of similar water levels. Compared to when water levels were at the same elevation, dissolved-phase hydrocarbon concentrations in source area wells MW-2 and MW-11 have decreased. Concentrations at source area wells TP-1 and DW-1 have increased compared to when water levels were at the same elevation, but are still within historical range. Temporary concentration increases following the ISCO injections are expected and are likely a result of desorption of hydrocarbon mass. Hydrocarbon concentrations are expected to begin to stabilize and decrease.

Offsite hydrocarbon concentrations also increased during the ISCO pilot test. However, based on results of fourth quarter monitoring, concentrations appear to be stabilizing or decreasing at most offsite wells. The highest offsite petroleum concentrations are located immediately downgradient of the onsite source. The highest offsite TPHg and benzene concentrations of 56,000 and 1,800 µg/l, respectively, were detected at DW-8, which is located immediately west of the site. MTBE and TBA concentrations of 150 and 310 µg/l, respectively, were detected at DW-2, located northwest of the intersection of 1st Street and P Street.

Wells MW-12 and DW-9 are the farthest downgradient shallow and deep well cluster. TPHg, benzene, MTBE, and TBA were detected in deep well DW-9 at concentrations of 8,000, 120, 25, and 73 µg/l, respectively. TPHg, benzene, and MTBE were detected in shallow well MW-12 at concentrations of 4,600, 15, and 0.50 µg/l, respectively. TBA was not detected in well MW-12. All offsite benzene concentrations were below the environmental screening level (ESL) of 1,800 µg/l established by the San Francisco Regional Water Quality Control Board for evaluation of potential vapor intrusion concerns.

Groundwater analytical results are summarized in Tables 2 and 3. Figures 3, 4, and 5 show isoconcentration contours for TPHg, benzene, and MTBE, respectively. Historical analytical results are in Attachment D, and the laboratory reports and the chain-of-custody forms are in Attachment E.

Expanded ISCO Pilot Test

Arctos conducted an ISCO pilot test at well IP-9 in the fourth quarter 2011. Monitoring results for the first quarter 2013 showed that TPHg and benzene concentrations decreased by over 68 percent at injection well IP-9. ISCO pilot test groundwater monitoring results are summarized in Table 4.

As described in the 16 March 2012 pilot test report, changes in groundwater chemistry and hydrocarbon concentrations indicated that the RegenOx™ chemical oxidant was effective at desorbing petroleum hydrocarbons from soil and destroying hydrocarbons in groundwater. On 25 March 2013, Arctos obtained approval from ACEH for an expanded ISCO pilot test to occur on and off site. The objective of the expanded pilot test was to further assess the effectiveness of the RegenOx™ chemical oxidant at remediating hydrocarbons in soil and groundwater.

Arctos installed seven offsite injection wells in April 2013. Arctos's subcontractor, Confluence Environmental of Sacramento, California, conducted the expanded ISCO pilot test from May to August 2013. Results of the expanded ISCO pilot test will be included in a separate report.

Source Area Remediation

SVE System

On 17 November 2012, the SVE system shut down because of a system alarm. Water levels on site had increased and insufficient screen was exposed for the SVE wells to operate. The system remained shut down during fourth quarter 2013.

A soil gas survey was conducted in June 2010 to establish baseline soil vapor conditions before starting the SVE system. On 28 February 2013, water levels decreased to elevations similar to June 2010 and Arctos conducted a soil gas survey to evaluate the effectiveness of the SVE system after approximately 2.5 years of operation. Concentrations of petroleum hydrocarbons in soil vapor decreased by over 90 percent at all SVE and soil vapor monitoring wells between June 2010 and February 2013. The results of the soil gas survey are summarized below and in Table 5. Soil vapor sampling procedures are in Attachment F and laboratory reports and the chain-of-custody forms are in Attachment E.

Well ID	Screen Interval (feet bgs)	Date	Petroleum Hydrocarbon Concentration ^(a) (mg/m ³)			Percent Reduction
			TPHg	Benzene	MTBE	
MW-1	34 - 54	6/24/10	NS ^(b)	NS	NS	NA ^(c)
		2/28/13	NS	NS	NS	
MW-11	28 - 43	6/24/10	2,300	13	ND<0.10 ^(d)	99
		2/28/13	26	ND<0.20	ND<0.20	
TP-1	28 - 43	6/24/10	350	0.15	ND<0.10	91 ^(e)
		2/28/13	32	ND<0.20	ND<0.20	
TP-2	28 - 43	6/24/10	3,600	24	18	99
		2/28/13	26	ND<0.20	ND<0.20	
VW-2	22 - 37	6/24/10	3,100	0.91	ND<0.10	99 ^(e)
		2/28/13	ND<20	ND<0.20	ND<0.20	
VW-3	21 - 36	6/24/10	120	0.33	ND<0.10	92 ^(e)
		2/28/13	ND<20	ND<0.20	ND<0.20	

- (a) Vapor-phase petroleum hydrocarbons as analyzed by EPA Method 8260B and reported in milligrams per cubic meter (mg/m³).
- (b) NS – Not sampled. A sample was not collected because of submerged screen.
- (c) NA – Not applicable.
- (d) ND – Not detected at the reporting limit listed.
- (e) Percent reduction calculated using TPHg concentrations.

During SVE operation from June 2010 through November 2012, hydrocarbon mass was removed from the subsurface through (1) volatilization caused by the SVE system and (2) in situ bioremediation from increased oxygen levels. The daily rate of hydrocarbon mass removal by volatilization was calculated from influent soil gas sample results and field flow measurements. Mass removal by biodegradation was calculated using equations adapted from a U.S. Environmental Protection Agency guidance document (EPA, 1995). SVE influent soil gas analytical results and SVE system parameters used for these calculations are summarized in Tables 6 and 7, respectively. The total hydrocarbon mass removed by the SVE system to date is estimated to be 38,250 pounds or approximately 5,890 gallons (at a density of 6.5 pounds per gallon).

Figures 6, 7, and 8 show soil vapor influent concentrations, mass removal by volatilization, and mass removal by biodegradation, respectively, during SVE operation.

Oxygen Injection System

The oxygen injection system was shut down on 28 March in preparation for the expanded ISCO pilot test and has remained shut off during the fourth quarter 2013. The system delivered oxygen to the subsurface in pulsed intervals to increase oxygen levels while decreasing the potential for “pushing” dissolved hydrocarbons away from injection wells.

The oxygen purity was approximately 88 percent and the average flow rate was 35 standard cubic feet per hour. DO readings are summarized in Attachment G.

Source Area Reduction

Concentrations in groundwater have decreased by up to 99 percent in all source area wells except DW-1 compared to before the SVE and oxygen injection systems were started in June and October 2010. The plume has also decreased in area compared to before the SVE and oxygen injection systems were started. The reductions in hydrocarbon concentrations for shallow and deep source area wells are summarized in the following table:

Well ID	Date	Groundwater Elevation (ft. MSL)	Petroleum Hydrocarbon Concentration ^(a) (µg/l)			Percent Reduction ^(b)
			TPHg	Benzene	MTBE	
MW-2	5/3/10	440.54	26,000	3,100	530	84%
	11/7/13	437.89	4,700	140	28	
MW-11	5/3/10	441.90	62,000	3,600	ND<15 ^(c)	87%
	11/7/13	439.21	8,800	50	ND<1.5	
TP-1	5/3/10	440.50	15,000	2,100	3,400	86%
	11/7/13	437.99	2,800	14	43	
TP-2	5/3/10	441.08	6,400	740	14,000	99%
	11/7/13	438.28	ND<50	ND<0.5	ND<0.5	
VW-2	11/7/13	DRY	--	--	--	--
	11/7/13	438.06	5,200	69	18	

- (a) Dissolved-phase petroleum hydrocarbons as analyzed by EPA Method 8260B and reported in micrograms per liter (µg/l).
- (b) Half the detection limit was used for non-detect concentrations in calculating percent reduction.
- (c) ND – Not detected at the reporting limit listed.

Figures 9A through 9C show onsite concentration contour maps for TPHg, benzene, and MTBE in May 2010, prior to startup of the SVE and oxygen injection systems, and in the fourth quarter 2013. As of 28 March, both the SVE and oxygen injection systems are shut down. Based on the expanded treatment area of the ISCO pilot test and the reduced concentrations in the source area, the source area treatment systems are no longer required for soil and groundwater remediation.

Conclusions

The SVE and oxygen injection systems remained off during the fourth quarter 2013. Results of groundwater sampling indicate the following conclusions:

1. Onsite hydrocarbon concentrations in groundwater have decreased following SVE and oxygen injection. The source area treatment systems are no longer required for soil and groundwater remediation.
2. In previous quarters, hydrocarbon concentrations at shallow and deep source area wells have decreased compared to concentrations at similar water levels. However, hydrocarbon concentrations at two source area wells increased during fourth quarter 2013 compared to concentrations at similar water levels. Concentration increases following ISCO injections are expected due to desorption of hydrocarbon mass. Concentration increases during the fourth quarter 2013 are within the historical range and are expected to be temporary.
3. Downgradient groundwater concentrations increased during the ISCO injections, but appeared to be stabilizing and decreasing during the fourth quarter 2013. Downgradient concentrations are within the historical range, and all offsite benzene concentrations are below the ESL for potential vapor intrusion concerns.

Recommendations


Based on the activities completed during this quarter, Arctos recommends the following tasks during the first quarter 2014 and beyond:

- Submit a report documenting the results and evaluating the effectiveness of the expanded ISCO pilot test.
- Continue groundwater monitoring activities and evaluate groundwater concentration trends.

If you have questions or comments, please call Emily Chow or Mike Purchase at 510/525-2180.

Very truly yours,

ARCTOS ENVIRONMENTAL



Emily Chow
Staff Scientist



Michael P. Purchase, P.E.
Principal Engineer



Copy: Jeffrey M. Baker, P.E. – Tesoro Refining & Marketing Company LLC
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 – ISCO Pilot Test General Chemistry Concentrations
Table 5 – Soil Vapor Analytical Results
Table 6 – SVE Influent Analytical Results
Table 7 – SVE System Parameters
Figure 1 – Site Location Map
Figure 2 – Groundwater Elevation Contours
Figure 3 – TPHg Concentration Contours
Figure 4 – Benzene Concentration Contours
Figure 5 – MTBE Concentration Contours
Figure 6 – Soil Vapor Influent Concentrations
Figure 7 – Mass Removal by Volatilization
Figure 8 – Mass Removal by Biodegradation
Figure 9A – Onsite TPHg Concentration Contours
Figure 9B – Onsite Benzene Concentration Contours
Figure 9C – Onsite MTBE Concentration Contours
Figure 10 – Expanded ISCO Pilot Test Injection Wells
Attachment A – Groundwater Sampling QA/QC Procedures
Attachment B – Field Data Sheets
Attachment C – Historical Well and Groundwater Elevations
Attachment D – Historical Groundwater Analytical Results
Attachment E – Laboratory Analytical Reports and Chain-of-Custody Forms
Attachment F – Soil Vapor Sampling QA/QC Procedures
Attachment G – Oxygen System Monitoring Results
Attachment H – Waste Manifests

References

Arctos Environmental, 2011. *Work Plan for ISCO Pilot Test, 1619 1st Street, Livermore, California, Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0000434, 9 September.*

Arctos Environmental, 2012. *In Situ Chemical Oxidation (ISCO) Pilot Test Report, Tesoro Site No. 67076 (Former Beacon 3604), 1619 1st Street, Livermore, California, 16 March.*

U.S. Environmental Protection Agency, 1995. *Bioventing Principles and Practice, Volume II: Bioventing Design.*

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	11/12/12	37.10	474.21 ^(c)	437.11
	2/12/13	30.98		443.23
	4/22/13	33.11		441.10
	8/21/13	35.40		438.81
	11/7/13	34.36		439.85
MW-2	11/12/12	39.03	472.98	433.95
	2/12/13	32.13		440.85
	4/22/13	34.15		438.83
	8/21/13	36.05		436.93
	11/7/13	35.09		437.89
MW-3	11/12/12	39.24	473.37	434.13
	2/12/13	31.34		442.03
	4/22/13	33.51		439.86
	8/21/13	35.71		437.66
	11/7/13	34.60		438.77
MW-4	11/12/12	39.65	473.64	433.99
	2/12/13	31.56		442.08
	4/22/13	33.80		439.84
	8/21/13	36.10		437.54
	11/7/13	35.18		438.46
MW-5	11/12/12	40.72	472.67	431.95
	2/12/13	32.68		439.99
	4/22/13	35.09		437.58
	8/21/13	37.00		435.67
	11/7/13	35.94		436.73
MW-6	11/12/12	42.20	471.93	429.73
	2/12/13	34.24		437.69
	4/22/13	36.78		435.15
	6/25/13	37.15		434.78
	8/21/13	37.98		433.95
	11/7/13	39.82		432.11
MW-7	11/12/12	38.73	472.33	433.60
	2/12/13	31.46		440.87

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	4/22/13	33.19	472.33	439.14
	8/21/13	36.90		435.43
	11/7/13	34.06		438.27
MW-8	11/12/12	40.87	471.18	430.31
	2/12/13	32.81		438.37
	4/22/13	35.00		436.18
	6/25/13	36.40		434.78
	8/21/13	37.20		433.98
	11/7/13	35.95		435.23
MW-9	11/12/12	42.66	470.78	428.12
	2/12/13	34.70		436.08
	4/22/13	37.01		433.77
	6/25/13	37.82		432.96
	8/21/13	39.02		431.76
	11/7/13	37.87		432.91
MW-10	11/12/12	40.53	471.63	431.10
	2/12/13	33.19		438.44
	4/22/13	34.99		436.64
	6/25/13	36.25		435.38
	8/21/13	37.11		434.52
	11/7/13	36.05		435.58
MW-11	11/12/12	35.34	472.96 ^(c)	437.62
	2/12/13	30.64		442.32
	4/22/13	32.74		440.22
	8/21/13	34.74		438.22
	11/7/13	33.75		439.21
MW-12	11/12/12	41.85	469.77	427.92
	2/12/13	34.10		435.67
	4/22/13	36.18		433.59
	6/25/13	37.80		431.97
	8/21/13	38.80		430.97
	11/7/13	37.40		432.37

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)
VW-2	11/12/12	33.90	472.57 ^(c)	438.67
	2/12/13	31.60		440.97
	4/22/13	33.51		439.06
	8/21/13	DRY ^(d)		--
	11/7/13	DRY		--
VW-3	11/12/12	DRY	474.38	--
	2/12/13	31.70		442.68
	4/22/13	33.49		440.89
	8/21/13	35.46		438.92
	11/7/13	35.07		439.31
TP-1	11/12/12	37.00	472.64 ^(c)	435.64
	2/12/13	31.96		440.68
	4/22/13	33.71		438.93
	8/21/13	35.86		436.78
	11/7/13	34.65		437.99
TP-2	11/12/12	36.25	472.78 ^(c)	436.53
	2/12/13	31.81		440.97
	4/22/13	33.70		439.08
	8/21/13	35.43		437.35
	11/7/13	34.50		438.28
DW-1	11/12/12	39.29	472.85	433.56
	2/12/13	31.63		441.22
	4/22/13	33.72		439.13
	8/21/13	35.90		436.95
	11/7/13	34.79		438.06
DW-2	11/12/12	42.25	471.61	429.36
	2/12/13	34.35		437.26
	4/22/13	36.70		434.91
	6/25/13	36.94		434.67
	8/21/13	37.85		433.76
	11/7/13	36.94		434.67
DW-3	11/12/12	41.48	470.33	428.85
	2/12/13	33.87		436.46

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-3 (cont.)	4/22/13	36.10	470.33	434.23
	6/25/13	37.39		432.94
	8/21/13	38.38		431.95
	11/7/13	36.85		433.48
DW-4	11/12/12	40.86	468.48	427.62
	2/12/13	33.29		435.19
	4/22/13	35.90		432.58
	8/21/13	38.30		430.18
	11/7/13	36.45		432.03
DW-5	11/12/12	41.65	471.86	430.21
	2/12/13	34.10		437.76
	4/22/13	36.52		435.34
	6/25/13	37.42		434.44
	8/21/13	38.35		433.51
	11/7/13	36.97		434.89
DW-6	11/12/12	42.95	471.77	428.82
	2/12/13	34.96		436.81
	4/22/13	37.29		434.48
	6/25/13	38.55		433.22
	8/21/13	39.55		432.22
	11/7/13	38.24		433.53
DW-7	11/12/12	42.43	470.07	427.64
	2/12/13	34.54		435.53
	4/22/13	36.80		433.27
	6/25/13	38.44		431.63
	8/21/13	39.91		430.16
	11/7/13	38.25		431.82
DW-8	11/12/12	38.00	472.31	434.31
	2/12/13	30.46		441.85
	4/22/13	32.66		439.65
	8/21/13	34.43		437.88
	11/7/13	33.54		438.77

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-9	11/12/12	42.05	469.80	427.75
	2/12/13	34.25		435.55
	4/22/13	36.39		433.41
	6/25/13	38.46		431.34
	8/21/13	39.32		430.48
	11/7/13	37.76		432.04

- (a) Elevation of PVC well casing (north edge) surveyed relative to mean sea level (MSL).
Wells were surveyed by Cross Land Surveying, Inc., per AB 2886 requirements.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (b) Water Table Elevation = (Casing Elevation - Depth to Water).
- (c) Wells were resurveyed by Cross Land Surveying, Inc., per AB 2886 requirements, on 19 October 2010 after remediation system construction.
Benchmark K2-741, elevation is 467.835 feet above MSL.
- (d) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.

TABLE 2

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

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(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	11/12/12	110	ND<0.5 ^(b)	ND<0.5	1.1	3.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/22/13	240	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
	8/21/13	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
	11/7/13	4,300	0.82	2.9	76	160	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	11/14/12	5,700	480	30	96	300	200	ND<0.9	ND<0.9	1.8	110	ND<200	ND<9	ND<0.9	ND<0.9
	2/13/13	270	29	4.4	8.9	19	7.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	430	10	2.2	3.8	8.5	13	ND<0.5	ND<0.5	ND<0.5	6.6	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,700	7.2	0.91	12	16	9.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	11,000	560	30	430	440	88	ND<0.5	ND<0.5	1.0	48	ND<50	ND<8	ND<0.5	ND<0.5
	11/7/13	4,700	140	7.5	160	170	28	ND<0.9	ND<0.9	ND<0.9	22	ND<90	ND<9	ND<0.9	ND<0.9
MW-3	11/12/12	170	ND<0.5	0.83	4.1	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/22/13	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
	8/22/13	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
	11/7/13	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-4	11/12/12	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
	2/12/13	NS ^(c)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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-5	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2

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

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(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-5 (cont.)	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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-6	11/14/12	17,000	1,600	68	120	96	190	ND<2.5	ND<2.5	ND<2.5	86	ND<500	ND<25	ND<2.5	ND<2.5
	2/14/13	12,000	1,400	42	230	56	200	ND<2.5	ND<2.5	2.5	100	ND<250	ND<25	ND<2.5	ND<2.5
	4/24/13	8,600	880	22	89	25	190	ND<1.5	ND<1.5	2.7	700	ND<400	ND<15	ND<1.5	ND<1.5
	6/25/13	6,800	350	7.0	26	9.3	81	ND<0.9	ND<0.9	1.0	280	ND<800	ND<9	ND<0.9	ND<0.9
	8/22/13	14,000	1,500	59	290	150	110	ND<1.5	ND<1.5	ND<1.5	93	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	12,000	1,200	62	190	81	100	ND<2.5	ND<2.5	ND<2.5	66	ND<250	ND<25	ND<2.5	ND<2.5
MW-7	11/13/12	690	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
	2/12/13	860	1.0	ND<0.5	2.3	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
	4/23/13	720	0.65	0.61	1.0	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
	6/24/13	1,700	1.3	ND<0.5	2.7	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	880	0.54	ND<0.5	1.7	0.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	330	ND<0.5	ND<0.5	0.51	0.73	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-8	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	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
	6/25/13	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
	8/22/13	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
	11/7/13	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	11/13/12	740	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2

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

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(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-9 (cont.)	4/23/13	1,900	4.5	0.75	1.7	1.0	3.4	ND<0.5	ND<0.5	ND<0.5	5.0	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	2,800	20	0.91	3.8	2.7	6.0	ND<0.5	ND<0.5	ND<0.5	29	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	1,500	20	0.70	1.7	0.84	9.0	ND<0.5	ND<0.5	ND<0.5	40	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	1,400	3.1	ND<0.5	0.70	0.58	4.2	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5	ND<0.5	ND<0.5
MW-10	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	6/25/13	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
	8/21/13	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
	11/7/13	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	11/13/12	1,100	5.7	4.1	15	86	1.6	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5
	2/13/13	6,400	28	72	160	860	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	4/24/13	5,800	16	18	140	640	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	6/24/13	8,000	24	34	190	830	ND<0.9	ND<0.9	ND<0.9	ND<0.9	5.8	ND<90	ND<9	ND<0.9	ND<0.9
	8/22/13	9,600	26	32	260	940	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.6	ND<200	ND<20	ND<0.9	ND<0.9
	11/7/13	8,800	50	54	380	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	12	ND<150	ND<15	ND<1.5	ND<1.5
MW-12	11/14/12	5,500	6.8	2.0	67	13	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	2/13/13	2,500	7.6	1.3	26	3.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/24/13	1,400	2.2	0.78	7.7	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<20	ND<0.5	ND<0.5
	6/25/13	4,400	8.8	5.2	26	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	4,500	15	2.4	33	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	4,600	15	2.4	47	13	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
VW-2	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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 2

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

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
VW-2 (cont.)	2/12/13	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
	4/24/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-3	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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	11/13/12	180	2.3	0.63	4.7	2.3	17	ND<0.5	ND<0.5	ND<0.5	9.6	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	160	ND<0.5	ND<0.5	3.6	6.0	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/24/13	2,000	35	21	22	180	76	ND<0.5	ND<0.5	0.70	33	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	3,500	28	3.8	35	11	100	ND<0.5	ND<0.5	0.98	42	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	2,800	14	1.8	19	7.3	43	ND<0.5	ND<0.5	ND<0.5	25	ND<50	ND<5	ND<0.5	ND<0.5
TP-2	11/12/12	59	ND<0.5	ND<0.5	0.59	0.54	2.8	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/24/13	100	1.2	0.88	1.6	7.4	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.89	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	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
DW-1	11/12/12	250	ND<0.5	ND<0.5	2.7	5.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	ND<50	ND<0.5	ND<0.5	0.54	0.68	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/22/13	ND<50	ND<0.5	ND<0.5	ND<0.5	0.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/24/13	12,000	110	66	280	860	13	ND<0.5	ND<0.5	ND<0.5	11	ND<50	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)	Ethyl- benzene ^(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-1 (cont.)	8/21/13	1,100	18	5.8	34	82	5.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	5,200	69	13	130	200	18	ND<0.5	ND<0.5	ND<0.5	15	ND<50	ND<8	ND<0.5	ND<0.5
DW-2	11/14/12	4,000	190	7.8	13	13	120	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5
	2/13/13	6,400	500	18	60	19	140	ND<0.5	ND<0.5	1.6	510	ND<400	ND<8	ND<0.5	ND<0.5
	4/24/13	4,500	320	7.2	26	9.5	100	ND<0.5	ND<0.5	1.3	370	ND<80	ND<5	ND<0.5	ND<0.5
	6/25/13	4,900	250	6.2	58	26	100	ND<0.5	ND<0.5	1.2	400	ND<50	ND<8	ND<0.5	ND<0.5
	8/22/13	8,300	600	23	96	42	240	ND<0.5	ND<0.5	2.5	500	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	6,500	520	18	57	17	150	ND<0.9	ND<0.9	2.2	310	ND<90	ND<9	ND<0.9	ND<0.9
DW-3	11/13/12	410	ND<0.5	ND<0.5	1.7	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	120	ND<0.5	ND<0.5	1.2	0.50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	66	ND<0.5	2.3	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
	6/25/13	5,600	1.1	1.1	120	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	840	1.4	ND<0.5	3.2	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	960	ND<0.5	ND<0.5	5.1	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
DW-4	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	ND<50	ND<0.5	ND<0.5	0.70	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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
DW-5	11/14/12	8,800	24	2.5	110	140	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	4,400	65	5.4	110	110	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	4/24/13	3,000	32	2.5	38	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/25/13	120,000	120	ND<4	1,400	2,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<200	ND<4	ND<4

TABLE 2

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

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(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-5 (cont.)	8/22/13	22,000	58	11	770	1,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	11/7/13	26,000	62	12	1,000	1,400	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
DW-6	11/14/12	3,000	5.4	1.8	11	4.7	2.1	ND<0.5	ND<0.5	ND<0.5	6.8	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	4,600	25	4.0	53	8.7	10	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<9	ND<0.5	ND<0.5
	4/24/13	1,000	2.9	1.1	2.1	0.98	1.8	ND<0.5	ND<0.5	ND<0.5	6.2	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	7,000	23	3.0	80	13	9.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	5,700	28	3.4	80	11	12	ND<0.5	ND<0.5	ND<0.5	37	ND<90	ND<8	ND<0.5	ND<0.5
	11/7/13	2,400	14	1.7	5.6	3.1	10	ND<0.5	ND<0.5	ND<0.5	35	ND<80	ND<5	ND<0.5	ND<0.5
DW-7	11/13/12	6,500	340	11	45	22	51	ND<0.5	ND<0.5	0.56	160	ND<80	ND<8	ND<0.5	ND<0.5
	2/13/13	970	78	3.0	10	2.7	18	ND<0.5	ND<0.5	ND<0.5	56	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	3,300	230	9.2	22	10	50	ND<0.5	ND<0.5	0.55	160	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	590	32	960	640	100	ND<0.5	ND<0.5	0.95	330	ND<80	ND<20	ND<4	ND<0.5
	8/22/13	15,000	420	18	520	320	96	ND<2.5	ND<2.5	ND<2.5	310	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	9,700	260	8.4	200	63	52	ND<1.5	ND<1.5	ND<1.5	170	ND<150	ND<15	ND<1.5	ND<1.5
DW-8	11/14/12	27,000	580	870	510	3,400	ND<5	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
	2/14/13	63,000	3,000	5,400	2,000	8,700	ND<5	ND<5	ND<5	ND<5	110	ND<500	ND<150	ND<5	ND<5
	4/24/13	5,900	350	370	140	790	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.0	ND<200	ND<80	ND<0.9	ND<0.9
	6/24/13	55,000	2,200	3,200	2,100	7,400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	56	ND<90	ND<50	ND<0.9	ND<0.9
	8/22/13	16,000	380	240	500	1,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	56,000	1,800	2,800	2,100	7,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	37	ND<250	ND<25	ND<2.5	ND<2.5
DW-9	11/14/12	10,000	210	7.5	230	65	28	ND<1.5	ND<1.5	ND<1.5	94	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	7,800	150	9.4	160	28	45	ND<1.5	ND<1.5	ND<1.5	110	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	3,200	18	1.7	7.8	7.2	21	ND<0.5	ND<0.5	ND<0.5	67	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	490	17	1,100	430	30	ND<4	ND<4	ND<4	62	ND<400	ND<40	ND<4	ND<4

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(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-9	8/22/13	19,000	320	13	690	240	28	ND<4	ND<4	ND<4	87	ND<2,000	ND<40	ND<4	ND<4
(cont.)	11/7/13	8,000	120	5.9	100	38	25	ND<1.5	ND<1.5	ND<1.5	73	ND<150	ND<15	ND<1.5	ND<1.5

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

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

(c) NS - Not sampled.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(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
	4/27/11	24,000	750	2,200	420	4,800	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	2/1/12	15,000	370	350	600	1,300	ND<2	ND<2	ND<2	ND<2	16	ND<200	ND<20	NS ^(d)	NS
	5/9/12	16,000	580	850	800	2,100	ND<2	ND<2	ND<2	ND<2	12	ND<200	ND<20	ND<2	ND<2
	8/8/12	12,000	260	190	470	860	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	11/13/12	9,000	170	74	280	540	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	2/13/13	17,000	480	480	690	2,000	ND<2	ND<2	ND<2	ND<2	20	ND<200	ND<20	ND<2	ND<2
	4/24/13	9,700	230	160	370	1,200	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	8/22/13	23,000	360	430	740	2,300	ND<2	ND<2	ND<2	ND<2	25	ND<200	ND<20	ND<2	ND<2
11/7/13	7,400	70	94	200	400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	14	ND<90	ND<9	ND<0.9	ND<0.9	
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
	4/26/11	350	8.9	1.7	4.7	5.7	0.90	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	340	10	4.8	6.3	13	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	160	5.6	3.7	1.3	3.6	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

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)	Ethyl- benzene ^(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-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 ^(e)	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
	4/26/11	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
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	ND<50	0.51	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
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
	4/26/11	ND<50	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
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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	5.3	ND<0.5	ND<0.5
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/23/13	140	ND<0.5	43	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 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)	Ethyl- benzene ^(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-4 (cont.)	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IP-5	7/23/08	2,000 ^(e)	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
	4/26/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.72	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	4.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	180	ND<0.5	ND<0.5	3.0	6.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
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 ^(e)	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
	4/27/11	ND<50	1.1	0.66	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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)	Ethyl- benzene ^(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-6 (cont.)	4/23/13	57	ND<0.5	11	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
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
	4/27/11	220	8.1	0.69	3.4	1.50	0.95	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	5.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
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
	4/28/11	13,000	620	2,000	240	2,200	ND<3	ND<3	ND<3	ND<3	27	ND<300	ND<30	ND<3	ND<3
	2/1/12	67,000	2,900	7,300	1,400	11,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	NS	NS
	5/9/12	50,000	2,400	4,900	790	8,600	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9
	8/8/12	63,000	3,500	6,700	980	7,400	ND<9	ND<9	ND<9	ND<9	65	ND<900	ND<90	ND<9	ND<9
	11/14/12	33,000	1,000	2,300	260	4,300	ND<7	ND<7	ND<7	ND<7	47	ND<700	ND<70	ND<7	ND<7
2/14/13	65,000	3,300	7,100	1,600	9,200	ND<7	ND<7	ND<7	ND<7	110	ND<700	ND<150	ND<7	ND<7	

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)	Ethyl- benzene ^(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-8 (cont.)	4/24/13	33,000	1,700	4,200	430	5,600	ND<6	ND<6	ND<6	ND<6	ND<30	ND<600	ND<60	ND<6	ND<6
	8/22/13	19,000	130	440	260	1,900	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<80	ND<4	ND<4
	11/7/13	18,000	400	520	170	1,700	ND<4	ND<4	ND<4	ND<4	23	ND<400	ND<40	ND<4	ND<4
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
	4/28/11	38,000	1,400	4,300	860	6,000	ND<6	ND<6	ND<6	ND<6	38	ND<600	ND<60	ND<6	ND<6
	2/1/12	19,000	180	1,200	640	3,100	ND<3	ND<3	ND<3	ND<3	ND<15	ND<300	ND<30	NS	NS
	5/9/12	10,000	14	180	270	780	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	8/7/12	11,000	22	240	210	880	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	11/13/12	9,800	22	200	150	690	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	12,000	68	560	280	1,300	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	8,800	42	480	210	1,100	ND<1.5	ND<1.5	ND<1.5	ND<1.5	11	ND<150	ND<15	ND<1.5	ND<1.5
	8/22/13	7,500	14	250	190	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<400	ND<15	ND<1.5	ND<1.5
11/7/13	1,100	4.9	30	14	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5	
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
	4/26/11	4,300	28	140	110	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5
	2/1/12	3,200	8.2	4.6	93	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	NS	NS
	5/9/12	3,900	24	38	110	58	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	8/7/12	2,700	15	5.8	31	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	2,600	12	7.6	4.7	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/12/13	6,500	26	270	180	590	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
4/24/13	1,800	12	11	24	81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5	

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)	Ethyl-benzene ^(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	8/22/13	1,100	2.2	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
(cont.)	11/7/13	810	2.6	1.7	1.5	7.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

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

TABLE 4

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
MW-2	12/15/11	ND<0.1 ^(h)	23	ND<0.015	0.026	7.4	2.2	51	ND<1	ND<0.1	64,200	2,040	574	540
	2/1/12	ND<0.1	7.6	0.030	0.18	55	5.9	52	ND<1	ND<0.1	100 ⁽ⁱ⁾	3,080	562	655
	5/11/12	ND<0.1	12	ND<0.015	0.098	29	5.5	46	ND<1	ND<0.1	120 ⁽ⁱ⁾	1,670	496	600
	8/8/12	ND<0.5	2.9	ND<0.015	0.092	25	4.2	45	ND<1	ND<0.1	70 ⁽ⁱ⁾	2,000	504	525
	11/14/12	ND<0.1	8.3	ND<0.015	0.095	28	3.5	44	ND<1	ND<0.1	51,200	1,190	584	680
	2/13/13	4.0	99	ND<0.015	0.0088	3.2	0.50	54	ND<1	ND<0.1	82,200	94	647	915
	4/23/13	1.7	92	ND<0.015	ND<0.005	ND<0.1	0.12	54	ND<1	ND<0.1	57,800	439	643	925
	6/24/13	0.83	88	ND<0.015	ND<0.005	1.8	0.61	54	ND<1	ND<0.1	73,100	798	602	875
	8/21/13	ND<1	39	ND<0.015	ND<0.005	0.71	2.3	65	ND<1	0.33	58,600	2,020	637	780
	11/7/13	ND<1	72	ND<0.015	ND<0.005	1.0	2.5	60	ND<1	ND<0.1	35,600	1,150	586	980
1/22/14	ND<0.5	61	ND<0.015	ND<0.005	1.2	2.9	54	ND<1	0.59	69,700	2,130	640	760	
MW-6	6/25/13	ND<1	120	0.048	0.017	5.8	1.4	240	ND<1	0.37	27,900	1,390	847	1,360
	8/22/13	ND<0.5	2.6	ND<0.015	ND<0.005	0.90	1.9	87	ND<1	0.40	53,400	5,370	586	745
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.0	2.1	75	ND<1	0.61	30,300	4,210	497	955
	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	1.2	2.1	68	ND<1	0.82	47,200	7,210	539	695
MW-7	12/15/11	ND<0.1	6.5	ND<0.015	0.32	88	5.4	58	ND<1	ND<0.1	28,100	1,080	433	515
	5/9/12	ND<0.1	7.3	0.037	0.36	110	7.1	59	ND<1	ND<0.1	55 ⁽ⁱ⁾	1,210	377	540
	8/7/12	ND<0.5	72	0.031	0.32	84	9.6	68	ND<1	ND<0.1	37 ⁽ⁱ⁾	806	416	450
	11/13/12	ND<0.1	81	0.046	0.40	130	12	57	ND<1	ND<0.1	14,000	663	302	620
	2/12/13	ND<0.1	27	ND<0.015	0.10	30	2.7	56	ND<1	ND<0.1	17,500	1,420	366	525
	4/23/13	ND<0.1	21	ND<0.015	ND<0.005	ND<0.1	1.9	58	ND<1	ND<0.1	21,500	1,190	418	615
	6/24/13	0.13	27	ND<0.015	0.18	53	5.2	68	ND<1	0.12	24,900	1,300	437	670
	8/21/13	ND<1	34	ND<0.015	ND<0.005	0.36	1.7	110	ND<1	0.11	21,400	2,770	598	790
	11/7/13	ND<0.5	27	ND<0.015	ND<0.005	0.21	1.5	74	ND<1	ND<0.1	21,100	358	418	605
1/22/14	ND<0.1	23	ND<0.015	ND<0.005	0.42	1.6	71	ND<1	ND<0.1	25,100	1,330	448	600	
MW-8	6/25/13	1.5	64	ND<0.015	0.042	12	2.0	54	ND<1	ND<0.1	17,700	3.8	370	730
	8/22/13	1.3	63	ND<0.015	ND<0.005	ND<0.1	0.90	50	ND<1	ND<0.1	21,500	4.4	378	680

TABLE 4

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
MW-8 (cont.)	11/7/13	5.1	60	ND<0.015	ND<0.005	ND<0.1	0.51	55	2.4	ND<0.1	12,300	1.2	373	870
	1/22/14	1.3	64	ND<0.015	ND<0.005	ND<0.1	0.55	52	ND<1	ND<0.1	17,500	7.6	380	605
MW-9	6/25/13	ND<0.5	10	ND<0.015	0.029	9.0	2.3	71	ND<1	0.44	25,400	385	510	705
	8/22/13	ND<0.5	4.1	ND<0.015	ND<0.005	1.9	1.8	95	ND<1	0.29	35,200	381	583	760
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.9	1.8	69	ND<1	0.57	21,200	280	485	900
	1/22/14	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.8	1.7	57	ND<1	0.62	32,200	426	473	600
MW-10	6/25/13	1.2	80	ND<0.015	0.066	18	0.57	54	9.6	ND<0.1	13,100	ND<1	552	840
	8/21/13	1.1	83	ND<0.015	0.0091	ND<0.1	0.058	56	9.6	ND<0.1	16,700	ND<1	561	900
	11/7/13	1.2	89	ND<0.015	0.015	ND<0.1	0.022	61	14	ND<0.1	11,500	20	556	1,080
	1/21/14	1.4	82	ND<0.015	0.014	ND<0.1	0.040	55	15	ND<0.1	19,200	14.7	557	795
MW-11	9/20/11	ND<0.1	30	ND<0.015	0.0056	1.8	3.6	67	ND<1	ND<0.1	90,300	36	702	840
	10/25/11	ND<0.5	85	ND<0.015	0.011	3.2	2.8	290	ND<1	ND<0.1	60,100	55	1,200	1,520
	11/17/11	ND<0.1	170	0.030	0.010	2.9	1.2	740	ND<1	ND<0.15	1,870	6.5	1,630	2,340
	12/14/11	0.12	140	0.021	0.034	9.6	0.84	540	2.6	ND<0.1	29,200	10	316	2,270
	2/1/12	ND<0.1	76	0.14	1.6	680	36	470	ND<1	ND<0.1	170 ⁽ⁱ⁾	27	1,430	1,640
	5/11/12	0.34	14	ND<0.015	0.050	15	2.8	210	ND<1	0.11	140 ⁽ⁱ⁾	99	771	870
	8/7/12	ND<0.5	51	0.021	0.066	21	3.2	610	ND<1	0.10	110 ⁽ⁱ⁾	284	1,760	1,960
	11/13/12	1.2	53	0.10	1.4	410	16	230	ND<1	ND<0.1	34,200	173	730	955
	2/13/13	0.49	95	0.062	0.39	130	5.8	730	ND<1	ND<0.1	64,900	139	1,960	2,380
	4/24/13	0.32	80	0.020	ND<0.005	ND<0.1	1.3	670	ND<1	ND<0.1	75,400	65	2,020	2,260
	6/24/13	ND<0.5	190	0.056	0.021	10	2.0	1,600	1.4	ND<0.1	4,560	325	3,100	4,210
	8/22/13	ND<0.5	260	0.048	ND<0.005	0.12	0.25	1,200	ND<1	ND<0.1	612	133	2,610	3,510
	11/7/13	ND<1	190	0.049	ND<0.005	0.13	0.45	1,300	ND<1	ND<0.1	21,400	185	556	3,950
1/22/14	ND<1	100	0.029	ND<0.005	0.12	0.54	850	ND<1	0.11	48,500	165	2,250	2,720	
MW-12	6/25/13	1.3	23	ND<0.015	0.045	14	1.7	80	ND<1	ND<0.1	9,940	2,410	450	675
	8/22/13	0.92	15	ND<0.015	ND<0.005	0.14	1.6	64	ND<1	ND<0.1	24,600	2,800	420	640

TABLE 4

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
MW-12 (cont.)	11/7/13	ND<0.5	14	ND<0.015	ND<0.005	0.37	1.7	66	ND<1	0.20	18,000	1,980	421	850
	1/22/14	1.8	33	ND<0.015	ND<0.005	ND<0.1	1.1	62	ND<1	ND<0.1	24,300	2,250	402	610
IP-1	9/20/11	ND<0.1	3.9	ND<0.015	ND<0.005	1.3	2.6	34	ND<1	ND<0.1	24,000	474	369	483
	10/25/11	ND<0.5	11	ND<0.015	0.018	2.6	2.4	64	ND<1	ND<0.1	20,600	311	378	557
	11/17/11	ND<0.1	24	0.02	0.012	3.9	3.8	93	ND<1	ND<0.1	34,300	1,180	576	660
	12/15/11	0.20	26	0.02	0.017	5.5	3.3	110	ND<1	0.11	12,800	916	580	620
	2/1/12	ND<0.1	1.2	ND<0.015	ND<0.005	2.0	3.6	73	ND<1	ND<0.1	72 ⁽ⁱ⁾	1,130	542	635
	5/9/12	ND<0.1	ND<0.5	ND<0.015	0.011	5.8	3.7	76	ND<1	ND<0.1	96 ⁽ⁱ⁾	1,060	530	650
	8/8/12	ND<0.5	ND<0.5	0.023	0.50	140	8.0	71	ND<1	ND<0.1	38 ⁽ⁱ⁾	1,570	444	435
	11/13/12	ND<0.1	ND<0.5	ND<0.015	0.028	9.7	3.0	68	ND<1	ND<0.1	22,200	1,070	418	540
	2/13/13	ND<0.1	ND<0.5	ND<0.015	0.056	18	3.6	60	ND<1	0.37	26,000	2,980	406	585
	4/24/13	ND<0.1	0.54	ND<0.015	ND<0.005	ND<0.1	2.9	68	ND<1	ND<0.1	19,200	1,400	408	525
	6/24/13	0.61	620	0.37	0.043	26	0.95	4,400	36	ND<0.1	596	317	9,160	11,100
	8/22/13	ND<1	730	0.13	0.012	ND<0.1	0.021	2,800	13	ND<0.1	702	1,040	5,340	7,740
	11/7/13	ND<1	1,100	0.35	0.066	0.11	0.011	8,900	92	ND<0.1	ND<1.7	136	20,700	27,700
1/22/14	ND<1	680	0.20	0.0065	0.27	0.031	2,600	1.1	ND<0.1	352	842	6,570	9,800	
IP-5	6/24/13	0.14	32	0.017	0.23	74	4.6	43	ND<1	ND<0.1	14,900	271	334	545
	11/7/13	ND<0.5	41	ND<0.015	ND<0.005	ND<0.1	0.17	38	ND<1	ND<0.1	4,280	22	311	510
	1/21/14	0.39	38	ND<0.015	ND<0.005	ND<0.1	0.41	40	ND<1	ND<0.1	11,400	334	313	470
IP-8	9/20/11	0.17	10	ND<0.015	ND<0.005	0.54	2.0	35	ND<1	ND<0.1	6,930	50	229	350
	10/25/11	ND<0.5	44	ND<0.015	ND<0.005	1.6	3.8	140	ND<1	ND<0.1	12,300	109	692	1,020
	11/17/11	ND<0.1	69	ND<0.015	0.011	3.2	3.3	160	ND<1	ND<0.1	4,470	184	795	960
	11/22/11	0.31	34	ND<0.015	0.011	2.9	2.4	81	ND<1	ND<0.1	32,800	1,150	562	715
	12/14/11	0.24	52	ND<0.015	0.023	6.2	3.7	110	ND<1	ND<0.1	11,800	81	650	920
	2/1/12	ND<0.1	42	ND<0.015	0.036	11	3.0	110	ND<1	ND<0.1	48 ⁽ⁱ⁾	262	688	890
	5/9/12	ND<0.1	26	ND<0.015	0.0098	3.1	2.5	100	ND<1	ND<0.1	44 ⁽ⁱ⁾	143	686	925
	8/8/12	ND<0.5	15	ND<0.015	0.013	4.4	3.3	110	ND<1	ND<0.1	40 ⁽ⁱ⁾	447	664	735

TABLE 4

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
IP-8 (cont.)	11/14/12	ND<0.1	1.6	ND<0.015	ND<0.005	0.45	3.0	84	ND<1	ND<0.1	26,400	105	588	710
	2/14/13	0.11	14	ND<0.015	ND<0.005	0.46	3.2	100	ND<1	ND<0.1	30,700	1,550	659	810
	8/22/13	1.5	1,200	0.24	0.044	ND<0.1	0.0056	13,000	49	ND<0.1	338	17	28,200	34,900
	11/7/13	ND<1	750	0.14	0.026	ND<0.1	0.017	5,800	13	ND<0.1	221	122	8,900	10,800
	1/22/14	ND<1	840	0.21	0.010	ND<0.1	0.043	3,600	9.7	ND<0.1	632	216	7,080	11,800
IP-9	9/20/11	ND<0.1	11	ND<0.015	ND<0.005	0.34	1.1	41	ND<1	ND<0.1	10,100	65	305	413
	10/25/11	ND<2.5	630	0.24	0.21	50	0.92	4,700	84	ND<0.1	935	7.5	9,770	12,200
	11/17/11	2.5	710	0.16	0.15	34	0.54	8,500	79	ND<0.15	14,500	3.9	18,700	21,300
	11/22/11	ND<0.5	300	0.049	0.017	1.8	0.10	1,500	12	ND<0.1	1,080	302	3,010	3,960
	12/14/11	ND<2	1,400	0.42	0.15	30	0.65	18,000	90	ND<0.1	5,130	5.1	35,100	44,300
	2/1/12	0.76	850	0.56	0.074	9.2	0.14	7,200	79	ND<0.1	ND<5 ⁽ⁱ⁾	54	14,000	20,400
	5/9/12	0.62	620	0.66	0.074	12	0.14	4,600	60	ND<0.1	ND<5 ⁽ⁱ⁾	59	9,490	7,480
	8/7/12	ND<2.5	810	0.90	0.14	75	0.74	5,900	60	ND<0.1	ND<5 ⁽ⁱ⁾	41	10,600	13,000
	11/13/12	ND<0.2	580	0.71	0.050	6.3	0.12	4,300	48	ND<0.1	81	62	8,020	10,200
	2/13/13	ND<0.5	440	0.57	0.039	2.2	0.16	3,000	30	ND>0.1	5,990	112	6,100	7,920
	8/22/13	1.4	880	0.24	0.099	0.14	0.0067	10,000	110	ND<0.1	266	1.5	25,200	38,800
	11/7/13	ND<0.5	260	0.019	0.0067	ND<0.1	ND<0.005	2,500	7.1	ND<0.1	294	3.2	5,600	654
1/22/14	ND<0.5	320	0.10	0.022	ND<0.1	0.014	3,500	16	ND<0.1	505	11	6,280	6,750	
IP-10	9/20/11	ND<0.1	26	ND<0.015	ND<0.005	0.46	1.4	48	ND<1	ND<0.1	5,530	39	290	483
	10/25/11	ND<0.5	37	ND<0.015	ND<0.005	0.79	4.2	74	ND<1	ND<0.1	15,500	139	390	625
	11/17/11	ND<0.1	34	ND<0.015	0.015	4.2	2.8	96	ND<1	ND<0.1	26,700	711	458	510
	12/14/11	ND<0.1	31	ND<0.015	ND<0.01	3.2	3.5	92	ND<1	ND<0.1	14,000	644	455	640
	2/1/12	ND<0.1	21	ND<0.015	ND<0.005	0.54	2.8	64	ND<1	ND<0.1	36 ⁽ⁱ⁾	237	353	505
	5/9/12	ND<0.1	4.2	ND<0.015	ND<0.005	1.0	3.0	66	ND<1	ND<0.1	46 ⁽ⁱ⁾	478	368	530
	8/7/12	ND<0.5	3.2	ND<0.015	ND<0.005	1.4	2.6	60	ND<1	ND<0.1	30 ⁽ⁱ⁾	535	335	435
	11/13/12	ND<0.1	0.86	ND<0.015	ND<0.005	1.6	2.8	57	ND<1	ND<0.1	11,900	747	304	445
	2/12/13	ND<0.1	ND<0.5	ND<0.015	ND<0.005	1.4	2.7	52	ND<1	0.26	12,600	1,420	311	390

TABLE 4

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
IP-10 (cont.)	4/24/13	ND<0.1	1.4	ND<0.015	ND<0.005	0.12	2.8	52	ND<1	0.11	10,300	597	296	420
	6/24/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.83	2.7	57	ND<1	0.19	5,050	795	290	505
	8/22/13	ND<0.5	2.7	ND<0.015	ND<0.005	0.60	2.6	55	ND<1	0.14	12,800	480	285	480
	11/7/13	ND<0.5	3.8	ND<0.015	ND<0.005	0.63	2.7	56	ND<1	ND<0.1	4,960	577	294	495
	1/22/14	ND<0.1	1.4	ND<0.015	ND<0.005	1.1	2.8	58	ND<1	0.30	18,100	1,150	306	455
DW-1	6/24/13	ND<0.1	45	ND<0.015	0.0096	3.0	1.2	200	ND<1	ND<0.1	36,000	817	744	1,030
	11/7/13	ND<0.5	27	ND<0.015	ND<0.005	ND<0.1	4.5	180	ND<1	ND<0.1	29,700	1,000	820	1,300
	1/22/14	ND<1	13	ND<0.015	ND<0.005	0.91	4.1	140	ND<1	0.14	57,100	2,030	715	865
DW-2	6/25/13	ND<1	79	0.021	0.032	11	1.5	210	ND<1	ND<0.25	13,700	1,420	715	1,100
	8/22/13	ND<0.5	12	ND<0.015	ND<0.005	0.39	2.2	100	ND<1	ND<0.1	64,300	2,580	638	800
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.81	2.6	77	ND<1	ND<0.1	19,900	2,620	572	1,030
	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	0.99	2.4	75	ND<1	0.47	50,100	3,260	572	705
DW-3	6/25/13	1.2	51	ND<0.015	0.030	8.6	2.1	51	ND<1	ND<0.1	12,900	666	379	645
	8/21/13	2.4	53	ND<0.015	ND<0.005	ND<0.1	1.0	53	ND<1	ND<0.1	14,600	1,390	380	595
	11/7/13	1.5	50	ND<0.015	ND<0.005	ND<0.1	1.1	54	ND<1	ND<0.1	11,200	359	373	795
	1/22/14	3.0	59	ND<0.015	ND<0.005	ND<0.1	0.63	52	ND<1	ND<0.1	15,500	450	364	575
DW-5	6/25/13	ND<1	140	0.041	0.20	73	3.0	470	ND<1	ND<0.25	1,560	1,500	1,040	1,600
	8/22/13	ND<2	290	0.025	ND<0.005	ND<0.1	0.41	620	ND<1	ND<0.1	3,510	1,620	1,220	2,020
	11/7/13	ND<1	120	ND<0.015	ND<0.005	ND<0.1	0.91	370	ND<1	ND<0.1	12,100	1,400	219	1,520
	1/22/14	ND<2	60	ND<0.015	ND<0.005	ND<0.1	1.2	250	ND<1	ND<0.1	16,600	1,940	804	1,080
DW-6	6/25/13	ND<0.5	12	0.028	0.32	96	4.4	79	ND<1	0.14	20,400	2,670	460	655
	8/22/13	ND<0.5	7.8	ND<0.015	ND<0.005	0.83	2.2	57	ND<1	0.59	27,700	2,070	430	600
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.73	2.2	52	ND<1	0.21	9,950	890	419	880
	1/22/14	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.69	2.2	50	ND<1	0.32	27,500	1,890	432	560
DW-7	6/25/13	ND<0.5	76	0.033	0.28	93	4.1	260	ND<1	ND<0.25	12,100	4,540	760	1,200
	8/22/13	ND<1	50	ND<0.015	ND<0.005	0.12	1.2	170	ND<1	ND<0.1	20,100	3,720	680	955

TABLE 4

EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
DW-7 (cont.)	11/7/13	ND<1	35	ND<0.015	ND<0.005	0.45	2.2	100	ND<1	0.24	13,000	4,690	523	710
	1/22/14	ND<1	20	ND<0.015	ND<0.005	0.61	2.4	100	ND<1	0.23	40,400	6,940	572	755
DW-8	9/20/11	ND<0.1	6.7	ND<0.015	ND<0.005	1.9	2.8	45	ND<1	ND<0.1	27,600	1,110	502	615
	10/25/11	ND<0.5	85	ND<0.015	ND<0.005	1.4	1.2	100	ND<1	ND<0.1	16,000	519	564	780
	11/17/11	ND<0.1	48	ND<0.015	ND<0.005	0.76	1.5	92	ND<1	ND<0.1	19,100	140	591	610
	11/22/11	ND<0.1	24	ND<0.015	0.031	9.1	2.4	64	ND<1	0.16	23,200	1,480	498	560
	12/15/11	ND<0.1	36	ND<0.015	ND<0.005	0.88	2.4	78	ND<1	ND<0.1	19,100	1,210	510	560
	2/1/12	ND<0.1	37	ND<0.015	0.0055	1.9	3.0	90	ND<1	ND<0.1	51 ⁽ⁱ⁾	1,170	598	795
	5/11/12	ND<0.1	14	ND<0.015	ND<0.005	0.12	0.14	77	2.2	ND<0.1	ND<5 ⁽ⁱ⁾	306	195	330
	8/8/12	ND<0.5	14	ND<0.015	0.0057	2.4	2.7	100	ND<1	ND<0.1	38 ⁽ⁱ⁾	404	556	600
	11/14/12	ND<0.1	1.6	ND<0.015	ND<0.005	1.2	2.5	91	ND<1	ND<0.1	15,300	632	472	600
	2/14/13	ND<0.1	10	ND<0.015	0.0056	2.4	3.3	150	ND<1	ND<0.1	34,400	1,520	786	930
	4/24/13	ND<0.1	5.1	ND<0.015	ND<0.005	ND<0.1	ND<0.005	41	2.2	ND<0.1	13.9	470	232	310
	6/24/13	ND<0.5	10	ND<0.015	0.013	8.8	4.1	140	ND<1	ND<0.1	22,500	1,710	750	1,020
	8/22/13	ND<1	ND<5	ND<0.015	ND<0.005	0.13	2.5	74	ND<1	0.10	22,900	1,230	398	570
11/7/13	ND<1	ND<5	ND<0.015	ND<0.005	2.0	4.0	160	ND<1	ND<0.1	24,300	511	778	1,120	
1/22/14	ND<2	ND<10	ND<0.015	ND<0.005	1.8	3.0	110	ND<1	0.11	19,100	2,580	527	625	
DW-9	6/25/13	ND<1	6.6	0.020	0.34	110	4.8	69	ND<1	0.40	30,300	4,070	460	660
	8/22/13	ND<1	ND<5	ND<0.015	ND<0.005	1.0	2.3	68	ND<1	0.17	29,600	3,000	470	610
	11/7/13	ND<1	ND<5	ND<0.015	ND<0.005	0.82	2.3	73	ND<1	ND<0.1	9,660	3,330	461	625
	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	0.84	2.3	64	ND<1	ND<0.1	24,800	4,940	469	630

- (a) Nitrate and sulfate analyzed by EPA Method 300.0; reported in milligrams per liter (mg/l).
- (b) Arsenic, chromium, iron, manganese, and sodium analyzed by EPA Method 6010B; reported in milligrams per liter (mg/l).
- (c) Hexavalent chromium (Hex Chrome) analyzed by EPA Method 7199; reported in micrograms per liter (µg/l).
- (d) Ferrous Iron (Fe (2+)) analyzed by Standard Method 3500-Fe D; reported in milligrams per liter (mg/l).
- (e) Carbon dioxide (CO₂) and methane (CH₄) analyzed by EPA Method RSK-175M; reported in micrograms per liter (µg/l).
- (f) Total alkalinity as CaCO₃ analyzed by Standard Method 2320B; reported in milligrams per liter (mg/l).
- (g) Total dissolved solids (TDS) analyzed by Standard Method 2540 C; reported in milligrams per liter (mg/l).
- (h) ND - Not detected at the reporting limit listed.
- (i) CO₂ analyzed by Standard Method 4500 C; reported in milligrams per liter (mg/l).

TABLE 5

**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
	2/28/13	NS	NS	NS	NS	NS	NS	NS	NA ^(d)	NA
MW-11	6/24/10	2,300	13	10	7.4	21	ND<0.10 ^(d)	ND<1.0	16	4.29
	2/28/13	26	ND<0.20	ND<0.20	ND<0.25	ND<0.20	ND<0.20	NA	NA	NA
TP-1	6/24/10	350	0.15	0.25	0.46	1.1	ND<0.10	ND<1.0	21.7	ND<0.5
	2/28/13 ^(e)	32	ND<0.20	ND<0.20	ND<0.25	ND<0.20	ND<0.20	NA	NA	NA
TP-2	6/24/10	3,600	24	0.59	27	28	18	ND<1.0	20.3	0.93
	2/28/13	26	ND<0.20	ND<0.20	ND<0.25	ND<0.20	ND<0.20	NA	NA	NA
VW-2	6/24/10	3,100	0.91	0.68	1.8	2.1	ND<0.10	ND<1.0	17	2.96
	2/28/13	ND<20	ND<0.20	ND<0.20	ND<0.25	ND<0.20	ND<0.20	NA	NA	NA
VW-3	6/24/10 ^(e)	120	0.33	ND<0.20	1.8	2.3	ND<0.10	ND<1.0	21.9	ND<0.5
	2/28/13	ND<20	ND<0.20	ND<0.20	ND<0.25	ND<0.20	ND<0.20	NA	NA	NA

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

(b) Results are in percent by volume.

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

(d) NA - Not analyzed.

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

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

TABLE 6

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

Sample ID	Date	TPHg ^(a) (ppmv)	Benzene ^(a) (ppmv)	Toluene ^(a) (ppmv)	Ethylbenzene ^(a) (ppmv)	Xylenes ^(a) (ppmv)	MTBE ^(a) (ppmv)	Methane ^(b) (%)	Carbon Dioxide ^(b) (%)	Carbon Monoxide ^(b) (%)	Oxygen ^(b) (%)	Nitrogen ^(b) (%)
SVE-Influent-0	6/29/10	5,300	16	20	45	110	75	-- ^(c)	--	--	--	--
SVE-Influent-1	6/29/10	4,700	15	12	36	90	58	0.58	3.6	ND<0.5 ^(d)	16.4	79.4
SVE-Influent	6/30/10	3,200	12	20	30	76	60	--	--	--	--	--
SVE-Influent	7/1/10	3,400	12	22	34	84	68	ND<0.5	4.0	ND<0.5	15.9	80.1
SVE-Influent	7/6/10	4,000	9.4	24	36	92	87	ND<0.5	4.3	ND<0.5	16.1	79.5
SVE-Influent	7/8/10	7,500	14	25	44	110	87	ND<0.5	5.3	ND<0.5	13.5	81.0
SVE-Influent	7/14/10	4,200	7.0	22	29	82	50	ND<0.5	5.5	ND<0.5	15.5	78.9
SVE-Influent	7/28/10	3,000	3.5	15	20	64	34	ND<0.5	4.0	ND<0.5	17.4	78.6
SVE-Manifold	8/5/10	4,800	4.4	12	20	66	28	ND<0.5	5.3	ND<0.5	12.1	82.4
SVE-Manifold	8/18/10	4,300	4.3	12	19	72	29	ND<0.5	5.2	ND<0.5	13.2	81.5
SVE-Manifold	9/7/10	1,100	2.2	6.2	4.8	26	10	ND<0.5	4.1	ND<0.5	17.6	78.3
SVE-Manifold	9/16/10	1,600	3.2	8.3	7.6	44	13	ND<0.5	4.0	ND<0.5	17.6	78.4
SVE-Manifold	9/29/10	1,800	2.8	5.6	6.1	34	12	ND<0.5	3.6	ND<0.5	15.4	81.0
SVE-Manifold	10/7/10	2,100	6.1	8.8	7.3	36	11	ND<0.5	3.6	ND<0.5	18.1	78.2
SVE-Manifold	10/13/10	2,100	7.8	10	6.1	32	8.9	ND<0.5	3.4	ND<0.5	16.8	79.7
SVE-Manifold	12/8/10	2,500	2.6	6.4	4.8	28	5.4	ND<0.5	4.7	ND<0.5	23.8	71.4
SVE-Manifold	12/14/10	1,700	2.1	5.4	5.2	30	4.9	ND<0.5	4.1	ND<0.5	18.3	77.6
SVE-Manifold	12/21/10	640	0.91	4.1	3.9	26	3.8	ND<0.5	2.2	ND<0.5	20.1	77.7
SVE-Manifold	12/29/10	150	ND<0.05	ND<0.05	ND<0.05	0.09	ND<0.05	ND<0.5	2.3	ND<0.5	19.2	78.4
SVE-Manifold	1/12/11	280	ND<0.05	ND<0.05	ND<0.05	0.09	--	ND<0.5	3.5	ND<0.5	18.5	77.9
SVE-Manifold	3/4/11	620	ND<0.1	ND<0.09	ND<0.08	0.1	--	ND<0.5	5.1	ND<0.5	46.6	48.3
SVE-Manifold	3/9/11	440	ND<0.1	ND<0.09	ND<0.08	ND<0.08	ND<0.1	ND<0.5	4.2	ND<0.5	24.6	71.2
SVE-Manifold	3/30/11	5.2	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	3.3	ND<0.5	22.9	73.8
SVE-Manifold	4/19/11	38	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.6	ND<0.5	18.9	76.5
SVE-Manifold	4/28/11	150	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.8	ND<0.5	17.5	77.6
SVE-Manifold	5/12/11	280	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.7	ND<0.5	17.2	78.1

TABLE 6

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

Sample ID	Date	TPHg ^(a) (ppmv)	Benzene ^(a) (ppmv)	Toluene ^(a) (ppmv)	Ethylbenzene ^(a) (ppmv)	Xylenes ^(a) (ppmv)	MTBE ^(a) (ppmv)	Methane ^(b) (%)	Carbon Dioxide ^(b) (%)	Carbon Monoxide ^(b) (%)	Oxygen ^(b) (%)	Nitrogen ^(b) (%)
SVE-Manifold	5/25/11	330	0.15	0.13	ND<0.05	0.10	ND<0.1	ND<0.5	5.1	ND<0.5	16.4	78.5
SVE-Manifold	6/8/11	340	0.082	ND<0.05	ND<0.05	0.084	ND<0.1	ND<0.5	4.5	ND<0.5	15.9	79.6
SVE-Manifold	6/16/11	370	0.12	0.052	0.059	0.15	ND<0.1	ND<0.5	5.3	ND<0.5	15.0	79.7
SVE-Manifold	6/16/11	360	0.19	ND<0.07	ND<0.06	0.13	ND<0.1	ND<0.5	5.3	ND<0.5	15.0	79.7
SVE-Manifold	6/16/11	370	0.20	0.083	0.056	0.18	ND<0.1	ND<0.5	4.8	ND<0.5	15.6	79.6
SVE-Manifold	6/27/11	310	0.22	0.11	ND<0.05	0.18	ND<0.1	ND<0.5	4.7	ND<0.5	16.5	78.9
SVE-Manifold	7/7/11	130	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.5	ND<0.5	18.3	77.2
SVE-Manifold	7/13/11	78	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.9	ND<0.5	18.4	76.7
SVE-Manifold	7/27/11	88	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.4	ND<0.5	19.0	76.6
SVE-Manifold	8/9/11	87	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.2	ND<0.5	19.6	76.2
SVE-Manifold	8/23/11	92	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.3	ND<0.5	19.7	76.0
SVE-Manifold	9/1/11	140	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	4.2	ND<0.5	19.5	76.3
SVE-Manifold	9/1/11	310	0.086	0.29	0.14	1.5	ND<0.1	ND<0.5	3.6	ND<0.5	22.9	73.5
SVE-Manifold	9/15/11	310	0.32	1.2	0.16	4.3	ND<0.1	ND<0.5	2.8	ND<0.5	20.1	77.1
SVE-Manifold	9/27/11	360	0.24	0.94	0.16	3.4	ND<0.1	ND<0.5	2.7	ND<0.5	20.3	77.1
SVE-Manifold	10/20/11	130	ND<0.05	0.15	0.085	1.3	0.11	ND<0.5	2.7	ND<0.5	21.8	75.5
SVE-Catox Influent ^(e)	11/10/11	110	ND<0.05	0.10	ND<0.05	0.83	ND<0.1	ND<0.5	2.7	ND<0.5	21.3	76.1
SVE-Manifold	11/21/11	190	ND<0.05	0.071	ND<0.05	0.75	0.10	ND<0.5	2.7	ND<0.5	20.4	76.9
SVE-Manifold	12/7/11	170	ND<0.05	ND<0.05	ND<0.05	0.42	ND<0.1	ND<0.5	2.5	ND<0.5	20.8	76.7
SVE-Manifold	12/19/11	250	ND<0.05	ND<0.05	ND<0.05	0.57	0.12	ND<0.5	2.6	ND<0.5	21.6	75.7
SVE-Manifold	1/5/12	450	0.082	0.063	0.063	1.1	0.23	ND<0.5	2.5	ND<0.5	21.5	76.0
SVE-Manifold	1/23/12	490	0.074	0.051	0.062	1.0	0.36	ND<0.5	2.0	ND<0.5	22.0	75.9
SVE-Manifold	1/26/12	530	0.067	ND<0.05	0.052	0.87	0.34	ND<0.5	1.8	ND<0.5	21.6	76.7
SVE-Manifold	1/26/12	800	0.78	2.0	0.35	3.6	ND<0.1	ND<0.5	1.6	ND<0.5	22.3	76.1
SVE-Manifold	2/2/12	440	0.90	1.9	0.16	4.4	ND<0.1	ND<0.5	0.99	ND<0.5	22.6	76.4
SVE-Manifold	2/16/12	430	0.29	1.2	0.16	4.0	ND<0.1	ND<0.5	0.93	ND<0.5	22.5	76.5

TABLE 6

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

Sample ID	Date	TPHg ^(a) (ppmv)	Benzene ^(a) (ppmv)	Toluene ^(a) (ppmv)	Ethylbenzene ^(a) (ppmv)	Xylenes ^(a) (ppmv)	MTBE ^(a) (ppmv)	Methane ^(b) (%)	Carbon Dioxide ^(b) (%)	Carbon Monoxide ^(b) (%)	Oxygen ^(b) (%)	Nitrogen ^(b) (%)
SVE-Manifold	2/28/12	380	0.11	0.60	0.10	2.7	ND<0.07	ND<0.5	0.96	ND<0.5	22.4	76.6
SVE-Manifold	3/14/12	250	0.056	0.48	0.086	1.8	ND<0.1	ND<0.5	0.82	ND<0.5	22.6	76.6
SVE-Manifold	4/4/12	74	0.060	0.49	0.089	1.6	ND<0.1	ND<0.5	0.51	ND<0.5	21.8	77.7
SVE-Manifold	4/17/12	110	0.19	1.5	0.24	3.9	ND<0.1	ND<0.5	0.60	ND<0.5	21.5	77.9
SVE-Manifold	5/16/12	43	0.056	0.34	0.063	1.5	ND<0.1	ND<0.5	0.55	ND<0.5	21.4	78.0
SVE-Manifold	6/19/12	37	ND<0.05	0.13	ND<0.05	0.99	ND<0.1	ND<0.5	ND<0.5	ND<0.5	21.6	77.9
SVE-Manifold	7/17/12	64	ND<0.05	ND<0.05	ND<0.05	0.56	ND<0.1	ND<0.5	0.54	ND<0.5	21.1	78.3
SVE-Manifold	7/17/12	59	ND<0.05	ND<0.05	ND<0.05	0.39	ND<0.1	ND<0.5	ND<0.5	ND<0.5	21.3	78.4
SVE-Manifold	8/16/12	64	ND<0.05	ND<0.05	ND<0.05	0.29	ND<0.1	ND<0.5	0.82	ND<0.5	21.1	78.1
SVE-Manifold	8/23/12	72	ND<0.05	ND<0.05	ND<0.05	0.27	ND<0.1	ND<0.5	0.77	ND<0.5	21.3	78.0
SVE-Manifold	8/23/12	81	ND<0.05	ND<0.05	ND<0.05	0.15	ND<0.1	ND<0.5	0.86	ND<0.5	21.1	78.0
SVE-Manifold	9/13/12	79	ND<0.05	ND<0.05	ND<0.05	0.09	ND<0.1	ND<0.5	0.85	ND<0.5	21.1	78.0
SVE-Manifold	10/11/12	45	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	0.84	ND<0.5	21.2	78.0
SVE-Manifold	10/25/12	26	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	0.51	ND<0.5	21.5	78.0
SVE-Manifold	11/1/12	37	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.1	ND<0.5	0.94	ND<0.5	21.3	77.7

- (a) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether (MTBE), analyzed by EPA Method 8260; reported in parts per million by volume (ppmv).
- (b) Fixed gases analyzed by Method ASTM D-1946; reported in percent (%).
- (c) "--" - Not analyzed.
- (d) ND - Not detected at the reporting limit listed.
- (e) SVE manifold influent vapor sample damaged during shipping to lab. Results of total well inlet and recirculation air used for data analysis.

TABLE 7

SVE SYSTEM PARAMETERS
TESORO - LIVERMORE, 67076

Influent Sample Number	Sample Date	Hours of Operation (hours)	Days of Operation (Days)	TPHg Concentration (ppmv)	Differential Pressure (in. wc)	Temp (°F)	Vacuum (in. Hg)	Standard Flow (scfm)	Volatilization	Biological	
									Mass Removal Rate (lbs/day)	Concentration of Carbon Dioxide (%)	Mass Removal Rate (lbs/day)
1	6/29/10	8.7	0.4	5,300	-- ^(a)	--	1.5	63 ^(b)	124	--	NA ^(c)
2	6/29/10	13	0.5	4,700	--	--	1.3	63 ^(b)	110	3.6	117
3	6/30/10	31	1	3,200	0.03	71	1.5	63 ^(b)	75	--	NA
4	7/1/10	56	2	3,400	0.05	72	1.5	63 ^(b)	80	4.0	130
5	7/6/10	175	7	4,000	0.04	69	1.5	63 ^(b)	94	4.3	139
6	7/8/10	200	8	7,500	0.03	73	1.5	63 ^(b)	176	5.3	171
7	7/14/10	343	14	4,200	1.25	90	1.5	81	127	5.5	230
8	7/28/10	625	26	3,000	0.62	68	1.5	59	65	4.0	122
9	8/5/10	793	33	4,800	0.73	68	1.0	65	115	5.3	177
10	8/18/10	985	41	4,300	0.64	71	1.0	60	97	5.2	162
11	9/7/10	1,309	55	1,100	2.05	75	1.6	106	43	4.1	222
12	9/16/10	1,473	61	1,600	0.81	76	1.4	67	40	4.0	136
13	9/29/10	1,628	68	1,800	0.08	89	1.5	21	14	3.6	38
14	10/7/10	1,821	76	2,100	0.26	69	1.5	38	30	3.6	70
15	10/13/10	1,866	78	2,100	0.09	76	3.3	21	16	3.4	36
16	12/8/10	1,912	80	2,500	1.02	53	2.4	74	69	4.7	178
17	12/14/10	2,051	85	1,700	1.45	58	2.1	89	56	4.1	187
18	12/21/10	2,221	93	640	0.78	59	2.1	65	15	2.2	72
19	12/29/10 ^(d)	2,412	101	150	0.35	49	4.1	41	2.3	2.3	48
20	1/12/11	2,748	115	280	--	54	4.2	14 ^(e)	1.5	3.5	26
21	3/4/11	2,922	122	620	--	63	5.9	15	3.5	5.1	40
22	3/9/11	3,040	127	440	--	68	2.4	13	2.1	4.2	28
23	3/30/11	3,539	147	5.2	--	55	2.4	12	0.02	3.3	20
24	4/19/11	4,020	168	38	--	63	2.3	12	0.2	4.6	29
25	4/28/11	4,238	177	150	--	65	2.3	15	0.9	4.8	38
26	5/12/11	4,570	190	280	--	60	2.4	14	1.5	4.7	34

TABLE 7

SVE SYSTEM PARAMETERS
TESORO - LIVERMORE, 67076

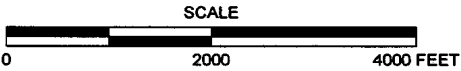
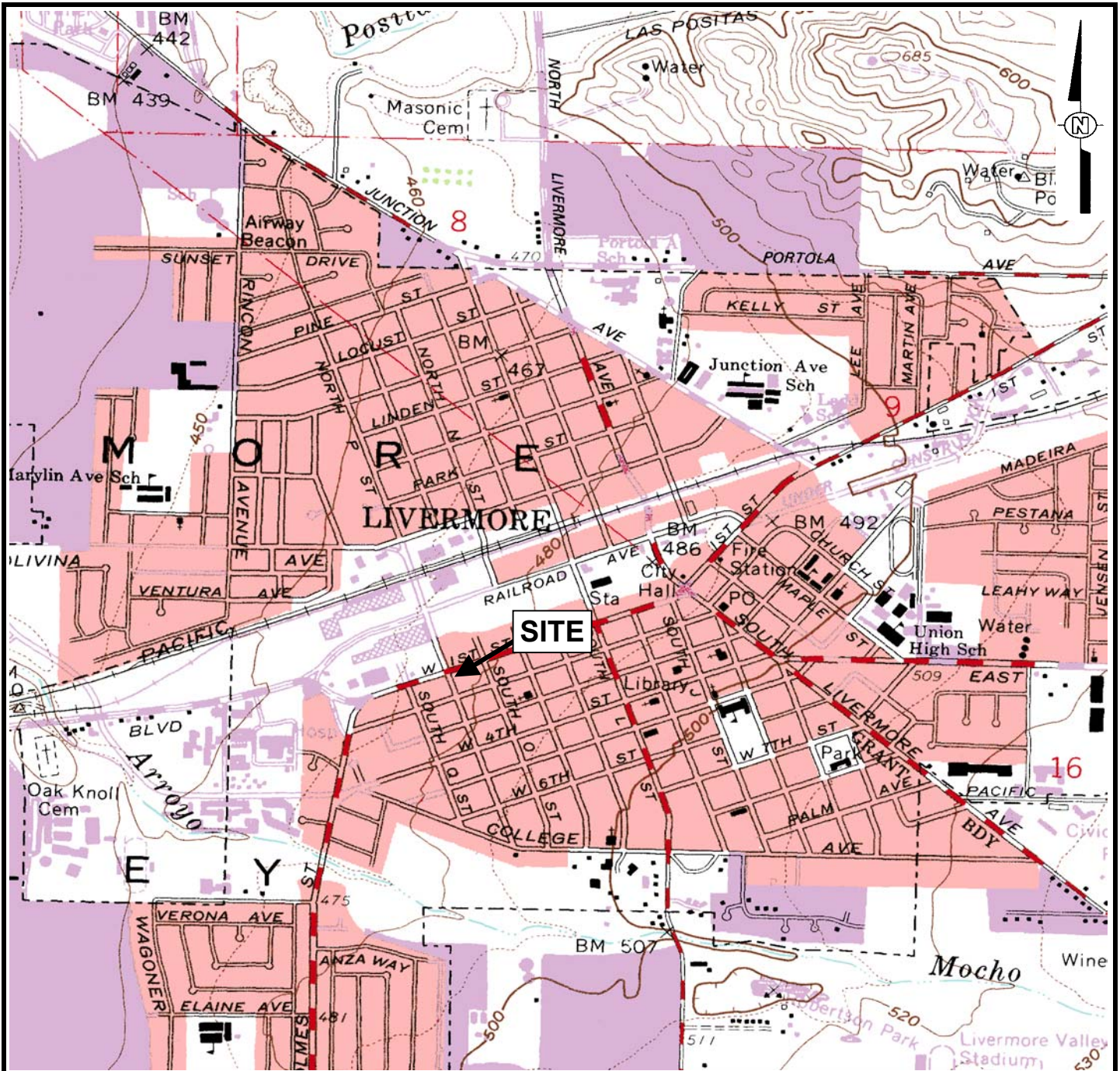
Influent Sample Number	Sample Date	Hours of Operation (hours)	Days of Operation (Days)	TPHg Concentration (ppmv)	Differential Pressure (in. wc)	Temp (°F)	Vacuum (in. Hg)	Standard Flow (scfm)	Volatilization	Biological	
									Mass Removal Rate (lbs/day)	Concentration of Carbon Dioxide (%)	Mass Removal Rate (lbs/day)
27	5/25/11	4,885	204	330	--	66	2.4	11	1.4	5.1	29
28	6/8/11	5,219	217	340	--	64	2.4	9	1.2	4.5	21
29	6/16/11	5,410	225	370	--	68	2.4	9	1.2	5.3	24
30	6/16/11	5,412	225	360	--	73	4.1	15	2.0	5.3	42
31	6/16/11	5,416	226	370	--	83	4.0	13	1.7	4.8	32
32	6/27/11	5,676	237	310	--	71	4.0	16	1.8	4.7	38
33	7/7/11	5,918	247	130	--	91	4.0	15	0.7	4.5	35
34	7/13/11	6,062	253	78	--	72	4.1	16	0.5	4.9	41
35	7/27/11	6,395	266	88	--	74	4.0	16	0.5	4.4	35
36	8/9/11	6,709	280	87	--	75	4.0	16	0.5	4.2	35
37	8/23/11	7,015	292	92	--	83	4.0	15	0.5	4.3	33
38	9/1/11	7,227	301	140	--	66	4.0	20	1.0	4.2	43
39	9/1/11	7,231	301	310	--	74	3.6	14	1.6	3.6	25
40	9/15/11	7,566	315	310	--	70	3.6	17	2.0	2.8	25
41	9/27/11	7,857	327	360	--	81	3.5	13	1.7	2.7	17
42	10/20/11	8,379	349	130	--	74	3.6	20	1.0	2.7	28
43	11/10/11	8,867	369	110	--	60	3.7	11	0.5	2.7	16
44	11/21/11	9,131	380	190	--	57	3.7	17	1.2	2.7	23
45	12/7/11	9,513	396	170	--	54	3.7	16	1.0	2.5	21
46	12/19/11	9,798	408	250	--	51	3.7	--	--	2.6	26
47	1/5/12	10,208	425	450	--	53	3.6	22	3.6	2.5	28
48	1/23/12	10,638	443	490	--	51	3.4	33	5.9	2.0	34
49	1/26/12	10,710	446	530	--	55	3.6	30	6.0	1.8	27
50	1/26/12	10,711	446	800	--	56	3.6	52	15	1.6	43
51	2/2/12	10,878	453	440	--	52	3.6	51	8.4	1.0	25
52	2/16/12	11,215	467	430	--	56	3.5	54	8.6	0.9	25

TABLE 7

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

Influent Sample Number	Sample Date	Hours of Operation (hours)	Days of Operation (Days)	TPHg Concentration (ppmv)	Differential Pressure (in. wc)	Temp (°F)	Vacuum (in. Hg)	Standard Flow (scfm)	Volatilization	Biological	
									Mass Removal Rate (lbs/day)	Concentration of Carbon Dioxide (%)	Mass Removal Rate (lbs/day)
53	2/28/12	11,501	479	380	--	56	3.3	54	7.6	1.0	26
54	3/14/12	11,862	494	250	--	60	3.4	51	4.7	0.8	21
55	4/4/12	12,365	515	74	--	57	3.5	50	1.4	0.5	12
56	4/17/12	12,676	528	110	--	60	3.7	26	1.1	0.6	7.7
57	5/16/12	13,378	557	43	--	74	3.4	38	0.6	0.6	10
58	6/19/12	14,189	591	37	--	76	3.2	38	0.5	0.3	4.2
59	7/17/12	14,861	619	64	--	74	3.1	43	1.0	0.5	11
60	7/17/12	14,863	619	59	--	74	3.7	69	1.5	0.3	7.6
61	8/16/12	15,582	649	64	--	80	3.8	59	1.4	0.8	24
62	8/23/12	15,745	656	72	--	74	3.8	56	1.5	0.8	21
63	8/23/12	15,747	656	81	--	73	4.1	49	1.5	0.9	22
64	9/13/12	16,252	677	79	--	75	4.1	50	1.5	0.9	21
65	10/11/12	16,925	705	45	--	62	4.1	56	0.9	0.8	23
66	10/25/12	17,260	719	26	--	66	3.1	57	0.5	0.5	14
67	11/1/12	17,310	721	37	--	66	4.0	55	0.8	0.9	26

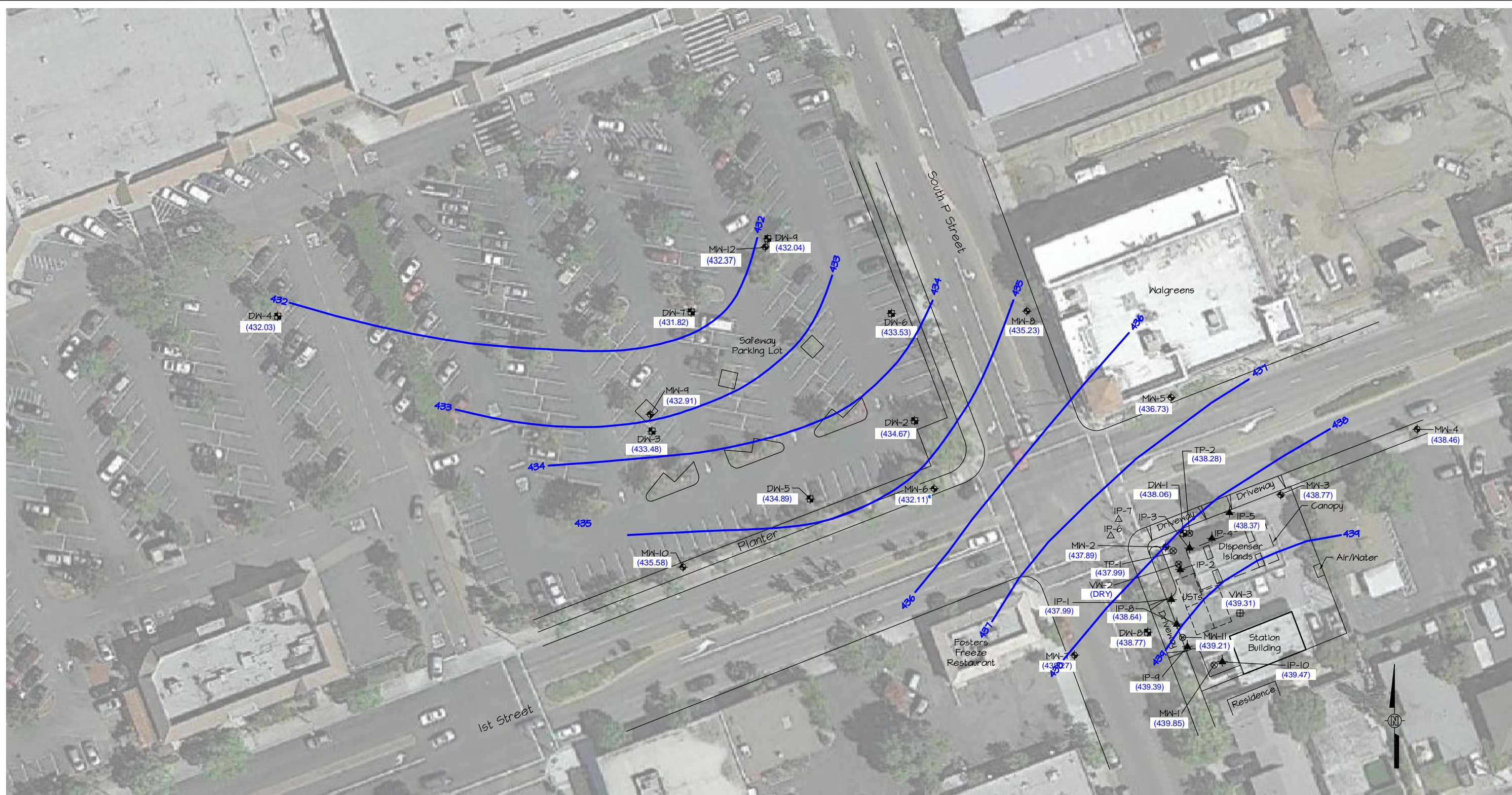
- (a) "--" - Not sampled, analyzed, or collected.
- (b) An average flow rate was used due to inaccurate system parameter readings.
- (c) NA - Not applicable.
- (d) Only operating on well VW-2 due to high water levels.
- (e) Flow measurements taken with a TSI anemometer for better accuracy at low flow rates.



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

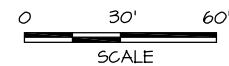
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
SITE LOCATION MAP			
PROJECT NO. 01LV	DRAWN BY MP	CHECKED BY MP	APPROVED BY JG
FILE NO. Site Map.xls		FIGURE 1	

01LV11B-20423.dwg
3/2/2014 6:22PM



Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VN-2 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well
- (DRY) Groundwater Elevation (Feet, MSL) Measured 7 November 2013
- * Groundwater Elevation Not Used for Contours
- Groundwater Contour



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
23	18	MY	2/15/13	Fourth Quarter 2012 Monitoring Report
	19	MY	5/15/13	First Quarter 2013 Monitoring Report
	20	MY	8/15/13	Second Quarter 2013 Monitoring Report
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report	

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
GROUNDWATER ELEVATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20423.DWG		FIGURE 2	

2/20/2014 10:33AM 01LV11B-20523.dwg



Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VN-3 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well

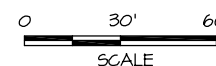
(ND<0.5/ND<0.5) Previous Quarter/Current Quarter Total Petroleum Hydrocarbons as Gasoline (TPHg) Results in µg/L

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

ND Not Detected at Laboratory Reporting Limit

NS Not Sampled

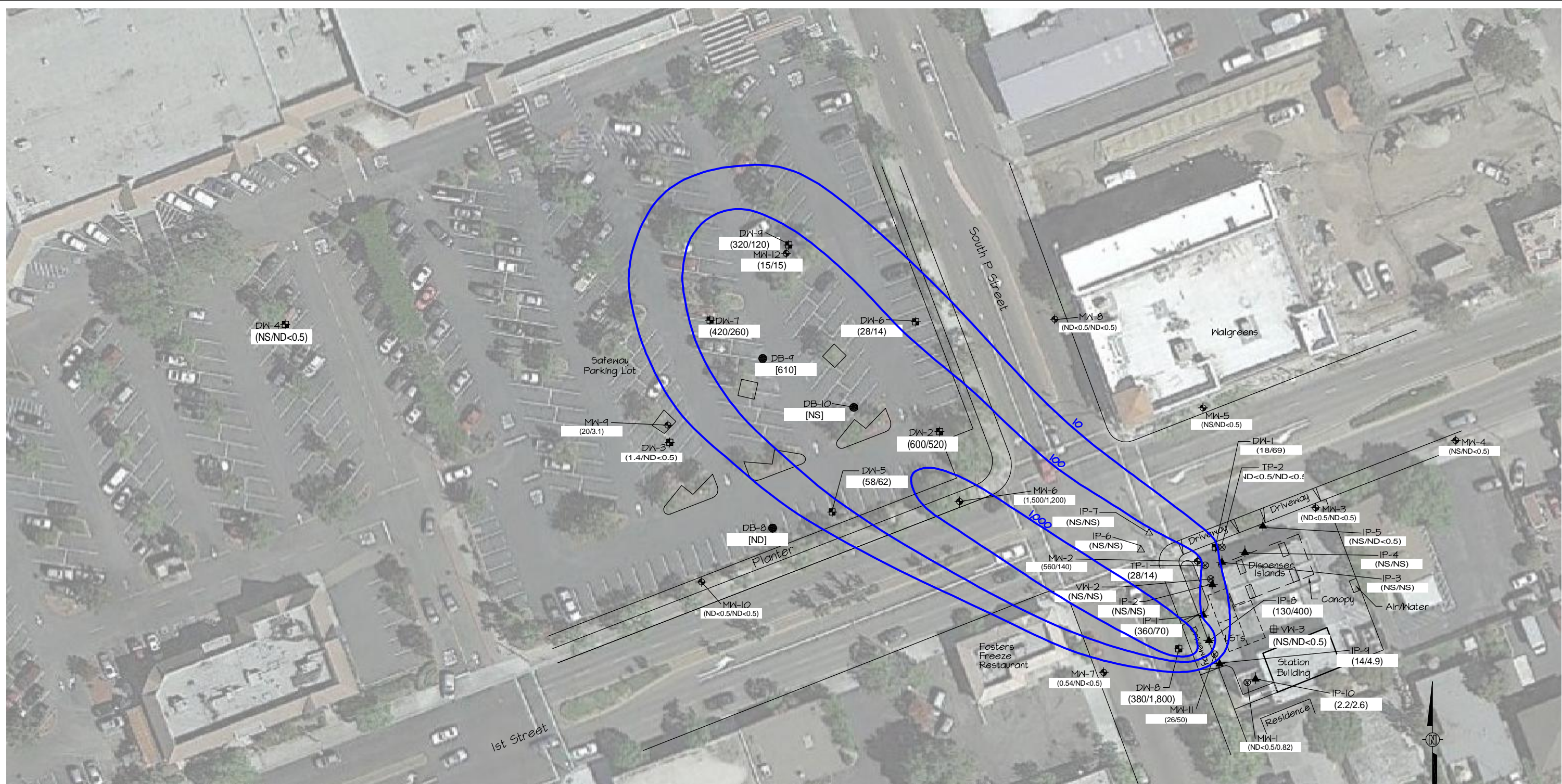
DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample Benzene Results in µg/L
[ND]



REVISION	NO.	BY	DATE	REVISIONS
23	19	MY	5/15/13	First Quarter 2013 Monitoring Report
	20	MY	8/15/13	Second Quarter 2013 Monitoring Report
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
TPHg CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20523.DWG		FIGURE 3	

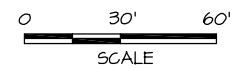
3/2/2014 6:27PM 01LV11B-20623.dwg



Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VN-3 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well

- (ND<0.5/ND<0.5) Previous Quarter/Current Quarter Benzene Results in µg/L
- 1,000 Benzene Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected at Laboratory Reporting Limit
- NS Not Sampled
- DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample Benzene Results in µg/L
- [ND] Not Detected



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
23	19	MY	5/15/13	First Quarter 2013 Monitoring Report
	20	MY	8/15/13	Second Quarter 2013 Monitoring Report
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report

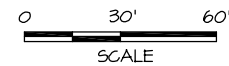
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
BENZENE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20623.DWG		FIGURE 4	

2/20/2014 10:52AM 01LV11B-20723.dwg



- Legend**
- MW-7 Groundwater Monitoring Well
 - DW-1 Deep Groundwater Monitoring Well
 - IP-1 Injection Well
 - IP-6 Angled Injection Well Screen
 - VN-3 Vapor Extraction Well
 - TP-1 Monitoring Well/Vapor Extraction Well

- (ND<0.5/ND<0.5) Previous Quarter/Current Quarter Methyl Tert-Butyl Ether (MTBE) Results in $\mu\text{g/L}$
- 100 MTBE Concentration Contour ($\mu\text{g/L}$), Queried Where Uncertain
- ND Not Detected at Laboratory Reporting Limit
- NS Not Sampled
- DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample MTBE Results in $\mu\text{g/L}$
- [ND]

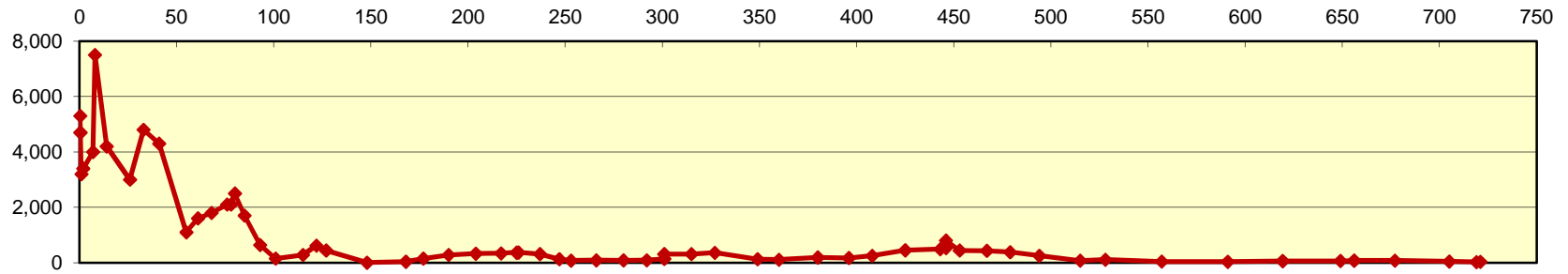


REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
23	19	MY	5/15/13	First Quarter 2013 Monitoring Report
	20	MY	8/15/13	Second Quarter 2013 Monitoring Report
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
MTBE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20723.DWG		FIGURE 5	

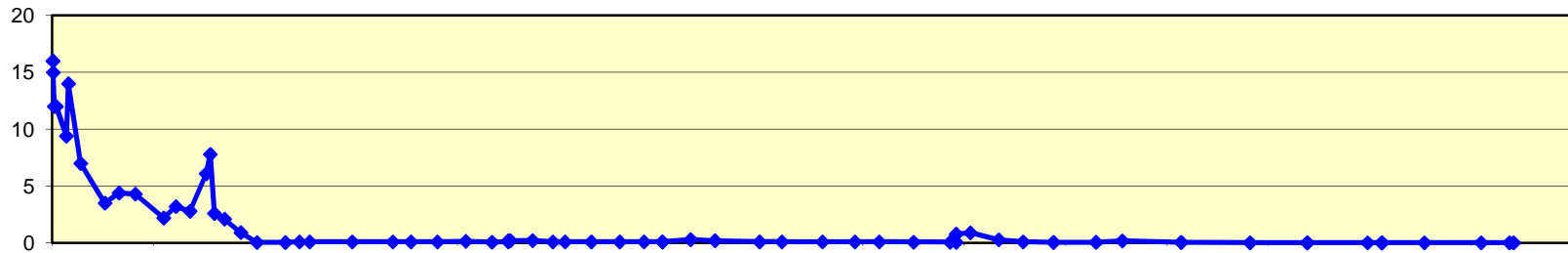
TPHg

Days of Operation

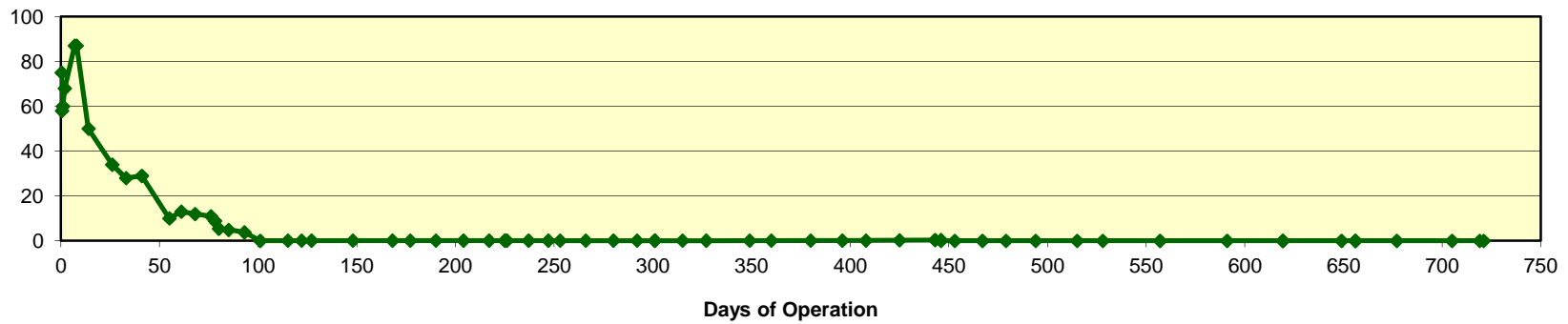


Benzene

Concentration (ppmv)

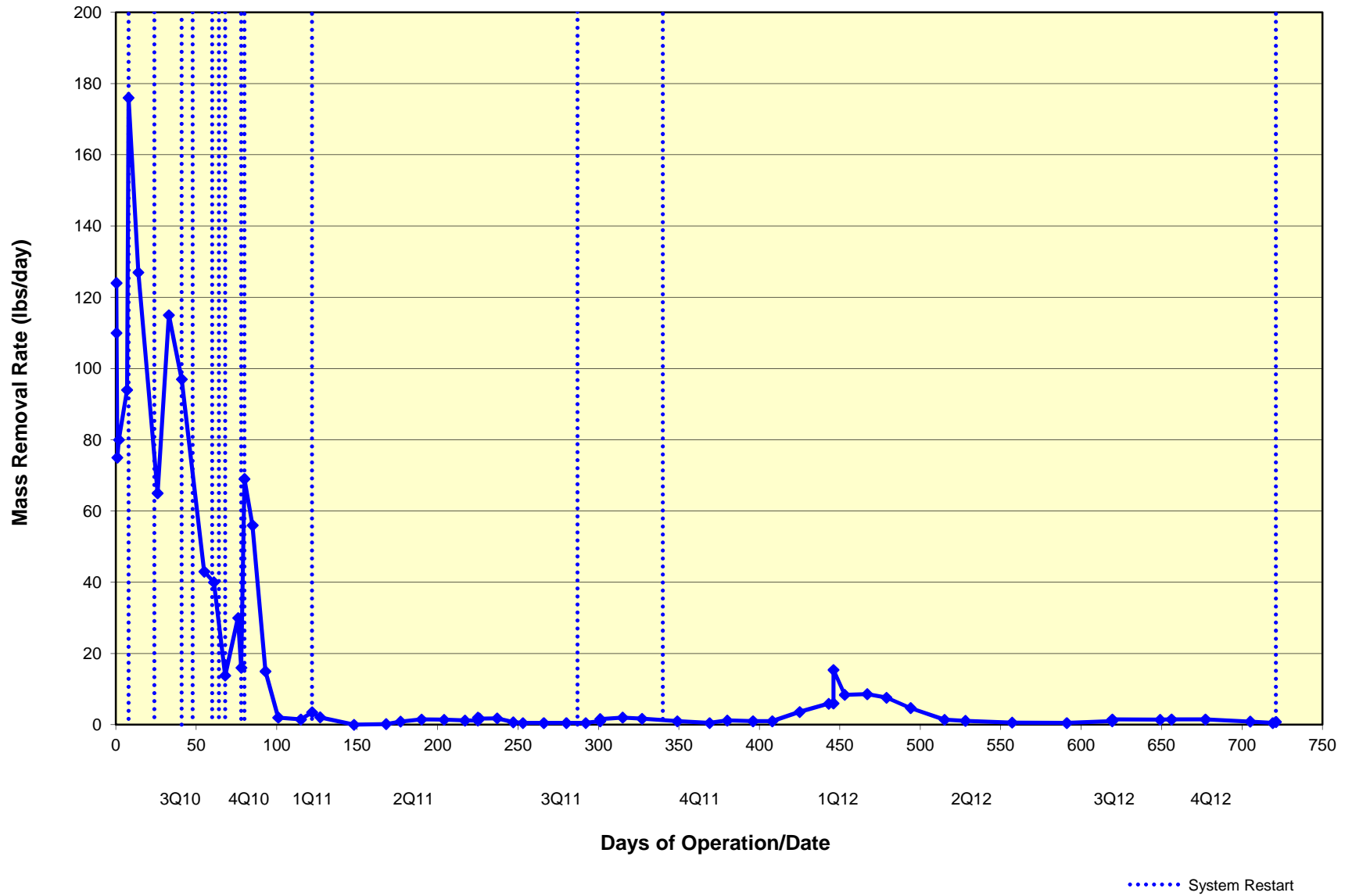


MTBE

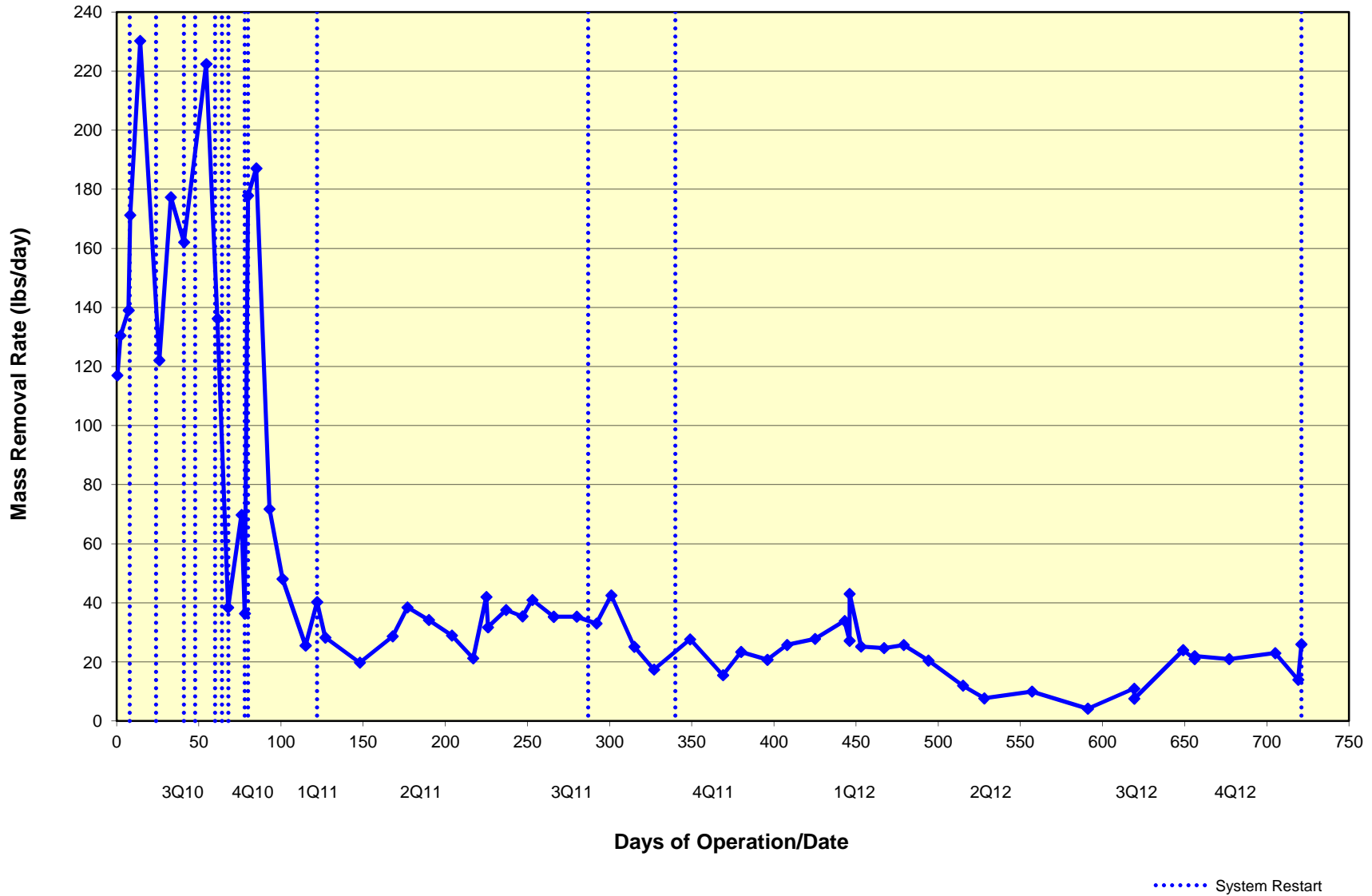


—◆— TPHg —◆— Benzene —◆— MTBE

HYDROCARBON MASS REMOVED BY VOLATILIZATION = 7,950 lbs



HYDROCARBON MASS REMOVED BY BIODEGRADATION = 30,300 lbs



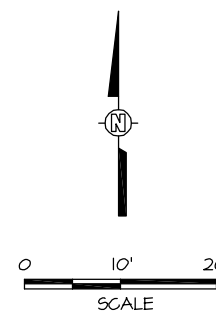


May 2010



November 2013

- Legend
- MW-1 Groundwater Monitoring Well
 - DW-1 Deep Groundwater Monitoring Well
 - IP-1 Injection Well
 - IP-6 Angled Injection Well Screen
 - VW-3 Vapor Extraction Well (Not Connected to System)
 - TP-1 Monitoring Well/Vapor Extraction Well
 - MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
 - 1000 TPHg Concentration Contour (µg/L), Queried Where Uncertain



REVISION	REVISIONS		
	NO.	BY	DATE
0	MY	5/15/13	First Quarter 2013 Monitoring Report
1	MY	10/15/13	Second Quarter 2013 Monitoring Report
2	MY	12/28/13	Third Quarter 2013 Monitoring Report
3	MY	3/15/14	Fourth Quarter 2013 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE TPHg CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILVIB2303.DWG		FIGURE 9A	



May 2010



November 2013

Legend

- MW-1 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well (Not Connected to System)
- TP-1 Monitoring Well/Vapor Extraction Well
- MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
- Benzene Concentration Contour (µg/L), Queried Where Uncertain

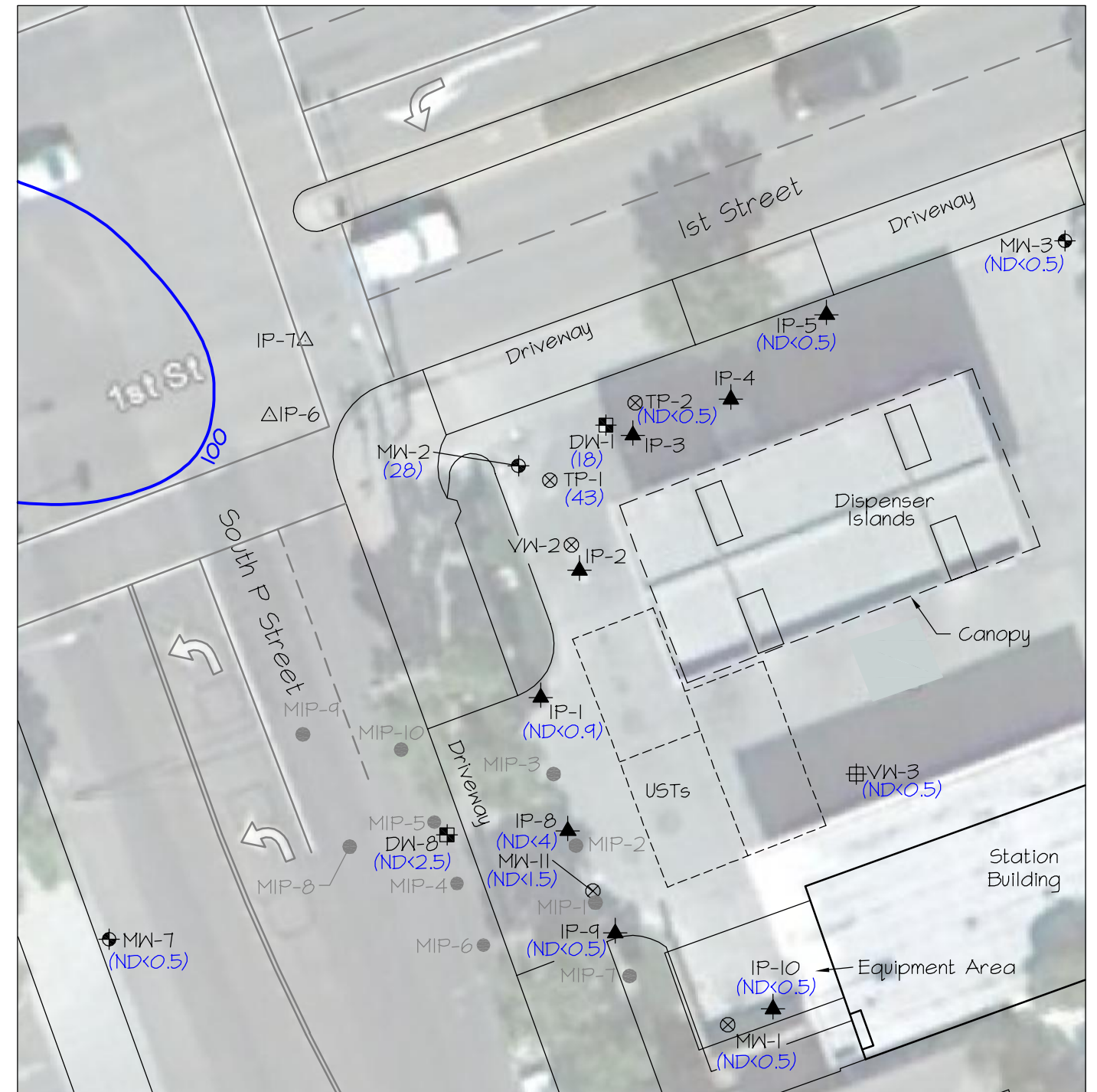


REVISION	REVISIONS		
	NO.	BY	DATE
3	0	MY	5/15/13
	1	MY	10/15/13
	2	MY	12/28/13
	3	MY	3/15/14

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE BENZENE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILVIIIB2403.DWG		FIGURE 9B	



May 2010



November 2013

Legend

- MW-1 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well (Not Connected to System)
- TP-1 Monitoring Well/Vapor Extraction Well
- MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
- MTBE Concentration Contour ($\mu\text{g/L}$), Queried Where Uncertain



REVISION	REVISIONS		
	NO.	BY	DATE
3	0	MY	5/15/13
	1	MY	10/15/13
	2	MY	12/28/13
	3	MY	3/15/14

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE MTBE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILVIB2503.DWG		FIGURE 9C	

01LV11B1602.dwg 3/4/2014 10:41AM



Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-2 Vapor Extraction Well
- TP-2 Monitoring Well/Vapor Extraction Well

- DB-8 Soil Boring
- IP-2 Expanded ISCO Pilot Test Onsite Injection Well
- IP-11 Offsite Injection Well Installed April 2013

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
EXPANDED ISCO PILOT TEST INJECTION WELLS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B1601.DWG	FIGURE 10		

REVISION	REVISIONS		
	NO.	BY	DATE
0	MY	10/1/12	Work Plan for Expanded ISCO Pilot Test
1	MY	2/19/13	Work Plan for Expanded ISCO Pilot Test
2	MY	3/15/14	Fourth Quarter 2013 Monitoring Report

ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

ATTACHMENT A

GROUNDWATER SAMPLING QA/QC PROCEDURES

Monitoring Plan

In accordance with the California State Water Resources Control Board's (SWRCB) Resolution No. 2009-0042, referenced in Alameda County Environmental Health's 23 July 2009 letter to Tesoro Environmental Resources Company (Tesoro), Arctos Environmental (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 groundwater remediation system according to the following groundwater monitoring plan:

Well Designation	Location	Sampling Frequency
MW-1 and MW-3	Upgradient	Quarterly
MW-2, MW-11, and DW-1	Source area	
MW-6, MW-12, DW-2, DW-3, DW-5, DW-6, DW-7, DW-8, and DW-9	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, a State-certified laboratory in Davis, California, for total petroleum hydrocarbons as gasoline; benzene, toluene, ethylbenzene, and total xylenes; methyl tert-butyl ether; and other oxygenates using Environmental Protection Agency (EPA) Method 8260B.

Arctos, as Tesoro's Authorized Responsible Party for the site, also electronically submitted the groundwater monitoring results to the SWRCB. The data were submitted in the State-mandated Electronic Data Format, in accordance with Assembly Bill 2886 requirements for underground storage tank 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 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 quality assurance/quality control (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 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 (HSP) 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 this quarter are in Attachment I.

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 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



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

86467

Project Name: Tesoro - Livermore #67076

Job Number: PI-131107

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff	Site Address: 1619 1st St, Livermore	Confluence PM: Jason Brown
Address: 2795 2nd St, Suite 300, Davis CA 95616	California Global ID No.: TO600101410	Phone / Fax: 916-760-7641 / 916-473-8617
Contact: Troy Turpen	Include EDF w/ Report: <u>Yes</u> No	Confluence Log Code: CESS
Phone/ Fax: 530-297-4800 x.111	Consultant / PM: Orion / Mike Purchase	Report to: Mike Purchase
	Phone / Fax: 510-525-2180 / 510-525-2392	Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis										Notes and Comments				
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260) <u>ATSE</u>	Oxygenates(7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)					
DW-9	1140	11-7-13		L		12	6							X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-7	1100													X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-6	1330													X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-2	1300													X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-6	1230													X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-12	1200													X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-9	1120													X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-3	1050													X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-10	1020													X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-5	1000													X	X	X	X	X	X	X	X	X	X	X	X	X	

01
02
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04
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08
09
10

Sampler's Name: <u>Scott Deslani</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Confluence Environmental	<u>[Signature]</u>	11-7-13	1530			
Shipment Date:				<u>[Signature]</u>	11-7-13	1540
Shipment Method:						

Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

86467

Project Name: Tesoro - Livermore #67076
 Job Number: PI-131107
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff			Site Address: 1619 1st St, Livermore			Confluence PM: Jason Brown																		
Address: 2795 2nd St, Suite 300, Davis CA 95616			California Global ID No.: TQ600101410			Phone / Fax: 916-760-7641 / 916-473-8617																		
Contact: Troy Turpen			Include EDF w/ Report: <u>Yes</u> No			Confluence Log Code: CESC																		
Phone/ Fax: 530-297-4800 x.111			Consultant / PM: Orion / Mike Purchase			Report to: Mike Purchase																		
			Phone / Fax: 510-525-2180 / 510-525-2392			Invoice to: Mike Purchase																		
Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis								Notes and Comments			
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates(7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)		Carbon Dioxide (RSK 175M)	TDS (2540C)	
DW-4	0935	11-7-13	X			3								X	X	X	X	X	X	X	X	X		
M6-8	1500	11-7-13	X			12	6				1	3		X	X	X	X	X	X	X	X	X	X	
Sampler's Name: <u>Mark Peterson</u>			Relinquished By / Affiliation: <u>[Signature]</u>					Date: 11-7-13	Time: 1530	Accepted By / Affiliation: <u>[Signature]</u>					Date: 11-7-13	Time: 1540								
Sampler's Company: Confluence Environmental																								
Shipment Date:																								
Shipment Method:																								
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field																								

4
2
1

Equipment Calibration Log

Equipment make/model	Equipment ID/serial number	Date	Time	Calibration Standards	Equipment Reading	Equipment Calibrated	Temp (°C / °F)	Tech init.	Comments
ultrameter II	6202450	11-7-13	0825	Ph 7, 4, 10. amb 1413	7.0 4.0 10.0 1413	Yes Yes	67.9	JP	
Ultrameter	7222370	11/7/13	0830	7 4 10 1413	7.0, 4.0, 10.0 1413	Y Y	68.1 68.1	EM EM	
ultrameter	4112110	11-7-13	1300	Ph 7, 4, 10 amb 1413	7.0, 4.0, 10.0 1413.0	Yes	67.9	AF	

Notes/comments:

Water Level Measurements

Job Number: PI-131107 Date: 11/7/13 Client: Orion

Site: Tesoro Livermore CA

Well I.D.	Time	Dia	Depth to NAPL	Thickness of NAPL	Depth to water (DTW)	Total Depth (measured)	Total Depth (historical)	Ref Point TOC/TOB		
DW-1	0756	4			34.79		61.80	TOC		
DW-2	0821	4			36.94		59.80	}		
DW-3	0807	4			36.85		59.72			
DW-4	0817	4			36.45		70.06			
DW-5	0830	4			36.97		59.80		I.P. ✓	
DW-6	0748	4			38.24		60.15			
DW-7	0758	4			38.25		65.18			
DW-8	0750	4			33.54		64.68			
DW-9	0755	4			37.76		59.65			
IP-1	0753	2			35.07		64.52			
IP-5	0811	2			34.68		64.25			
IP-8	0745	2			34.58		64.52			
IP-9	0748	2			33.96		64.75			
IP-10	0830	2			34.41		63.05			
MW-1	0817	4			34.36		54.26			
MW-2	0758	4			35.09		54.05			
MW-3	0813	4			34.60		52.85			
MW-4	0815	2			35.18		46.69			
MW-5	0825	2			35.94		46.27			
MW-6	0832	2			36.82		47.55			

Purging And Sampling Data Sheet

Job#: P1-131107	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>MW-2</u>	Date: 11/7/13	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>35.09</u>	Total Depth: <u>54.05</u>
Purge equip: <u>ES-diam</u> : Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 12.32 X 3 = 36.97 (Total Purge) 80% = 38.85

Time	Temp (°F)	pH	Cond (ms/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
1315	21.1	8.0	1309	20	530	10.0	13.0	
1318	20.9	7.4	1323	>1000	-36		26.0	
		<u>Dewatered</u>					28.0	
1415	20.2	7.15	1345	235	-43	—	—	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>28.0</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: 11/7/13	Sample time: <u>1415</u> DTW at sample: <u>36.77</u>
Sample ID: <u>MW-2</u> Lab: Kiff	Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-131107	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>MW-11</u>	Date: 11/7/13	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>33.75</u>	Total Depth: <u>40.25</u>
Purge equip: <u>ES - diam.</u> Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume	80% Recovery (TD - DTW X 0.20 + DTW)	

1 Volume = 4.2 X 3 = 12.6 (Total Purge) 80% = 35.05

Time	Temp (°C/°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
1303	20.5	6.85	5233	125	71	10.0	5.0	
		<u>Dewatered</u>					7.0	
1350	20.4	7.40	4638	325	66	—	—	Reaction w/ HCL used

Did well dewater? <u>YES</u> NO	Total volume removed: <u>7.0</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: 11/7/13	Sample time: <u>1350</u> DTW at sample: <u>35.15</u>
Sample ID: <u>MW-11</u> Lab: Kiff	Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

ATTACHMENT C
HISTORICAL WELL AND GROUNDWATER ELEVATIONS

TABLE C-1

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

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

TABLE C-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 (cont.)	6/30/01	36.61	474.29	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		436.05
	12/3/02	36.85		437.44
	3/4/03	33.72		440.57
	6/10/03	31.31		442.98
	9/9/03	35.05		439.24
	12/23/03	30.15		444.14
	3/23/04	26.61		447.68
	5/10/04	30.31		443.98
	8/4/04	34.77		439.52
	11/4/04	33.93		440.36
	1/12/05	27.82		446.47
	5/2/05	24.87		449.42
	7/19/05	29.26		445.03
	11/21/05	31.15		443.14
	2/9/06	26.24		448.05
	5/16/06	24.87		449.42
	8/9/06	31.64		442.65
	11/8/06	31.16		443.13
	2/14/07	30.00		444.29
	5/17/07	33.75		440.54
	8/2/07	40.00		434.29
	11/12/07	48.55		425.74
	2/14/08	34.74		439.55
	5/8/08	36.15		438.14
7/23/08	45.76	428.53		
10/13/08	51.00	423.29		
2/11/09	48.69	425.60		
4/27/09	41.90	432.39		
8/4/09	51.44	422.85		

TABLE C-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 (cont.)	12/8/09	39.87	474.29	434.42
	2/11/10	35.20		439.09
	5/3/10	31.23		443.06
	8/2/10	34.56	474.21 ^(c)	439.65
	11/2/10	37.04		437.17
	2/1/11	32.51		441.70
	4/25/11	27.73		446.48
	8/3/11	31.57		442.64
	10/10/11	33.12		441.09
	1/31/12	36.11		438.10
	5/7/12	36.14		438.07
	8/6/12	37.40		436.81
	11/12/12	37.10		437.11
	2/12/13	30.98		443.23
	4/22/13	33.11		441.10
8/21/13	35.40	438.81		
11/7/13	34.36	439.85		
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		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-2 (cont.)	3/7/97	21.33	472.98	451.65
	6/12/97	29.94		443.04
	9/29/97	34.22		438.76
	12/1/97	35.94		437.04
	3/19/98	20.34		452.64
	5/29/98	22.63		450.35
	9/15/98	32.30		440.68
	11/30/98	36.90		436.08
	1/17/99	30.17		442.81
	6/10/99	29.98		443.00
	9/7/99	31.85		441.13
	12/13/99	33.72		439.26
	3/13/00	26.54		446.44
	6/12/00	28.44		444.54
	11/10/00	31.31		441.67
	12/31/00	32.68		440.30
	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		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-2 (cont.)	5/2/05	25.61	472.98	447.37
	7/19/05	30.11		442.87
	11/21/05	32.04		440.94
	2/9/06	27.11		445.87
	5/17/06	25.18		447.80
	8/9/06	32.69		440.29
	11/8/06	33.21		439.77
	2/14/07	31.27		441.71
	5/17/07	34.40		438.58
	8/2/07	41.23		431.75
	11/12/07	48.22		424.76
	2/14/08	36.31		436.67
	5/8/08	36.70		436.28
	7/23/08	45.78		427.20
	10/13/08	51.30		421.68
	2/11/09	48.90		424.08
	4/27/09	42.62		430.36
	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
	8/2/10	35.34		437.64
	11/2/10	38.15		434.83
	2/1/11	33.40		439.58
	4/25/11	28.49		444.49
	8/3/11	32.40		440.58
	10/10/11	33.51		439.47
	1/31/12	39.52		433.46
5/7/12	36.89	436.09		
8/6/12	40.95	432.03		
11/12/12	39.03	433.95		
2/12/13	32.13	440.85		
4/22/13	34.15	438.83		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-2 (cont.)	6/24/13	35.05	472.98	437.93
	8/21/13	36.05		436.93
	11/7/13	35.09		437.89
MW-3	6/1/93	36.18	473.37	437.19
	6/22/93	37.11		436.26
	10/6/93	41.15		432.22
	1/13/94	33.95		439.42
	3/30/94	30.97		442.40
	4/25/94	32.46		440.91
	8/12/94	41.72		431.65
	12/14/94	37.62		435.75
	2/10/95	29.96		443.41
	6/15/95	23.66		449.71
	9/26/95	29.62		443.75
	12/15/95	27.10		446.27
	3/21/96	15.85		457.52
	6/13/96	21.31		452.06
	9/16/96	28.62		444.75
	12/2/96	25.55		447.82
	3/7/97	19.77		453.60
	6/12/97	27.67		445.70
	9/29/97	29.60		443.77
	12/1/97	33.37		440.00
	3/19/98	18.76		454.61
	5/29/98	20.64		452.73
	9/15/98	30.70		442.67
	11/30/98	34.96		438.41
	1/17/99	28.81		444.56
	6/10/99	28.10		445.27
	9/7/99	30.38		442.99
12/13/99	31.46	441.91		
3/13/00	24.28	449.09		
6/12/00	26.80	446.57		

TABLE C-1

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

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

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-3 (cont.)	10/13/08	50.70	473.37	422.67
	2/11/09	47.81		425.56
	4/27/09	41.18		432.19
	8/4/09	51.89		421.48
	12/8/09	39.50		433.87
	2/11/10	35.19		438.18
	5/3/10	31.39		441.98
	8/2/10	34.61		438.76
	11/2/10	37.20		436.17
	2/1/11	32.59		440.78
	4/25/11	27.60		445.77
	8/3/11	31.69		441.68
	10/10/11	33.96		439.41
	1/31/12	39.05		434.32
	5/7/12	36.03		437.34
	8/6/12	40.52		432.85
	11/12/12	39.24		434.13
	2/12/13	31.34		442.03
	4/22/13	33.51		439.86
8/21/13	35.71	437.66		
11/7/13	34.60	438.77		
MW-4	3/30/94	31.56	473.64	442.08
	4/25/94	32.73		440.91
	8/12/94	41.61		432.03
	12/14/94	38.11		435.53
	2/10/95	30.50		443.14
	6/15/95	23.63		450.01
	9/26/95	29.70		443.94
	12/15/95	27.56		446.08
	3/21/96	15.63		458.01
	6/13/96	21.07		452.57
	9/16/96	28.99		444.65
	12/2/96	26.04		447.60

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-4 (cont.)	3/7/97	19.69	473.64	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		
8/4/04	34.87	438.77		
11/4/04	34.28	439.36		
1/12/05	28.67	444.97		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-4 (cont.)	5/2/05	24.46	473.64	449.18
	7/19/05	29.36		444.28
	11/21/05	31.80		441.84
	2/9/06	26.34		447.30
	5/16/06	24.30		449.34
	8/9/06	32.05		441.59
	11/8/06	32.85		440.79
	2/14/07	30.46		443.18
	5/17/07	33.92		439.72
	8/2/07	40.68		432.96
	11/12/07	DRY ^(d)		--
	2/14/08	34.53		439.11
	5/8/08	35.55		438.09
	7/23/08	43.87		429.77
	10/13/08	DRY		--
	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
	8/2/10	35.15		438.49
	11/2/10	37.55		436.09
	2/1/11	32.86		440.78
	4/25/11	28.69		444.95
	8/3/11	32.01		441.63
	10/10/11	34.49		439.15
	1/31/12	38.91		434.73
5/7/12	36.24	437.40		
8/6/12	40.69	432.95		
11/12/12	39.65	433.99		
2/12/13	31.56	442.08		
4/22/13	33.80	439.84		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-4 (cont.)	8/21/13	36.10	473.64	437.54
	11/7/13	35.18		438.46
MW-5	3/30/94	32.07	472.67	440.60
	4/25/94	33.65		439.02
	8/12/94	42.73		429.94
	12/14/94	38.89		433.78
	2/10/95	31.44		441.23
	6/15/95	24.99		447.68
	9/26/95	30.20		442.47
	12/15/95	28.56		444.11
	3/21/96	16.82		455.85
	6/13/96	22.61		450.06
	9/16/96	29.78		442.89
	12/2/96	26.51		446.16
	3/7/97	21.91		450.76
	9/29/97	31.74		440.93
	12/1/97	34.05		438.62
	3/19/98	20.93		451.74
	5/29/98	21.30		451.37
	9/15/98	31.32		441.35
	11/30/98	35.44		437.23
	1/17/99	29.59		443.08
	6/10/99	28.05		444.62
	9/7/99	31.11		441.56
	12/13/99	32.66		440.01
3/13/00	25.87	446.80		
6/12/00	28.15	444.52		
11/10/00	30.05	442.62		
12/31/00	31.81	440.86		
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		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-5 (cont.)	3/18/02	38.75	472.67	433.92
	6/5/02	36.21		436.46
	8/21/02	36.76		435.91
	12/3/02	36.12		436.55
	3/4/03	32.90		439.77
	6/10/03	33.04		439.63
	9/9/03	34.20		438.47
	12/23/03	31.38		441.29
	3/23/04	27.51		445.16
	5/10/04	31.12		441.55
	8/4/04	35.09		437.58
	11/4/04	34.34		438.33
	1/12/05	29.19		443.48
	5/2/05	25.31		447.36
	7/19/05	30.49		442.18
	11/21/05	32.35		440.32
	2/9/06	27.19		445.48
	5/16/06	25.30		447.37
	8/9/06	32.68		439.99
	11/8/06	32.22		440.45
	2/14/07	34.00		438.67
	5/17/07	34.29		438.38
	8/2/07	41.72		430.95
	11/12/07	DRY		--
	2/14/08	35.66		437.01
	5/8/08	36.60		436.07
	7/23/08	DRY		--
	10/13/08	DRY		--
2/11/09	DRY	--		
4/27/09	42.50	430.17		
8/4/09	DRY	--		
12/8/09	39.92	432.75		
2/11/10	36.62	436.05		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-5 (cont.)	5/3/10	32.89	472.67	439.78
	8/2/10	36.16		436.51
	11/2/10	38.75		433.92
	2/1/11	32.77		439.90
	4/25/11	29.03		443.64
	8/3/11	33.18		439.49
	10/10/11	35.58		437.09
	1/31/12	39.80		432.87
	5/7/12	37.29		435.38
	8/6/12	NM ^(e)		--
	11/12/12	40.72		431.95
	2/12/13	32.68		439.99
	4/22/13	35.09		437.58
	8/21/13	37.00		435.67
11/7/13	35.94	436.73		
MW-6	3/30/94	33.38	471.93	438.55
	4/25/94	35.49		436.44
	8/12/94	45.14		426.79
	12/14/94	40.99		430.94
	2/10/95	33.34		438.59
	6/15/95	26.88		445.05
	9/26/95	33.55		438.38
	12/15/95	30.32		441.61
	3/21/96	18.89		453.04
	6/13/96	24.62		447.31
	9/16/96	32.64		439.29
	12/2/96	27.42		444.51
	3/7/97	22.13		449.80
	6/12/97	31.02		440.91
	9/29/97	35.77		436.16
	12/1/97	37.14		434.79
	3/19/98	21.10		450.83
5/29/98	23.26	448.67		

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
MW-6 (cont.)	9/15/98	33.50	471.93	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
	6/10/03	34.15		437.78
	9/9/03	37.66		434.27
	12/23/03	33.43		438.50
	3/23/04	29.96		441.97
	5/10/04	32.98		438.95
	8/4/04	37.02		434.91
	11/4/04	37.03		434.90
	1/12/05	32.01		439.92
	5/2/05	27.30		444.63
7/19/05	32.27	439.66		
11/21/05	33.23	438.70		
2/9/06	29.07	442.86		
5/17/06	27.23	444.70		
8/9/06	35.22	436.71		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-6 (cont.)	11/8/06	33.41	471.93	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
	8/2/10	37.87		434.06
	11/2/10	40.45		431.48
	2/1/11	35.73		436.20
	4/25/11	30.72		441.21
	8/3/11	34.95		436.98
	10/10/11	37.45		434.48
	1/31/12	42.15		429.78
	5/7/12	39.11		432.82
	8/6/12	43.66		428.27
11/12/12	42.20	429.73		
2/12/13	34.24	437.69		
4/22/13	36.78	435.15		
6/25/13	37.15	434.78		
8/21/13	37.98	433.95		
11/7/13	39.82	432.11		
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 C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	12/14/94	39.34	472.33	432.99
	2/10/95	32.11		440.22
	6/15/95	25.51		446.82
	9/26/95	31.43		440.90
	12/15/95	28.97		443.36
	3/21/96	17.36		454.97
	6/13/96	23.47		448.86
	9/16/96	31.35		440.98
	12/2/96	27.11		445.22
	3/7/97	21.33		451.00
	6/12/97	29.90		442.43
	9/29/97	34.37		437.96
	12/1/97	36.46		435.87
	3/19/98	20.33		452.00
	5/29/98	22.30		450.03
	9/15/98	32.54		439.79
	11/30/98	37.96		434.37
	1/17/99	31.04		441.29
	6/10/99	29.89		442.44
	9/7/99	32.38		439.95
	12/13/99	33.98		438.35
	3/13/00	27.09		445.24
	6/12/00	28.76		443.57
	11/10/00	31.54		440.79
	12/31/00	32.76		439.57
	3/27/01	30.97		441.36
	6/30/01	37.50		434.83
	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		
8/21/02	36.81	435.52		
12/3/02	36.52	435.81		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	3/4/03	32.60	472.33	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		
8/2/10	34.31	438.02		
11/2/10	36.68	435.65		
2/1/11	32.66	439.67		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-7 (cont.)	4/25/11	27.75	472.33	444.58
	8/3/11	31.36		440.97
	10/10/11	33.63		438.70
	1/31/12	38.74		433.59
	5/7/12	35.97		436.36
	8/6/12	39.85		432.48
	11/12/12	38.73		433.60
	2/12/13	31.46		440.87
	4/22/13	33.19		439.14
	6/24/13	34.10		438.23
	8/21/13	36.90		435.43
	11/7/13	34.06		438.27
MW-8	12/23/03	32.01	471.18	439.17
	3/23/04	28.50		442.68
	5/10/04	31.44		439.74
	8/4/04	35.11		436.07
	11/4/04	34.77		436.41
	1/12/05	29.66		441.52
	5/2/05	25.91		445.27
	7/19/05	30.56		440.62
	11/21/05	32.48		438.70
	2/9/06	27.40		443.78
	5/16/06	25.60		445.58
	8/9/06	32.77		438.41
	11/8/06	32.10		439.08
	2/14/07	30.94		440.24
	5/17/07	34.14		437.04
	8/2/07	41.24		429.94
	11/12/07	DRY		--
	2/14/08	35.55		435.63
	5/8/08	36.64		434.54
	7/23/08	DRY		--
10/13/08	DRY	--		

TABLE C-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 (cont.)	2/11/09	DRY	471.18	--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/17/09	39.92		431.26
	2/11/10	36.72		434.46
	5/3/10	32.81		438.37
	8/2/10	36.08		435.10
	11/2/10	38.44		432.74
	2/1/11	34.11		437.07
	4/25/11	28.72		442.46
	8/3/11	33.09		438.09
	10/10/11	35.69		435.49
	1/31/12	40.08		431.10
	5/7/12	37.38		433.80
	8/6/12	41.94		429.24
	11/12/12	40.87		430.31
	2/12/13	32.81		438.37
	4/22/13	35.00		436.18
	6/25/13	36.40		434.78
8/21/13	37.20	433.98		
11/7/13	35.95	435.23		
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
	5/2/05	27.73		443.05
	7/19/05	32.90		437.88
	11/21/05	34.15		436.63
	2/9/06	29.44		441.34
	5/16/06	27.50		443.28
	8/9/06	35.85		434.93
	11/8/06	34.18		436.60

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
MW-9 (cont.)	2/14/07	34.00	470.78	436.78
	5/17/07	36.88		433.90
	8/2/07	44.11		426.67
	11/12/07	DRY		--
	2/14/08	39.32		431.46
	5/8/08	38.90		431.88
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	43.79		426.99
	8/4/09	DRY		--
	12/8/09	43.61		427.17
	2/11/10	39.48		431.30
	5/3/10	34.96		435.82
	8/2/10	38.00		432.78
	11/2/10	40.30		430.48
	2/1/11	35.97		434.81
	4/25/11	30.64		440.14
	8/3/11	35.17		435.61
	10/10/11	37.64		433.14
	1/31/12	42.06		428.72
5/7/12	39.43	431.35		
8/6/12	43.51	427.27		
11/12/12	42.66	428.12		
2/12/13	34.70	436.08		
4/22/13	37.01	433.77		
6/25/13	37.82	432.96		
8/21/13	39.02	431.76		
11/7/13	37.87	432.91		
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

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
MW-10 (cont.)	11/4/04	36.21	471.63	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
	8/9/06	34.37		437.26
	11/8/06	33.41		438.22
	2/14/07	32.81		438.82
	5/17/07	35.85		435.78
	8/2/07	43.46		428.17
	11/12/07	DRY		--
	2/14/08	39.71		431.92
	5/8/08	37.55		434.08
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	45.10		426.53
	8/4/09	44.52		427.11
	12/8/09	42.80		428.83
	2/11/10	39.74		431.89
	5/3/10	33.97		437.66
	8/2/10	36.12		435.51
	11/2/10	38.30		433.33
	2/1/11	34.63		437.00
	4/25/11	29.63		442.00
8/3/11	33.26	438.37		
10/10/11	35.62	436.01		
1/31/12	39.67	431.96		
5/7/12	38.14	433.49		
8/6/12	40.65	430.98		
11/12/12	40.53	431.10		

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
MW-10 (cont.)	2/12/13	33.19	471.63	438.44
	4/22/13	34.99		436.64
	6/25/13	36.25		435.38
	8/21/13	37.11		434.52
	11/7/13	36.05		435.58
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		--
	5/3/10	31.36		441.90
	8/2/10	31.94	472.96 ^(c)	441.02
	11/2/10	36.98		435.98
	2/1/11	32.30		440.66
	4/25/11	27.31		445.65
	8/3/11	31.11		441.85
	10/10/11	33.27		439.69
	1/31/12	34.36		438.60
	5/7/12	31.61		441.35
	8/6/12	35.20		437.76
	11/12/12	35.34		437.62
	2/12/13	30.64		442.32
	4/22/13	32.74		440.22
	6/24/13	33.62		439.34
8/21/13	34.74	438.22		
11/7/13	33.75	439.21		
MW-12	6/14/12	40.62	469.77	429.15
	8/6/12	43.22		426.55
	11/12/12	41.85		427.92
	2/12/13	34.10		435.67
	4/22/13	36.18		433.59
	6/25/13	37.80		431.97

TABLE C-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-12	8/21/13	38.80	469.77	430.97
(cont.)	11/7/13	37.40		432.37
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
	2/14/07	30.77		442.51
	5/17/07	33.17		440.11
	8/2/07	36.33		436.95
	11/12/07	DRY		--
	2/14/08	35.55		437.73
	5/8/08	35.31		437.97
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY	--	
	12/8/09	DRY	--	
	2/11/10	NM	--	
	5/3/10	31.84	441.44	
	8/2/10	33.15	472.57 ^(c)	439.42
	11/2/10	DRY		--
2/1/11	32.80	439.77		
4/25/11	25.43	447.14		
8/3/11	26.82	445.75		
10/10/11	33.29	439.28		
1/31/12	32.19	440.38		

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
VW-2 (cont.)	5/7/12	31.50	472.57	441.07
	8/6/12	32.64		439.93
	11/12/12	33.90		438.67
	2/12/13	31.60		440.97
	4/22/13	33.51		439.06
	8/21/13	DRY		--
	11/7/13	DRY		--
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		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	DRY		--
2/11/10	DRY	--		
5/3/10	31.85	442.53		
8/2/10	34.72	439.66		
11/2/10	DRY	--		

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
VW-3 (cont.)	2/1/11	32.56	474.38	441.82
	4/25/11	27.81		446.57
	8/3/11	28.93		445.45
	10/10/11	33.66		440.72
	1/31/12	DRY		--
	5/7/12	DRY		--
	8/6/12	DRY		--
	11/12/12	DRY		--
	2/12/13	31.70		442.68
	4/22/13	33.49		440.89
	8/21/13	35.46		438.92
	11/7/13	35.07		439.31
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

TABLE C-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-1 (cont.)	8/2/10	33.96	472.64 ^(c)	438.68
	11/2/10	37.46		435.18
	2/1/11	33.01		439.63
	4/25/11	28.23		444.41
	8/3/11	31.85		440.79
	10/10/11	31.60		441.04
	1/31/12	35.43		437.21
	5/7/12	34.70		437.94
	8/6/12	36.59		436.05
	11/12/12	37.00		435.64
	2/12/13	31.96		440.68
	4/22/13	33.71		438.93
	8/21/13	35.86		436.78
	11/7/13	34.65		437.99
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
	5/17/07	33.28		439.65
	8/2/07	39.35		433.58
	11/12/07	DRY		--
	2/14/08	35.62		437.31
	5/8/08	36.62		436.31
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
8/4/09	DRY	--		
12/8/09	40.08	432.85		

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation ^(a) (feet MSL)	Water Table Elevation ^(b) (feet MSL)
TP-2 (cont.)	2/11/10	NM	472.93	--
	5/3/10	31.85		441.08
	8/2/10	33.57	472.78 ^(c)	439.21
	11/2/10	37.35		435.43
	2/1/11	32.79		439.99
	4/25/11	28.30		444.48
	8/3/11	31.59		441.19
	10/10/11	32.14		440.64
	1/31/12	34.32		438.46
	5/7/12	34.41		438.37
	8/6/12	36.00		436.78
	11/12/12	36.25		436.53
	2/12/13	31.81		440.97
	4/22/13	33.70		439.08
	8/21/13	35.43		437.35
11/7/13	34.50	438.28		
DW-1	5/22/08	37.30	472.85	435.55
	7/23/08	45.55		427.30
	10/13/08	51.40		421.45
	2/11/09	48.28		424.57
	4/27/09	41.74		431.11
	8/4/09	52.22		420.63
	12/8/09	39.79		433.06
	2/11/10	35.57		437.28
	5/3/10	31.70		441.15
	8/2/10	34.76		438.09
	11/2/10	37.49		435.36
	2/1/11	32.83		440.02
	4/25/11	27.96		444.89
	8/3/11	31.96		440.89
	10/10/11	34.40		438.45
1/31/12	39.39	433.46		
5/7/12	36.35	436.50		

TABLE C-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-1 (cont.)	8/6/12	40.60	472.85	432.25
	11/12/12	39.29		433.56
	2/12/13	31.63		441.22
	4/22/13	33.72		439.13
	6/24/13	35.08		437.77
	8/21/13	35.90		436.95
	11/7/13	34.79		438.06
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
	8/2/10	37.72		433.89
	11/2/10	40.50		431.11
	2/1/11	35.66		435.95
	4/25/11	30.69		440.92
	8/3/11	35.00		436.61
	10/10/11	37.44		434.17
	1/31/12	42.19		429.42
	5/7/12	39.10		432.51
	8/6/12	43.90		427.71
	11/12/12	42.25		429.36
	2/12/13	34.35		437.26
	4/22/13	36.70		434.91
6/25/13	36.94	434.67		
8/21/13	37.85	433.76		
11/7/13	36.94	434.67		
DW-3	5/22/08	40.20	470.33	430.13
	7/23/08	49.09		421.24

TABLE C-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 (cont.)	10/13/08	54.62	470.33	415.71
	2/11/09	51.96		418.37
	4/27/09	45.17		425.16
	8/4/09	56.32		414.01
	12/8/09	42.92		427.41
	2/11/10	38.75		431.58
	5/3/10	34.51		435.82
	8/2/10	35.59		434.74
	11/2/10	40.00		430.33
	2/1/11	35.50		434.83
	4/25/11	30.45		439.88
	8/3/11	34.71		435.62
	10/10/11	37.00		433.33
	1/31/12	42.10		428.23
	5/7/12	38.70		431.63
	8/6/12	43.26		427.07
	11/12/12	41.48		428.85
	2/12/13	33.87		436.46
	4/22/13	36.10		434.23
	6/25/13	37.39		432.94
8/21/13	38.38	431.95		
11/7/13	36.85	433.48		
DW-4	5/22/08	40.20	468.48	428.28
	7/23/08	49.50		418.98
	10/13/08	54.90		413.58
	2/11/09	51.71		416.77
	4/27/09	45.10		423.38
	8/4/09	56.46		412.02
	12/8/09	42.26		426.22
	2/11/10	37.98		430.50
	5/3/10	34.04		434.44
	8/2/10	36.94		431.54
	11/2/10	39.50		428.98

TABLE C-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-4 (cont.)	2/1/11	35.11	468.48	433.37
	4/25/11	30.12		438.36
	8/3/11	34.54		433.94
	10/10/11	36.60		431.88
	1/31/12	42.10		426.38
	5/7/12	38.26		430.22
	8/6/12	42.80		425.68
	11/12/12	40.86		427.62
	2/12/13	33.29		435.19
	4/22/13	35.90		432.58
	8/21/13	38.30		430.18
11/7/13	36.45	432.03		
DW-5	12/8/09	43.05	471.86	428.81
	2/11/10	38.93		432.93
	5/3/10	34.55		437.31
	8/2/10	37.56		434.30
	11/2/10	40.00		431.86
	2/1/11	35.57		436.29
	4/25/11	30.59		441.27
	8/3/11	34.64		437.22
	10/10/11	37.00		434.86
	1/31/12	42.31		429.55
	5/7/12	38.98		432.88
	8/6/12	46.32		425.54
	11/12/12	41.65		430.21
	2/12/13	34.10		437.76
	4/22/13	36.52		435.34
6/25/13	37.42	434.44		
8/21/13	38.35	433.51		
11/7/13	36.97	434.89		
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

TABLE C-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-6 (cont.)	8/2/10	38.35	471.77	433.42
	11/2/10	40.09		431.68
	2/1/11	36.35		435.42
	4/25/11	31.32		440.45
	8/3/11	35.63		436.14
	10/10/11	38.09		433.68
	1/31/12	42.69		429.08
	5/7/12	39.82		431.95
	8/6/12	44.50		427.27
	11/12/12	42.95		428.82
	2/12/13	34.96		436.81
	4/22/13	37.29		434.48
	6/25/13	38.55		433.22
	8/21/13	39.55		432.22
11/7/13	38.24	433.53		
DW-7	12/8/09	43.01	470.07	427.06
	2/11/10	38.70		431.37
	5/3/10	34.64		435.43
	8/2/10	37.82		432.25
	11/2/10	40.42		429.65
	2/1/11	35.76		434.31
	4/25/11	30.82		439.25
	8/3/11	35.19		434.88
	10/10/11	37.55		432.52
	1/31/12	42.35		427.72
	5/7/12	39.30		430.77
	8/6/12	44.02		426.05
	11/12/12	42.43		427.64
	2/12/13	34.54		435.53
4/22/13	36.80	433.27		
6/25/13	38.44	431.63		
8/21/13	39.91	430.16		
11/7/13	38.25	431.82		

TABLE C-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-8	4/25/11	27.23	472.31	445.08
	8/3/11	31.14		441.17
	10/10/11	33.41		438.90
	1/31/12	38.69		433.62
	5/7/12	35.52		436.79
	8/6/12	39.61		432.70
	11/12/12	38.00		434.31
	2/12/13	30.46		441.85
	4/22/13	32.66		439.65
	6/24/13	33.87		438.44
	8/21/13	34.43		437.88
11/7/13	33.54	438.77		
DW-9	6/14/12	40.85	469.80	428.95
	8/6/12	43.65		426.15
	11/12/12	42.05		427.75
	2/12/13	34.25		435.55
	4/22/13	36.39		433.41
	6/25/13	38.46		431.34
	8/21/13	39.32		430.48
	11/7/13	37.76		432.04
MW-A	1/17/99	30.13	NM	--
MW-B	1/17/99	30.29	NM	--
MW-C	1/17/99	30.60	NM	--
MW-D	1/17/99	31.32	NM	--
MW-E	1/17/99	31.36	NM	--
MW-W	1/17/99	30.91	NM	--
IP-1	7/23/08	45.49	473.16	427.67
	10/13/08	51.30		421.86
	5/3/10 ^(f)	33.80		439.36
	4/25/11	27.97	473.06 ^(c)	445.09
	1/31/12	39.26		433.80
	5/7/12	36.18		436.88
	8/6/12	40.23		432.83

TABLE C-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-1 (cont.)	11/12/12	38.76	473.06	434.30
	2/12/13	31.25		441.81
	4/22/13	33.28		439.78
	6/24/13	34.85		438.21
	8/21/13	36.10		436.96
	11/7/13	35.07		437.99
IP-2	7/23/08	46.83	473.21	426.38
	10/13/08	51.40		421.81
	5/3/10 ^(f)	32.00		441.21
	4/25/11	28.04	473.06 ^(c)	445.02
	5/7/12	37.21		435.85
	8/6/12	40.78		432.28
	11/12/12	39.79		433.27
	2/12/13	NM		--
	4/22/13	33.86		439.20
	8/21/13	NM		--
	11/7/13	NM		--
IP-3	7/23/08	45.47	472.97	427.50
	10/13/08	51.11		421.86
	5/3/10 ^(f)	31.68		441.29
	4/25/11	28.07	473.05 ^(c)	444.98
	5/7/12	36.41		436.64
	8/6/12	40.70		432.35
	11/12/12	39.41		433.64
	2/12/13	NM		--
	4/22/13	34.12		438.93
	8/21/13	NM		--
	11/7/13	NM		--
IP-4	7/23/08	44.55	473.02	428.47
	10/13/08	50.89		422.13
	5/3/10 ^(f)	31.61		441.41
	4/25/11	27.93	473.10 ^(c)	445.17
	5/7/12	36.30		436.80

TABLE C-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-4 (cont.)	8/6/12	40.67	473.10	432.43
	11/12/12	39.15		433.95
	2/12/13	NM		--
	4/22/13	33.76		439.34
	8/21/13	NM		--
	11/7/13	NM		--
IP-5	7/23/08	44.70	473.06	428.36
	10/13/08	51.06		422.00
	5/3/10 ^(f)	31.60		441.46
	4/25/11	27.80	473.05 ^(c)	445.25
	5/7/12	36.90		436.15
	8/6/12	40.65		432.40
	11/12/12	39.16		433.89
	2/12/13	NM		--
	4/22/13	33.78		439.27
	6/24/13	35.08		437.97
	8/21/13	NM		--
	11/7/13	34.68		438.37
IP-6	7/23/08	49.91	472.73	422.82
	10/13/08	55.63		417.10
	5/3/10 ^(f)	34.98		437.75
	4/25/11	30.60	472.43 ^(c)	441.83
	5/7/12	39.70		432.73
	8/6/12	44.44		427.99
	11/12/12	42.67		429.76
	2/12/13	NM		--
	4/22/13	37.05		435.38
	8/21/13	NM		--
	11/7/13	NM		--
IP-7	7/23/08	51.45	472.86	421.41
	10/13/08	57.23		415.63
	5/3/10 ^(f)	35.75		437.11

TABLE C-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-7 (cont.)	4/25/11	31.51	472.43 ^(c)	440.92
	5/7/12	41.87		430.56
	8/6/12	45.63		426.80
	11/12/12	43.87		428.56
	2/12/13	NM		--
	4/22/13	38.34		434.09
	8/21/13	NM		--
	11/7/13	NM		--
IP-8	12/16/08	50.48	473.13	422.65
	5/3/10 ^(f)	33.34	473.22 ^(c)	439.79
	4/25/11	28.07		445.15
	1/31/12	39.45		433.77
	5/7/12	36.25		436.97
	8/6/12	40.32		432.90
	11/12/12	39.10		434.12
	2/12/13	31.59		441.63
	4/22/13	33.75		439.47
	8/21/13	36.69		436.53
	11/7/13	34.58		438.64
IP-9	12/16/08	52.51	473.47	420.96
	5/3/10 ^(f)	31.79	473.35 ^(c)	441.68
	4/25/11	27.84		445.51
	1/31/12	39.37		433.98
	5/7/12	37.03		436.32
	8/6/12	40.30		433.05
	11/12/12	38.77		434.58
	2/12/13	31.25		442.10
	4/22/13	33.85		439.50
	8/21/13	35.50		437.85
	11/7/13	33.96		439.39
IP-10	2/11/09	48.77	473.78	425.01
	5/3/10 ^(f)	32.23		441.55

TABLE C-1

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

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation^(a) (feet MSL)	Water Table Elevation^(b) (feet MSL)
IP-10 (cont.)	4/25/11	27.79	473.88 ^(c)	446.09
	1/31/12	39.24		434.64
	5/7/12	36.24		437.64
	8/6/12	40.36		433.52
	11/12/12	38.99		434.89
	2/12/13	31.18		442.70
	4/22/13	33.40		440.48
	6/24/13	34.87		439.01
	8/21/13	35.55		438.33
	11/7/13	34.41		439.47

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

ATTACHMENT D
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

TABLE D-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)	Ethyl- benzene ^(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	--	--	--	--	--	--	--	--	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	1/17/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/10/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/7/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	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	0.80	0.70	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	11/12/07	750	0.85	2.7	4.2	9.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	2/14/08	1,700	3.3	17	38	83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	620	1.8	ND<0.5	12	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	270	0.52	ND<0.5	3.9	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	10/13/08	730	ND<0.5	ND<0.5	0.68	0.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	2/11/09	2,100	4.1	8.1	18	36	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
	4/27/09	2,800	9.9	34	94	170	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	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	710	2.2	0.92	5.9	2.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	1,200	2.4	3.7	22	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/3/10	1,100	7.3	34	18	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	200	ND<0.5	ND<0.5	0.81	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
	4/25/11	130	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
	8/3/11	1,500	2.0	15	44	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
	10/11/11	2,300	6.0	30	15	64	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5
	1/31/12	1,700	1.6	11	26	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<100	ND<0.5	ND<0.5
	5/9/12	3,300	2.2	5.5	52	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<5	ND<0.5	ND<0.5
	8/8/12	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
11/12/12	110	ND<0.5	ND<0.5	1.1	3.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
2/12/13	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	
4/22/13	240	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 D-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)	Ethyl- benzene ^(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	8/21/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5
(cont.)	11/7/13	4,300	0.82	2.9	76	160	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	--	--	--	--	--	--	--	--
	3/19/98	42,000	5,000	3,600	2,000	8,300	ND<250	--	--	--	--	--	--	--	--
	5/29/98	68,000	5,600	4,700	2,400	11,000	ND<250	--	--	--	--	--	--	--	--

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	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 D-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)	Ethyl- benzene ^(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 (cont.)	5/10/04	7,300	1,000	51	240	290	1,800	ND<5	ND<5	14	ND<50	ND<500	ND<50	ND<5	ND<5
	8/4/04	45,000	7,200	1,900	1,800	5,100	2,500	ND<25	ND<25	31	ND<250	ND<2,500	ND<250	ND<25	ND<25
	11/4/04	27,000	4,400	1,100	840	2,200	3,500	ND<9	ND<9	29	ND<50	ND<900	ND<90	ND<9	ND<9
	1/12/05	16,000	1,900	640	570	1,500	1,900	ND<4	ND<4	19	28 ^(f)	ND<400	ND<40	ND<4	ND<4
	5/2/05	44,000	5,200	1,100	1,800	4,800	2,200	ND<20	ND<20	30	ND<200	ND<2,000	ND<200	ND<20	ND<20
	7/20/05	21,000	3,000	500	1,000	1,500	4,400	ND<7	ND<7	32	74 ^(f)	ND<700	ND<70	ND<7	ND<7
	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<1,000	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<1,000	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	5/3/10	26,000	3,100	870	1,100	2,200	530	ND<7	ND<7	8.0	370	ND<700	ND<70	ND<7	ND<7
	8/3/10	19,000	2,000	150	840	730	280	ND<4	ND<4	4.4	200	ND<400	ND<40	ND<4	ND<4
	11/4/10	13,000	2,000	160	420	390	540	ND<4	ND<4	5.7	510	ND<400	ND<40	ND<4	ND<4
	2/2/11	10,000	1,600	130	320	410	410	ND<4	ND<4	4.2	410	ND<400	ND<40	ND<4	ND<4
	4/28/11	13,000	1,400	100	470	670	450	ND<2.5	ND<2.5	4.6	200	ND<250	ND<50	ND<2.5	ND<2.5
	8/4/11	16,000	1,900	200	430	820	660	ND<3	ND<3	5.7	420	ND<1,500	ND<30	ND<3	ND<3
	10/11/11	7,000	810	110	200	430	370	ND<1.5	ND<1.5	3.3	170	ND<250	ND<15	ND<1.5	ND<1.5
	2/1/12	14,000	1,200	130	440	650	340	ND<2.5	ND<2.5	5.4	170	ND<800	ND<25	ND<2.5	ND<2.5
	5/11/12	14,000	1,200	140	490	1,000	220	ND<2.5	ND<2.5	2.7	120	ND<250	ND<25	ND<2.5	ND<2.5
	8/8/12	15,000	720	120	460	580	140	ND<2.5	ND<2.5	2.6	70	ND<250	ND<25	ND<2.5	ND<2.5
	11/14/12	5,700	480	30	96	300	200	ND<0.9	ND<0.9	1.8	110	ND<200	ND<9	ND<0.9	ND<0.9
	2/13/13	270	29	4.4	8.9	19	7.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	430	10	2.2	3.8	8.5	13	ND<0.5	ND<0.5	ND<0.5	6.6	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,700	7.2	0.91	12	16	9.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
8/21/13	11,000	560	30	430	440	88	ND<0.5	ND<0.5	1.0	48	ND<50	ND<8	ND<0.5	ND<0.5	
11/7/13	4,700	140	7.5	160	170	28	ND<0.9	ND<0.9	ND<0.9	22	ND<90	ND<9	ND<0.9	ND<0.9	
MW-3	6/1/93	270	4.6	ND<0.5	ND<0.5	1.9	--	--	--	--	--	--	--	--	--
	6/22/93	160	8.2	ND<0.5	ND<0.5	0.72	--	--	--	--	--	--	--	--	--
	10/6/93	740	57	110	24	120	--	--	--	--	--	--	--	--	--
	1/13/94	83	2.6	0.67	0.78	4.2	--	--	--	--	--	--	--	--	--
	3/30/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/94	60	0.75	3.2	0.50	3.6	--	--	--	--	--	--	--	--	--
	8/12/94	310	7.3	14	2.6	13	--	--	--	--	--	--	--	--	--
	12/14/94	75	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	2/10/95	96	1.4	ND<0.5	ND<0.5	1.8	--	--	--	--	--	--	--	--	--
	6/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	140	ND<0.5	ND<0.5	ND<0.5	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
	7/23/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
10/13/08	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	61	ND<5	ND<0.5	ND<0.5	
2/11/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
4/27/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.64	ND<0.5	ND<0.5	ND<0.5	ND<5	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	12/8/09	150	3.6	1.1	2.4	2.6	0.82	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
	2/11/10	61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	53	ND<5	ND<0.5	ND<0.5
	5/6/10	ND<50	ND<0.5	1.0	ND<0.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	74	2.4	5.5	0.96	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/3/10	ND<50	ND<0.5	2.5	ND<0.5	3.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	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
	4/25/11	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
	8/4/11	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
	10/10/11	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
	1/31/12	ND<50	ND<0.5	0.67	7.1	3.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/7/12	74	ND<0.5	0.56	1.9	7.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	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
	11/12/12	170	ND<0.5	0.83	4.1	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/22/13	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
8/22/13	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	
11/7/13	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-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	--	--	--	--	--	--	--	--	--

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	1.8	1.1	1.4	4.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	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
	2/1/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	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-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	--	--	--	--	--	--	--	--

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	9/16/96	380	29	ND<0.5	0.95	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/2/96	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/7/97	520	74	ND<0.5	0.58	1.5	ND<5	--	--	--	--	--	--	--	--
	6/12/97	140	5.3	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/29/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/1/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	5/29/98	540	4.1	ND<0.5	ND<0.5	0.52	ND<5	--	--	--	--	--	--	--	--
	9/15/98	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/30/98	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	1/17/99	500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/10/99	66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/7/99	820	46	1.7	10	21	ND<5	--	--	--	--	--	--	--	--
	12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	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	--	--	--	--	--	--	--	--	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	6/5/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/21/02	2,100	20	ND<0.5	63	4.0	7.0	--	--	--	--	--	--	--	--
	12/3/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/03	490	10	ND<0.5	2.2	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/10/03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/9/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/23/03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/23/04	440	2.3	ND<0.5	1.0	5.9	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/04	160	ND<0.5	ND<0.5	ND<0.5	0.71	0.94	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	290	0.74	ND<0.5	0.58	1.3	0.61	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	300	ND<0.5	ND<0.5	0.51	1.6	0.73	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/20/05	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	210	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	0.63	1.0	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.79	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	220	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	5/8/08	580	ND<0.5	ND<0.5	1.8	ND<0.5	0.60	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	2.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	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
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	190	ND<0.5	ND<0.5	0.80	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	160	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/22/13	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	
8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/7/13	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 D-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)	Ethyl- benzene ^(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	3/30/94	63,000	21,000	8,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	4/25/94	77,000	22,000	12,000	2,300	16,000	--	--	--	--	--	--	--	--	--
	8/12/94	65,000	12,000	8,100	2,200	16,000	--	--	--	--	--	--	--	--	--
	12/14/94	65,000	18,000	9,500	2,200	14,000	--	--	--	--	--	--	--	--	--
	2/10/95	63,000	21,000	8,400	2,000	14,000	--	--	--	--	--	--	--	--	--
	6/15/95	75,000	20,000	11,000	2,100	15,000	--	--	--	--	--	--	--	--	--
	9/26/95	62,000	15,000	9,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	12/15/95	61,000	15,000	9,000	2,300	15,000	--	--	--	--	--	--	--	--	--
	3/21/96	65,000	18,000	9,800	2,400	16,000	--	--	--	--	--	--	--	--	--
	6/13/96	29,000	8,600	3,300	2,200	12,000	ND<250	--	--	--	--	--	--	--	--
	9/16/96	42,000	6,400	1,800	2,100	11,000	ND<250	--	--	--	--	--	--	--	--
	12/2/96	28,000	3,000	1,100	970	8,300	ND<500	--	--	--	--	--	--	--	--
	3/7/97	12,000	2,000	190	520	2,300	ND<250	--	--	--	--	--	--	--	--
	6/12/97	37,000	3,900	470	1,600	6,200	ND<100	--	--	--	--	--	--	--	--
	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	--	--	--	--	--	--	--	--	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	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	--	--	--	--	--	--	--	--
	6/30/01	750	45	0.93	47	14	54	--	--	--	--	--	--	--	--
	9/26/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/18/01	43,000	3,800	350	1,900	3,000	900	--	--	--	--	--	--	--	--
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/18/02	33,000	2,600	120	1,800	2,800	740	--	--	--	--	--	--	--	--
	6/5/02	10,000	1,100	16	700	180	600	--	--	--	--	--	--	--	--
	8/21/02	10,000	1,200	23	710	290	370	--	--	--	--	--	--	--	--
	12/3/02	16,000	1,700	63	970	630	1,500	--	--	--	--	--	--	--	--
	3/4/03	16,000	1,700	25	1,200	40	7,700	ND<20	ND<20	ND<70	ND<200	ND<2,000	ND<200	ND<200	ND<20
	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<1,000	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<1,000	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	11/21/05	6,600	150	26	580	640	100	ND<1	ND<1	ND<1	13	ND<100	ND<10	ND<1	ND<1	
	2/9/06	7,100	340	11	370	360	910	ND<2	ND<2	9.3	120	ND<200	ND<20	ND<2	ND<2	
	5/17/06	7,100	270	5.1	320	290	930	ND<2	ND<2	8.4	260	ND<200	ND<20	ND<2	ND<2	
	8/9/06	5,800	440	7.5	120	45	670	ND<2	ND<2	7.3	380	ND<2,000	ND<50	ND<2	ND<2	
	11/8/06	9,200	990	37	390	140	310	ND<2	ND<2	3.2	110	ND<200	ND<20	ND<2	ND<2	
	2/14/07	5,900	480	10	73	23	1,600	ND<2	ND<2	14	1,100	ND<500	ND<20	ND<2	ND<2	
	5/17/07	3,700	240	3.4	30	10	770	ND<0.5	ND<0.5	9.2	800	ND<2,000	ND<5	--	--	
	8/2/07	15,000	1,800	120	980	510	310	ND<2.5	ND<2.5	3.0	180	ND<250	ND<25	ND<2.5	ND<2.5	
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	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	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/09	16,000	2,200	160	860	230	320	ND<2.5	ND<2.5	3.8	580	ND<1,000	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	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	
	8/3/10	21,000	2,700	120	690	250	730	ND<5	ND<5	7.4	480	ND<500	ND<50	ND<5	ND<5	
11/2/10	12,000	1,600	57	410	120	240	ND<2.5	ND<2.5	2.7	160	ND<250	ND<25	ND<2.5	ND<2.5		
2/2/11	15,000	1,600	89	460	150	350	ND<2.5	ND<2.5	3.7	310	ND<250	ND<25	ND<2.5	ND<2.5		
4/27/11	8,500	870	28	180	67	1,200	ND<2.5	ND<2.5	10	1,100	ND<250	ND<25	ND<2.5	ND<2.5		
8/4/11	6,300	600	17	58	16	650	ND<1.5	ND<1.5	7.8	1,000	ND<600	ND<15	ND<1.5	ND<1.5		

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	10/11/11	10,000	1,000	60	160	66	370	ND<2.5	ND<2.5	3.1	860	ND<250	ND<25	ND<2.5	ND<2.5
	1/31/12	5,200	370	6.7	5.1	12	84	ND<0.9	ND<0.9	ND<0.9	1,500	ND<90	ND<10	ND<0.9	ND<0.9
	5/10/12	11,000	1,200	60	140	69	150	ND<0.9	ND<0.9	ND<2	290	ND<250	ND<9	ND<0.9	ND<0.9
	8/8/12	12,000	1,200	31	69	47	170	ND<2.5	ND<2.5	ND<2.5	440	ND<250	ND<25	ND<2.5	ND<2.5
	11/14/12	17,000	1,600	68	120	96	190	ND<2.5	ND<2.5	ND<2.5	86	ND<500	ND<25	ND<2.5	ND<2.5
	2/14/13	12,000	1,400	42	230	56	200	ND<2.5	ND<2.5	2.5	100	ND<250	ND<25	ND<2.5	ND<2.5
	4/24/13	8,600	880	22	89	25	190	ND<1.5	ND<1.5	2.7	700	ND<400	ND<15	ND<1.5	ND<1.5
	6/25/13	6,800	350	7.0	26	9.3	81	ND<0.9	ND<0.9	1.0	280	ND<800	ND<9	ND<0.9	ND<0.9
	8/22/13	14,000	1,500	59	290	150	110	ND<1.5	ND<1.5	ND<1.5	93	ND<400	ND<15	ND<1.5	ND<1.5
11/7/13	12,000	1,200	62	190	81	100	ND<2.5	ND<2.5	ND<2.5	66	ND<250	ND<25	ND<2.5	ND<2.5	
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	--	--	--	--	--	--	--	--	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	9/29/97	6,100	56	9.0	340	190	ND<25	--	--	--	--	--	--	--	--
	12/1/97	6,500	24	ND<2.5	400	250	ND<25	--	--	--	--	--	--	--	--
	3/19/98	2,000	20	ND<2.5	73	79	ND<25	--	--	--	--	--	--	--	--
	5/29/98	5,700	22	7.3	290	350	ND<25	--	--	--	--	--	--	--	--
	9/15/98	1,700	15	ND<2.5	44	5.1	ND<25	--	--	--	--	--	--	--	--
	11/30/98	4,800	42	12	270	640	ND<25	--	--	--	--	--	--	--	--
	1/17/99	3,400	33	ND<5	200	190	ND<50	--	--	--	--	--	--	--	--
	6/10/99	1,700	7.8	1.5	23	4.1	ND<5	--	--	--	--	--	--	--	--
	9/7/99	1,900	9.7	2.1	70	2.9	ND<5	--	--	--	--	--	--	--	--
	12/13/99	1,900	8.0	1.1	10	1.1	ND<5	--	--	--	--	--	--	--	--
	3/13/00	1,500	7.5	ND<0.5	6.7	2.9	ND<5	--	--	--	--	--	--	--	--
	6/12/00	1,200	5.4	ND<0.5	5.2	1.0	ND<5	--	--	--	--	--	--	--	--
	11/10/00	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	0.70	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	6/10/03	550	0.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	9/9/03	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/23/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	2,600	2.5	ND<0.5	36	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	1,600	2.0	ND<0.5	16	16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	830	1.6	ND<0.5	15	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	710	ND<0.5	ND<0.5	0.75	0.52	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/20/05	1,400	1.1	ND<0.5	9.2	8.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	1,100	0.56	ND<0.5	3.4	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	270	ND<0.5	ND<0.5	1.2	0.98	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	930	0.84	ND<0.5	10	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	650	ND<0.5	ND<0.5	1.2	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	800	ND<0.5	ND<0.5	1.0	0.62	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	800	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	700	ND<0.5	ND<0.5	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	3,200	1.3	ND<0.5	50	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	4/28/09	4,500	7.4	3.8	33	7.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	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	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	2,100	4.6	1.3	16	3.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	1,200	3.3	0.59	1.6	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	
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	1,900	3.5	1.2	0.79	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/31/12	1,700	1.5	0.55	6.0	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/9/12	1,600	1.4	0.79	1.4	0.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/7/12	1,500	1.0	ND<0.5	0.51	0.65	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/13/12	690	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	
	2/12/13	860	1.0	ND<0.5	2.3	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	
	4/23/13	720	0.65	0.61	1.0	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	
6/24/13	1,700	1.3	ND<0.5	2.7	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
8/21/13	880	0.54	ND<0.5	1.7	0.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
11/7/13	330	ND<0.5	ND<0.5	0.51	0.73	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-8	9/5/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	
	12/23/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	7.3	ND<0.5	ND<0.5	
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/10/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	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<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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	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
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	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
	6/25/13	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
	8/22/13	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
11/7/13	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	0.80	0.80	2.1	ND<0.5	ND<0.5	ND<0.5	5.9	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/04	760	8.5	ND<0.5	4.9	0.95	18	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	1,100	4.4	ND<0.5	1.3	0.67	11	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	1,200	3.4	0.59	16	7.6	6.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	610	0.52	ND<0.5	1.3	ND<0.5	2.0	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	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	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	NS
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	3,300	68	2.1	110	7.8	16	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/08	1,200	8.2	0.52	4.0	0.74	5.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5	
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	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	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/3/10	430	1.1	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		
2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4/26/11	1,300	14	ND<0.5	2.8	0.71	23	ND<0.5	ND<0.5	ND<0.5	26	ND<50	ND<5	ND<0.5	ND<0.5		
8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	10/11/11	470	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	2,500	12	1.1	9.0	3.0	7.4	ND<0.5	ND<0.5	ND<0.5	8.8	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/12	740	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	1,900	4.5	0.75	1.7	1.0	3.4	ND<0.5	ND<0.5	ND<0.5	5.0	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	2,800	20	0.91	3.8	2.7	6.0	ND<0.5	ND<0.5	ND<0.5	29	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	1,500	20	0.70	1.7	0.84	9.0	ND<0.5	ND<0.5	ND<0.5	40	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	1,400	3.1	ND<0.5	0.70	0.58	4.2	ND<0.5	ND<0.5	ND<0.5	12	ND<50	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
	3/23/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	0.61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/2/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/19/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	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
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/2/10	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
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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
1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5/7/12	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	
8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/12/12	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 D-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)	Ethyl-benzene ^(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 (cont.)	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	6/25/13	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
	8/21/13	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
	11/7/13	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
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	100,000	6,100	9,000	3,100	20,000	3.3	ND<0.5	ND<0.5	ND<0.5	25	ND<200	ND<20	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/3/10	62,000	3,600	5,900	2,600	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	8/3/10	53,000	2,800	3,800	2,100	10,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	11/4/10	59,000	2,100	5,400	1,400	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	2/2/11	20,000	210	610	560	3,600	ND<5	ND<5	ND<5	ND<5	38	ND<500	ND<50	ND<5	ND<5
	4/28/11	20,000	300	920	450	4,300	ND<5	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
	8/4/11	15,000	96	370	240	2,800	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	10/25/11	18,000	130	500	319	2,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5	18	ND<50	ND<10	ND<0.5	ND<0.5
	2/1/12	13,000	380	710	83	2,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<50	ND<2.5	ND<2.5
	5/11/12	1,100	3.8	15	6.7	150	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	8/7/12	10,000	54	83	270	1,400	2.3	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<5	ND<0.5	ND<0.5
11/13/12	1,100	5.7	4.1	15	86	1.6	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5	
2/13/13	6,400	28	72	160	860	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5	
4/24/13	5,800	16	18	140	640	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	6/24/13	8,000	24	34	190	830	ND<0.9	ND<0.9	ND<0.9	ND<0.9	5.8	ND<90	ND<9	ND<0.9	ND<0.9
	8/22/13	9,600	26	32	260	940	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.6	ND<200	ND<20	ND<0.9	ND<0.9
	11/7/13	8,800	50	54	380	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	12	ND<150	ND<15	ND<1.5	ND<1.5
MW-12	6/14/12	6,900	8.5	2.2	96	22	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	8/8/12	6,000	10	2.2	100	12	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	11/14/12	5,500	6.8	2.0	67	13	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	2/13/13	2,500	7.6	1.3	26	3.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/24/13	1,400	2.2	0.78	7.7	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<20	ND<0.5	ND<0.5
	6/25/13	4,400	8.8	5.2	26	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	4,500	15	2.4	33	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	4,600	15	2.4	47	13	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
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	

TABLE D-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)	Ethyl- benzene ^(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-2 (cont.)	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	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	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	NS
	5/5/10	2,800	130	6.1	170	130	1,300	ND<2.5	ND<2.5	12	1,700	ND<250	ND<25	ND<2.5	ND<2.5	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/4/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	ND<50	ND<0.5	ND<0.5	ND<0.5	0.51	0.79	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/12/12	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
2/12/13	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
4/24/13	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl- benzene ^(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-2 (cont.)	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
VW-3	8/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/4/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/12/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/2/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	7/20/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/21/05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/16/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	1,100	
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--	
	8/2/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	NS	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<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	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/4/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/7/13	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
	8/9/06	28,000	1,600	150	1,200	2,200	13,000	ND<15	ND<15	84	4,900	ND<2,500	ND<150	ND<15	ND<15
	11/8/06	20,000	1,100	78	990	1,600	6,800	ND<15	ND<15	47	4,400	ND<8,000	ND<150	ND<15	ND<15
	2/14/07	15,000	820	37	810	1,000	8,300	ND<15	ND<15	58	8,500	ND<4,000	ND<150	ND<15	ND<15
	5/17/07	16,000	850	35	810	1,200	6,700	ND<10	ND<10	42	12,000	ND<2,000	ND<100	--	--

TABLE D-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)	Ethyl-benzene ^(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 (cont.)	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	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
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	14,000	1,000	270	280	1,600	4,500	ND<8	ND<8	28	4,800	ND<800	ND<80	ND<8	ND<8
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	6,600	350	64	170	730	2,600	ND<5	ND<5	15	1,400	ND<500	ND<50	ND<5	ND<5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	2,000	32	4.3	49	220	1,500	ND<3	ND<3	9.7	1,000	ND<800	ND<30	ND<3	ND<3
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	590	1.6	ND<0.5	7.1	22	28	ND<0.5	ND<0.5	ND<0.5	27	ND<80	ND<5	ND<0.5	ND<0.5
8/7/12	2,800	24	3.7	74	68	110	ND<0.5	ND<0.5	0.94	62	ND<400	ND<5	ND<0.5	ND<0.5	
11/13/12	180	2.3	0.63	4.7	2.3	17	ND<0.5	ND<0.5	ND<0.5	9.6	ND<50	ND<5	ND<0.5	ND<0.5	
2/12/13	160	ND<0.5	ND<0.5	3.6	6.0	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
4/24/13	2,000	35	21	22	180	76	ND<0.5	ND<0.5	0.70	33	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	8/22/13	3,500	28	3.8	35	11	100	ND<0.5	ND<0.5	0.98	42	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	2,800	14	1.8	19	7.3	43	ND<0.5	ND<0.5	ND<0.5	25	ND<50	ND<5	ND<0.5	ND<0.5
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	28	510	110	6,400	ND<8	ND<8	64	5,200	ND<12,000	ND<80	ND<8	ND<8
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	
8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/4/10	4,900	230	82	150	630	980	ND<5	ND<5	6.3	14,000	ND<500	ND<50	ND<5	ND<5	

TABLE D-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)	Ethyl- benzene ^(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 (cont.)	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	130	1.6	ND<0.5	1.5	5.2	350	ND<0.5	ND<0.5	1.3	630	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	120	ND<0.5	ND<0.5	ND<0.5	380	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/12	59	ND<0.5	ND<0.5	0.59	0.54	2.8	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/24/13	100	1.2	0.88	1.6	7.4	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.89	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	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	
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
	8/2/10	1,400	53	11	67	78	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/10	ND<50	0.90	ND<0.5	0.70	1.3	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
2/2/11	58	1.9	ND<0.5	2.0	2.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl- benzene ^(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-1 (cont.)	4/28/11	72	2.2	5.7	2.0	9.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	55	0.57	ND<0.5	0.92	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
	10/11/11	180	3.0	1.0	5.1	10	0.77	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	2,500	23	6.4	85	190	3.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/9/12	2,000	24	5.6	75	160	2.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	140	1.7	1.0	3.2	7.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/12	250	ND<0.5	ND<0.5	2.7	5.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	ND<50	ND<0.5	ND<0.5	0.54	0.68	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/22/13	ND<50	ND<0.5	ND<0.5	ND<0.5	0.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/24/13	12,000	110	66	280	860	13	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	1,100	18	5.8	34	82	5.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	5,200	69	13	130	200	18	ND<0.5	ND<0.5	ND<0.5	15	ND<50	ND<8	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<0.9	ND<0.9
	8/2/10	3,800	420	22	21	28	300	ND<0.9	ND<0.9	3.5	600	ND<300	ND<20	ND<0.9	ND<0.9
	11/2/10	2,600	230	7.0	11	4.0	300	ND<0.5	ND<0.5	3.3	660	ND<300	ND<8	ND<0.5	ND<0.5
	2/1/11	3,300	220	6.8	18	10	210	ND<0.5	ND<0.5	2.7	620	ND<300	ND<5	ND<0.5	ND<0.5

TABLE D-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)	Ethyl- benzene ^(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-2 (cont.)	4/27/11	1,900	78	2.6	2.6	5.6	200	ND<0.5	ND<0.5	2.2	590	ND<300	ND<5	ND<0.5	ND<0.5
	8/4/11	4,400	420	10	24	13	160	ND<0.5	ND<0.5	2.1	500	ND<100	ND<10	ND<0.5	ND<0.5
	10/11/11	2,700	110	5.0	4.0	11	170	ND<0.5	ND<0.5	1.9	440	ND<100	ND<5	ND<0.5	ND<0.5
	1/31/12	4,400	220	7.0	15	8.9	130	ND<0.5	ND<0.5	1.2	400	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/12	2,200	140	8.6	0.63	15	98	ND<0.5	ND<0.5	1.1	430	ND<200	ND<8	ND<0.5	ND<0.5
	8/7/12	4,000	360	8.9	14	15	110	ND<0.5	ND<0.5	1.2	380	ND<400	ND<5	ND<0.5	ND<0.5
	11/14/12	4,000	190	7.8	13	13	120	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5
	2/13/13	6,400	500	18	60	19	140	ND<0.5	ND<0.5	1.6	510	ND<400	ND<8	ND<0.5	ND<0.5
	4/24/13	4,500	320	7.2	26	9.5	100	ND<0.5	ND<0.5	1.3	370	ND<80	ND<5	ND<0.5	ND<0.5
	6/25/13	4,900	250	6.2	58	26	100	ND<0.5	ND<0.5	1.2	400	ND<50	ND<8	ND<0.5	ND<0.5
	8/22/13	8,300	600	23	96	42	240	ND<0.5	ND<0.5	2.5	500	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	6,500	520	18	57	17	150	ND<0.9	ND<0.9	2.2	310	ND<90	ND<9	ND<0.9	ND<0.9	
DW-3	5/22/08	4,700	8.7	2.1	120	200	0.86	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,800	8.1	1.4	94	100	2.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	4,100	59	10	160	70	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<80	ND<0.5	ND<0.5
	2/11/09	1,700	21	1.7	35	21	9.8	ND<0.5	ND<0.5	ND<0.5	16	ND<50	ND<10	ND<0.5	ND<0.5
	4/27/09	1,800	16	2.3	26	10	3.0	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5	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
	8/2/10	640	4.0	ND<0.5	5.3	3.9	0.59	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/3/10	170	0.85	ND<0.5	ND<0.5	0.59	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	60	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 D-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)	Ethyl- benzene ^(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 (cont.)	4/27/11	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	
	8/4/11	310	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	
	10/10/11	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	
	1/31/12	1,300	1.0	ND<0.5	19	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/12	750	1.2	ND<0.5	5.4	4.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5	
	8/6/12	900	0.56	ND<0.5	7.0	4.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	11/13/12	410	ND<0.5	ND<0.5	1.7	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/12/13	120	ND<0.5	ND<0.5	1.2	0.50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	4/23/13	66	ND<0.5	2.3	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	
	6/25/13	5,600	1.1	1.1	120	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/21/13	840	1.4	ND<0.5	3.2	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
11/7/13	960	ND<0.5	ND<0.5	5.1	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
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	NS
	5/6/10	180	3.3	3.7	13	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	ND<50	0.70	4.0	0.59	5.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-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)	Ethyl-benzene ^(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-4 (cont.)	4/26/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	ND<50	ND<0.5	0.67	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	ND<50	ND<0.5	ND<0.5	0.70	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	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	
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
	8/2/10	12,000	240	9.4	350	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	11/2/10	5,000	120	3.6	68	35	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/1/11	3,800	70	2.5	37	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/11	710	8.0	ND<0.5	4.3	2.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	6,100	76	3.7	110	97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	10/10/11	6,800	59	4.7	140	150	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	1/31/12	8,200	130	5.9	170	180	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<200	ND<1.5	ND<1.5
	5/10/12	11,000	100	6.8	320	380	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	8/8/12	14,000	84	11	480	590	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
11/14/12	8,800	24	2.5	110	140	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5	

TABLE D-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)	Ethyl-benzene ^(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-5 (cont.)	2/13/13	4,400	65	5.4	110	110	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	4/24/13	3,000	32	2.5	38	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/25/13	120,000	120	ND<4	1,400	2,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<200	ND<4	ND<4
	8/22/13	22,000	58	11	770	1,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	11/7/13	26,000	62	12	1,000	1,400	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
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
	8/2/10	4,500	13	4.4	54	14	5.9	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<8	ND<0.5	ND<0.5
	11/2/10	5,200	20	4.2	47	13	8.9	ND<0.9	ND<0.9	ND<0.9	26	ND<90	ND<9	ND<0.9	ND<0.9
	2/1/11	4,000	11	2.9	32	11	6.0	ND<0.5	ND<0.5	ND<0.5	16	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/11	3,100	8.8	2.4	12	8.2	6.2	ND<0.5	ND<0.5	ND<0.5	19	ND<50	ND<8	ND<0.5	ND<0.5
	8/4/11	2,900	4.2	0.95	6.0	4.9	6.5	ND<0.5	ND<0.5	ND<0.5	24	ND<50	ND<8	ND<0.5	ND<0.5
	10/10/11	1,500	4.1	3.3	3.0	3.3	4.9	ND<0.5	ND<0.5	ND<0.5	20	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	4,700	13	2.4	51	12	8.1	ND<0.5	ND<0.5	ND<0.5	28	ND<50	ND<80	ND<0.5	ND<0.5
	5/10/12	2,600	7.8	1.6	12	5.2	4.6	ND<0.5	ND<0.5	ND<0.5	17	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	4,500	15	3.2	41	8.3	6.2	ND<0.5	ND<0.5	ND<0.5	20	ND<50	ND<8	ND<0.5	ND<0.5
	11/14/12	3,000	5.4	1.8	11	4.7	2.1	ND<0.5	ND<0.5	ND<0.5	6.8	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	4,600	25	4.0	53	8.7	10	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<9	ND<0.5	ND<0.5
	4/24/13	1,000	2.9	1.1	2.1	0.98	1.8	ND<0.5	ND<0.5	ND<0.5	6.2	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	7,000	23	3.0	80	13	9.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
8/22/13	5,700	28	3.4	80	11	12	ND<0.5	ND<0.5	ND<0.5	37	ND<90	ND<8	ND<0.5	ND<0.5	
11/7/13	2,400	14	1.7	5.6	3.1	10	ND<0.5	ND<0.5	ND<0.5	35	ND<80	ND<5	ND<0.5	ND<0.5	

TABLE D-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)	Ethyl-benzene ^(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-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
	8/3/10	3,500	280	13	49	30	130	ND<0.5	ND<0.5	1.3	220	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/10	660	30	1.2	5.0	3.3	130	ND<0.5	ND<0.5	1.2	220	ND<50	ND<5	ND<0.5	ND<0.5
	2/2/11	760	43	1.8	9.4	4.0	91	ND<0.5	ND<0.5	0.76	160	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/11	1,600	120	4.6	4.2	6.7	95	ND<0.5	ND<0.5	1.0	170	ND<200	ND<5	ND<0.5	ND<0.5
	8/4/11	1,400	83	2.5	4.4	5.2	97	ND<0.5	ND<0.5	0.96	160	ND<80	ND<5	ND<0.5	ND<0.5
	10/11/11	400	45	1.1	0.80	1.6	90	ND<0.5	ND<0.5	0.89	180	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	7,800	380	14	170	59	120	ND<0.5	ND<0.5	1.3	300	ND<150	ND<50	ND<0.5	ND<0.5
	5/10/12	940	47	1.6	6.1	5.2	120	ND<0.5	ND<0.5	1.1	280	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	1,200	33	2.5	8.0	8.4	80	ND<0.5	ND<0.5	0.83	250	ND<300	ND<5	ND<0.5	ND<0.5
	11/13/12	6,500	340	11	45	22	51	ND<0.5	ND<0.5	0.56	160	ND<80	ND<8	ND<0.5	ND<0.5
	2/13/13	970	78	3.0	10	2.7	18	ND<0.5	ND<0.5	ND<0.5	56	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	3,300	230	9.2	22	10	50	ND<0.5	ND<0.5	0.55	160	ND<50	ND<5	ND<0.5	ND<0.5
6/25/13	27,000	590	32	960	640	100	ND<0.5	ND<0.5	0.95	330	ND<80	ND<20	ND<4	ND<0.5	
8/22/13	15,000	420	18	520	320	96	ND<2.5	ND<2.5	ND<2.5	310	ND<250	ND<25	ND<2.5	ND<2.5	
11/7/13	9,700	260	8.4	200	63	52	ND<1.5	ND<1.5	ND<1.5	170	ND<150	ND<15	ND<1.5	ND<1.5	
DW-8	4/28/11	72,000	5,200	10,000	1,900	12,000	ND<10	ND<10	ND<10	ND<10	56	ND<1,000	ND<100	ND<10	ND<10
	8/4/11	65,000	2,900	8,100	650	10,000	ND<20	ND<20	ND<20	ND<20	ND<90	ND<2,000	ND<200	ND<20	ND<20
	10/25/11	82,000	4,300	10,000	1,900	12,000	ND<4	ND<4	ND<4	ND<4	58	ND<400	ND<40	ND<4	ND<4
	2/1/12	52,000	2,500	5,200	1,900	8,200	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9
	5/11/12	11,000	500	1,000	300	1,200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	25	ND<250	ND<25	ND<2.5	ND<2.5
	8/8/12	52,000	1,900	4,500	1,500	5,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	58	ND<250	ND<25	ND<2.5	ND<2.5

TABLE D-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)	Ethyl- benzene ^(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-8 (cont.)	11/14/12	27,000	580	870	510	3,400	ND<5	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
	2/14/13	63,000	3,000	5,400	2,000	8,700	ND<5	ND<5	ND<5	ND<5	110	ND<500	ND<150	ND<5	ND<5
	4/24/13	5,900	350	370	140	790	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.0	ND<200	ND<80	ND<0.9	ND<0.9
	6/24/13	55,000	2,200	3,200	2,100	7,400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	56	ND<90	ND<50	ND<0.9	ND<0.9
	8/22/13	16,000	380	240	500	1,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	56,000	1,800	2,800	2,100	7,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	37	ND<250	ND<25	ND<2.5	ND<2.5
DW-9	6/14/12	8,300	89	2.4	21	96	36	ND<1.5	ND<1.5	ND<1.5	80	ND<150	ND<15	ND<1.5	ND<1.5
	8/8/12	12,000	310	11	400	110	35	ND<1.5	ND<1.5	ND<1.5	96	ND<150	ND<15	ND<1.5	ND<1.5
	11/14/12	10,000	210	7.5	230	65	28	ND<1.5	ND<1.5	ND<1.5	94	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	7,800	150	9.4	160	28	45	ND<1.5	ND<1.5	ND<1.5	110	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	3,200	18	1.7	7.8	7.2	21	ND<0.5	ND<0.5	ND<0.5	67	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	490	17	1,100	430	30	ND<4	ND<4	ND<4	62	ND<400	ND<40	ND<4	ND<4
	8/22/13	19,000	320	13	690	240	28	ND<4	ND<4	ND<4	87	ND<2,000	ND<40	ND<4	ND<4
	11/7/13	8,000	120	5.9	100	38	25	ND<1.5	ND<1.5	ND<1.5	73	ND<150	ND<15	ND<1.5	ND<1.5
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	0.80	ND<0.5	ND<0.5	0.55	ND<5	--	--	--	--	--	--	--	--
MW-D	1/17/99	5,600	1,600	130	66	220	ND<5	--	--	--	--	--	--	--	--
MW-E	1/17/99	5,700	1,600	180	180	310	ND<50	--	--	--	--	--	--	--	--
	6/10/99	5,000	1,300	130	320	450	ND<25	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
IP-1	7/23/08	62,000	2,100	6,800	2,700	11,000	16	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	10/13/08	55,000	3,100	3,300	2,300	7,700	ND<15	ND<15	ND<15	ND<15	98	ND<1,500	ND<150	ND<15	ND<15

TABLE D-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)	Ethyl-benzene ^(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-1 (cont.)	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	
	4/27/11	24,000	750	2,200	420	4,800	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7	
	2/1/12	15,000	370	350	600	1,300	ND<2	ND<2	ND<2	ND<2	16	ND<200	ND<20	NS	NS	
	5/9/12	16,000	580	850	800	2,100	ND<2	ND<2	ND<2	ND<2	12	ND<200	ND<20	ND<2	ND<2	
	8/8/12	12,000	260	190	470	860	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	11/13/12	9,000	170	74	280	540	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	2/13/13	17,000	480	480	690	2,000	ND<2	ND<2	ND<2	ND<2	20	ND<200	ND<20	ND<2	ND<2	
	4/24/13	9,700	230	160	370	1,200	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	6/24/13	14,000	130	260	280	1000	ND<2	ND<2	ND<2	ND<2	10	ND<200	ND<20	ND<2	ND<2	
	8/22/13	23,000	360	430	740	2,300	ND<2	ND<2	ND<2	ND<2	25	ND<200	ND<20	ND<2	ND<2	
11/7/13	7,400	70	94	200	400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	14	ND<90	ND<9	ND<0.9	ND<0.9		
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	
	4/26/11	350	8.9	1.7	4.7	5.7	0.90	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/12	340	10	4.8	6.3	13	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	160	5.6	3.7	1.3	3.6	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
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	

TABLE D-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)	Ethyl-benzene ^(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-3 (cont.)	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
	4/26/11	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
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	ND<50	0.51	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
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
	4/26/11	ND<50	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
	5/8/12	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	5.3	ND<0.5	ND<0.5
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	140	ND<0.5	43	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
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
	4/26/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.72	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE D-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)	Ethyl- benzene ^(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-5 (cont.)	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	4.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	180	ND<0.5	ND<0.5	3.0	6.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
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
	4/27/11	ND<50	1.1	0.66	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	57	ND<0.5	11	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
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
	4/27/11	220	8.1	0.69	3.4	1.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE D-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)	Ethyl-benzene ^(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-7 (cont.)	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	5.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
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
	4/28/11	13,000	620	2,000	240	2,200	ND<3	ND<3	ND<3	ND<3	27	ND<300	ND<30	ND<3	ND<3
	2/1/12	67,000	2,900	7,300	1400	11,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	NS	NS
	5/9/12	50,000	2,400	4,900	790	8,600	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9
	8/8/12	63,000	3,500	6,700	980	7,400	ND<9	ND<9	ND<9	ND<9	65	ND<900	ND<90	ND<9	ND<9
	11/14/12	33,000	1,000	2,300	260	4,300	ND<7	ND<7	ND<7	ND<7	47	ND<700	ND<70	ND<7	ND<7
	2/14/13	65,000	3,300	7,100	1,600	9,200	ND<7	ND<7	ND<7	ND<7	110	ND<700	ND<150	ND<7	ND<7
	4/24/13	33,000	1,700	4,200	430	5,600	ND<6	ND<6	ND<6	ND<6	ND<30	ND<600	ND<60	ND<6	ND<6
	8/22/13	19,000	130	440	260	1,900	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<80	ND<4	ND<4
11/7/13	18,000	400	520	170	1,700	ND<4	ND<4	ND<4	ND<4	23	ND<400	ND<40	ND<4	ND<4	
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
	4/28/11	38,000	1,400	4,300	860	6,000	ND<6	ND<6	ND<6	ND<6	38	ND<600	ND<60	ND<6	ND<6
	2/1/12	19,000	180	1,200	640	3,100	ND<3	ND<3	ND<3	ND<3	ND<15	ND<300	ND<30	NS	NS
	5/9/12	10,000	14	180	270	780	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	8/7/12	11,000	22	240	210	880	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	11/13/12	9,800	22	200	150	690	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	12,000	68	560	280	1,300	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5

TABLE D-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)	Ethyl-benzene ^(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-9 (cont.)	4/24/13	8,800	42	480	210	1,100	ND<1.5	ND<1.5	ND<1.5	ND<1.5	11	ND<150	ND<15	ND<1.5	ND<1.5
	8/22/13	7,500	14	250	190	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	1,100	4.9	30	14	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
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
	4/26/11	4,300	28	140	110	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5
	2/1/12	3,200	8.2	4.6	93	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	NS	NS
	5/9/12	3,900	24	38	110	58.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	8/7/12	2,700	15	5.8	31	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	2,600	12	7.6	4.7	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/12/13	6,500	26	270	180	590	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	4/24/13	1,800	12	11	24	81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,500	5.4	1.1	0.76	6.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	1,100	2.2	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	810	2.6	1.7	1.5	7.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

- (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), methanol, ethanol, 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l).
- (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 E

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

Laboratory Results

Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 5 Water Samples
Project Name : Tesoro - Livermore #67076
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 and TNI 2009 standards. 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,



Troy Turpen

Subject : 5 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limits for Nitrate as N for samples DW-1, DW-5, DW-8, MW-11, and MW-2 and Sulfate for sample DW-8 were raised due to dilution for matrix effects.

Some Method Reporting Limits have been increased due to the presence of interfering compounds.

Recoveries for some Matrix Spike/Matrix Spike Duplicate analytes were outside of control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-1**

Matrix : Water

Lab Number : 86466-01

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/08/13 16:29
Sulfate	27	2.5	mg/L	EPA 300.0	11/08/13 16:29
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 10:59
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:26
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/13 11:04
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 11:04
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 11:04
Manganese, Dissolved	4.5	0.0050	mg/L	EPA 6010B	11/14/13 11:04
Sodium, Dissolved	180	5.0	mg/L	EPA 6010B	11/14/13 13:30
Benzene	69	0.50	ug/L	EPA 8260B	11/08/13 14:51
Toluene	13	0.50	ug/L	EPA 8260B	11/08/13 14:51
Ethylbenzene	130	0.50	ug/L	EPA 8260B	11/08/13 14:51
Total Xylenes	200	0.50	ug/L	EPA 8260B	11/08/13 14:51
Methyl-t-butyl ether (MTBE)	18	0.50	ug/L	EPA 8260B	11/08/13 14:51
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:51
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:51
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:51
Tert-Butanol	15	5.0	ug/L	EPA 8260B	11/08/13 14:51
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 14:51
Ethanol	< 8.0	8.0	ug/L	EPA 8260B	11/08/13 14:51
TPH as Gasoline	5200	150	ug/L	EPA 8260B	11/12/13 22:21
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:51
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:51
1,2-Dichloroethane-d4 (Surr)	92.2		% Recovery	EPA 8260B	11/08/13 14:51
Toluene - d8 (Surr)	94.2		% Recovery	EPA 8260B	11/08/13 14:51

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-11**

Matrix : Water

Lab Number : 86466-02

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 13:54
Sulfate	190	5.0	mg/L	EPA 300.0	11/08/13 13:54
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 11:09
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:26
Arsenic, Dissolved	0.049	0.015	mg/L	EPA 6010B	11/13/13 12:13
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 14:46
Iron, Dissolved	0.13	0.10	mg/L	EPA 6010B	11/14/13 14:46
Manganese, Dissolved	0.45	0.0050	mg/L	EPA 6010B	11/13/13 12:13
Sodium, Dissolved	1300	50	mg/L	EPA 6010B	11/14/13 12:52
Benzene	50	1.5	ug/L	EPA 8260B	11/13/13 01:20
Toluene	54	1.5	ug/L	EPA 8260B	11/13/13 01:20
Ethylbenzene	380	1.5	ug/L	EPA 8260B	11/13/13 01:20
Total Xylenes	1000	1.5	ug/L	EPA 8260B	11/13/13 01:20
Methyl-t-butyl ether (MTBE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
Diisopropyl ether (DIPE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
Ethyl-t-butyl ether (ETBE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
Tert-amyl methyl ether (TAME)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
Tert-Butanol	12	7.0	ug/L	EPA 8260B	11/13/13 01:20
Methanol	< 150	150	ug/L	EPA 8260B	11/13/13 01:20
Ethanol	< 15	15	ug/L	EPA 8260B	11/13/13 01:20
TPH as Gasoline	8800	150	ug/L	EPA 8260B	11/13/13 01:20
1,2-Dichloroethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
1,2-Dibromoethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 01:20
1,2-Dichloroethane-d4 (Surr)	92.0		% Recovery	EPA 8260B	11/13/13 01:20
Toluene - d8 (Surr)	93.4		% Recovery	EPA 8260B	11/13/13 01:20

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-2**

Matrix : Water

Lab Number : 86466-03

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 14:06
Sulfate	72	5.0	mg/L	EPA 300.0	11/08/13 14:06
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 11:22
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:27
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:28
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:00
Iron, Dissolved	1.0	0.10	mg/L	EPA 6010B	11/14/13 15:00
Manganese, Dissolved	2.5	0.0050	mg/L	EPA 6010B	11/13/13 12:28
Sodium, Dissolved	60	0.50	mg/L	EPA 6010B	11/13/13 12:28
Benzene	140	0.90	ug/L	EPA 8260B	11/13/13 01:55
Toluene	7.5	0.90	ug/L	EPA 8260B	11/13/13 01:55
Ethylbenzene	160	0.90	ug/L	EPA 8260B	11/13/13 01:55
Total Xylenes	170	0.90	ug/L	EPA 8260B	11/13/13 01:55
Methyl-t-butyl ether (MTBE)	28	0.90	ug/L	EPA 8260B	11/13/13 01:55
Diisopropyl ether (DIPE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 01:55
Ethyl-t-butyl ether (ETBE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 01:55
Tert-amyl methyl ether (TAME)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 01:55
Tert-Butanol	22	5.0	ug/L	EPA 8260B	11/13/13 01:55
Methanol	< 90	90	ug/L	EPA 8260B	11/13/13 01:55
Ethanol	< 9.0	9.0	ug/L	EPA 8260B	11/13/13 01:55
TPH as Gasoline	4700	90	ug/L	EPA 8260B	11/13/13 01:55
1,2-Dichloroethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 01:55
1,2-Dibromoethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 01:55
1,2-Dichloroethane-d4 (Surr)	92.2		% Recovery	EPA 8260B	11/13/13 01:55
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	11/13/13 01:55

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-8**

Matrix : Water

Lab Number : 86466-04

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 14:40
Sulfate	< 5.0	5.0	mg/L	EPA 300.0	11/08/13 14:40
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 11:53
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:27
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:33
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:04
Iron, Dissolved	2.0	0.10	mg/L	EPA 6010B	11/14/13 15:04
Manganese, Dissolved	4.0	0.0050	mg/L	EPA 6010B	11/13/13 12:33
Sodium, Dissolved	160	0.50	mg/L	EPA 6010B	11/13/13 12:33
Benzene	1800	2.5	ug/L	EPA 8260B	11/12/13 11:54
Toluene	2800	15	ug/L	EPA 8260B	11/13/13 15:16
Ethylbenzene	2100	15	ug/L	EPA 8260B	11/13/13 15:16
Total Xylenes	7900	15	ug/L	EPA 8260B	11/13/13 15:16
Methyl-t-butyl ether (MTBE)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
Diisopropyl ether (DIPE)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
Ethyl-t-butyl ether (ETBE)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
Tert-amyl methyl ether (TAME)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
Tert-Butanol	37	15	ug/L	EPA 8260B	11/12/13 11:54
Methanol	< 250	250	ug/L	EPA 8260B	11/12/13 11:54
Ethanol	< 25	25	ug/L	EPA 8260B	11/12/13 11:54
TPH as Gasoline	56000	1500	ug/L	EPA 8260B	11/13/13 15:16
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 11:54
1,2-Dichloroethane-d4 (Surr)	88.3		% Recovery	EPA 8260B	11/12/13 11:54
Toluene - d8 (Surr)	93.0		% Recovery	EPA 8260B	11/12/13 11:54

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-5**

Matrix : Water

Lab Number : 86466-05

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 14:52
Sulfate	120	5.0	mg/L	EPA 300.0	11/08/13 14:52
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 12:03
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:29
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:46
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:08
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 15:08
Manganese, Dissolved	0.91	0.0050	mg/L	EPA 6010B	11/13/13 12:46
Sodium, Dissolved	370	5.0	mg/L	EPA 6010B	11/14/13 12:56
Benzene	62	4.0	ug/L	EPA 8260B	11/12/13 13:04
Toluene	12	4.0	ug/L	EPA 8260B	11/12/13 13:04
Ethylbenzene	1000	4.0	ug/L	EPA 8260B	11/12/13 13:04
Total Xylenes	1400	4.0	ug/L	EPA 8260B	11/12/13 13:04
Methyl-t-butyl ether (MTBE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
Diisopropyl ether (DIPE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
Ethyl-t-butyl ether (ETBE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
Tert-amyl methyl ether (TAME)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
Tert-Butanol	< 20	20	ug/L	EPA 8260B	11/12/13 13:04
Methanol	< 400	400	ug/L	EPA 8260B	11/12/13 13:04
Ethanol	< 40	40	ug/L	EPA 8260B	11/12/13 13:04
TPH as Gasoline	26000	400	ug/L	EPA 8260B	11/12/13 13:04
1,2-Dichloroethane	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
1,2-Dibromoethane	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:04
1,2-Dichloroethane-d4 (Surr)	88.3		% Recovery	EPA 8260B	11/12/13 13:04
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	11/12/13 13:04

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/13/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	11/13/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	11/14/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Methanol	< 50	50	ug/L	EPA 8260B	11/12/2013
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane-d4 (Surr)	98.6		%	EPA 8260B	11/12/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Toluene - d8 (Surr)	102		%	EPA 8260B	11/12/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/11/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/11/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane-d4 (Surr)	98.3		%	EPA 8260B	11/11/2013	Methanol	< 50	50	ug/L	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	102		%	EPA 8260B	11/11/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
						Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						1,2-Dichloroethane-d4 (Surr)	99.5		%	EPA 8260B	11/08/2013
						Toluene - d8 (Surr)	99.2		%	EPA 8260B	11/08/2013

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/13/2013
Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	11/08/2013
Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	11/08/2013
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	11/08/2013
Sulfate	<0.50	0.50	mg/L	EPA 300.0	11/08/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ferrous Iron														
	86468-07	< 0.10	0.251	0.251	0.268	0.269	mg/L	SM 3500-Fe D	11/8/13	97.2	97.6	0.372	70.0-130	25
Hexavalent Chromium														
	86468-07	< 1.0	5.00	5.00	5.06	5.32	ug/L	EPA 7199	11/8/13	101	106	4.88	90.0-110	10
Nitrate as N														
	86468-07	0.35	0.500	0.500	0.785	0.792	mg/L	EPA 300.0	11/8/13	87.4	88.8	0.902	90.0-110	10
Sulfate														
	86468-07	41	2.50	2.50	43.1	43.2	mg/L	EPA 300.0	11/8/13	91.2	95.2	0.227	90.0-110	10
Arsenic, (Dis)														
	86466-02	0.049	0.400	0.400	0.464	0.476	mg/L	EPA 6010B	11/13/13	104	107	2.57	75-125	20
Manganese, (Dis)														
	86466-02	0.45	0.400	0.400	0.809	0.812	mg/L	EPA 6010B	11/13/13	90.1	90.9	0.395	75-125	20
Sodium, (Dis)														
	86466-02	1300	0.400	0.400	1250	1240	mg/L	EPA 6010B	11/13/13	0.00	0.00	1.44	75-125	20
Arsenic, (Dis)														
	86468-07	< 0.015	0.400	0.400	0.398	0.406	mg/L	EPA 6010B	11/14/13	99.4	101	2.09	75-125	20

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Chromium, (Dis)	86468-07	< 0.0050	0.400	0.400	0.384	0.390	mg/L	EPA 6010B	11/14/13	96.0	97.5	1.57	75-125	20
Iron, (Dis)	86468-07	< 0.10	0.400	0.400	0.383	0.385	mg/L	EPA 6010B	11/14/13	94.3	94.8	0.599	75-125	20
Manganese, (Dis)	86468-07	0.17	0.400	0.400	0.534	0.541	mg/L	EPA 6010B	11/14/13	91.9	93.6	1.26	75-125	20
Sodium, (Dis)	86468-07	< 0.50	0.400	0.400	38.2	0.00	mg/L	EPA 6010B	11/14/13	9540	0.00	200	75-125	20
Chromium, (Dis)	86466-02	< 0.0050	0.400	0.400	0.380	0.379	mg/L	EPA 6010B	11/14/13	94.6	94.5	0.0790	75-125	20
Iron, (Dis)	86466-02	0.13	0.400	0.400	0.504	0.509	mg/L	EPA 6010B	11/14/13	93.3	94.7	1.11	75-125	20
1,2-Dibromoethane	86476-01	<0.50	40.3	40.2	42.6	40.2	ug/L	EPA 8260B	11/11/13	106	99.9	5.66	70.0-130	25
1,2-Dichloroethane	86476-01	<0.50	40.0	39.9	38.2	36.8	ug/L	EPA 8260B	11/11/13	95.5	92.3	3.40	70.0-130	25
Benzene	86476-01	<0.50	40.0	39.9	38.5	38.6	ug/L	EPA 8260B	11/11/13	96.2	96.6	0.396	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Diisopropyl ether	86476-01	<0.50	39.9	39.8	39.4	39.4	ug/L	EPA 8260B	11/11/13	98.8	99.0	0.175	70.0-130	25
Ethanol	86476-01	<5.0	99.3	99.1	111	98.3	ug/L	EPA 8260B	11/11/13	111	99.2	11.6	55.0-150	25
Ethyl-tert-butyl ether	86476-01	<0.50	40.1	40.0	42.5	42.1	ug/L	EPA 8260B	11/11/13	106	105	0.613	70.0-130	25
Ethylbenzene	86476-01	<0.50	40.0	39.9	42.3	42.0	ug/L	EPA 8260B	11/11/13	106	105	0.624	70.0-130	25
Methanol	86476-01	<50	997	995	909	1020	ug/L	EPA 8260B	11/11/13	91.2	102	11.5	65.0-150	25
Methyl-t-butyl ether	86476-01	2.0	39.9	39.8	41.2	39.3	ug/L	EPA 8260B	11/11/13	98.4	93.8	4.80	70.0-130	25
P + M Xylene	86476-01	<0.50	40.0	39.9	42.4	41.9	ug/L	EPA 8260B	11/11/13	106	105	1.18	70.0-130	25
Tert-Butanol	86476-01	40	202	201	243	240	ug/L	EPA 8260B	11/11/13	101	99.2	1.48	70.0-130	25
Tert-amyl-methyl ether	86476-01	<0.50	40.3	40.2	43.0	42.0	ug/L	EPA 8260B	11/11/13	107	104	2.22	70.0-130	25
Toluene	86476-01	<0.50	40.0	39.9	40.1	39.9	ug/L	EPA 8260B	11/11/13	100	99.9	0.315	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	86468-08	<0.50	39.9	39.9	39.9	39.6	ug/L	EPA 8260B	11/12/13	99.9	99.3	0.619	70.0-130	25
1,2-Dibromoethane	86459-24	<0.50	40.2	39.9	41.5	40.9	ug/L	EPA 8260B	11/12/13	103	102	0.631	70.0-130	25
1,2-Dichloroethane	86459-24	<0.50	39.9	39.6	38.9	37.9	ug/L	EPA 8260B	11/12/13	97.6	95.8	1.85	70.0-130	25
Benzene	86459-24	73	39.9	39.6	107	107	ug/L	EPA 8260B	11/12/13	83.8	86.6	3.24	70.0-130	25
Diisopropyl ether	86459-24	<0.50	39.8	39.5	39.0	38.8	ug/L	EPA 8260B	11/12/13	98.1	98.3	0.212	70.0-130	25
Ethanol	86459-24	<5.0	99.1	98.4	89.8	105	ug/L	EPA 8260B	11/12/13	90.6	106	16.2	55.0-150	25
Ethyl-tert-butyl ether	86459-24	<0.50	40.0	39.7	41.6	40.1	ug/L	EPA 8260B	11/12/13	104	101	2.75	70.0-130	25
Ethylbenzene	86459-24	4.8	39.9	39.6	46.9	46.5	ug/L	EPA 8260B	11/12/13	106	105	0.330	70.0-130	25
Methanol	86459-24	<50	995	987	993	1070	ug/L	EPA 8260B	11/12/13	99.8	108	8.06	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	86459-24	<0.50	39.8	39.5	37.2	35.4	ug/L	EPA 8260B	11/12/13	93.4	89.7	4.08	70.0-130	25
P + M Xylene	86459-24	<0.50	39.9	39.6	42.4	42.3	ug/L	EPA 8260B	11/12/13	106	107	0.572	70.0-130	25
Tert-Butanol	86459-24	<5.0	201	200	202	205	ug/L	EPA 8260B	11/12/13	100	102	2.36	70.0-130	25
Tert-amyl-methyl ether	86459-24	<0.50	40.2	39.9	41.5	40.6	ug/L	EPA 8260B	11/12/13	103	102	1.54	70.0-130	25
Toluene	86459-24	1.4	39.9	39.6	41.2	40.7	ug/L	EPA 8260B	11/12/13	99.6	99.2	0.383	70.0-130	25
1,2-Dibromoethane	86467-11	<0.50	40.3	40.3	45.8	45.1	ug/L	EPA 8260B	11/8/13	114	112	1.59	70.0-130	25
1,2-Dichloroethane	86467-11	<0.50	40.0	40.0	43.9	42.8	ug/L	EPA 8260B	11/8/13	110	107	2.34	70.0-130	25
Benzene	86467-11	<0.50	40.0	40.0	42.3	41.6	ug/L	EPA 8260B	11/8/13	106	104	1.63	70.0-130	25
Diisopropyl ether	86467-11	<0.50	39.9	39.9	44.6	43.9	ug/L	EPA 8260B	11/8/13	112	110	1.71	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethanol	86467-11	<5.0	99.3	99.3	101	108	ug/L	EPA 8260B	11/8/13	102	109	6.35	55.0-150	25
Ethyl-tert-butyl ether	86467-11	<0.50	40.1	40.1	46.4	46.0	ug/L	EPA 8260B	11/8/13	116	115	0.908	70.0-130	25
Ethylbenzene	86467-11	<0.50	40.0	40.0	42.8	42.3	ug/L	EPA 8260B	11/8/13	107	106	1.14	70.0-130	25
Methanol	86467-11	<50	997	997	1030	1080	ug/L	EPA 8260B	11/8/13	103	108	4.84	65.0-150	25
Methyl-t-butyl ether	86467-11	<0.50	39.9	39.9	46.2	45.5	ug/L	EPA 8260B	11/8/13	116	114	1.52	70.0-130	25
P + M Xylene	86467-11	<0.50	40.0	40.0	43.3	42.9	ug/L	EPA 8260B	11/8/13	108	107	0.892	70.0-130	25
Tert-Butanol	86467-11	<5.0	202	202	219	216	ug/L	EPA 8260B	11/8/13	109	107	1.58	70.0-130	25
Tert-amyl-methyl ether	86467-11	<0.50	40.3	40.3	45.4	44.9	ug/L	EPA 8260B	11/8/13	112	111	1.05	70.0-130	25
Toluene	86467-11	<0.50	40.0	40.0	43.1	42.0	ug/L	EPA 8260B	11/8/13	108	105	2.52	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethylbenzene	86511-12	<0.50	40.0	40.0	41.5	40.7	ug/L	EPA 8260B	11/13/13	104	102	1.82	70.0-130	25
P + M Xylene	86511-12	<0.50	40.0	40.0	39.5	38.7	ug/L	EPA 8260B	11/13/13	98.7	96.7	2.03	70.0-130	25
Toluene	86511-12	<0.50	40.0	40.0	41.3	40.5	ug/L	EPA 8260B	11/13/13	103	101	2.06	70.0-130	25

QC Report : Laboratory Control Sample (LCS)Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	101	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	96.6	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	103	85-115
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	99.0	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.4	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.8	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.4	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.8	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.0	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.8	85-115
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/11/13	89.4	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/11/13	93.9	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/11/13	95.6	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/11/13	109	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/11/13	101	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Methanol	997	ug/L	EPA 8260B	11/11/13	95.4	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/11/13	91.5	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
P + M Xylene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/11/13	101	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/11/13	97.2	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/12/13	101	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/12/13	96.6	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/12/13	89.5	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/12/13	94.1	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/12/13	96.1	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/12/13	111	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/12/13	101	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/12/13	103	70.0-130
Methanol	997	ug/L	EPA 8260B	11/12/13	107	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/12/13	89.3	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	11/12/13	103	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/12/13	98.9	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/12/13	102	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/12/13	97.6	70.0-130
1,2-Dibromoethane	40.5	ug/L	EPA 8260B	11/8/13	112	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

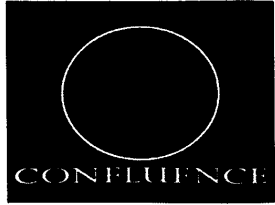
Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	11/8/13	108	70.0-130
Benzene	40.2	ug/L	EPA 8260B	11/8/13	103	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/8/13	108	70.0-130
Ethanol	99.8	ug/L	EPA 8260B	11/8/13	105	55.0-150
Ethyl-tert-butyl ether	40.3	ug/L	EPA 8260B	11/8/13	112	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	11/8/13	107	70.0-130
Methanol	1000	ug/L	EPA 8260B	11/8/13	102	65.0-150
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	11/8/13	112	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	11/8/13	108	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/8/13	105	70.0-130
Tert-amyl-methyl ether	40.5	ug/L	EPA 8260B	11/8/13	107	70.0-130
Toluene	40.2	ug/L	EPA 8260B	11/8/13	105	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	11/13/13	103	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	11/13/13	97.9	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/13/13	89.1	70.0-130
Toluene	40.1	ug/L	EPA 8260B	11/13/13	102	70.0-130
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	11/8/13	99.9	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	11/8/13	97.4	90.0-110

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Nitrate as N	0.500	mg/L	EPA 300.0	11/8/13	102	90.0-110
Sulfate	2.50	mg/L	EPA 300.0	11/8/13	104	90.0-110



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

86466

Project Name: Tesoro - Livermore #67076
 Job Number: ~~1131107~~ 11-131107
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff	Site Address: 1619 1st St, Livermore	Confluence PM: Jason Brown
Address: 2795 2nd St, Suite 300, Davis CA 95616	California Global ID No.: TO600101410	Phone / Fax: 916-760-7641 / 916-473-8617
Contact: Troy Turpen	Include EDF w/ Report: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Confluence Log Code: CESC
Phone/ Fax: 530-297-4800 x.111	Consultant / PM: Orion / Mike Purchase	Report to: Mike Purchase
	Phone / Fax: 510-525-2180 / 510-525-2392	Invoice to: Mike Purchase

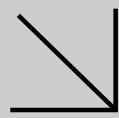
Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis										Notes and Comments				
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates(7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)					
DW-1	1335	11/7/13					12			1	5			X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-11	1350	11/7/13					12			1	5			X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-2	1415	11/7					12			1	5			X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-8	1420	11/7					12			1	5			X	X	X	X	X	X	X	X	X	X	X	X	X	
DW-5	1500	11/7					12			1	5			X	X	X	X	X	X	X	X	X	X	X	X	X	

01
02
03
04
05

Sampler's Name: <u>Eric Morse</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date: <u>11/7/13</u>	Time: <u>1507</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>11/7/13</u>	Time: <u>1500</u>
Sampler's Company: Confluence Environmental						
Shipment Date:						
Shipment Method:						
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field						



Subcontract Laboratory Report Attachments



CALSCIENCE

WORK ORDER NUMBER: 13-11-0732

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 11/15/2013 by:
Amanda Porter
Project Manager

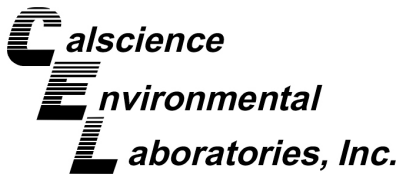
ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.





Contents

Client Project Name: Tesoro - Livermore #67076
Work Order Number: 13-11-0732

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Work Order Narrative

Work Order: 13-11-0732

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Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 11/09/13. They were assigned to Work Order 13-11-0732.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

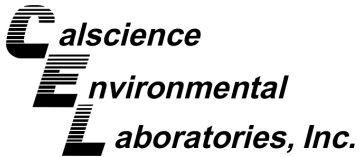
Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: RSK-175M
Units: ug/L

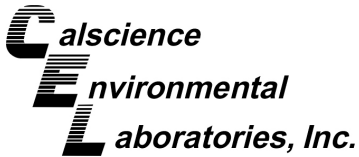
Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-1	13-11-0732-1-C	11/07/13 13:35	Aqueous	GC 14	N/A	11/11/13 17:41	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		29700	17.0		10		
MW-11	13-11-0732-2-C	11/07/13 13:50	Aqueous	GC 14	N/A	11/11/13 18:02	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		21400	17.0		10		
MW-2	13-11-0732-3-C	11/07/13 14:15	Aqueous	GC 14	N/A	11/11/13 18:21	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		35600	17.0		10		
DW-8	13-11-0732-4-C	11/07/13 14:20	Aqueous	GC 14	N/A	11/11/13 18:44	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		24300	17.0		10		
DW-5	13-11-0732-5-C	11/07/13 15:00	Aqueous	GC 14	N/A	11/11/13 19:03	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		12100	17.0		10		
Method Blank	099-12-659-634	N/A	Aqueous	GC 14	N/A	11/11/13 13:36	131111L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: RSK-175M
Units: ug/L

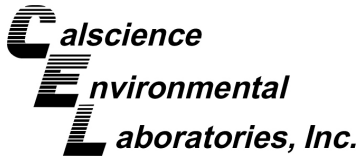
Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-1	13-11-0732-1-B	11/07/13 13:35	Aqueous	GC 61	N/A	11/11/13 17:54	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1000	4.00		4		
MW-11	13-11-0732-2-A	11/07/13 13:50	Aqueous	GC 61	N/A	11/11/13 18:41	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		185	1.00		1		
MW-2	13-11-0732-3-B	11/07/13 14:15	Aqueous	GC 61	N/A	11/11/13 19:31	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1150	4.00		4		
DW-8	13-11-0732-4-B	11/07/13 14:20	Aqueous	GC 61	N/A	11/12/13 10:41	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		511	2.00		2		
DW-5	13-11-0732-5-B	11/07/13 15:00	Aqueous	GC 61	N/A	11/12/13 11:26	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1400	4.00		4		
Method Blank	099-12-663-2020	N/A	Aqueous	GC 61	N/A	11/11/13 16:07	131111L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		ND	1.00		1		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732

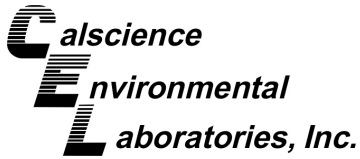
Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
DW-1	13-11-0732-1				11/07/13 13:35		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	820	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	1300	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-11	13-11-0732-2				11/07/13 13:50		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	556	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	3950	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-2	13-11-0732-3				11/07/13 14:15		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	586	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	980	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
DW-8	13-11-0732-4				11/07/13 14:20		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	778	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	1120	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
DW-5	13-11-0732-5				11/07/13 15:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	219	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	1520	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
Method Blank					N/A		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	ND	1.0	1		mg/L	11/13/13	11/13/13	SM 2540 C

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Sample Duplicate

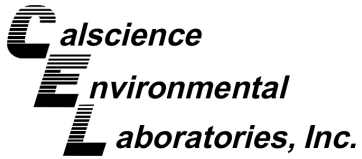
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 1 of 2

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13-11-0731-1	Aqueous	PH1/BUR03	N/A	11/13/13 19:42	D1113ALKD3
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)	406.0	405.0	0	0-25	



Quality Control - Sample Duplicate

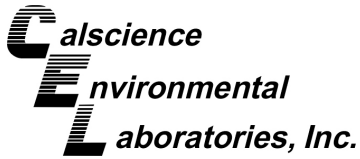
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13-11-0726-1	Aqueous	SC 5	11/13/13 00:00	11/13/13 16:15	D1113TDSD3
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	625.0	625.0	0	0-20	



Quality Control - LCS/LCSD

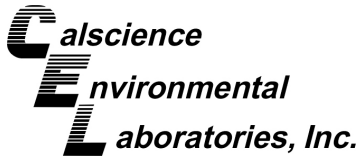
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-659-634	Aqueous	GC 14	N/A	11/11/13 12:36	131111L02				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Carbon Dioxide	102.0	95.89	94	95.88	94	80-120	0	0-20	



Quality Control - LCS/LCSD

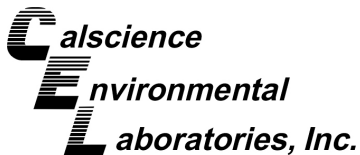
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0732
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

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Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2020		Aqueous	GC 61	N/A	11/11/13 13:27	131111L01			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Methane	98.50	92.90	94	93.15	95	80-120	0	0-20	



Quality Control - LCS/LCSD

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0732
 Preparation: N/A
 Method: SM 2320B

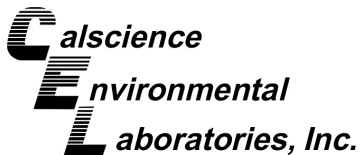
Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-859-206	Aqueous	PH1/BUR03	N/A	11/13/13 19:42	D1113ALKB3				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)	100.0	99.00	99	99.00	99	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0732
 Preparation: N/A
 Method: SM 2540 C

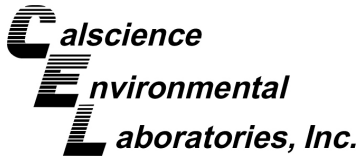
Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-180-3885	Aqueous	SC 5	11/13/13	11/13/13 16:15	D1113TDSL3				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	100.0	105.0	105	110.0	110	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Sample Analysis Summary Report

Work Order: 13-11-0732

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	878	GC 14	2
RSK-175M	N/A	896	GC 14	2
RSK-175M	N/A	896	GC 61	2
SM 2320B	N/A	688	PH1/BUR03	1
SM 2540 C	N/A	722	SC 5	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 13-11-0732

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDS or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
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. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



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

13-11-0732

COC No. **86466** Page 1 of 1

Project Contact (Hardcopy or PDF to): Scott Forbes	EDF Report? YES	Chain-of-Custody Record and Analysis Request
--	------------------------	---

Company/Address: Kiff Analytical		Recommended but not mandatory to complete this section:										Analysis Request		TAT			
Phone No.: 530-297-4800		FAX No.: 530-297-4808		Sampling Company Log Code: CESC													
Project Number: 01LV		P.O. No.: 86466		Global ID: T0600101410													
Project Name: Tesoro - Livermore #67076		Deliverables to (Email Address): inbox@kiffanalytical.com															
Project Address:		Container / Preservative															

Sample Designation	Sampling		Container / Preservative				Matrix				Alkalinity SM 2320 (Total as CaCO ₃)	Carbon Dioxide by RSK 175	Methane in Water by RSK 175	Total Dissolved Solids	3-Days	For Lab Use Only	
	Date	Time	1-L Poly None	250ml Poly None	VOA 40 ml None	VOA 40 ml HCl	Water										
DW-1	11/07/13	13:35	1	1	2	2					X	X	X	X		X	1
MW-11	11/07/13	13:50	1	1	2	2					X	X	X	X		X	2
MW-2	11/07/13	14:15	1	1	2	2					X	X	X	X		X	3
DW-8	11/07/13	14:20	1	1	2	2					X	X	X	X		X	4
DW-5	11/07/13	15:00	1	1	2	2					X	X	X	X		X	5

Relinquished by: <i>[Signature]</i> Kiff Analytical	Date 11/08/13	Time 1730	Received by:	Remarks: Bill to: Accounts Payable
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date 11/09/13	Time 1000	Received by Laboratory: <i>[Signature]</i>	

0732



800.334.5000
ontrac.com



D10010632791897

Date Printed 11/8/2013

Tracking#D10010632791897

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 40
Reference: SUBS
Reference 2: 600

<p><i>Ship To Company:</i> CALSCIENCE ENVIRONMENTAL LABS 7440 LINCOLN WAY GARDEN GROVE, CA 92841 SAMPLE RECEIVING (714)895-5494</p>	<p><i>Service:</i> S <i>Sort Code:</i> ORG <i>Special Services:</i> Saturday Delivery Signature Required</p>
---	--



WORK ORDER #: **13-11-0772**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: KIFF

DATE: 11/09/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.0 °C - 0.2 °C (CF) = 1.8 °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

Checked by: 802

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A

Sample _____ No (Not Intact) Not Present

Checked by: 802

Checked by: 854

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

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

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBz_{na} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: _____ Labeled/Checked by: 854

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 681

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{na}: ZnAc₂+NaOH f: Filtered Scanned by: 681

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Laboratory Results

Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 12 Water Samples
Project Name : Tesoro - Livermore #67076
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 and TNI 2009 standards. 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,



Troy Turpen

Subject : 12 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Nitrate as N by Method EPA 300.0 was raised due to dilution for matrix effects for samples DW-2, DW-6, DW-7, DW-9, MW-12, MW-6, and MW-9.

The Method Reporting Limit for Sulfate by Method EPA 300.0 was raised due to dilution for matrix effects for samples DW-2, DW-6, DW-9, MW-6 and MW-9.

Some Method Reporting Limits have been increased due to the presence of interfering compounds.

Recoveries for some Matrix Spike/Matrix Spike Duplicate analytes were outside of control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-9**

Matrix : Water

Lab Number : 86467-01

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/07/13 22:16
Sulfate	< 5.0	5.0	mg/L	EPA 300.0	11/07/13 22:16
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 19:43
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/07/13 22:19
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:50
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:12
Iron, Dissolved	0.82	0.10	mg/L	EPA 6010B	11/14/13 15:12
Manganese, Dissolved	2.3	0.0050	mg/L	EPA 6010B	11/13/13 12:50
Sodium, Dissolved	73	0.50	mg/L	EPA 6010B	11/13/13 12:50
Benzene	120	1.5	ug/L	EPA 8260B	11/13/13 13:35
Toluene	5.9	1.5	ug/L	EPA 8260B	11/13/13 13:35
Ethylbenzene	100	1.5	ug/L	EPA 8260B	11/13/13 13:35
Total Xylenes	38	1.5	ug/L	EPA 8260B	11/13/13 13:35
Methyl-t-butyl ether (MTBE)	25	1.5	ug/L	EPA 8260B	11/13/13 13:35
Diisopropyl ether (DIPE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 13:35
Ethyl-t-butyl ether (ETBE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 13:35
Tert-amyl methyl ether (TAME)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 13:35
Tert-Butanol	73	7.0	ug/L	EPA 8260B	11/13/13 13:35
Methanol	< 150	150	ug/L	EPA 8260B	11/13/13 13:35
Ethanol	< 15	15	ug/L	EPA 8260B	11/13/13 13:35
TPH as Gasoline	8000	150	ug/L	EPA 8260B	11/13/13 13:35
1,2-Dichloroethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 13:35
1,2-Dibromoethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 13:35
1,2-Dichloroethane-d4 (Surr)	97.1		% Recovery	EPA 8260B	11/13/13 13:35
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	11/13/13 13:35

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-7**

Matrix : Water

Lab Number : 86467-02

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/07/13 22:29
Sulfate	35	5.0	mg/L	EPA 300.0	11/07/13 22:29
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 19:53
Ferrous Iron	0.24	0.10	mg/L	SM 3500-Fe D	11/07/13 22:20
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/13 11:15
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 11:15
Iron, Dissolved	0.45	0.10	mg/L	EPA 6010B	11/14/13 11:15
Manganese, Dissolved	2.2	0.0050	mg/L	EPA 6010B	11/14/13 11:15
Sodium, Dissolved	100	5.0	mg/L	EPA 6010B	11/14/13 13:34
Benzene	260	1.5	ug/L	EPA 8260B	11/13/13 00:41
Toluene	8.4	1.5	ug/L	EPA 8260B	11/13/13 00:41
Ethylbenzene	200	1.5	ug/L	EPA 8260B	11/13/13 00:41
Total Xylenes	63	1.5	ug/L	EPA 8260B	11/13/13 00:41
Methyl-t-butyl ether (MTBE)	52	1.5	ug/L	EPA 8260B	11/13/13 00:41
Diisopropyl ether (DIPE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 00:41
Ethyl-t-butyl ether (ETBE)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 00:41
Tert-amyl methyl ether (TAME)	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 00:41
Tert-Butanol	170	7.0	ug/L	EPA 8260B	11/13/13 00:41
Methanol	< 150	150	ug/L	EPA 8260B	11/13/13 00:41
Ethanol	< 15	15	ug/L	EPA 8260B	11/13/13 00:41
TPH as Gasoline	9700	150	ug/L	EPA 8260B	11/13/13 00:41
1,2-Dichloroethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 00:41
1,2-Dibromoethane	< 1.5	1.5	ug/L	EPA 8260B	11/13/13 00:41
1,2-Dichloroethane-d4 (Surr)	90.0		% Recovery	EPA 8260B	11/13/13 00:41
Toluene - d8 (Surr)	94.5		% Recovery	EPA 8260B	11/13/13 00:41

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-6**

Matrix : Water

Lab Number : 86467-03

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/07/13 22:43
Sulfate	< 2.5	2.5	mg/L	EPA 300.0	11/07/13 22:43
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 19:59
Ferrous Iron	0.61	0.10	mg/L	SM 3500-Fe D	11/07/13 22:21
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:54
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:16
Iron, Dissolved	1.0	0.10	mg/L	EPA 6010B	11/14/13 15:16
Manganese, Dissolved	2.1	0.0050	mg/L	EPA 6010B	11/13/13 12:54
Sodium, Dissolved	75	0.50	mg/L	EPA 6010B	11/13/13 12:54
Benzene	1200	2.5	ug/L	EPA 8260B	11/12/13 02:38
Toluene	62	2.5	ug/L	EPA 8260B	11/12/13 02:38
Ethylbenzene	190	2.5	ug/L	EPA 8260B	11/12/13 02:38
Total Xylenes	81	2.5	ug/L	EPA 8260B	11/12/13 02:38
Methyl-t-butyl ether (MTBE)	100	2.5	ug/L	EPA 8260B	11/12/13 02:38
Diisopropyl ether (DIPE)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 02:38
Ethyl-t-butyl ether (ETBE)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 02:38
Tert-amyl methyl ether (TAME)	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 02:38
Tert-Butanol	66	15	ug/L	EPA 8260B	11/12/13 02:38
Methanol	< 250	250	ug/L	EPA 8260B	11/12/13 02:38
Ethanol	< 25	25	ug/L	EPA 8260B	11/12/13 02:38
TPH as Gasoline	12000	250	ug/L	EPA 8260B	11/12/13 02:38
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 02:38
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	11/12/13 02:38
1,2-Dichloroethane-d4 (Surr)	95.0		% Recovery	EPA 8260B	11/12/13 02:38
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	11/12/13 02:38

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-2**

Matrix : Water

Lab Number : 86467-04

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/07/13 22:56
Sulfate	< 2.5	2.5	mg/L	EPA 300.0	11/07/13 22:56
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 20:06
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/07/13 22:21
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 12:58
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:26
Iron, Dissolved	0.81	0.10	mg/L	EPA 6010B	11/14/13 15:26
Manganese, Dissolved	2.6	0.0050	mg/L	EPA 6010B	11/13/13 12:58
Sodium, Dissolved	77	0.50	mg/L	EPA 6010B	11/13/13 12:58
Benzene	520	0.90	ug/L	EPA 8260B	11/13/13 00:06
Toluene	18	0.90	ug/L	EPA 8260B	11/13/13 00:06
Ethylbenzene	57	0.90	ug/L	EPA 8260B	11/13/13 00:06
Total Xylenes	17	0.90	ug/L	EPA 8260B	11/13/13 00:06
Methyl-t-butyl ether (MTBE)	150	0.90	ug/L	EPA 8260B	11/13/13 00:06
Diisopropyl ether (DIPE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 00:06
Ethyl-t-butyl ether (ETBE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 00:06
Tert-amyl methyl ether (TAME)	2.2	0.90	ug/L	EPA 8260B	11/13/13 00:06
Tert-Butanol	310	5.0	ug/L	EPA 8260B	11/13/13 00:06
Methanol	< 90	90	ug/L	EPA 8260B	11/13/13 00:06
Ethanol	< 9.0	9.0	ug/L	EPA 8260B	11/13/13 00:06
TPH as Gasoline	6500	90	ug/L	EPA 8260B	11/13/13 00:06
1,2-Dichloroethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 00:06
1,2-Dibromoethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 00:06
1,2-Dichloroethane-d4 (Surr)	92.8		% Recovery	EPA 8260B	11/13/13 00:06
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	11/13/13 00:06

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-6**

Matrix : Water

Lab Number : 86467-05

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/07/13 23:10
Sulfate	< 2.5	2.5	mg/L	EPA 300.0	11/07/13 23:10
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 20:13
Ferrous Iron	0.21	0.10	mg/L	SM 3500-Fe D	11/07/13 22:21
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:03
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:30
Iron, Dissolved	0.73	0.10	mg/L	EPA 6010B	11/14/13 15:30
Manganese, Dissolved	2.2	0.0050	mg/L	EPA 6010B	11/13/13 13:03
Sodium, Dissolved	52	0.50	mg/L	EPA 6010B	11/13/13 13:03
Benzene	14	0.50	ug/L	EPA 8260B	11/12/13 13:07
Toluene	1.7	0.50	ug/L	EPA 8260B	11/12/13 13:07
Ethylbenzene	5.6	0.50	ug/L	EPA 8260B	11/12/13 13:07
Total Xylenes	3.1	0.50	ug/L	EPA 8260B	11/12/13 13:07
Methyl-t-butyl ether (MTBE)	10	0.50	ug/L	EPA 8260B	11/12/13 13:07
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:07
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:07
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:07
Tert-Butanol	35	5.0	ug/L	EPA 8260B	11/12/13 13:07
Methanol	< 80	80	ug/L	EPA 8260B	11/12/13 13:07
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/13 13:07
TPH as Gasoline	2400	50	ug/L	EPA 8260B	11/12/13 13:07
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:07
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:07
1,2-Dichloroethane-d4 (Surr)	97.4		% Recovery	EPA 8260B	11/12/13 13:07
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	11/12/13 13:07

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-12**

Matrix : Water

Lab Number : 86467-06

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/07/13 23:23
Sulfate	14	2.5	mg/L	EPA 300.0	11/07/13 23:23
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 20:19
Ferrous Iron	0.20	0.10	mg/L	SM 3500-Fe D	11/07/13 22:22
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:07
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:34
Iron, Dissolved	0.37	0.10	mg/L	EPA 6010B	11/14/13 15:34
Manganese, Dissolved	1.7	0.0050	mg/L	EPA 6010B	11/13/13 13:07
Sodium, Dissolved	66	0.50	mg/L	EPA 6010B	11/13/13 13:07
Benzene	15	0.50	ug/L	EPA 8260B	11/08/13 12:13
Toluene	2.4	0.50	ug/L	EPA 8260B	11/08/13 12:13
Ethylbenzene	47	0.50	ug/L	EPA 8260B	11/08/13 12:13
Total Xylenes	13	0.50	ug/L	EPA 8260B	11/08/13 12:13
Methyl-t-butyl ether (MTBE)	0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 12:13
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 12:13
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 12:13
TPH as Gasoline	4600	150	ug/L	EPA 8260B	11/12/13 21:46
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:13
1,2-Dichloroethane-d4 (Surr)	91.3		% Recovery	EPA 8260B	11/08/13 12:13
Toluene - d8 (Surr)	92.8		% Recovery	EPA 8260B	11/08/13 12:13

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-9**

Matrix : Water

Lab Number : 86467-07

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/07/13 23:36
Sulfate	< 2.5	2.5	mg/L	EPA 300.0	11/07/13 23:36
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 20:26
Ferrous Iron	0.57	0.10	mg/L	SM 3500-Fe D	11/07/13 22:22
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:11
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:38
Iron, Dissolved	1.9	0.10	mg/L	EPA 6010B	11/14/13 15:38
Manganese, Dissolved	1.8	0.0050	mg/L	EPA 6010B	11/13/13 13:11
Sodium, Dissolved	69	0.50	mg/L	EPA 6010B	11/13/13 13:11
Benzene	3.1	0.50	ug/L	EPA 8260B	11/08/13 12:44
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
Ethylbenzene	0.70	0.50	ug/L	EPA 8260B	11/08/13 12:44
Total Xylenes	0.58	0.50	ug/L	EPA 8260B	11/08/13 12:44
Methyl-t-butyl ether (MTBE)	4.2	0.50	ug/L	EPA 8260B	11/08/13 12:44
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
Tert-Butanol	12	5.0	ug/L	EPA 8260B	11/08/13 12:44
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 12:44
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 12:44
TPH as Gasoline	1400	50	ug/L	EPA 8260B	11/08/13 12:44
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:44
1,2-Dichloroethane-d4 (Surr)	99.2		% Recovery	EPA 8260B	11/08/13 12:44
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	11/08/13 12:44

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-3**

Matrix : Water

Lab Number : 86467-08

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	1.5	0.50	mg/L	EPA 300.0	11/07/13 23:50
Sulfate	50	2.5	mg/L	EPA 300.0	11/07/13 23:50
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/07/13 20:33
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/07/13 22:22
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:15
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:42
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 15:42
Manganese, Dissolved	1.1	0.0050	mg/L	EPA 6010B	11/13/13 13:15
Sodium, Dissolved	54	0.50	mg/L	EPA 6010B	11/13/13 13:15
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Ethylbenzene	5.1	0.50	ug/L	EPA 8260B	11/08/13 13:16
Total Xylenes	2.5	0.50	ug/L	EPA 8260B	11/08/13 13:16
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:16
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 13:16
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:16
TPH as Gasoline	960	50	ug/L	EPA 8260B	11/08/13 13:16
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:16
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	11/08/13 13:16
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	11/08/13 13:16

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-10**

Matrix : Water

Lab Number : 86467-09

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	1.2	0.50	mg/L	EPA 300.0	11/08/13 15:26
Sulfate	89	2.5	mg/L	EPA 300.0	11/08/13 15:26
Hexavalent Chromium	14	1.0	ug/L	EPA 7199	11/07/13 20:40
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/07/13 22:23
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:19
Chromium, Dissolved	0.015	0.0050	mg/L	EPA 6010B	11/14/13 15:46
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 15:46
Manganese, Dissolved	0.022	0.0050	mg/L	EPA 6010B	11/13/13 13:19
Sodium, Dissolved	61	0.50	mg/L	EPA 6010B	11/13/13 13:19
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:48
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 13:48
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:48
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 13:48
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:48
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	11/08/13 13:48
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	11/08/13 13:48

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-5**

Matrix : Water

Lab Number : 86467-10

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 14:19
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 14:19
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 14:19
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 14:19
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:19
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	11/08/13 14:19
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	11/08/13 14:19

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **DW-4**

Matrix : Water

Lab Number : 86467-11

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:34
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 09:34
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:34
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 09:34
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:34
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	11/08/13 09:34
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	11/08/13 09:34

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-8**

Matrix : Water

Lab Number : 86467-12

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	5.1	0.50	mg/L	EPA 300.0	11/08/13 15:37
Sulfate	60	2.5	mg/L	EPA 300.0	11/08/13 15:37
Hexavalent Chromium	2.4	1.0	ug/L	EPA 7199	11/07/13 21:00
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/07/13 22:23
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/13 13:24
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 15:50
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 15:50
Manganese, Dissolved	0.51	0.0050	mg/L	EPA 6010B	11/13/13 13:24
Sodium, Dissolved	55	0.50	mg/L	EPA 6010B	11/13/13 13:24
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:32
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 09:32
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:32
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 09:32
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:32
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	11/08/13 09:32
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	11/08/13 09:32

QC Report : Method Blank Data

Project Name : Tesoro - Livermore #67076

Project Number : 01LV

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/13/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/13/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	11/13/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	11/14/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/2013	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Methanol	< 50	50	ug/L	EPA 8260B	11/12/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane-d4 (Surr)	98.6		%	EPA 8260B	11/12/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Toluene - d8 (Surr)	102		%	EPA 8260B	11/12/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/11/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/11/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane-d4 (Surr)	98.3		%	EPA 8260B	11/11/2013	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	102		%	EPA 8260B	11/11/2013	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
						Methanol	< 50	50	ug/L	EPA 8260B	11/08/2013
						Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
						TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/2013
						1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013

QC Report : Method Blank Data

Project Name : Tesoro - Livermore #67076

Project Number : 01LV

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	99.5		%	EPA 8260B	11/08/2013	1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	11/13/2013
Toluene - d8 (Surr)	99.2		%	EPA 8260B	11/08/2013	Toluene - d8 (Surr)	100		%	EPA 8260B	11/13/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/12/2013	Methanol	< 50	50	ug/L	EPA 8260B	11/08/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	11/12/2013	1,2-Dichloroethane-d4 (Surr)	97.4		%	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	100		%	EPA 8260B	11/12/2013	Toluene - d8 (Surr)	102		%	EPA 8260B	11/08/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013	Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	11/07/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/13/2013						
Methanol	< 50	50	ug/L	EPA 8260B	11/13/2013						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/13/2013						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/13/2013						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013						

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

<u>Parameter</u>	<u>Measured Value</u>	<u>Method Reporting Limit</u>	<u>Units</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>
Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	11/07/2013
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	11/07/2013
Sulfate	<0.50	0.50	mg/L	EPA 300.0	11/07/2013
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	11/08/2013
Sulfate	<0.50	0.50	mg/L	EPA 300.0	11/08/2013

<u>Parameter</u>	<u>Measured Value</u>	<u>Method Reporting Limit</u>	<u>Units</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>
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QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Hexavalent Chromium														
	86467-01	< 1.0	5.00	5.00	4.80	5.16	ug/L	EPA 7199	11/7/13	96.1	103	7.20	90.0-110	10
Ferrous Iron														
	86467-01	< 0.10	0.251	0.251	0.263	0.263	mg/L	SM 3500-Fe D	11/7/13	99.6	99.6	0.00	70.0-130	25
Nitrate as N														
	86467-09	1.2	0.500	0.500	1.63	1.64	mg/L	EPA 300.0	11/8/13	94.4	96.9	0.740	90.0-110	10
Sulfate														
	86467-09	80	2.50	2.50	81.5	82.0	mg/L	EPA 300.0	11/8/13	46.5	66.3	0.606	90.0-110	10
Nitrate as N														
	86468-07	0.35	0.500	0.500	0.785	0.792	mg/L	EPA 300.0	11/8/13	87.4	88.8	0.902	90.0-110	10
Sulfate														
	86468-07	41	2.50	2.50	43.1	43.2	mg/L	EPA 300.0	11/8/13	91.2	95.2	0.227	90.0-110	10
Arsenic, (Dis)														
	86466-02	0.049	0.400	0.400	0.464	0.476	mg/L	EPA 6010B	11/13/13	104	107	2.57	75-125	20
Manganese, (Dis)														
	86466-02	0.45	0.400	0.400	0.809	0.812	mg/L	EPA 6010B	11/13/13	90.1	90.9	0.395	75-125	20

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Sodium, (Dis)	86466-02	1300	0.400	0.400	1250	1240	mg/L	EPA 6010B	11/13/13	0.00	0.00	1.44	75-125	20
Arsenic, (Dis)	86468-07	< 0.015	0.400	0.400	0.398	0.406	mg/L	EPA 6010B	11/14/13	99.4	101	2.09	75-125	20
Chromium, (Dis)	86468-07	< 0.0050	0.400	0.400	0.384	0.390	mg/L	EPA 6010B	11/14/13	96.0	97.5	1.57	75-125	20
Iron, (Dis)	86468-07	< 0.10	0.400	0.400	0.383	0.385	mg/L	EPA 6010B	11/14/13	94.3	94.8	0.599	75-125	20
Manganese, (Dis)	86468-07	0.17	0.400	0.400	0.534	0.541	mg/L	EPA 6010B	11/14/13	91.9	93.6	1.26	75-125	20
Sodium, (Dis)	86468-07	< 0.50	0.400	0.400	38.2	0.00	mg/L	EPA 6010B	11/14/13	9540	0.00	200	75-125	20
Chromium, (Dis)	86466-02	< 0.0050	0.400	0.400	0.380	0.379	mg/L	EPA 6010B	11/14/13	94.6	94.5	0.0790	75-125	20
Iron, (Dis)	86466-02	0.13	0.400	0.400	0.504	0.509	mg/L	EPA 6010B	11/14/13	93.3	94.7	1.11	75-125	20
1,2-Dibromoethane	86476-01	<0.50	40.3	40.2	42.6	40.2	ug/L	EPA 8260B	11/11/13	106	99.9	5.66	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dichloroethane	86476-01	<0.50	40.0	39.9	38.2	36.8	ug/L	EPA 8260B	11/11/13	95.5	92.3	3.40	70.0-130	25
Benzene	86476-01	<0.50	40.0	39.9	38.5	38.6	ug/L	EPA 8260B	11/11/13	96.2	96.6	0.396	70.0-130	25
Diisopropyl ether	86476-01	<0.50	39.9	39.8	39.4	39.4	ug/L	EPA 8260B	11/11/13	98.8	99.0	0.175	70.0-130	25
Ethanol	86476-01	<5.0	99.3	99.1	111	98.3	ug/L	EPA 8260B	11/11/13	111	99.2	11.6	55.0-150	25
Ethyl-tert-butyl ether	86476-01	<0.50	40.1	40.0	42.5	42.1	ug/L	EPA 8260B	11/11/13	106	105	0.613	70.0-130	25
Ethylbenzene	86476-01	<0.50	40.0	39.9	42.3	42.0	ug/L	EPA 8260B	11/11/13	106	105	0.624	70.0-130	25
Methanol	86476-01	<50	997	995	909	1020	ug/L	EPA 8260B	11/11/13	91.2	102	11.5	65.0-150	25
Methyl-t-butyl ether	86476-01	2.0	39.9	39.8	41.2	39.3	ug/L	EPA 8260B	11/11/13	98.4	93.8	4.80	70.0-130	25
P + M Xylene	86476-01	<0.50	40.0	39.9	42.4	41.9	ug/L	EPA 8260B	11/11/13	106	105	1.18	70.0-130	25
Tert-Butanol	86476-01	40	202	201	243	240	ug/L	EPA 8260B	11/11/13	101	99.2	1.48	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether	86476-01	<0.50	40.3	40.2	43.0	42.0	ug/L	EPA 8260B	11/11/13	107	104	2.22	70.0-130	25
Toluene	86476-01	<0.50	40.0	39.9	40.1	39.9	ug/L	EPA 8260B	11/11/13	100	99.9	0.315	70.0-130	25
Toluene	86468-08	<0.50	39.9	39.9	39.9	39.6	ug/L	EPA 8260B	11/12/13	99.9	99.3	0.619	70.0-130	25
1,2-Dibromoethane	86459-24	<0.50	40.2	39.9	41.5	40.9	ug/L	EPA 8260B	11/12/13	103	102	0.631	70.0-130	25
1,2-Dichloroethane	86459-24	<0.50	39.9	39.6	38.9	37.9	ug/L	EPA 8260B	11/12/13	97.6	95.8	1.85	70.0-130	25
Benzene	86459-24	73	39.9	39.6	107	107	ug/L	EPA 8260B	11/12/13	83.8	86.6	3.24	70.0-130	25
Diisopropyl ether	86459-24	<0.50	39.8	39.5	39.0	38.8	ug/L	EPA 8260B	11/12/13	98.1	98.3	0.212	70.0-130	25
Ethanol	86459-24	<5.0	99.1	98.4	89.8	105	ug/L	EPA 8260B	11/12/13	90.6	106	16.2	55.0-150	25
Ethyl-tert-butyl ether	86459-24	<0.50	40.0	39.7	41.6	40.1	ug/L	EPA 8260B	11/12/13	104	101	2.75	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethylbenzene	86459-24	4.8	39.9	39.6	46.9	46.5	ug/L	EPA 8260B	11/12/13	106	105	0.330	70.0-130	25
Methanol	86459-24	<50	995	987	993	1070	ug/L	EPA 8260B	11/12/13	99.8	108	8.06	65.0-150	25
Methyl-t-butyl ether	86459-24	<0.50	39.8	39.5	37.2	35.4	ug/L	EPA 8260B	11/12/13	93.4	89.7	4.08	70.0-130	25
P + M Xylene	86459-24	<0.50	39.9	39.6	42.4	42.3	ug/L	EPA 8260B	11/12/13	106	107	0.572	70.0-130	25
Tert-Butanol	86459-24	<5.0	201	200	202	205	ug/L	EPA 8260B	11/12/13	100	102	2.36	70.0-130	25
Tert-amyl-methyl ether	86459-24	<0.50	40.2	39.9	41.5	40.6	ug/L	EPA 8260B	11/12/13	103	102	1.54	70.0-130	25
Toluene	86459-24	1.4	39.9	39.6	41.2	40.7	ug/L	EPA 8260B	11/12/13	99.6	99.2	0.383	70.0-130	25
1,2-Dibromoethane	86467-11	<0.50	40.3	40.3	45.8	45.1	ug/L	EPA 8260B	11/8/13	114	112	1.59	70.0-130	25
1,2-Dichloroethane	86467-11	<0.50	40.0	40.0	43.9	42.8	ug/L	EPA 8260B	11/8/13	110	107	2.34	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	86467-11	<0.50	40.0	40.0	42.3	41.6	ug/L	EPA 8260B	11/8/13	106	104	1.63	70.0-130	25
Diisopropyl ether	86467-11	<0.50	39.9	39.9	44.6	43.9	ug/L	EPA 8260B	11/8/13	112	110	1.71	70.0-130	25
Ethanol	86467-11	<5.0	99.3	99.3	101	108	ug/L	EPA 8260B	11/8/13	102	109	6.35	55.0-150	25
Ethyl-tert-butyl ether	86467-11	<0.50	40.1	40.1	46.4	46.0	ug/L	EPA 8260B	11/8/13	116	115	0.908	70.0-130	25
Ethylbenzene	86467-11	<0.50	40.0	40.0	42.8	42.3	ug/L	EPA 8260B	11/8/13	107	106	1.14	70.0-130	25
Methanol	86467-11	<50	997	997	1030	1080	ug/L	EPA 8260B	11/8/13	103	108	4.84	65.0-150	25
Methyl-t-butyl ether	86467-11	<0.50	39.9	39.9	46.2	45.5	ug/L	EPA 8260B	11/8/13	116	114	1.52	70.0-130	25
P + M Xylene	86467-11	<0.50	40.0	40.0	43.3	42.9	ug/L	EPA 8260B	11/8/13	108	107	0.892	70.0-130	25
Tert-Butanol	86467-11	<5.0	202	202	219	216	ug/L	EPA 8260B	11/8/13	109	107	1.58	70.0-130	25
Tert-amyl-methyl ether	86467-11	<0.50	40.3	40.3	45.4	44.9	ug/L	EPA 8260B	11/8/13	112	111	1.05	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	86467-11	<0.50	40.0	40.0	43.1	42.0	ug/L	EPA 8260B	11/8/13	108	105	2.52	70.0-130	25
1,2-Dibromoethane	86517-03	<0.50	40.3	40.3	45.3	44.9	ug/L	EPA 8260B	11/12/13	112	111	0.792	70.0-130	25
1,2-Dichloroethane	86517-03	<0.50	40.0	40.0	43.8	43.1	ug/L	EPA 8260B	11/12/13	109	108	1.50	70.0-130	25
Benzene	86517-03	<0.50	40.0	40.0	42.2	41.2	ug/L	EPA 8260B	11/12/13	106	103	2.31	70.0-130	25
Diisopropyl ether	86517-03	<0.50	39.9	39.9	43.6	42.7	ug/L	EPA 8260B	11/12/13	109	107	2.05	70.0-130	25
Ethanol	86517-03	<5.0	99.3	99.3	105	118	ug/L	EPA 8260B	11/12/13	106	119	11.6	55.0-150	25
Ethyl-tert-butyl ether	86517-03	<0.50	40.1	40.1	44.8	41.8	ug/L	EPA 8260B	11/12/13	112	104	7.06	70.0-130	25
Ethylbenzene	86517-03	<0.50	40.0	40.0	42.6	42.1	ug/L	EPA 8260B	11/12/13	106	105	0.992	70.0-130	25
Methanol	86517-03	<50	997	997	1020	1150	ug/L	EPA 8260B	11/12/13	102	115	12.4	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	86517-03	<0.50	39.9	39.9	44.0	39.5	ug/L	EPA 8260B	11/12/13	110	99.1	10.6	70.0-130	25
P + M Xylene	86517-03	<0.50	40.0	40.0	42.8	42.6	ug/L	EPA 8260B	11/12/13	107	106	0.322	70.0-130	25
Tert-Butanol	86517-03	<5.0	202	202	214	216	ug/L	EPA 8260B	11/12/13	106	107	0.942	70.0-130	25
Tert-amyl-methyl ether	86517-03	<0.50	40.3	40.3	44.7	42.2	ug/L	EPA 8260B	11/12/13	111	104	5.70	70.0-130	25
Toluene	86517-03	<0.50	40.0	40.0	42.6	41.9	ug/L	EPA 8260B	11/12/13	107	105	1.85	70.0-130	25
1,2-Dibromoethane	86511-13	<0.50	40.3	40.3	46.2	45.4	ug/L	EPA 8260B	11/13/13	114	113	1.60	70.0-130	25
1,2-Dichloroethane	86511-13	<0.50	40.0	40.0	43.4	42.8	ug/L	EPA 8260B	11/13/13	109	107	1.59	70.0-130	25
Benzene	86511-13	<0.50	40.0	40.0	42.3	41.0	ug/L	EPA 8260B	11/13/13	106	103	2.95	70.0-130	25
Diisopropyl ether	86511-13	<0.50	39.9	39.9	43.4	43.0	ug/L	EPA 8260B	11/13/13	109	108	0.920	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : Tesoro - Livermore #67076

Project Number : 01LV

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethanol	86511-13	<5.0	99.3	99.3	111	97.7	ug/L	EPA 8260B	11/13/13	112	98.3	13.0	55.0-150	25
Ethyl-tert-butyl ether	86511-13	<0.50	40.1	40.1	42.2	44.8	ug/L	EPA 8260B	11/13/13	105	112	6.07	70.0-130	25
Ethylbenzene	86511-13	<0.50	40.0	40.0	43.2	42.0	ug/L	EPA 8260B	11/13/13	108	105	2.72	70.0-130	25
Methanol	86511-13	<50	997	997	1060	926	ug/L	EPA 8260B	11/13/13	106	92.9	13.2	65.0-150	25
Methyl-t-butyl ether	86511-13	<0.50	39.9	39.9	40.0	44.0	ug/L	EPA 8260B	11/13/13	100	110	9.64	70.0-130	25
P + M Xylene	86511-13	<0.50	40.0	40.0	43.3	42.3	ug/L	EPA 8260B	11/13/13	108	106	2.30	70.0-130	25
Tert-Butanol	86511-13	<5.0	202	202	213	211	ug/L	EPA 8260B	11/13/13	106	105	0.723	70.0-130	25
Tert-amyl-methyl ether	86511-13	<0.50	40.3	40.3	42.1	44.5	ug/L	EPA 8260B	11/13/13	104	110	5.35	70.0-130	25
Toluene	86511-13	<0.50	40.0	40.0	43.0	42.3	ug/L	EPA 8260B	11/13/13	108	106	1.66	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane	86467-12	<0.50	40.3	40.3	41.4	41.3	ug/L	EPA 8260B	11/8/13	102	102	0.241	70.0-130	25
1,2-Dichloroethane	86467-12	<0.50	40.0	40.0	37.9	38.4	ug/L	EPA 8260B	11/8/13	94.8	95.9	1.21	70.0-130	25
Benzene	86467-12	<0.50	40.0	40.0	39.1	38.4	ug/L	EPA 8260B	11/8/13	97.7	96.0	1.70	70.0-130	25
Diisopropyl ether	86467-12	<0.50	39.9	39.9	36.1	36.4	ug/L	EPA 8260B	11/8/13	90.6	91.4	0.902	70.0-130	25
Ethanol	86467-12	<5.0	99.3	99.3	110	110	ug/L	EPA 8260B	11/8/13	111	110	0.533	55.0-150	25
Ethyl-tert-butyl ether	86467-12	<0.50	40.1	40.1	37.4	38.6	ug/L	EPA 8260B	11/8/13	93.3	96.3	3.12	70.0-130	25
Ethylbenzene	86467-12	<0.50	40.0	40.0	42.2	40.9	ug/L	EPA 8260B	11/8/13	106	102	3.08	70.0-130	25
Methanol	86467-12	<50	997	997	1110	1070	ug/L	EPA 8260B	11/8/13	111	107	3.38	65.0-150	25
Methyl-t-butyl ether	86467-12	<0.50	39.9	39.9	35.8	36.1	ug/L	EPA 8260B	11/8/13	89.8	90.6	0.815	70.0-130	25
P + M Xylene	86467-12	<0.50	40.0	40.0	40.3	39.2	ug/L	EPA 8260B	11/8/13	101	98.0	2.72	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol	86467-12	<5.0	202	202	208	205	ug/L	EPA 8260B	11/8/13	103	102	1.36	70.0-130	25
Tert-amyl-methyl ether	86467-12	<0.50	40.3	40.3	37.8	37.8	ug/L	EPA 8260B	11/8/13	93.7	93.7	0.0113	70.0-130	25
Toluene	86467-12	<0.50	40.0	40.0	40.4	39.5	ug/L	EPA 8260B	11/8/13	101	98.7	2.29	70.0-130	25

QC Report : Laboratory Control Sample (LCS)Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	101	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	96.6	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	11/13/13	103	85-115
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	99.0	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.4	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.8	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.4	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.8	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.0	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.8	85-115
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/11/13	89.4	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/11/13	93.9	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/11/13	95.6	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/11/13	109	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/11/13	101	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Methanol	997	ug/L	EPA 8260B	11/11/13	95.4	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/11/13	91.5	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
P + M Xylene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/11/13	101	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/11/13	97.2	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/12/13	101	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/12/13	96.6	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/12/13	89.5	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/12/13	94.1	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/12/13	96.1	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/12/13	111	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/12/13	101	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/12/13	103	70.0-130
Methanol	997	ug/L	EPA 8260B	11/12/13	107	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/12/13	89.3	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	11/12/13	103	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/12/13	98.9	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/12/13	102	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/12/13	97.6	70.0-130
1,2-Dibromoethane	40.5	ug/L	EPA 8260B	11/8/13	112	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	11/8/13	108	70.0-130
Benzene	40.2	ug/L	EPA 8260B	11/8/13	103	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/8/13	108	70.0-130
Ethanol	99.8	ug/L	EPA 8260B	11/8/13	105	55.0-150
Ethyl-tert-butyl ether	40.3	ug/L	EPA 8260B	11/8/13	112	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	11/8/13	107	70.0-130
Methanol	1000	ug/L	EPA 8260B	11/8/13	102	65.0-150
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	11/8/13	112	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	11/8/13	108	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/8/13	97.6	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/8/13	105	70.0-130
Tert-amyl-methyl ether	40.5	ug/L	EPA 8260B	11/8/13	107	70.0-130
Toluene	40.2	ug/L	EPA 8260B	11/8/13	105	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/12/13	111	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/12/13	108	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/12/13	105	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/12/13	106	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/12/13	129	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/12/13	102	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/12/13	107	70.0-130
Methanol	997	ug/L	EPA 8260B	11/12/13	124	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/12/13	96.7	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
P + M Xylene	40.0	ug/L	EPA 8260B	11/12/13	108	70.0-130
TPH as Gasoline	490	ug/L	EPA 8260B	11/12/13	96.6	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/12/13	109	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/12/13	104	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/12/13	107	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	11/13/13	110	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	11/13/13	104	70.0-130
Benzene	40.1	ug/L	EPA 8260B	11/13/13	102	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/13/13	105	70.0-130
Ethanol	99.6	ug/L	EPA 8260B	11/13/13	103	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	11/13/13	108	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
Methanol	999	ug/L	EPA 8260B	11/13/13	98.6	65.0-150
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	11/13/13	105	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/13/13	95.8	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/13/13	103	70.0-130
Tert-amyl-methyl ether	40.4	ug/L	EPA 8260B	11/13/13	107	70.0-130
Toluene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	11/8/13	101	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	11/8/13	94.3	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.1	ug/L	EPA 8260B	11/8/13	96.8	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/8/13	91.5	70.0-130
Ethanol	99.6	ug/L	EPA 8260B	11/8/13	106	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	11/8/13	95.0	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	11/8/13	104	70.0-130
Methanol	999	ug/L	EPA 8260B	11/8/13	105	65.0-150
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	11/8/13	88.3	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	11/8/13	99.3	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/8/13	95.1	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/8/13	100	70.0-130
Tert-amyl-methyl ether	40.4	ug/L	EPA 8260B	11/8/13	93.3	70.0-130
Toluene	40.1	ug/L	EPA 8260B	11/8/13	100	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	11/7/13	99.2	90.0-110
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	11/7/13	97.2	70.0-130
Nitrate as N	0.500	mg/L	EPA 300.0	11/7/13	99.6	90.0-110
Sulfate	2.50	mg/L	EPA 300.0	11/7/13	107	90.0-110
Nitrate as N	0.500	mg/L	EPA 300.0	11/8/13	102	90.0-110
Sulfate	2.50	mg/L	EPA 300.0	11/8/13	104	90.0-110



Subcontract Laboratory Report Attachments



CALSCIENCE

WORK ORDER NUMBER: 13-11-0726

The difference is service



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Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 11/15/2013 by:
Amanda Porter
Project Manager

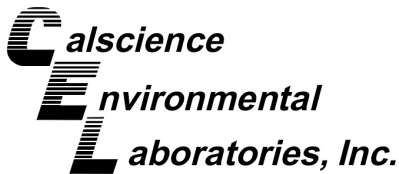
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Work Order Number: 13-11-0726

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Work Order Narrative

Work Order: 13-11-0726

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Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 11/09/13. They were assigned to Work Order 13-11-0726.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

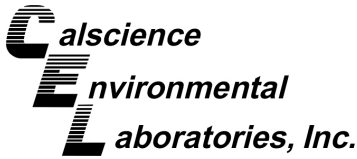
Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

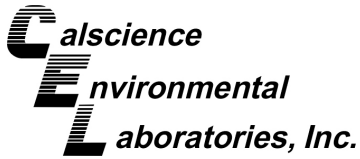
Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-9	13-11-0726-1-C	11/07/13 14:40	Aqueous	GC 14	N/A	11/12/13 15:42	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		9660	3.40		2		
DW-7	13-11-0726-2-C	11/07/13 14:00	Aqueous	GC 14	N/A	11/12/13 16:13	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		13000	3.40		2		
MW-6	13-11-0726-3-C	11/07/13 13:30	Aqueous	GC 14	N/A	11/12/13 17:30	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		30300	6.80		4		
DW-2	13-11-0726-4-C	11/07/13 13:00	Aqueous	GC 14	N/A	11/12/13 21:29	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		19900	6.80		4		
DW-6	13-11-0726-5-C	11/07/13 12:30	Aqueous	GC 14	N/A	11/12/13 21:49	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		9950	6.80		4		
MW-12	13-11-0726-6-C	11/07/13 12:00	Aqueous	GC 14	N/A	11/12/13 23:40	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		18000	6.80		4		
MW-9	13-11-0726-7-C	11/07/13 11:20	Aqueous	GC 14	N/A	11/13/13 04:49	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		21200	6.80		4		
DW-3	13-11-0726-8-C	11/07/13 10:50	Aqueous	GC 14	N/A	11/13/13 05:24	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		11200	6.80		4		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
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Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M
Units: ug/L

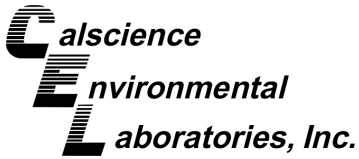
Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-10	13-11-0726-9-C	11/07/13 10:20	Aqueous	GC 14	N/A	11/13/13 06:23	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		11500	6.80		4		
MW-8	13-11-0726-10-C	11/07/13 15:00	Aqueous	GC 14	N/A	11/13/13 06:43	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		12300	6.80		4		
Method Blank	099-12-659-633	N/A	Aqueous	GC 14	N/A	11/12/13 12:18	131112L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

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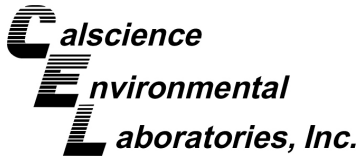
Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-9	13-11-0726-1-A	11/07/13 14:40	Aqueous	GC 61	N/A	11/12/13 16:16	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		3330	8.00		8		
DW-7	13-11-0726-2-A	11/07/13 14:00	Aqueous	GC 61	N/A	11/12/13 16:40	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		4690	8.00		8		
MW-6	13-11-0726-3-A	11/07/13 13:30	Aqueous	GC 61	N/A	11/12/13 17:07	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		4210	8.00		8		
DW-2	13-11-0726-4-A	11/07/13 13:00	Aqueous	GC 61	N/A	11/12/13 17:31	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		2620	8.00		8		
DW-6	13-11-0726-5-B	11/07/13 12:30	Aqueous	GC 61	N/A	11/12/13 23:37	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		890	8.00		8		
MW-12	13-11-0726-6-A	11/07/13 12:00	Aqueous	GC 61	N/A	11/12/13 19:08	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1980	8.00		8		
MW-9	13-11-0726-7-A	11/07/13 11:20	Aqueous	GC 61	N/A	11/12/13 19:59	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		280	1.00		1		
DW-3	13-11-0726-8-A	11/07/13 10:50	Aqueous	GC 61	N/A	11/12/13 20:22	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		359	1.00		1		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M
Units: ug/L

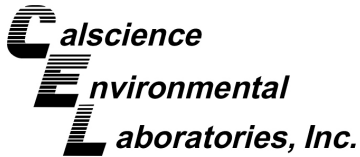
Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-10	13-11-0726-9-A	11/07/13 10:20	Aqueous	GC 61	N/A	11/12/13 20:45	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		19.9	1.00		1		
MW-8	13-11-0726-10-A	11/07/13 15:00	Aqueous	GC 61	N/A	11/12/13 21:24	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1.24	1.00		1		
Method Blank	099-12-663-2021	N/A	Aqueous	GC 61	N/A	11/12/13 15:22	131112L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		ND	1.00		1		

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

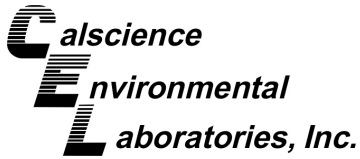
11/09/13
13-11-0726

Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
DW-9	13-11-0726-1				11/07/13 14:40		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	461	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	625	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
DW-7	13-11-0726-2				11/07/13 14:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	523	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	710	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-6	13-11-0726-3				11/07/13 13:30		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	497	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	955	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
DW-2	13-11-0726-4				11/07/13 13:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	572	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	1030	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
DW-6	13-11-0726-5				11/07/13 12:30		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	419	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	880	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-12	13-11-0726-6				11/07/13 12:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	421	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	850	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-9	13-11-0726-7				11/07/13 11:20		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	485	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	900	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

11/09/13
13-11-0726

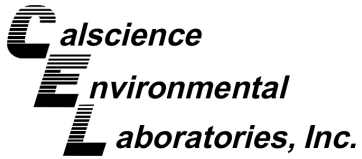
Project: Tesoro - Livermore #67076

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Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
DW-3	13-11-0726-8				11/07/13 10:50		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	373	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	795	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-10	13-11-0726-9				11/07/13 10:20		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	556	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	1080	10.0	1		mg/L	11/13/13	11/13/13	SM 2540 C
MW-8	13-11-0726-10				11/07/13 15:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	373	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	870	1.00	1		mg/L	11/13/13	11/13/13	SM 2540 C
Method Blank					N/A		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	ND	1.0	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	ND	1.0	1		mg/L	11/13/13	11/13/13	SM 2540 C

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Sample Duplicate

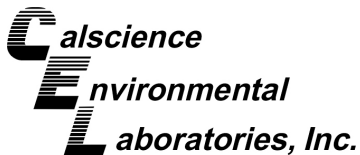
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
DW-9	Aqueous	PH1/BUR03	N/A	11/13/13 15:35	D1113ALKD2
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)	461.0	463.0	0	0-25	



Quality Control - Sample Duplicate

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0726
 Preparation: N/A
 Method: SM 2540 C

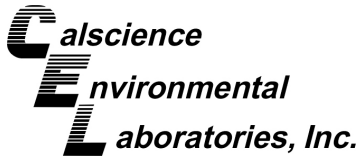
Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
DW-9	Aqueous	SC 5	11/13/13 00:00	11/13/13 16:15	D1113TDSD3
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	625.0	625.0	0	0-20	



RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

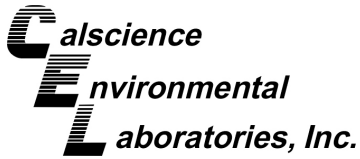
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

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Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-659-633		Aqueous	GC 14	N/A	11/12/13 11:26	131112L02			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Carbon Dioxide	102.0	96.30	94	96.37	94	80-120	0	0-20	



Quality Control - LCS/LCSD

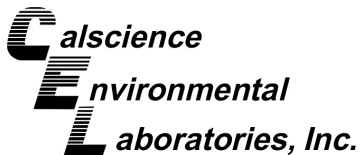
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0726
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

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Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2021		Aqueous	GC 61	N/A	11/12/13 13:48	131112L01			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Methane	98.50	88.95	90	89.00	90	80-120	0	0-20	



Quality Control - LCS/LCSD

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0726
 Preparation: N/A
 Method: SM 2320B

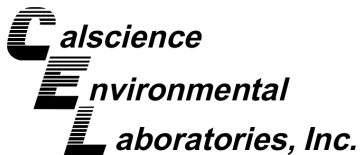
Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-859-205	Aqueous	PH1/BUR03	N/A	11/13/13 15:35	D1113ALKB2				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)	100.0	98.00	98	98.00	98	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0726
 Preparation: N/A
 Method: SM 2540 C

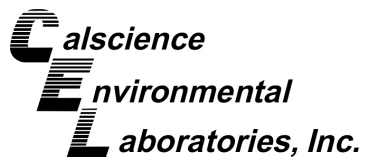
Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-180-3885	Aqueous	SC 5	11/13/13	11/13/13 16:15	D1113TDSL3				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	100.0	105.0	105	110.0	110	80-120	5	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Sample Analysis Summary Report

Work Order: 13-11-0726

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	460	GC 14	2
RSK-175M	N/A	460	GC 61	2
RSK-175M	N/A	884	GC 14	2
RSK-175M	N/A	888	GC 14	2
RSK-175M	N/A	888	GC 61	2
RSK-175M	N/A	896	GC 61	2
SM 2320B	N/A	688	PH1/BUR03	1
SM 2540 C	N/A	722	SC 5	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 13-11-0726

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<u>Qualifiers</u>	<u>Definition</u>
*	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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSO or PES/PESO associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
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. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



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

13-11-0726

Calscience
 7440 Lincoln Way
 Garden Grove, CA 92841-1427
 714-895-5494
 COC No. 86467

Project Contact (Hardcopy or PDF to):

Scott Forbes

Company/Address:

Kiff Analytical

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

Project Number: 01LV
 P.O. No.: 86467

Project Name:

Tesoro - Livermore #67076

Project Address:

Sampling

Sample Designation

Sample Designation	Date	Time
DW-9	11/07/13	14:40
DW-7	11/07/13	14:00
MW-6	11/07/13	13:30
DW-2	11/07/13	13:00
DW-6	11/07/13	12:30
MW-12	11/07/13	12:00
MW-9	11/07/13	11:20
DW-3	11/07/13	10:50
MW-10	11/07/13	10:20
MW-8	11/07/13	15:00

Relinquished by: *[Signature]* Date: 11/29/13/1000
 Relinquished by: *[Signature]* Date: 11/08/13
 Relinquished by: *[Signature]* Date: 11/29/13/1000

EDF Report? YES

Recommended but not mandatory to complete this section:

Sampling Company Log Code: CESC

Global ID: T0600101410

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

Container / Preservative

Matrix

Water

1-L Poly None
 250ml Poly None
 VOA 40 ml None
 VOA 40 ml HCl

Chain-of-Custody Record and Analysis Request

Analysis Request

Analysis Request	TAT
Alkalinity SM 2320 (Total as CaCO ₃)	X
Carbon Dioxide by RSK 175	X
Methane in Water by RSK 175	X
Total Dissolved Solids	X

Remarks:

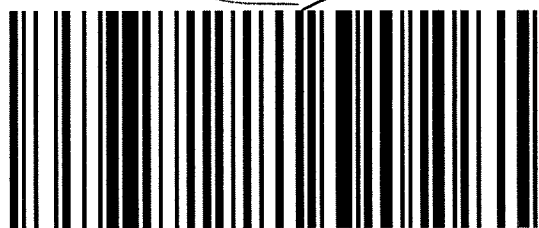
Received by: *[Signature]* Time: 1730
 Received by: *[Signature]* Time: 1730
 Received by Laboratory: *[Signature]* Time: 11/29/13/1000

Bill to: Accounts Payable



800.334.5000
ontrac.com

0726



D10010632791813

Date Printed 11/8/2013

Tracking#D10010632791813

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 40
Reference: SUBS
Reference 2: 600

Ship To Company:
CALSCIENCE ENVIRONMENTAL LABS
7440 LINCOLN WAY
GARDEN GROVE, CA 92841
SAMPLE RECEIVING (714)895-5494

Service: **S**
Sort Code: **ORG**
Special Services:
Saturday Delivery
Signature Required

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WORK ORDER #: **13-11-0726**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: KIFF

DATE: 11/09/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.1 °C - 0.2 °C (CF) = 1.9 °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

Checked by: 802

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A

Sample _____ No (Not Intact) Not Present

Checked by: 802
Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

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

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBz_{nna} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister **Other:** _____ **Trip Blank Lot#:** _____ **Labeled/Checked by:** 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 739

Preservative: h: HCL n: HNO₃ na₂:Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{nna}: ZnAc₂+NaOH f: Filtered **Scanned by:** 739

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Laboratory Results

Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 12 Water Samples
Project Name : Tesoro - Livermore #67076
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 and TNI 2009 standards. 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,

Troy Turpen

Subject : 12 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Nitrate as N by Method EPA 300.0 was raised due to dilution for matrix effects for samples IP-1, IP-10, IP-5, IP-8, IP-9 and MW-7.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for sample IP-9.

The Matrix Spike and Matrix Spike Duplicate for Sulfate by method EPA 300.0 were diluted due to high level concentrations. The spike was performed on the diluted sample.

Recoveries for some Matrix Spike/Matrix Spike Duplicate analytes were outside of control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **VW-3**

Matrix : Water

Lab Number : 86468-01

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 11:42
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 11:42
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 11:42
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 11:42
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 11:42
1,2-Dichloroethane-d4 (Surr)	97.6		% Recovery	EPA 8260B	11/08/13 11:42
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/08/13 11:42

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **TP-2**

Matrix : Water

Lab Number : 86468-02

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 12:14
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 12:14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 12:14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 12:14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 12:14
1,2-Dichloroethane-d4 (Surr)	96.4		% Recovery	EPA 8260B	11/08/13 12:14
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/08/13 12:14

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-3**

Matrix : Water

Lab Number : 86468-03

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:02
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 13:02
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 13:02
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:02
1,2-Dichloroethane-d4 (Surr)	91.7		% Recovery	EPA 8260B	11/08/13 13:02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/08/13 13:02

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-4**

Matrix : Water

Lab Number : 86468-04

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:34
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 13:34
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 13:34
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/13 13:34
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 13:34
1,2-Dichloroethane-d4 (Surr)	96.5		% Recovery	EPA 8260B	11/08/13 13:34
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/08/13 13:34

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **TP-1**

Matrix : Water

Lab Number : 86468-05

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	14	0.50	ug/L	EPA 8260B	11/08/13 14:07
Toluene	1.8	0.50	ug/L	EPA 8260B	11/08/13 14:07
Ethylbenzene	19	0.50	ug/L	EPA 8260B	11/08/13 14:07
Total Xylenes	7.3	0.50	ug/L	EPA 8260B	11/08/13 14:07
Methyl-t-butyl ether (MTBE)	43	0.50	ug/L	EPA 8260B	11/08/13 14:07
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:07
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:07
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:07
Tert-Butanol	25	5.0	ug/L	EPA 8260B	11/08/13 14:07
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 14:07
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 14:07
TPH as Gasoline	2800	50	ug/L	EPA 8260B	11/08/13 14:07
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:07
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:07
1,2-Dichloroethane-d4 (Surr)	90.8		% Recovery	EPA 8260B	11/08/13 14:07
Toluene - d8 (Surr)	96.4		% Recovery	EPA 8260B	11/08/13 14:07

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-1**

Matrix : Water

Lab Number : 86468-06

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	0.82	0.50	ug/L	EPA 8260B	11/08/13 14:39
Toluene	2.9	0.50	ug/L	EPA 8260B	11/08/13 14:39
Ethylbenzene	76	0.50	ug/L	EPA 8260B	11/08/13 14:39
Total Xylenes	160	0.50	ug/L	EPA 8260B	11/08/13 14:39
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 14:39
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 14:39
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 14:39
TPH as Gasoline	4300	50	ug/L	EPA 8260B	11/08/13 14:39
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 14:39
1,2-Dichloroethane-d4 (Surr)	94.2		% Recovery	EPA 8260B	11/08/13 14:39
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	11/08/13 14:39

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **IP-5**

Matrix : Water

Lab Number : 86468-07

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/08/13 16:17
Sulfate	41	2.5	mg/L	EPA 300.0	11/08/13 16:17
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 10:16
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 11:57
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/13 10:45
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 10:45
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 10:45
Manganese, Dissolved	0.17	0.0050	mg/L	EPA 6010B	11/14/13 10:45
Sodium, Dissolved	38	5.0	mg/L	EPA 6010B	11/14/13 13:18
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Ethylbenzene	3.0	0.50	ug/L	EPA 8260B	11/08/13 09:23
Total Xylenes	6.1	0.50	ug/L	EPA 8260B	11/08/13 09:23
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:23
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 09:23
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 09:23
TPH as Gasoline	180	50	ug/L	EPA 8260B	11/08/13 09:23
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 09:23
1,2-Dichloroethane-d4 (Surr)	98.7		% Recovery	EPA 8260B	11/08/13 09:23
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	11/08/13 09:23

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **MW-7**

Matrix : Water

Lab Number : 86468-08

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/08/13 12:38
Sulfate	27	2.5	mg/L	EPA 300.0	11/08/13 12:38
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 10:22
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:24
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/13 10:56
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 10:56
Iron, Dissolved	0.21	0.10	mg/L	EPA 6010B	11/14/13 10:56
Manganese, Dissolved	1.5	0.0050	mg/L	EPA 6010B	11/14/13 10:56
Sodium, Dissolved	74	5.0	mg/L	EPA 6010B	11/14/13 13:22
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Ethylbenzene	0.51	0.50	ug/L	EPA 8260B	11/08/13 15:11
Total Xylenes	0.73	0.50	ug/L	EPA 8260B	11/12/13 13:08
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 15:11
Methanol	< 50	50	ug/L	EPA 8260B	11/08/13 15:11
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/13 15:11
TPH as Gasoline	330	50	ug/L	EPA 8260B	11/08/13 15:11
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/13 15:11
1,2-Dichloroethane-d4 (Surr)	97.9		% Recovery	EPA 8260B	11/08/13 15:11
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/08/13 15:11

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **IP-9**

Matrix : Water

Lab Number : 86468-09

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/08/13 12:52
Sulfate	260	5.0	mg/L	EPA 300.0	11/11/13 12:35
Hexavalent Chromium	7.1	2.0	ug/L	EPA 7199	11/08/13 10:29
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:24
Arsenic, Dissolved	0.019	0.015	mg/L	EPA 6010B	11/14/13 11:19
Chromium, Dissolved	0.0067	0.0050	mg/L	EPA 6010B	11/14/13 11:19
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 11:19
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 11:19
Sodium, Dissolved	2500	50	mg/L	EPA 6010B	11/14/13 13:00
Benzene	4.9	0.50	ug/L	EPA 8260B	11/12/13 13:08
Toluene	30	0.50	ug/L	EPA 8260B	11/12/13 13:08
Ethylbenzene	14	0.50	ug/L	EPA 8260B	11/12/13 13:08
Total Xylenes	89	0.50	ug/L	EPA 8260B	11/12/13 13:08
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/13 13:08
Methanol	< 50	50	ug/L	EPA 8260B	11/12/13 13:08
Ethanol	< 20	20	ug/L	EPA 8260B	11/12/13 13:08
TPH as Gasoline	1100	50	ug/L	EPA 8260B	11/12/13 13:08
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/13 13:08
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	11/12/13 13:08
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	11/12/13 13:08

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **IP-10**

Matrix : Water

Lab Number : 86468-10

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.50	0.50	mg/L	EPA 300.0	11/08/13 13:09
Sulfate	3.8	2.5	mg/L	EPA 300.0	11/08/13 13:09
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	11/08/13 10:36
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:25
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/13 11:00
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/13 11:00
Iron, Dissolved	0.63	0.10	mg/L	EPA 6010B	11/14/13 11:00
Manganese, Dissolved	2.7	0.0050	mg/L	EPA 6010B	11/14/13 11:00
Sodium, Dissolved	56	5.0	mg/L	EPA 6010B	11/14/13 13:26
Benzene	2.6	0.50	ug/L	EPA 8260B	11/11/13 23:33
Toluene	1.7	0.50	ug/L	EPA 8260B	11/11/13 23:33
Ethylbenzene	1.5	0.50	ug/L	EPA 8260B	11/11/13 23:33
Total Xylenes	7.6	0.50	ug/L	EPA 8260B	11/11/13 23:33
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/13 23:33
Methanol	< 50	50	ug/L	EPA 8260B	11/11/13 23:33
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/13 23:33
TPH as Gasoline	810	50	ug/L	EPA 8260B	11/11/13 23:33
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/13 23:33
1,2-Dichloroethane-d4 (Surr)	96.7		% Recovery	EPA 8260B	11/11/13 23:33
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/11/13 23:33

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **IP-8**

Matrix : Water

Lab Number : 86468-11

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 13:20
Sulfate	750	50	mg/L	EPA 300.0	11/11/13 12:48
Hexavalent Chromium	13	2.0	ug/L	EPA 7199	11/08/13 10:43
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:25
Arsenic, Dissolved	0.14	0.015	mg/L	EPA 6010B	11/14/13 11:24
Chromium, Dissolved	0.026	0.0050	mg/L	EPA 6010B	11/14/13 11:24
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/13 11:24
Manganese, Dissolved	0.017	0.0050	mg/L	EPA 6010B	11/14/13 11:24
Sodium, Dissolved	5800	51	mg/L	EPA 6010B	11/14/13 14:24
Benzene	400	4.0	ug/L	EPA 8260B	11/12/13 13:40
Toluene	520	4.0	ug/L	EPA 8260B	11/12/13 13:40
Ethylbenzene	170	4.0	ug/L	EPA 8260B	11/12/13 13:40
Total Xylenes	1700	4.0	ug/L	EPA 8260B	11/12/13 13:40
Methyl-t-butyl ether (MTBE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
Diisopropyl ether (DIPE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
Ethyl-t-butyl ether (ETBE)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
Tert-amyl methyl ether (TAME)	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
Tert-Butanol	23	20	ug/L	EPA 8260B	11/12/13 13:40
Methanol	< 400	400	ug/L	EPA 8260B	11/12/13 13:40
Ethanol	< 40	40	ug/L	EPA 8260B	11/12/13 13:40
TPH as Gasoline	18000	400	ug/L	EPA 8260B	11/12/13 13:40
1,2-Dichloroethane	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
1,2-Dibromoethane	< 4.0	4.0	ug/L	EPA 8260B	11/12/13 13:40
1,2-Dichloroethane-d4 (Surr)	93.6		% Recovery	EPA 8260B	11/12/13 13:40
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	11/12/13 13:40

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Sample : **IP-1**

Matrix : Water

Lab Number : 86468-12

Sample Date :11/07/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 1.0	1.0	mg/L	EPA 300.0	11/08/13 13:32
Sulfate	1100	50	mg/L	EPA 300.0	11/11/13 13:01
Hexavalent Chromium	92	10	ug/L	EPA 7199	11/08/13 10:49
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	11/08/13 12:25
Arsenic, Dissolved	0.35	0.015	mg/L	EPA 6010B	11/14/13 11:29
Chromium, Dissolved	0.066	0.0050	mg/L	EPA 6010B	11/14/13 11:29
Iron, Dissolved	0.11	0.10	mg/L	EPA 6010B	11/14/13 11:29
Manganese, Dissolved	0.011	0.0052	mg/L	EPA 6010B	11/14/13 11:29
Sodium, Dissolved	8900	52	mg/L	EPA 6010B	11/14/13 13:14
Benzene	70	0.90	ug/L	EPA 8260B	11/13/13 13:03
Toluene	94	0.90	ug/L	EPA 8260B	11/13/13 13:03
Ethylbenzene	200	0.90	ug/L	EPA 8260B	11/13/13 13:03
Total Xylenes	400	0.90	ug/L	EPA 8260B	11/13/13 13:03
Methyl-t-butyl ether (MTBE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
Diisopropyl ether (DIPE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
Ethyl-t-butyl ether (ETBE)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
Tert-amyl methyl ether (TAME)	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
Tert-Butanol	14	5.0	ug/L	EPA 8260B	11/13/13 13:03
Methanol	< 90	90	ug/L	EPA 8260B	11/13/13 13:03
Ethanol	< 9.0	9.0	ug/L	EPA 8260B	11/13/13 13:03
TPH as Gasoline	7400	90	ug/L	EPA 8260B	11/13/13 13:03
1,2-Dichloroethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
1,2-Dibromoethane	< 0.90	0.90	ug/L	EPA 8260B	11/13/13 13:03
1,2-Dichloroethane-d4 (Surr)	96.0		% Recovery	EPA 8260B	11/13/13 13:03
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	11/13/13 13:03

QC Report : Method Blank Data

Project Name : Tesoro - Livermore #67076

Project Number : 01LV

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	11/14/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	11/14/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	11/14/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	11/14/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/13/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Methanol	< 50	50	ug/L	EPA 8260B	11/13/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/13/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/11/2013	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/13/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/13/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	11/13/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/11/2013	Toluene - d8 (Surr)	100		%	EPA 8260B	11/13/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/11/2013	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane-d4 (Surr)	98.3		%	EPA 8260B	11/11/2013	Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	102		%	EPA 8260B	11/11/2013	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
						Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						Methanol	< 50	50	ug/L	EPA 8260B	11/08/2013
						Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
						Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/2013
						1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
						1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore #67076**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	99.5		%	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	101		%	EPA 8260B	11/08/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/12/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/12/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/12/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/12/2013
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	11/12/2013
Toluene - d8 (Surr)	101		%	EPA 8260B	11/12/2013
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Methanol	< 50	50	ug/L	EPA 8260B	11/08/2013
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/08/2013
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/08/2013
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/08/2013

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	97.4		%	EPA 8260B	11/08/2013
Toluene - d8 (Surr)	102		%	EPA 8260B	11/08/2013
Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	11/08/2013
Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	11/08/2013
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	11/08/2013
Sulfate	<0.50	0.50	mg/L	EPA 300.0	11/08/2013
Sulfate	<0.50	0.50	mg/L	EPA 300.0	11/11/2013

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ferrous Iron														
	86468-07	< 0.10	0.251	0.251	0.268	0.269	mg/L	SM 3500-Fe D	11/8/13	97.2	97.6	0.372	70.0-130	25
Hexavalent Chromium														
	86468-07	< 1.0	5.00	5.00	5.06	5.32	ug/L	EPA 7199	11/8/13	101	106	4.88	90.0-110	10
Nitrate as N														
	86468-07	0.35	0.500	0.500	0.785	0.792	mg/L	EPA 300.0	11/8/13	87.4	88.8	0.902	90.0-110	10
Sulfate														
	86468-07	41	2.50	2.50	43.1	43.2	mg/L	EPA 300.0	11/8/13	91.2	95.2	0.227	90.0-110	10
Sulfate														
	86468-09	26	2.50	2.50	28.6	28.6	mg/L	EPA 300.0	11/11/13	99.9	97.2	2.74	90.0-110	10
1,2-Dibromoethane														
	86476-01	<0.50	40.3	40.2	42.6	40.2	ug/L	EPA 8260B	11/11/13	106	99.9	5.66	70.0-130	25
1,2-Dichloroethane														
	86476-01	<0.50	40.0	39.9	38.2	36.8	ug/L	EPA 8260B	11/11/13	95.5	92.3	3.40	70.0-130	25
Benzene														
	86476-01	<0.50	40.0	39.9	38.5	38.6	ug/L	EPA 8260B	11/11/13	96.2	96.6	0.396	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Diisopropyl ether	86476-01	<0.50	39.9	39.8	39.4	39.4	ug/L	EPA 8260B	11/11/13	98.8	99.0	0.175	70.0-130	25
Ethanol	86476-01	<5.0	99.3	99.1	111	98.3	ug/L	EPA 8260B	11/11/13	111	99.2	11.6	55.0-150	25
Ethyl-tert-butyl ether	86476-01	<0.50	40.1	40.0	42.5	42.1	ug/L	EPA 8260B	11/11/13	106	105	0.613	70.0-130	25
Ethylbenzene	86476-01	<0.50	40.0	39.9	42.3	42.0	ug/L	EPA 8260B	11/11/13	106	105	0.624	70.0-130	25
Methanol	86476-01	<50	997	995	909	1020	ug/L	EPA 8260B	11/11/13	91.2	102	11.5	65.0-150	25
Methyl-t-butyl ether	86476-01	2.0	39.9	39.8	41.2	39.3	ug/L	EPA 8260B	11/11/13	98.4	93.8	4.80	70.0-130	25
P + M Xylene	86476-01	<0.50	40.0	39.9	42.4	41.9	ug/L	EPA 8260B	11/11/13	106	105	1.18	70.0-130	25
Tert-Butanol	86476-01	40	202	201	243	240	ug/L	EPA 8260B	11/11/13	101	99.2	1.48	70.0-130	25
Tert-amyl-methyl ether	86476-01	<0.50	40.3	40.2	43.0	42.0	ug/L	EPA 8260B	11/11/13	107	104	2.22	70.0-130	25
Toluene	86476-01	<0.50	40.0	39.9	40.1	39.9	ug/L	EPA 8260B	11/11/13	100	99.9	0.315	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
P + M Xylene	86468-08	0.73	39.9	39.9	39.6	39.7	ug/L	EPA 8260B	11/12/13	97.2	97.7	0.490	70.0-130	25
1,2-Dibromoethane	86511-13	<0.50	40.3	40.3	46.2	45.4	ug/L	EPA 8260B	11/13/13	114	113	1.60	70.0-130	25
1,2-Dichloroethane	86511-13	<0.50	40.0	40.0	43.4	42.8	ug/L	EPA 8260B	11/13/13	109	107	1.59	70.0-130	25
Benzene	86511-13	<0.50	40.0	40.0	42.3	41.0	ug/L	EPA 8260B	11/13/13	106	103	2.95	70.0-130	25
Diisopropyl ether	86511-13	<0.50	39.9	39.9	43.4	43.0	ug/L	EPA 8260B	11/13/13	109	108	0.920	70.0-130	25
Ethanol	86511-13	<5.0	99.3	99.3	111	97.7	ug/L	EPA 8260B	11/13/13	112	98.3	13.0	55.0-150	25
Ethyl-tert-butyl ether	86511-13	<0.50	40.1	40.1	42.2	44.8	ug/L	EPA 8260B	11/13/13	105	112	6.07	70.0-130	25
Ethylbenzene	86511-13	<0.50	40.0	40.0	43.2	42.0	ug/L	EPA 8260B	11/13/13	108	105	2.72	70.0-130	25
Methanol	86511-13	<50	997	997	1060	926	ug/L	EPA 8260B	11/13/13	106	92.9	13.2	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	86511-13	<0.50	39.9	39.9	40.0	44.0	ug/L	EPA 8260B	11/13/13	100	110	9.64	70.0-130	25
P + M Xylene	86511-13	<0.50	40.0	40.0	43.3	42.3	ug/L	EPA 8260B	11/13/13	108	106	2.30	70.0-130	25
Tert-Butanol	86511-13	<5.0	202	202	213	211	ug/L	EPA 8260B	11/13/13	106	105	0.723	70.0-130	25
Tert-amyl-methyl ether	86511-13	<0.50	40.3	40.3	42.1	44.5	ug/L	EPA 8260B	11/13/13	104	110	5.35	70.0-130	25
Toluene	86511-13	<0.50	40.0	40.0	43.0	42.3	ug/L	EPA 8260B	11/13/13	108	106	1.66	70.0-130	25
1,2-Dibromoethane	86468-07	<0.50	40.3	40.3	42.9	42.0	ug/L	EPA 8260B	11/8/13	106	104	2.14	70.0-130	25
1,2-Dichloroethane	86468-07	<0.50	40.0	40.0	41.3	40.1	ug/L	EPA 8260B	11/8/13	103	100	2.95	70.0-130	25
Benzene	86468-07	<0.50	40.0	40.0	41.2	39.4	ug/L	EPA 8260B	11/8/13	103	98.5	4.35	70.0-130	25
Diisopropyl ether	86468-07	<0.50	39.9	39.9	41.0	40.0	ug/L	EPA 8260B	11/8/13	103	100	2.40	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethanol	86468-07	<5.0	99.3	99.3	108	118	ug/L	EPA 8260B	11/8/13	108	118	8.75	55.0-150	25
Ethyl-tert-butyl ether	86468-07	<0.50	40.1	40.1	42.0	41.1	ug/L	EPA 8260B	11/8/13	105	102	2.33	70.0-130	25
Ethylbenzene	86468-07	3.0	40.0	40.0	45.3	44.2	ug/L	EPA 8260B	11/8/13	106	103	2.56	70.0-130	25
Methanol	86468-07	<50	997	997	1060	1060	ug/L	EPA 8260B	11/8/13	106	106	0.0626	65.0-150	25
Methyl-t-butyl ether	86468-07	<0.50	39.9	39.9	40.9	39.9	ug/L	EPA 8260B	11/8/13	102	100	2.32	70.0-130	25
P + M Xylene	86468-07	5.2	40.0	40.0	45.3	43.5	ug/L	EPA 8260B	11/8/13	100	95.7	4.62	70.0-130	25
Tert-Butanol	86468-07	<5.0	202	202	210	208	ug/L	EPA 8260B	11/8/13	104	103	0.923	70.0-130	25
Tert-amyl-methyl ether	86468-07	<0.50	40.3	40.3	41.0	40.0	ug/L	EPA 8260B	11/8/13	102	99.1	2.49	70.0-130	25
Toluene	86468-07	<0.50	40.0	40.0	41.0	39.1	ug/L	EPA 8260B	11/8/13	103	97.8	4.81	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane	86517-05	<0.50	40.3	40.3	43.0	42.1	ug/L	EPA 8260B	11/12/13	107	104	2.16	70.0-130	25
1,2-Dichloroethane	86517-05	<0.50	40.0	40.0	41.1	40.3	ug/L	EPA 8260B	11/12/13	103	101	1.96	70.0-130	25
Benzene	86517-05	<0.50	40.0	40.0	41.8	41.0	ug/L	EPA 8260B	11/12/13	104	102	2.06	70.0-130	25
Diisopropyl ether	86517-05	<0.50	39.9	39.9	42.1	41.0	ug/L	EPA 8260B	11/12/13	106	103	2.65	70.0-130	25
Ethanol	86517-05	<5.0	99.3	99.3	114	113	ug/L	EPA 8260B	11/12/13	115	114	0.984	55.0-150	25
Ethyl-tert-butyl ether	86517-05	<0.50	40.1	40.1	42.2	41.5	ug/L	EPA 8260B	11/12/13	105	104	1.56	70.0-130	25
Ethylbenzene	86517-05	<0.50	40.0	40.0	40.4	39.1	ug/L	EPA 8260B	11/12/13	101	97.7	3.36	70.0-130	25
Methanol	86517-05	<50	997	997	1020	1010	ug/L	EPA 8260B	11/12/13	102	102	0.302	65.0-150	25
Methyl-t-butyl ether	86517-05	<0.50	39.9	39.9	41.9	41.5	ug/L	EPA 8260B	11/12/13	105	104	0.982	70.0-130	25
P + M Xylene	86517-05	<0.50	40.0	40.0	41.3	39.7	ug/L	EPA 8260B	11/12/13	103	99.3	3.78	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike DuplicateProject Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol	86517-05	<5.0	202	202	208	204	ug/L	EPA 8260B	11/12/13	103	101	1.58	70.0-130	25
Tert-amyl-methyl ether	86517-05	<0.50	40.3	40.3	42.1	41.4	ug/L	EPA 8260B	11/12/13	104	102	1.80	70.0-130	25
Toluene	86517-05	<0.50	40.0	40.0	42.0	40.8	ug/L	EPA 8260B	11/12/13	105	102	2.84	70.0-130	25
1,2-Dibromoethane	86467-12	<0.50	40.3	40.3	41.4	41.3	ug/L	EPA 8260B	11/8/13	102	102	0.241	70.0-130	25
1,2-Dichloroethane	86467-12	<0.50	40.0	40.0	37.9	38.4	ug/L	EPA 8260B	11/8/13	94.8	95.9	1.21	70.0-130	25
Benzene	86467-12	<0.50	40.0	40.0	39.1	38.4	ug/L	EPA 8260B	11/8/13	97.7	96.0	1.70	70.0-130	25
Diisopropyl ether	86467-12	<0.50	39.9	39.9	36.1	36.4	ug/L	EPA 8260B	11/8/13	90.6	91.4	0.902	70.0-130	25
Ethanol	86467-12	<5.0	99.3	99.3	110	110	ug/L	EPA 8260B	11/8/13	111	110	0.533	55.0-150	25
Ethyl-tert-butyl ether	86467-12	<0.50	40.1	40.1	37.4	38.6	ug/L	EPA 8260B	11/8/13	93.3	96.3	3.12	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethylbenzene	86467-12	<0.50	40.0	40.0	42.2	40.9	ug/L	EPA 8260B	11/8/13	106	102	3.08	70.0-130	25
Methanol	86467-12	<50	997	997	1110	1070	ug/L	EPA 8260B	11/8/13	111	107	3.38	65.0-150	25
Methyl-t-butyl ether	86467-12	<0.50	39.9	39.9	35.8	36.1	ug/L	EPA 8260B	11/8/13	89.8	90.6	0.815	70.0-130	25
P + M Xylene	86467-12	<0.50	40.0	40.0	40.3	39.2	ug/L	EPA 8260B	11/8/13	101	98.0	2.72	70.0-130	25
Tert-Butanol	86467-12	<5.0	202	202	208	205	ug/L	EPA 8260B	11/8/13	103	102	1.36	70.0-130	25
Tert-amyl-methyl ether	86467-12	<0.50	40.3	40.3	37.8	37.8	ug/L	EPA 8260B	11/8/13	93.7	93.7	0.0113	70.0-130	25
Toluene	86467-12	<0.50	40.0	40.0	40.4	39.5	ug/L	EPA 8260B	11/8/13	101	98.7	2.29	70.0-130	25
Arsenic, (Dis)	86468-07	< 0.015	0.400	0.400	0.398	0.406	mg/L	EPA 6010B	11/14/13	99.4	101	2.09	75-125	20
Chromium, (Dis)	86468-07	< 0.0050	0.400	0.400	0.384	0.390	mg/L	EPA 6010B	11/14/13	96.0	97.5	1.57	75-125	20

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Iron, (Dis)	86468-07	< 0.10	0.400	0.400	0.383	0.385	mg/L	EPA 6010B	11/14/13	94.3	94.8	0.599	75-125	20
Manganese, (Dis)	86468-07	0.17	0.400	0.400	0.534	0.541	mg/L	EPA 6010B	11/14/13	91.9	93.6	1.26	75-125	20
Sodium, (Dis)	86468-07	< 0.50	0.400	0.400	38.2	0.00	mg/L	EPA 6010B	11/14/13	9540	0.00	200	75-125	20

QC Report : Laboratory Control Sample (LCS)Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	99.0	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.4	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.8	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	96.4	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	11/14/13	97.8	85-115
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	11/11/13	89.4	70.0-130
Benzene	40.0	ug/L	EPA 8260B	11/11/13	93.9	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	11/11/13	95.6	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	11/11/13	109	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	11/11/13	101	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Methanol	997	ug/L	EPA 8260B	11/11/13	95.4	65.0-150
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	11/11/13	91.5	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	11/11/13	104	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/11/13	96.8	70.0-130
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	11/11/13	101	70.0-130
Toluene	40.0	ug/L	EPA 8260B	11/11/13	97.2	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	11/12/13	98.1	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	11/13/13	110	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	11/13/13	104	70.0-130
Benzene	40.1	ug/L	EPA 8260B	11/13/13	102	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/13/13	105	70.0-130
Ethanol	99.6	ug/L	EPA 8260B	11/13/13	103	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	11/13/13	108	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
Methanol	999	ug/L	EPA 8260B	11/13/13	98.6	65.0-150
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	11/13/13	105	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/13/13	95.8	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/13/13	103	70.0-130
Tert-amyl-methyl ether	40.4	ug/L	EPA 8260B	11/13/13	107	70.0-130
Toluene	40.1	ug/L	EPA 8260B	11/13/13	105	70.0-130
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	11/8/13	104	70.0-130
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	11/8/13	104	70.0-130
Benzene	39.9	ug/L	EPA 8260B	11/8/13	101	70.0-130
Diisopropyl ether	39.8	ug/L	EPA 8260B	11/8/13	102	70.0-130
Ethanol	99.1	ug/L	EPA 8260B	11/8/13	107	55.0-150
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	11/8/13	104	70.0-130
Ethylbenzene	39.9	ug/L	EPA 8260B	11/8/13	106	70.0-130
Methanol	994	ug/L	EPA 8260B	11/8/13	106	65.0-150

QC Report : Laboratory Control Sample (LCS)

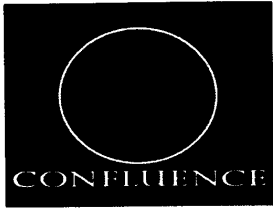
Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-butyl ether	39.8	ug/L	EPA 8260B	11/8/13	98.6	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	11/8/13	102	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/8/13	97.2	70.0-130
Tert-Butanol	201	ug/L	EPA 8260B	11/8/13	102	70.0-130
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	11/8/13	100	70.0-130
Toluene	39.9	ug/L	EPA 8260B	11/8/13	101	70.0-130
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	11/12/13	104	70.0-130
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	11/12/13	101	70.0-130
Benzene	39.9	ug/L	EPA 8260B	11/12/13	103	70.0-130
Diisopropyl ether	39.8	ug/L	EPA 8260B	11/12/13	103	70.0-130
Ethanol	99.1	ug/L	EPA 8260B	11/12/13	114	55.0-150
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	11/12/13	104	70.0-130
Ethylbenzene	39.9	ug/L	EPA 8260B	11/12/13	99.3	70.0-130
Methanol	994	ug/L	EPA 8260B	11/12/13	104	65.0-150
Methyl-t-butyl ether	39.8	ug/L	EPA 8260B	11/12/13	103	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	11/12/13	101	70.0-130
TPH as Gasoline	490	ug/L	EPA 8260B	11/12/13	92.4	70.0-130
Tert-Butanol	201	ug/L	EPA 8260B	11/12/13	101	70.0-130
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	11/12/13	102	70.0-130
Toluene	39.9	ug/L	EPA 8260B	11/12/13	103	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	11/8/13	101	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro - Livermore #67076**Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	11/8/13	94.3	70.0-130
Benzene	40.1	ug/L	EPA 8260B	11/8/13	96.8	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	11/8/13	91.5	70.0-130
Ethanol	99.6	ug/L	EPA 8260B	11/8/13	106	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	11/8/13	95.0	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	11/8/13	104	70.0-130
Methanol	999	ug/L	EPA 8260B	11/8/13	105	65.0-150
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	11/8/13	88.3	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	11/8/13	99.3	70.0-130
TPH as Gasoline	494	ug/L	EPA 8260B	11/8/13	95.1	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	11/8/13	100	70.0-130
Tert-amyl-methyl ether	40.4	ug/L	EPA 8260B	11/8/13	93.3	70.0-130
Toluene	40.1	ug/L	EPA 8260B	11/8/13	100	70.0-130
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	11/8/13	99.9	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	11/8/13	97.4	90.0-110
Nitrate as N	0.500	mg/L	EPA 300.0	11/8/13	102	90.0-110
Sulfate	2.50	mg/L	EPA 300.0	11/8/13	104	90.0-110
Sulfate	2.50	mg/L	EPA 300.0	11/11/13	100	90.0-110



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

86468

Project Name: Tesoro - Livermore #67076
 Job Number: R-131107
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff	Site Address: 1619 1st St, Livermore	Confluence PM: Jason Brown
Address: 2795 2nd St, Suite 300, Davis CA 95616	California Global ID No.: TO600101410	Phone / Fax: 916-760-7641 / 916-473-8617
Contact: Troy Turpen	Include EDF w/ Report: <u>(Yes)</u> No	Confluence Log Code: CESC
Phone/ Fax: 530-297-4800 x.111	Consultant / PM: Orion / Mike Purchase	Report to: Mike Purchase
	Phone / Fax: 510-525-2180 / 510-525-2392	Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis										Notes and Comments		
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates(7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)			
IP-8	1430	11/7/13	X			17	6		1	5			X	X	X	X	X	X	X	X	X	X	X	X	
IP-1	1455	11/7/13	X			17	6		1	5			X	X	X	X	X	X	X	X	X	X	X	X	

Sampler's Name: <u>Adam Fearey</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date: <u>11/7/13</u>	Time: <u>1520</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>11/7/13</u>	Time: <u>1600</u>
Sampler's Company: Confluence Environmental						
Shipment Date:						
Shipment Method:						
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field						

NOV 13 2013

12



Subcontract Laboratory Report Attachments



CALSCIENCE

WORK ORDER NUMBER: 13-11-0727

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 11/15/2013 by:
Amanda Porter
Project Manager

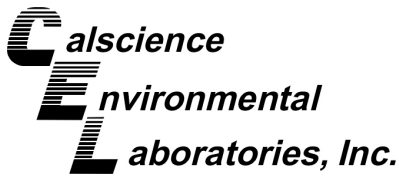
ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.





Contents

Client Project Name: Tesoro - Livermore #67076
Work Order Number: 13-11-0727

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Work Order Narrative

Work Order: 13-11-0727

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 11/09/13. They were assigned to Work Order 13-11-0727.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

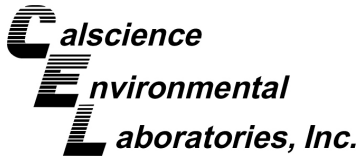
Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: RSK-175M
Units: ug/L

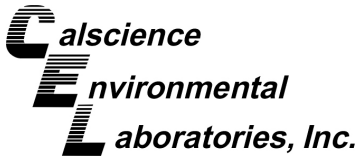
Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-5	13-11-0727-1-C	11/07/13 12:05	Aqueous	GC 14	N/A	11/13/13 13:45	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		4280	1.70		1		
MW-7	13-11-0727-2-C	11/07/13 12:40	Aqueous	GC 14	N/A	11/13/13 15:59	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		21100	17.0		10		
IP-9	13-11-0727-3-C	11/07/13 13:15	Aqueous	GC 14	N/A	11/13/13 16:37	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		294	1.70		1		
IP-10	13-11-0727-4-C	11/07/13 14:00	Aqueous	GC 14	N/A	11/13/13 17:07	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		4960	1.70		1		
IP-8	13-11-0727-5-C	11/07/13 14:30	Aqueous	GC 14	N/A	11/13/13 17:26	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		221	1.70		1		
IP-1	13-11-0727-6-C	11/07/13 14:55	Aqueous	GC 14	N/A	11/13/13 17:49	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1		
Method Blank	099-12-659-635	N/A	Aqueous	GC 14	N/A	11/13/13 10:38	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: RSK-175M
Units: ug/L

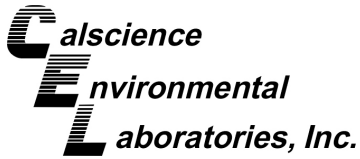
Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-5	13-11-0727-1-A	11/07/13 12:05	Aqueous	GC 61	N/A	11/13/13 11:53	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		21.7	1.00		1		
MW-7	13-11-0727-2-A	11/07/13 12:40	Aqueous	GC 61	N/A	11/13/13 12:16	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		358	1.00		1		
IP-9	13-11-0727-3-A	11/07/13 13:15	Aqueous	GC 61	N/A	11/13/13 12:46	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		3.15	1.00		1		
IP-10	13-11-0727-4-A	11/07/13 14:00	Aqueous	GC 61	N/A	11/13/13 13:12	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		577	1.00		1		
IP-8	13-11-0727-5-A	11/07/13 14:30	Aqueous	GC 61	N/A	11/13/13 13:37	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		122	1.00		1		
IP-1	13-11-0727-6-A	11/07/13 14:55	Aqueous	GC 61	N/A	11/13/13 14:07	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		136	1.00		1		
Method Blank	099-12-663-2022	N/A	Aqueous	GC 61	N/A	11/13/13 11:04	131113L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		ND	1.00		1		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

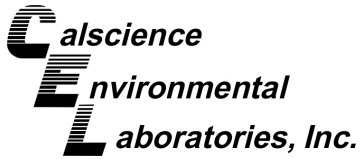
11/09/13
13-11-0727

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
IP-5	13-11-0727-1				11/07/13 12:05		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	311	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	510	1.00	1		mg/L	11/12/13	11/12/13	SM 2540 C
MW-7	13-11-0727-2				11/07/13 12:40		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	418	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	605	1.00	1		mg/L	11/12/13	11/12/13	SM 2540 C
IP-9	13-11-0727-3				11/07/13 13:15		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	5600	10.0	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	654	1.00	1		mg/L	11/12/13	11/12/13	SM 2540 C
IP-10	13-11-0727-4				11/07/13 14:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	294	5.00	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	495	1.00	1		mg/L	11/12/13	11/12/13	SM 2540 C
IP-8	13-11-0727-5				11/07/13 14:30		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	8900	10.0	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	10800	100	1		mg/L	11/12/13	11/12/13	SM 2540 C
IP-1	13-11-0727-6				11/07/13 14:55		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	20700	100	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	27700	100	1		mg/L	11/12/13	11/12/13	SM 2540 C
Method Blank					N/A		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	11/13/13	SM 2320B
Solids, Total Dissolved	ND	1.0	1		mg/L	11/12/13	11/12/13	SM 2540 C

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Sample Duplicate

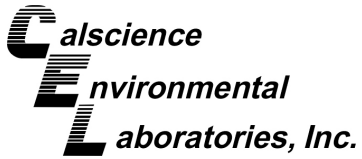
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 1 of 2

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13-11-0726-1	Aqueous	PH1/BUR03	N/A	11/13/13 15:35	D1113ALKD2
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)	461.0	463.0	0	0-25	



Quality Control - Sample Duplicate

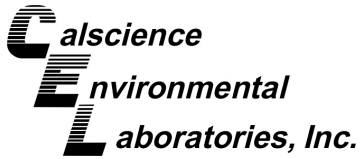
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 2 of 2

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
13-11-0555-1	Aqueous	SC 5	11/12/13 00:00	11/12/13 16:00	D1112TDS01
<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	550.0	580.0	5	0-20	



Quality Control - LCS/LCSD

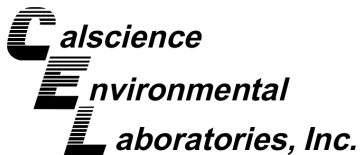
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

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Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-659-635		Aqueous	GC 14	N/A	11/13/13 09:45	131113L01			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Carbon Dioxide	102.0	96.28	94	95.67	94	80-120	1	0-20	



Quality Control - LCS/LCSD

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6505

Date Received: 11/09/13
 Work Order: 13-11-0727
 Preparation: N/A
 Method: RSK-175M

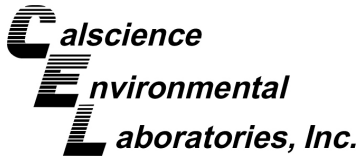
Project: Tesoro - Livermore #67076

Page 2 of 4

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-12-663-2022	Aqueous	GC 61	N/A	11/13/13 10:15	131113L01				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Methane	98.50	92.16	94	92.00	93	80-120	0	0-20	

Return to Contents 

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

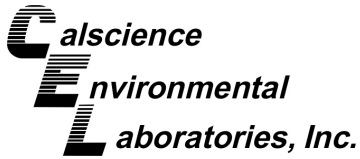
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

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Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-859-205	Aqueous	PH1/BUR03	N/A	11/13/13 15:35	D1113ALKB2				
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO ₃)	100.0	98.00	98	98.00	98	80-120	0	0-20	



Quality Control - LCS/LCSD

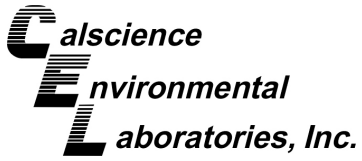
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 11/09/13
Work Order: 13-11-0727
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

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Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-180-3881		Aqueous	SC 5	11/12/13	11/12/13 16:00	D1112TDSL1			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	100.0	105.0	105	95.00	95	80-120	10	0-20	



Sample Analysis Summary Report

Work Order: 13-11-0727

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	884	GC 14	2
RSK-175M	N/A	888	GC 14	2
RSK-175M	N/A	888	GC 61	2
RSK-175M	N/A	896	GC 61	2
SM 2320B	N/A	688	PH1/BUR03	1
SM 2540 C	N/A	722	SC 5	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 13-11-0727

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<u>Qualifiers</u>	<u>Definition</u>
*	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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
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. All QC results are reported on a wet weight basis.

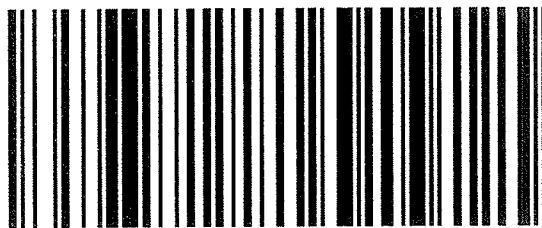
Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

0727



800.334.5000
ontrac.com



D10010632791897

Date Printed 11/8/2013

Tracking#D10010632791897

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 40
Reference: SUBS
Reference 2: 600

<p>Ship To Company: CALSCIENCE ENVIRONMENTAL LABS 7440 LINCOLN WAY GARDEN GROVE, CA 92841 SAMPLE RECEIVING (714)895-5494</p>	<p>Service: S Sort Code: ORG Special Services: Saturday Delivery Signature Required</p>
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WORK ORDER #: **13-11-0727**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: KIFF

DATE: 11/09/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.0 °C - 0.2 °C (CF) = 1.8 °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

Checked by: 802

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Checked by: 802

Sample _____ No (Not Intact) Not Present Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

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

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBz_{na} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: _____ Labeled/Checked by: 862

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 681

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{na}: ZnAc₂+NaOH f: Filtered Scanned by: 681

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ATTACHMENT F
SOIL VAPOR SAMPLING QA/QC PROCEDURES

ATTACHMENT F

SOIL VAPOR SAMPLING QA/QC PROCEDURES

Vapor Sample Collection

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

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

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

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

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

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

Analytical Plan

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

- Total petroleum hydrocarbons as gasoline; benzene, toluene, ethylbenzene, and total xylenes; and methyl tert-butyl ether using Environmental Protection Agency Method 8260B

Analytical Quality Assurance Quality Control (QA/QC) Procedures

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

ATTACHMENT G
OXYGEN SYSTEM MONITORING RESULTS

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-1	10/15/10	0.03	NM ^(c)
	10/18/10	NM	NM
	10/22/10	9.96	NM
	10/25/10	41.75	82.2
	11/1/10	51.19	77.7
	12/9/10	24.66	51.3
	12/14/10	23.67	53.3
	12/23/10	28.27	58.1
	1/5/11	29.06	52.0
	1/18/11	0.0	0.0
	2/1/11	0.25	88.9
	3/4/11	15.02	90.4
	4/8/11	0.12	49.8
	5/3/11	0.01	88.0
	6/27/11	0.01	0.0
	6/28/11	0.24	91.3
	6/30/11	0.08	94.3
	7/5/11	0.13	94.5
	7/7/11	0.01	94.2
	7/13/11	0.01	95.3
	7/22/11	0.01	94.5
	8/9/11	0.01	94.5
	9/1/11	0.05	92.9
	11/29/11	NM	0.0
	1/5/12	NM	93.6
	2/2/12	0.01	91.0
	3/20/12	0.02	93.0
	4/26/12	NM	94.7
	5/16/12	0.01	NM
	6/19/12	NM	NM
	7/17/12	0.01	NM
	8/16/12	0.01	NM
9/21/12	NM	NM	
11/20/12	-0.02	NM	
12/11/12	NM	NM	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-1 (cont.)	1/3/13	NM	91.2
	3/28/13	NM	85.4
IP-2	10/15/10	0.03	NM
	10/18/10	NM	NM
	10/22/10	0.05	NM
	10/25/10	0.29	82.2
	11/1/10	0.02	77.7
	12/9/10	0.46	51.3
	12/14/10	0.84	53.3
	12/23/10	0.41	58.1
	1/5/11	NM	52.0
	1/18/11	2.01	0.0
	2/1/11	2.09	88.9
	3/4/11	1.45	90.4
	4/8/11	3.38	49.8
	5/3/11	0.47	88.0
	6/27/11	0.01	0.0
	6/28/11	25.05	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
	7/22/11	9.31	94.5
	8/9/11	17.38	94.5
	9/1/11	24.79	92.9
	11/29/11	1.14	0.0
	1/5/12	44.72	93.6
	2/2/12	36.25	91.0
	3/20/12	7.40	93.0
	4/26/12	11.27	94.7
5/16/12	8.48	NM	
6/19/12	18.34	NM	
7/17/12	7.41	NM	
8/16/12	NM	NM	
9/21/12	2.31	NM	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-2 (cont.)	11/20/12	NM	NM
	12/11/12	31.74	NM
	1/3/13	11.65	91.2
	3/28/13	24.84	85.4
IP-3	10/15/10	0.06	NM
	10/18/10	NM	NM
	10/22/10	NM	NM
	10/25/10	NM	82.2
	11/1/10	0.12	77.7
	12/9/10	0.15	51.3
	12/14/10	0.19	53.3
	12/23/10	0.33	58.1
	1/5/11	0.66	52.0
	1/18/11	0.08	0.0
	2/1/11	15.12	88.9
	3/4/11	14.61	90.4
	4/8/11	20.46	49.8
	5/3/11	5.59	88.0
	6/27/11	0.01	0.0
	6/28/11	0.96	91.3
	6/30/11	0.67	94.3
	7/5/11	0.55	94.5
	7/7/11	1.32	94.2
	7/13/11	0.26	95.3
	7/22/11	0.30	94.5
	8/9/11	0.49	94.5
	9/1/11	3.63	92.9
	11/29/11	2.11	0.0
	1/5/12	11.85	93.6
	2/2/12	8.91	91.0
	3/20/12	2.97	93.0
4/26/12	1.17	94.7	
5/16/12	2.11	NM	
6/19/12	11.83	NM	
7/17/12	0.73	NM	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-3 (cont.)	8/16/12	NM	NM
	9/21/12	1.48	NM
	11/20/12	NM	NM
	12/11/12	6.42	NM
	1/3/13	4.42	91.2
	3/28/13	7.62	85.4
IP-4	10/15/10	0.01	NM
	10/18/10	NM	NM
	10/22/10	0.04	NM
	10/25/10	0.14	82.2
	11/1/10	0.15	77.7
	12/9/10	0.09	51.3
	12/14/10	0.01	53.3
	12/23/10	0.03	58.1
	1/5/11	0.02	52.0
	1/18/11	1.04	0.0
	2/1/11	1.25	88.9
	3/4/11	0.18	90.4
	4/8/11	1.02	49.8
	5/3/11	13.77	88.0
	6/27/11	1.33	0.0
	6/28/11	7.11	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
	7/22/11	9.74	94.5
	8/9/11	15.48	94.5
	9/1/11	16.45	92.9
	11/29/11	0.91	0.0
	1/5/12	15.56	93.6
	2/2/12	26.26	91.0
	3/20/12	0.58	93.0
4/26/12	1.06	94.7	
5/16/12	0.38	NM	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-4 (cont.)	6/19/12	2.22	NM
	7/17/12	1.11	NM
	8/16/12	NM	NM
	9/21/12	4.00	NM
	11/20/12	NM	NM
	12/11/12	3.11	NM
	1/3/13	2.38	91.2
	3/28/13	5.06	85.4
IP-5	10/15/10	0.02	NM
	10/18/10	NM	NM
	10/22/10	0.04	NM
	10/25/10	0.09	82.2
	11/1/10	0.02	77.7
	12/9/10	0.21	51.3
	12/14/10	0.01	53.3
	12/23/10	0.07	58.1
	1/5/11	NM	52.0
	1/18/11	0.72	0.0
	2/1/11	0.77	88.9
	3/4/11	50.28	90.4
	4/8/11	25.82	49.8
	5/3/11	19.23	88
	6/27/11	0.03	0.0
	6/28/11	38.65	91.3
	6/30/11	30.79	94.3
	7/5/11	41.81	94.5
	7/7/11	42.53	94.2
	7/13/11	38.87	95.3
	7/22/11	31.29	94.5
	8/9/11	32.78	94.5
	9/1/11	40.51	92.9
	11/29/11	13.76	0.0
1/5/12	16.42	93.6	
2/2/12	16.21	91.0	
3/20/12	4.49	93.0	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-5 (cont.)	4/26/12	12.87	94.7
	5/16/12	7.53	NM
	6/19/12	11.44	NM
	7/17/12	6.47	NM
	8/16/12	NM	NM
	9/21/12	25.52	NM
	11/20/12	NM	NM
	12/11/12	52.5	NM
	1/3/13	6.32	91.2
3/28/13	2.02	85.4	
IP-6	10/15/10	0.25	NM
	10/18/10	NM	NM
	10/22/10	0.27	NM
	10/25/10	0.44	82.2
	11/1/10	11.22	77.7
	12/9/10	12.55	51.3
	12/14/10	12.79	53.3
	12/23/10	12.82	58.1
	1/5/11	14.3	52
	1/18/11	5.19	0.0
	2/1/11	15.94	88.9
	3/4/11	10.31	90.4
	4/8/11	13.22	49.8
	5/3/11	9.97	88.0
	6/27/11	4.88	0.0
	6/28/11	3.65	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
	7/22/11	2.69	94.5
8/9/11	2.40	94.5	
9/1/11	2.79	92.9	
11/29/11	1.17	0.0	
1/5/12	3.30	93.6	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-6 (cont.)	2/2/12	2.72	91.0
	3/20/12	2.43	93.0
	4/26/12	2.29	94.7
	5/16/12	2.36	NM
	6/19/12	10.41	NM
	7/17/12	3.59	NM
	8/16/12	NM	NM
	9/21/12	NM	NM
	11/20/12	NM	NM
	12/11/12	NM	91.8
	1/3/13	1.57	91.2
	3/28/13	2.30	85.4
IP-7	10/15/10	0.01	NM
	10/18/10	NM	NM
	10/22/10	0.13	NM
	10/25/10	0.17	82.2
	11/1/10	0.34	77.7
	12/9/10	5.75	51.3
	12/14/10	4.72	53.3
	12/23/10	6.29	58.1
	1/5/11	5.75	52.0
	1/18/11	0.14	0.0
	2/1/11	32.69	88.9
	3/4/11	10.22	90.4
	4/8/11	2.58	49.8
	5/3/11	0.75	88.0
	6/27/11	0.26	0.0
	6/28/11	0.26	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
7/22/11	0.15	94.5	
8/9/11	0.10	94.5	
9/1/11	0.24	92.9	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-7 (cont.)	11/29/11	0.74	0.0
	1/5/12	1.17	93.6
	2/2/12	0.17	91.0
	3/20/12	0.12	93.0
	4/26/12	0.94	94.7
	5/16/12	0.05	NM
	6/19/12	0.06	NM
	7/17/12	0.01	NM
	8/16/12	NM	NM
	9/21/12	NM	NM
	11/20/12	NM	NM
	12/11/12	NM	NM
	1/3/13	0.22	91.2
	3/28/13	0.08	85.4
IP-8	10/15/10	0.02	NM
	10/18/10	NM	NM
	10/22/10	0.27	NM
	10/25/10	0.21	82.2
	11/1/10	NM	77.7
	12/9/10	NM	51.3
	12/14/10	NM	53.3
	12/23/10	NM	58.1
	1/5/11	NM	52.0
	1/18/11	NM	0.0
	2/1/11	NM	88.9
	3/4/11	NM	90.4
	4/8/11	24.74	49.8
	5/3/11	5.15	88.0
	6/27/11	0.01	0.0
	6/28/11	21.98	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
7/22/11	11.34	94.5	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-8 (cont.)	8/9/11	12.88	94.5
	9/1/11	16.02	92.9
	11/29/11	NM	0.0
	1/5/12	NM	93.6
	2/2/12	26.83	91.0
	3/20/12	1.94	93.0
	4/26/12	NM	94.7
	5/16/12	1.64	NM
	6/19/12	NM	NM
	7/17/12	5.14	NM
	8/16/12	0.06	NM
	9/21/12	NM	NM
	11/20/12	3.55	NM
	12/11/12	NM	NM
	1/3/13	NM	91.2
	3/28/13	NM	85.4
IP-9	10/15/10	0.01	NM
	10/18/10	NM	NM
	10/22/10	11.27	NM
	10/25/10	18.36	82.2
	11/1/10	18.96	77.7
	12/9/10	31.42	51.3
	12/14/10	33.16	53.3
	12/23/10	31.77	58.1
	1/5/11	35.3	52.0
	1/18/11	0.0	0.0
	2/1/11	0.65	88.9
	3/4/11	0.45	90.4
	4/8/11	0.42	49.8
	5/3/11	0.55	88.0
	6/27/11	0.01	0.0
	6/28/11	NM	91.3
	6/30/11	27.14	94.3
	7/5/11	23.48	94.5
7/7/11	22.62	94.2	

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-9 (cont.)	7/13/11	21.37	95.3
	7/22/11	20.65	94.5
	8/9/11	16.24	94.5
	9/1/11	36.38	92.9
	11/29/11	NM	0.0
	1/5/12	NM	93.6
	2/2/12	46.40	91.0
	3/20/12	33.17	93.0
	4/26/12	NM	94.7
	5/16/12	28.85	NM
	6/19/12	NM	NM
	7/17/12	1.33	NM
	8/16/12	0.01	NM
	9/21/12	NM	NM
	11/20/12	0.12	NM
	12/11/12	NM	NM
	1/3/13	NM	91.2
3/28/13	NM	85.4	
IP-10	10/15/10	0.11	NM
	10/18/10	NM	NM
	10/22/10	0.07	NM
	10/25/10	5.33	82.2
	11/1/10	8.48	77.7
	12/9/10	0.25	51.3
	12/14/10	0.30	53.3
	12/23/10	0.04	58.1
	1/5/11	0.01	52.0
	1/18/11	0.0	0.0
	2/1/11	0.18	88.9
	3/4/11	0.04	90.4
	4/8/11	26.54	49.8
	5/3/11	4.45	88.0
	6/27/11	0.04	0.0
	6/28/11	10.08	91.3
	6/30/11	NM	94.3

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
IP-10 (cont.)	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	NM	95.3
	7/22/11	29.15	94.5
	8/9/11	11.44	94.5
	9/1/11	37.28	92.9
	11/29/11	NM	0.0
	1/5/12	NM	93.6
	2/2/12	0.14	91.0
	3/20/12	0.01	93.0
	4/26/12	NM	94.7
	5/16/12	0.09	NM
	6/19/12	NM	NM
	7/17/12	0.04	NM
	8/16/12	0.01	NM
	9/21/12	NM	NM
	11/20/12	0.04	NM
	12/11/12	NM	NM
	1/3/13	NM	91.2
3/28/13	NM	85.4	
MW-1	10/15/10	0.11	NM
	10/18/10	NM	NM
	10/22/10	0.31	NM
	10/25/10	0.35	82.2
	11/1/10	1.79	77.7
	12/9/10	0.21	51.3
	12/14/10	0.01	53.3
	12/23/10	0.01	58.1
	1/5/11	0.0	52.0
	1/18/11	0.0	0.0
	2/1/11	0.66	88.9
	3/4/11	NM	90.4
	4/8/11	10.53	49.8
	5/3/11	10.43	88.0
	6/27/11	0.71	0.0

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
MW-1 (cont.)	6/28/11	NM	91.3
	6/30/11	NM	94.3
	7/5/11	NM	94.5
	7/7/11	NM	94.2
	7/13/11	11.42	95.3
	7/22/11	16.04	94.5
	8/9/11	27.72	94.5
	9/1/11	32.16	92.9
	11/29/11	NM	0.0
	1/5/12	0.97	93.6
	2/2/12	1.73	91.0
	3/20/12	0.32	93.0
	4/26/12	NM	94.7
	5/16/12	0.01	NM
	6/19/12	NM	NM
	7/17/12	0.01	NM
	8/16/12	0.66	NM
	9/21/12	NM	NM
	11/20/12	NM	NM
	12/11/12	NM	NM
1/3/13	0.01	91.2	
3/28/13	NM	85.4	
MW-2	10/15/10	0.02	NM
	10/18/10	NM	NM
	10/22/10	0.15	NM
	10/25/10	0.04	82.2
	11/1/10	0.08	77.7
	12/9/10	0.03	51.3
	12/14/10	0.21	53.3
	12/23/10	0.01	58.1
	1/5/11	0.06	52.0
	1/18/11	0.0	0.0
	2/1/11	0.15	88.9
	3/4/11	0.44	90.4
	4/8/11	0.06	49.8

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
MW-2 (cont.)	5/3/11	0.01	88.0
	6/27/11	0.02	0.0
	6/28/11	NM	91.3
	6/30/11	0.04	94.3
	7/5/11	0.01	94.5
	7/7/11	0.07	94.2
	7/13/11	0.04	95.3
	7/22/11	0.11	94.5
	8/9/11	1.14	94.5
	9/1/11	0.24	92.9
	11/29/11	0.71	0.0
	1/5/12	1.92	93.6
	2/2/12	0.17	91.0
	3/20/12	0.02	93.0
	4/26/12	0.93	94.7
	5/16/12	0.24	NM
	6/19/12	0.41	NM
	7/17/12	0.01	NM
	8/16/12	0.07	NM
	9/21/12	0.06	NM
11/20/12	0.18	NM	
12/11/12	5.98	NM	
1/3/13	0.07	91.2	
3/28/13	15.51	85.4	
MW-11	10/15/10	0.04	NM
	10/18/10	NM	NM
	10/22/10	29.48	NM
	10/25/10	29.78	82.2
	11/1/10	32.42	77.7
	12/9/10	5.07	51.3
	12/14/10	13.39	53.3
	12/23/10	11.87	58.1
	1/5/11	11.42	52.0
	1/18/11	0.0	0.0
	2/1/11	1.18	88.9

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
MW-11 (cont.)	3/4/11	0.23	90.4
	4/8/11	16.87	49.8
	5/3/11	12.14	88.0
	6/27/11	0.01	0.0
	6/28/11	36.72	91.3
	6/30/11	32.83	94.3
	7/5/11	33.76	94.5
	7/7/11	33.91	94.2
	7/13/11	35.42	95.3
	7/22/11	33.97	94.5
	8/9/11	34.22	94.5
	9/1/11	27.88	92.9
	11/29/11	NM	0.0
	1/5/12	NM	93.6
	2/2/12	0.04	91.0
	3/20/12	0.01	93.0
	4/26/12	NM	94.7
	5/16/12	6.89	NM
	6/19/12	NM	NM
	7/17/12	0.37	NM
	8/16/12	0.04	NM
	9/21/12	NM	NM
	11/20/12	12.9	NM
12/11/12	NM	NM	
1/3/13	NM	91.2	
3/28/13	NM	85.4	
DW-1	10/15/10	0.03	NM
	10/18/10	NM	NM
	10/22/10	NM	NM
	10/25/10	NM	82.2
	11/1/10	0.03	77.7
	12/9/10	10.38	51.3
	12/14/10	9.93	53.3
	12/23/10	7.14	58.1
	1/5/11	15.77	52.0

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
DW-1 (cont.)	1/18/11	11.58	0.0
	2/1/11	24.42	88.9
	3/4/11	28.71	90.4
	4/8/11	19.81	49.8
	5/3/11	0.01	88.0
	6/27/11	0.02	0.0
	6/28/11	0.24	91.3
	6/30/11	0.05	94.3
	7/5/11	0.08	94.5
	7/7/11	0.16	94.2
	7/13/11	0.04	95.3
	7/22/11	0.08	94.5
	8/9/11	0.46	94.5
	9/1/11	0.09	92.9
	11/29/11	0.94	0.0
	1/5/12	3.25	93.6
	2/2/12	15.07	91.0
	3/20/12	0.17	93.0
	4/26/12	1.30	94.7
	5/16/12	0.42	NM
	6/19/12	0.92	NM
	7/17/12	0.09	NM
	8/16/12	0.08	NM
	9/21/12	2.61	NM
	11/20/12	0.26	NM
	12/11/12	0.36	NM
1/3/13	0.45	91.2	
3/28/13	0.58	85.4	
TP-1	10/15/10	0.12	NM
	10/18/10	NM	NM
	10/22/10	2.11	NM
	10/25/10	16.11	82.2
	11/1/10	5.15	77.7
	12/9/10	0.01	51.3
	12/14/10	0.33	53.3

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
TP-1 (cont.)	12/23/10	0.16	58.1
	1/5/11	0.0	52.0
	1/18/11	0.0	0.0
	2/1/11	27.22	88.9
	3/4/11	12.11	90.4
	4/8/11	15.61	49.8
	5/3/11	1.25	88.0
	6/27/11	0.01	0.0
	6/28/11	7.49	91.3
	6/30/11	0.02	94.3
	7/5/11	0.19	94.5
	7/7/11	8.43	94.2
	7/13/11	0.02	95.3
	7/22/11	11.89	94.5
	8/9/11	18.19	94.5
	9/1/11	10.35	92.9
	11/29/11	0.67	0.0
	1/5/12	12.64	93.6
	2/2/12	2.75	91.0
	3/20/12	0.03	93.0
	4/26/12	16.6	94.7
	5/16/12	16.03	NM
	6/19/12	7.31	NM
	7/17/12	7.01	NM
	8/16/12	1.25	NM
	9/21/12	0.01	NM
	11/20/12	8.32	NM
	12/11/12	28.48	NM
1/3/13	34.85	91.2	
3/28/13	23.98	85.4	
TP-2	10/15/10	0.05	NM
	10/18/10	NM	NM
	10/22/10	25.44	NM
	10/25/10	24.90	82.2
	11/1/10	25.83	77.7

TABLE G-1

OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076

Well	Date	Dissolved Oxygen ^(a) (mg/l)	Oxygen Purity ^(b) (%)
TP-2 (cont.)	12/9/10	6.03	51.3
	12/14/10	5.12	53.3
	12/23/10	0.63	58.1
	1/5/11	0.43	52.0
	1/18/11	0.0	0.0
	2/1/11	33.44	88.9
	3/4/11	34.15	90.4
	4/8/11	19.31	49.8
	5/3/11	11.95	88
	6/27/11	0.01	0.0
	6/28/11	24.27	91.3
	6/30/11	23.57	94.3
	7/5/11	31.33	94.5
	7/7/11	33.74	94.2
	7/13/11	33.16	95.3
	7/22/11	33.72	94.5
	8/9/11	35.64	94.5
	9/1/11	26.08	92.9
	11/29/11	0.69	0.0
	1/5/12	14.77	93.6
	2/2/12	21.95	91.0
	3/20/12	16.32	93.0
	4/26/12	8.75	94.7
	5/16/12	19.78	NM
	6/19/12	19.87	NM
	7/17/12	15.29	NM
	8/16/12	3.22	NM
	9/21/12	8.70	NM
	11/20/12	28.4	NM
	12/11/12	2.64	NM
1/3/13	37.35	91.2	
3/28/13	35.85	85.4	
VW-2	1/5/12	13.24	93.6
	2/2/12	5.56	91.0
	3/20/12	6.11	93.0

TABLE G-1

**OXYGEN SYSTEM MONITORING RESULTS
TESORO - LIVERMORE, 67076**

Well	Date	Dissolved Oxygen^(a) (mg/l)	Oxygen Purity^(b) (%)
VW-2 (cont.)	4/26/12	10.57	94.7
	5/16/12	10.52	NM
	6/19/12	5.87	NM
	7/17/12	5.13	NM
	8/16/12	4.93	NM
	9/21/12	8.11	NM
	11/20/12	3.64	NM
	12/11/12	32.72	NM
	1/3/13	32.77	91.2
	3/28/13	32.14	85.4

(a) Dissolved oxygen measured in milligrams per liter (mg/l).

(b) Oxygen purity measured at injection manifold (same for all wells) in percent (%).

(c) Not measured.

ATTACHMENT H
WASTE MANIFESTS

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1
3. Generator's Name and Mailing Address <i>Tesoro 1619 1ST LIVERMORE CA</i>				
4. Generator's Phone ()				
5. Transporter 1 Company Name <i>Confluence</i>	6. US EPA ID Number	A. State Transporter's ID		
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter 1 Phone <i>916 760-7641</i>		
9. Designated Facility Name and Site Address <i>ISI 1105 Air Port Rd Pied Vista CA</i>		C. State Transporter's ID		
		D. Transporter 2 Phone		
		E. State Facility's ID		
		F. Facility's Phone <i>530 755-1829</i>		

11. WASTE DESCRIPTION	12. Containers		13. Total Quantity	14. Unit Wt./Vol.
	No.	Type		
a. <i>Non Haz Pump Water</i>	1	Ply	633	gal.
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above	H. Handling Codes for Wastes Listed Above
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15. Special Handling Instructions and Additional Information

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

17. Transporter 1 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name <i>Monte Stearns</i>	Signature	Month Day Year <i>11 07 13</i>

18. Transporter 2 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month Day Year

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.		Date
Printed/Typed Name <i>MICHAEL WHITEHEAD</i>	Signature <i>Michael Whitehead</i>	Month Day Year <i>12 2 13</i>

NON-HAZARDOUS WASTE GENERATOR TRANSPORTER FACILITY