120.434

Kelleher & Associates
Environmental Management

1658 E. Capitol Expy PMB 293
San Jose, CA 95121
Phone: (408) 528-7719
Fax: (408) 528-7720
bkellehr@ix.netcom.com

November 19, 2002

Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Cecil Fox
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Site: TESORO STATION # 67076 (former Beacon # 3604), 1619 West First Street, Livermore, CA

Dear Ms. Chu and Mr. Fox:

Please find enclosed herewith a copy of the following technical report prepared by TRC, Concord, CA:

Quarterly Groundwater Monitoring Report Second Quarter 2002 dated October 21, 2002.

As an authorized representative of Tesoro Petroleum and Refining Company (Tesoro), I have reviewed the enclosed report and declare under penalty of perjury, that to the best of my knowledge the information contained in the report is true and correct.

The report covers the groundwater-monitoring event Doulas Environmental conducted on August 21, 2002 during which they sounded seven monitoring wells, purged and sampled three wells, and provided for certified analyses of total petroleum hydrocarbon constituents, BTEX, and MTBE via EPA Method 8260B. The next quarterly monitoring event is scheduled for the fourth quarter 2002.

With respect to Alameda County correspondence dated January 18, 2002, Tesoro has contracted TRC to install three additional offsite wells as called for in the Doulas Environmental April 2001 "Workplan for Additional Subsurface Assessment Activities." We are currently assisting Tesoro in entering into a site access agreement with the owner of the associated property. We anticipate that TRC will complete the associated well-installation work during the fourth quarter 2002 and that we will be submitting the associated report by the end of the year.

Sincerely,

Brian T. Kelleher
Project Coordinator
Enclosure: CC with enclosure: Robert Donovan, Tesoro; Glenn Dembroff, Ultramar; Tracy Walker, TRC (cover letter only).

RO.434 Donovan

Alameda County
DEC 19 2
Environmental Health

Tesoro Petroleum Companies, Inc.
Corporate Environmental Affairs
3450 South 344th Way, Suite 100
Auburn, WA 98001-5931
253 896 8700
253 896 8887 Fax

December 11, 2002

CERTIFIED MAIL No. 7002 0860 0000 6031 9693
7002 0860 0000 6031 9686
Return Receipt Requested

Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Cecil Fox
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

RE: Change of Ownership
Tesoro Station 67076 at 1619 West First Street, Livermore, CA

Dear Ms. Chu and Mr. Fox:

Ownership of the Beacon-branded station at 1619 West First Street in Livermore transferred from Tesoro Refining and Marketing Company (Tesoro) to Green Valley Gasoline LLC (Green Valley) on December 11, 2002.

Tesoro will retain the responsibility to manage the environmental remediation activities at the site. As such, all future correspondence should continue to be directed to my attention at the above address with copies to Poul Moller of Green Valley at 2920 N. Green Valley Pkwy, Suite 721, Henderson, NV, 89014. The environmental contractors and project management will remain unchanged with no interruption in clean up progress on-going at the site.

Please do not hesitate to contact me at 253-896-8700 if you have questions regarding today's correspondence

Sincerely,

Rob Donovan

Rob Donovan
V.P., Corporate Environmental Affairs
Tesoro Petroleum Companies, Inc.

20 - 434

TRC
Customer-Focused Solutions

October 21, 2002 Project No. 41-0362-03

Mr. Robert Donovan
Tesoro Refining and Marketing Company
3450 South 344th Way #100
Auburn, Washington 98001

SITE: TESORO STATION 67076
FORMER BEACON STATION 3604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

RE: QUARTERLY GROUNDWATER MONITORING REPORT
THIRD QUARTER 2002

Dear Mr. Donovan:

On Behalf of Tesoro Refining and Marketing Company (Tesoro), TRC has prepared this report to document the results of the second quarter groundwater monitoring event conducted on August 21, 2002 at the subject site (Figure 1). The monitoring, conducted by Doulos Environmental (Doulos), included measurements of depth to groundwater, subjective analysis for the presence or absence of free product, groundwater purging, and collection of groundwater samples. According to Doulos, all field activities were conducted in accordance with the Field Procedures described in Attachment A.

1.0 GROUNDWATER ELEVATIONS

Pursuant to Alameda County Health Care correspondence dated January 18, 2002, Doulos sounds all wells and purges and samples wells MW-2, -6, and -7 on a quarterly basis. Well MW-5 is sampled semi-annually during the First and Third quarters. Wells MW-1, -3, and -4 are no longer sampled.

Prior to purging, Doulos collected depth-to-groundwater measurements. Copies of Doulos' field data sheets are included in Attachment B. Groundwater elevation data collected since June 1993 are summarized in Table 1. Based on groundwater levels measured on August 21, 2002, groundwater flows toward the west at a gradient of 0.023 foot per foot (Figure 2). Groundwater levels have decreased an average of 0.65 feet compared to the Second Quarter 2002 monitoring event.

5052 Commercial Circle • Concord, California 94520-1248
Telephone 925-688-1200 • Fax 925-688-0388

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from four monitoring wells (MW-2, MW-5, MW-6 and MW-7) on August 21, 2002. All groundwater samples were analyzed using EPA Method 8260B for concentrations of:

- total petroleum hydrocarbons as gasoline (TPH-G);
- benzene, toluene, ethyl benzene, and total xylenes (BTEX); and
- methyl tert butyl ether (MTBE).

The distribution of dissolved phase benzene and MTBE based on the current data are shown in Figures 3 and 4 respectively.

Analytical results collected since June 1993 are summarized in Table 1. The laboratory reports and chain-of-custody forms for the current sampling event are contained in Attachment C.

3.0 CONCLUSIONS

Benzene was detected in all four wells sampled. MW-2 and MW-6 had the highest benzene concentrations at 1,200 micrograms per liter (µg/l). These levels are consistent with historical data.

TPH-G was detected in all four wells sampled. MW-2 and MW-6 had the highest TPH-G levels at 10,000 µg/l. These levels are consistent with historical data.

MTBE was detected in MW-2, MW-5, and MW-6. The highest MTBE concentration was detected at MW-6 (360µg/l). MTBE was not detected in MW-7. These levels are consistent with historical data.

4.0 RECOMMENDATIONS

TRC recommends that groundwater monitoring and sampling of all wells be continued to assess plume stability and concentration trends at key wells.

The interpretations and/or conclusions that may be contained within this report represent our professional opinions. These opinions are based on currently available information. Other than this, no warranty is implied or intended. This report has been prepared solely for the use of Tesoro Refining and Marketing Company. Any reliance on this report by third parties will be at such parties' sole risk.

TRC recommends you submit copies of this report to:

1. Ms. Eva Chu
   Alameda County Health Care Services Agency
   1131 Harbor Bay Parkway, Room 250
   Alameda, CA 94502
   Oakland, CA 94612

2. Mr. Cecil Fox
   Regional Water Quality Control Board
   San Francisco Bay Region
   1515 Clay Street, Suite 1400

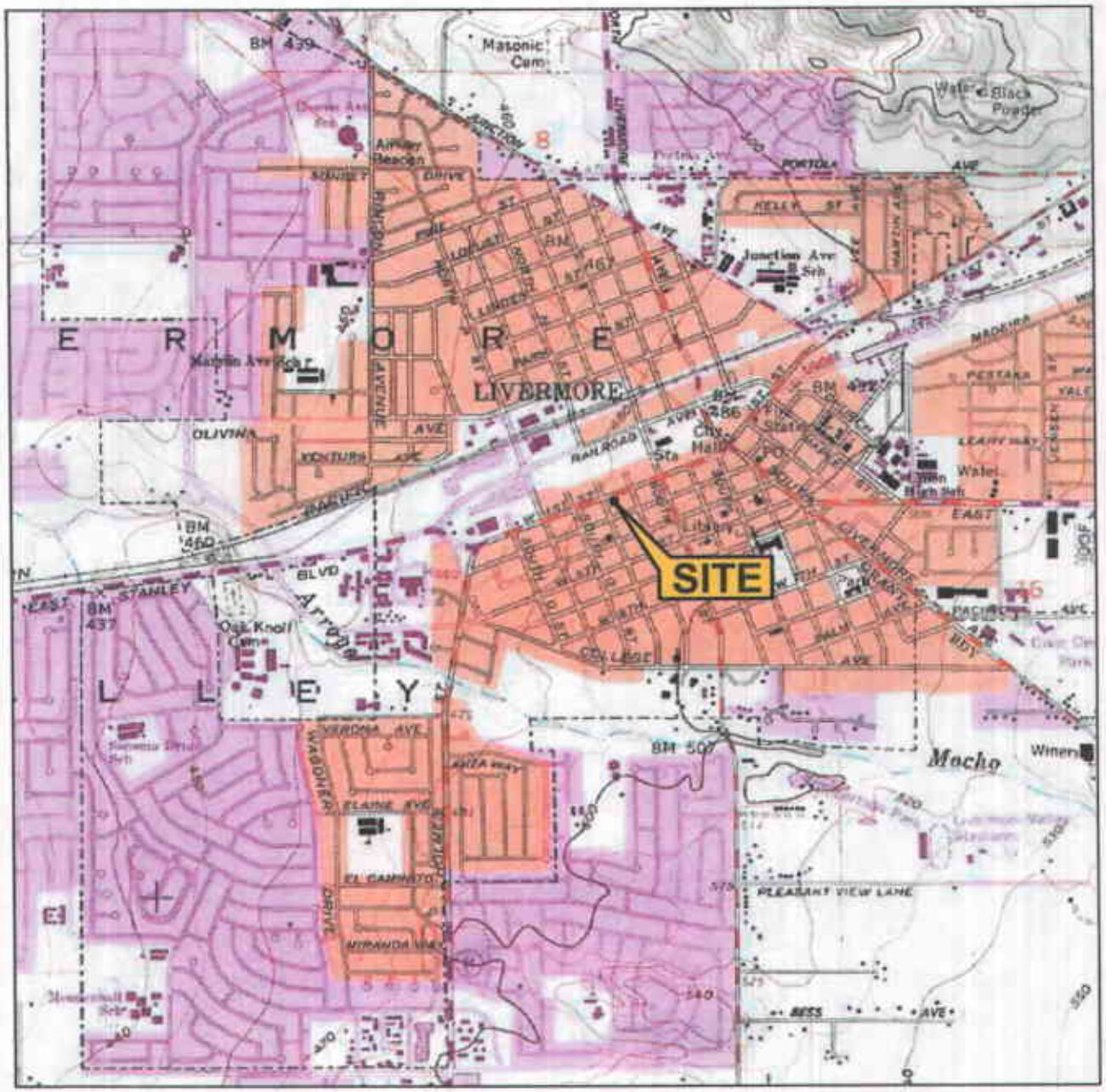
If you have any questions or comments, please contact me at (925) 688-2476.

Sincerely,
TRC

Tracy L. Walker, RG
Associate

ATTACHMENTS:

Figure 1:	Vicinity Map
Figure 2:	Groundwater Elevation Contour Map – August 21, 2002
Figure 3:	Dissolved-Phase Benzene Concentrations – August 21, 2002
Figure 4:	Dissolved-Phase MTBE Concentrations – August 21, 2002
Table 1:	Summary of Groundwater Monitoring and Chemical Analysis
Appendix A:	Field Procedures
Appendix B:	Doulos Environmental Field Data Sheets
Appendix C:	Official Laboratory Reports and Chain-of-Custody Records



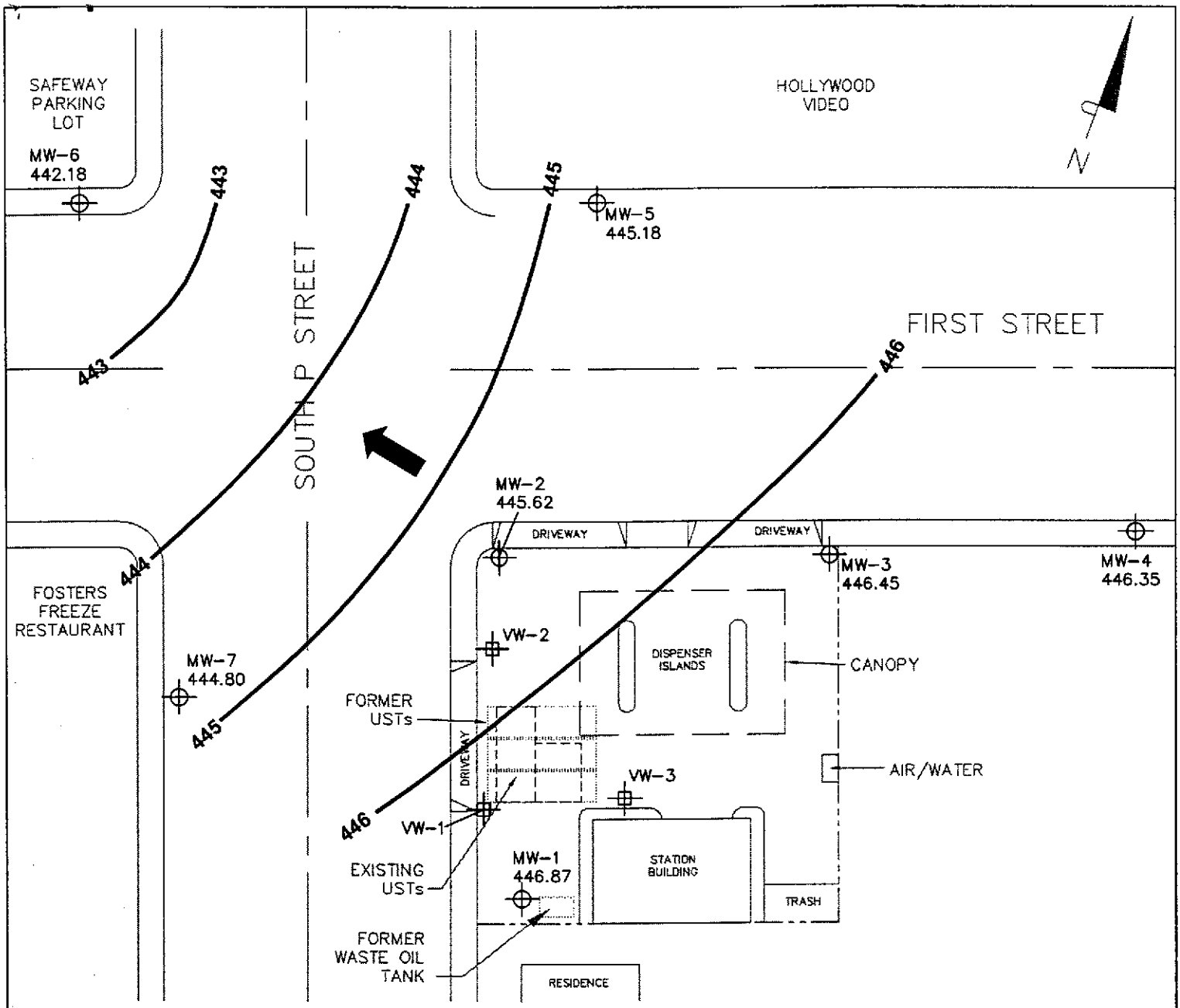
SOURCE:
United States Geological Survey
7.5 Minute Topographic Maps:
Livermore Quadrangle

VICINITY MAP

Tesoro Station No. 67076
(Former Beacon Station No. 3604)
1619 West First Street
Livermore, California

TRC

FIGURE 1



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 446.87 — Groundwater elevation (in feet above mean sea level)
- 445 — Groundwater elevation contour line
- General direction of groundwater gradient

NOTES: Contour lines are interpretive based on fluid level measurements taken on August 21, 2002. Contour interval = 1 foot.

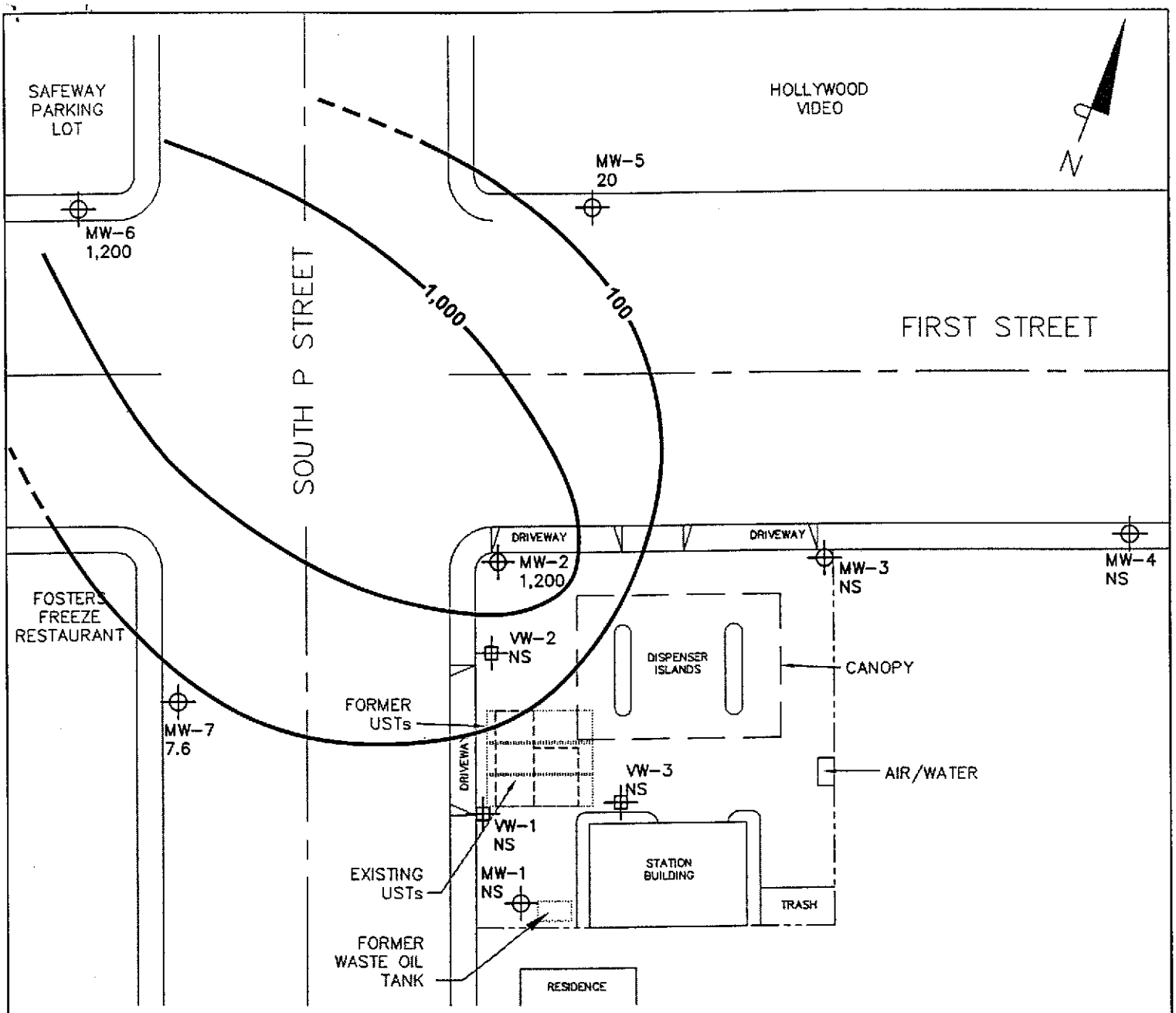
APPROXIMATE SCALE (FEET)

0 40 80

SOURCE: Doulos Environmental, Inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

GROUNDWATER ELEVATION CONTOUR MAP
August 21, 2002
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC | **FIGURE 2**



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 1,200 — Dissolved-phase benzene concentration (µg/l)
- 100 — Benzene isoconcentration line (µg/l)

SOURCE: Douios Environmental, Inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

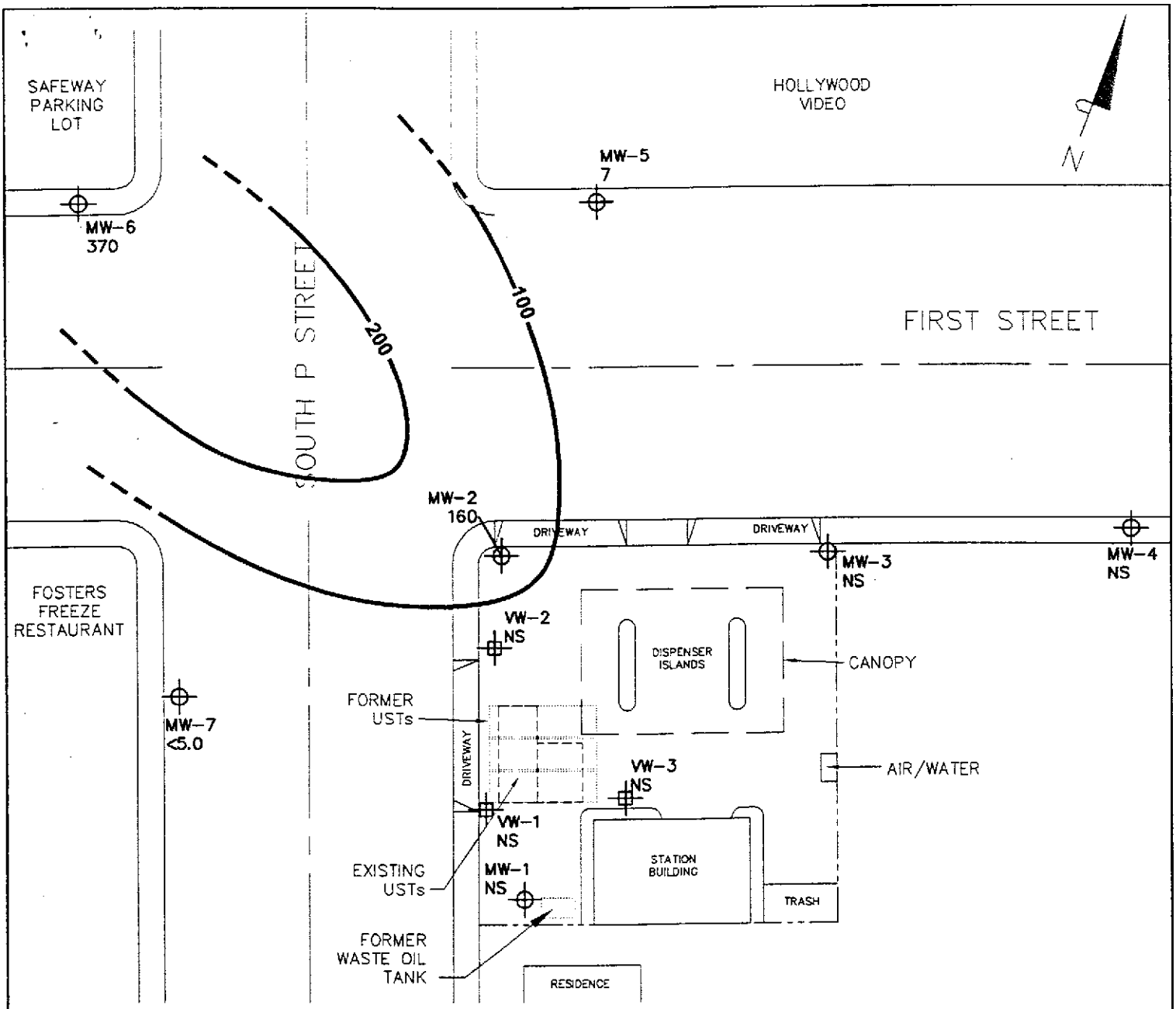
NOTES: Contour lines are interpretive based on laboratory analysis of groundwater samples collected on August 21, 2002. µg/l = micrograms per liter (parts per billion); < = not detected at or above the stated method detection limit; NS = not sampled.

APPROXIMATE SCALE (FEET)

0 40 80

DISSOLVED-PHASE BENZENE CONCENTRATIONS
August 21, 2002
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC | **FIGURE 3**



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 160 — Dissolved-phase MTBE concentration (µg/l)
- 100 — MTBE isoconcentration line (µg/l)

SOURCE: Doulos Environmental, Inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

NOTES: Contour lines are interpretive based on laboratory analysis of groundwater samples collected on August 21, 2002. MTBE = methyl tert butyl ether; µg/l = micrograms per liter (parts per billion); < = not detected at or above the stated method detection limit; NS = not sampled.

APPROXIMATE SCALE (FEET)

0 40 80

DISSOLVED-PHASE MTBE CONCENTRATIONS
August 21, 2002
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC

FIGURE 4

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-1	06/01/93	100.00	37.50	62.50	27,000	2,200	400	<0.50	4,900	—
MW-1	06/22/93	100.00	38.46	61.54	87,000	8,000	10,000	260	10,000	—
MW-1	10/06/93	100.00	42.22	57.78	40,000	4,700	6,500	740	5,300	—
MW-1	01/13/94	100.00	34.52	65.48	9,400	1,300	9,500	110	850	—
MW-1	03/30/94	100.00	31.93	68.07	—	—	—	—	—	—
MW-1	04/25/94	100.00	33.49	66.51	11,000	1,500	1,800	290	1,700	—
MW-1	08/12/94	100.00	41.03	58.97	11,000	550	330	260	1,400	—
MW-1	12/14/94	100.00	38.63	61.37	11,000	1,000	1,200	320	1,500	—
MW-1	02/10/95	100.00	30.80	69.20	9,300	1,200	1,500	280	1,500	—
MW-1	06/15/95	100.00	25.46	74.54	140	5.6	<0.50	<0.50	<0.50	—
MW-1	09/26/95	100.00	31.05	68.95	410	140	<0.50	<0.50	43	—
MW-1	12/15/95	100.00	28.11	71.89	740	250	<1.3	<1.3	87	—
MW-1	03/21/96	100.00	17.67	82.33	<50	0.52	<0.50	<0.50	0.51	—
MW-1	06/13/96	100.00	22.86	77.14	240*	<0.50	<0.50	<0.50	<0.50	—
MW-1	09/16/96	100.00	30.04	69.96	720	70	<0.50	1.0	5.1	<5.0
MW-1	12/02/96	100.00	26.74	73.26	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	03/07/97	100.00	20.84	79.16	600	6.7	<0.50	1.2	1.8	<5.0
MW-1	06/12/97	100.00	28.71	71.29	18,000	180	800	410	1,800	<5.0
MW-1	09/29/97	100.00	33.91	66.09	350	120	1.5	<0.50	12	<50
MW-1	12/01/97	100.00	34.88	65.12	<50	7.0	<0.50	<0.50	<0.50	<5.0
MW-1	03/19/98	100.00	19.83	80.17	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	05/29/98	100.00	21.57	78.43	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	09/15/98	100.00	31.68	68.32	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	11/30/98	100.00	36.80	63.20	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	01/17/99	100.00	30.02	69.98	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	06/10/99	100.00	29.30	70.70	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	09/07/99	100.00	31.41	68.59	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	12/13/99	100.00	32.95	67.05	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	03/13/00	100.00	25.74	74.26	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	06/12/00	100.00	28.24	71.76	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-1	11/10/00	100.00	30.56	69.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-1	12/31/00	100.00	31.71	68.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-1	03/27/01	100.00	30.43	69.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-1	06/30/01	100.00	36.61	63.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-1	09/26/01	100.00	45.10	54.90	90	<0.50	<0.50	<0.50	<0.50	<0.50
MW-1	12/18/01	100.00	39.39	60.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-1	01/22/02	483.58	Well resurveyed to new reference point							
MW-1	03/18/02	483.58	38.24	445.34	—	—	—	—	—	—
MW-1	06/05/02	483.58	Well inaccessible							
MW-1	08/21/02	483.58	36.71	446.87	—	—	—	—	—	—
MW-2	06/01/93	98.68	38.02	60.66	170,000	20,000	21,000	3,300	18,000	—
MW-2	06/22/93	98.68	39.07	59.61	160,000	19,000	22,000	3,500	18,000	—
MW-2	10/06/93	98.68	43.72	54.96	110,000	17,000	17,000	3,000	15,000	—
MW-2	01/13/94	98.68	35.85	62.83	93,000	20,000	19,000	2,300	14,000	—
MW-2	03/30/94	98.68	32.82	65.86	—	—	—	—	—	—
MW-2	04/25/94	98.68	34.76	63.92	41,000	9,600	7,300	840	7,800	—
MW-2	08/12/94	98.68	44.33	54.35	59,000	11,000	11,000	2,300	11,000	—
MW-2	12/14/94	98.68	40.00	58.68	63,000	13,000	13,000	2,200	12,000	—
MW-2	02/10/95	98.68	32.16	66.52	63,000	12,000	12,000	2,200	11,000	—
MW-2	06/15/95	98.68	25.93	72.75	61,000	11,000	12,000	1,900	11,000	—
MW-2	09/26/95	98.68	32.42	66.26	61,000	9,400	11,000	2,300	12,000	—
MW-2	12/15/95	98.68	29.41	69.27	48,000	8,000	8,300	2,200	12,000	—
MW-2	03/21/96	98.68	17.47	81.21	48,000	8,000	7,700	2,400	12,000	—
MW-2	06/13/96	98.68	23.69	74.99	33,000	7,300	8,800	1,900	12,000	<250
MW-2	09/16/96	98.68	31.24	67.44	8,600	510	640	180	1,300	<250
MW-2	12/02/96	98.68	26.90	71.78	29,000	4,400	4,000	1,300	6,100	<130
MW-2	03/07/97	98.68	21.33	77.35	13,000	1,800	1,100	270	2,000	<250
MW-2	06/12/97	98.68	29.94	68.74	68,000	7,800	6,600	2,300	11,000	<500
MW-2	09/29/97	98.68	34.22	64.46	15,000	1,500	97	740	1,800	<250
MW-2	12/01/97	98.68	35.94	62.74	13,000	900	37	860	2,400	<250
MW-2	03/19/98	98.68	20.34	78.34	42,000	5,000	3,600	2,000	8,300	<250
MW-2	05/29/98	98.68	22.63	76.05	68,000	5,600	4,700	2,400	11,000	<250
MW-2	09/15/98	98.68	32.30	66.38	36,000	3,900	1,200	1,400	7,800	<250
MW-2	11/30/98	98.68	36.90	61.78	16,000	2,200	59	1,200	1,500	<250
MW-2	01/17/99	98.68	30.17	68.51	30,000	4,000	2,200	2,100	9,500	<250
MW-2	06/10/99	98.68	29.98	68.70	70,000	6,300	1,800	3,600	14,000	<500
MW-2	09/07/99	98.68	31.85	66.83	42,000	3,800	840	1,900	8,000	150

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-2	12/13/99	98.68	33.72	64.96	14,000	1,400	87	690	110	34
MW-2	03/13/00	98.68	26.54	72.14	38,000	2,400	2,300	1,600	6,400	2,400
MW-2	06/12/00	98.68	28.44	70.24	56,000	4,000	950	2,300	7,200	<50
MW-2	11/10/00	98.68	31.31	67.37	35,000	5,100	850	1,500	3,200	230
MW-2	12/31/00	98.68	32.68	66.00	21,000	3,200	420	1,300	1,200	440
MW-2	03/27/01	98.68	30.81	67.87	3,500	420	64	16	280	120
MW-2	06/30/01	98.68	37.58	61.10	1,200	88	4.5	65	37	29
MW-2	09/26/01	98.68	44.97	53.71	53,000	8,500	1,500	2,400	4,600	270
MW-2	12/18/01	98.68	40.67	58.01	26,000	5,400	900	1,500	2,200	430
MW-2	01/22/02	482.77	Well resurveyed to new reference point							
MW-2	03/18/02	482.77	38.94	443.83	4,200	240	7.3	200	53	89
MW-2	06/05/02	482.77	36.45	446.32	25,000	3,500	390.0	1,400	2,400	550
MW-2	08/21/02	482.77	37.15	445.62	10,000	1,200	32.0	620	300	160
MW-3	06/01/93	97.08	36.18	60.90	270	4.6	<0.50	<0.50	1.9	—
MW-3	06/22/93	97.08	37.11	59.97	160	8.2	<0.50	<0.50	0.72	—
MW-3	10/06/93	97.08	41.15	55.93	740	57	110	24	120	—
MW-3	01/13/94	97.08	33.95	63.13	83	2.6	0.67	0.78	4.2	—
MW-3	03/30/94	97.08	30.97	66.11	—	—	—	—	—	—
MW-3	04/25/94	97.08	32.46	64.62	60	0.75	3.2	0.50	3.6	—
MW-3	08/12/94	97.08	41.72	55.36	310	7.3	14	2.6	13	—
MW-3	12/14/94	97.08	37.62	59.46	75	<0.50	<0.50	<0.50	<0.50	—
MW-3	02/10/95	97.08	29.96	67.12	96	1.4	<0.50	<0.50	1.8	—
MW-3	06/15/95	97.08	23.66	73.42	<50	<0.50	<0.50	<0.50	<0.50	—
MW-3	09/26/95	97.08	29.62	67.46	<50	<0.50	<0.50	<0.50	<0.50	—
MW-3	12/15/95	97.08	27.10	69.98	<50	<0.50	<0.50	<0.50	<0.50	—
MW-3	03/21/96	97.08	15.85	81.23	—	—	—	—	—	—
MW-3	06/13/96	97.08	21.31	75.77	—	—	—	—	—	—
MW-3	09/16/96	97.08	28.62	68.46	—	—	—	—	—	—
MW-3	12/02/96	97.08	25.55	71.53	—	—	—	—	—	—
MW-3	03/07/97	97.08	19.77	77.31	—	—	—	—	—	—
MW-3	06/12/97	97.08	27.67	69.41	—	—	—	—	—	—
MW-3	09/29/97	97.08	29.60	67.48	—	—	—	—	—	—
MW-3	12/01/97	97.08	33.37	63.71	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-3	03/19/98	97.08	18.76	78.32	—	—	—	—	—	—
MW-3	05/29/98	97.08	20.64	76.44	—	—	—	—	—	—
MW-3	09/15/98	97.08	30.70	66.38	—	—	—	—	—	—
MW-3	11/30/98	97.08	34.96	62.12	—	—	—	—	—	—
MW-3	01/17/99	97.08	28.81	68.27	—	—	—	—	—	—
MW-3	06/10/99	97.08	28.10	68.98	—	—	—	—	—	—
MW-3	09/07/99	97.08	30.38	66.70	—	—	—	—	—	—
MW-3	12/13/99	97.08	31.46	65.62	—	—	—	—	—	—
MW-3	03/13/00	97.08	24.28	72.80	—	—	—	—	—	—
MW-3	06/12/00	97.08	26.80	70.28	—	—	—	—	—	—
MW-3	11/10/00	97.08	29.47	67.61	—	—	—	—	—	—
MW-3	12/31/00	97.08	31.38	65.70	—	—	—	—	—	—
MW-3	03/27/01	97.08	29.94	67.14	—	—	—	—	—	—
MW-3	06/30/01	97.08	37.54	59.54	—	—	—	—	—	—
MW-3	09/26/01	97.08	45.17	51.91	—	—	—	—	—	—
MW-3	12/18/01	97.08	39.41	57.67	—	—	—	—	—	—
MW-3	01/22/02	482.66	Well resurveyed to new reference point							
MW-3	03/18/02	482.66	37.73	444.93	—	—	—	—	—	—
MW-3	06/05/02	482.66	35.35	447.31	—	—	—	—	—	—
MW-3	08/21/02	482.66	36.21	446.45	—	—	—	—	—	—
MW-4	03/30/94	99.35	31.56	67.79	120	4.2	15	2.5	26	—
MW-4	04/25/94	99.35	32.73	66.62	65	<0.50	1.8	<0.50	2.1	—
MW-4	08/12/94	99.35	41.61	57.74	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	12/14/94	99.35	38.11	61.24	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	02/10/95	99.35	30.50	68.85	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	06/15/95	99.35	23.63	75.72	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	09/26/95	99.35	29.70	69.65	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	12/15/95	99.35	27.56	71.79	<50	<0.50	<0.50	<0.50	<0.50	—
MW-4	03/21/96	99.35	15.63	83.72	—	—	—	—	—	—
MW-4	06/13/96	99.35	21.07	78.28	—	—	—	—	—	—
MW-4	09/16/96	99.35	28.99	70.36	—	—	—	—	—	—
MW-4	12/02/96	99.35	26.04	73.31	—	—	—	—	—	—
MW-4	03/07/97	99.35	19.69	79.66	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-4	06/12/97	99.35	28.04	71.31	—	—	—	—	—	—
MW-4	09/29/97	99.35	29.91	69.44	—	—	—	—	—	—
MW-4	12/01/97	99.35	33.88	65.47	—	—	—	—	—	—
MW-4	03/19/98	99.35	18.67	80.68	—	—	—	—	—	—
MW-4	05/29/98	99.35	20.16	79.19	—	—	—	—	—	—
MW-4	09/15/98	99.35	30.46	68.89	—	—	—	—	—	—
MW-4	11/30/98	99.35	34.50	64.85	—	—	—	—	—	—
MW-4	01/17/99	99.35	28.30	71.05	—	—	—	—	—	—
MW-4	06/10/99	99.35	27.60	71.75	—	—	—	—	—	—
MW-4	09/07/99	99.35	30.79	68.56	—	—	—	—	—	—
MW-4	12/13/99	99.35	31.60	67.75	—	—	—	—	—	—
MW-4	03/13/00	99.35	24.35	75.00	—	—	—	—	—	—
MW-4	06/12/00	99.35	26.91	72.44	—	—	—	—	—	—
MW-4	11/10/00	99.35	29.71	69.64	—	—	—	—	—	—
MW-4	12/31/00	99.35	31.79	67.56	—	—	—	—	—	—
MW-4	03/27/01	99.35	29.98	69.37	—	—	—	—	—	—
MW-4	06/30/01	99.35	36.88	62.47	—	—	—	—	—	—
MW-4	09/26/01	99.35	43.87	55.48	—	—	—	—	—	—
MW-4	12/18/01	99.35	39.30	60.05	—	—	—	—	—	—
MW-4	01/22/02	482.93	Well resurveyed to new reference point							
MW-4	03/18/02	482.93	37.75	445.18	—	—	—	—	—	—
MW-4	06/05/02	482.93	35.68	447.25	—	—	—	—	—	—
MW-4	08/21/02	482.93	36.58	446.35	—	—	—	—	—	—
MW-5	03/30/94	98.37	32.07	66.30	7,500	1,300	20	<13	160	—
MW-5	04/25/94	98.37	33.65	64.72	6,500	1,100	41	130	740	—
MW-5	08/12/94	98.37	42.73	55.64	4,000	420	2.9	41	98	—
MW-5	12/14/94	98.37	38.89	59.48	4,800	660	<2.5	33	13	—
MW-5	02/10/95	98.37	31.44	66.93	5,200	490	<13	23	19	—
MW-5	06/15/95	98.37	24.99	73.38	460	<0.50	<0.50	<0.50	<0.50	—
MW-5	09/26/95	98.37	30.20	68.17	1,400	61	<0.50	3.1	<0.50	—
MW-5	12/15/95	98.37	28.56	69.81	2,100	77	1.5	10	1.5	—
MW-5	03/21/96	98.37	16.82	81.55	930	35	2.0	2.0	18	—
MW-5	06/13/96	98.37	22.61	75.76	610	38	0.72	1.9	2.0	<5.0

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-5	09/16/96	98.37	29.78	68.59	380	29	<0.50	0.95	<0.50	<5.0
MW-5	12/02/96	98.37	26.51	71.86	200	1.1	0.64	<0.50	<0.50	<5.0
MW-5	03/07/97	98.37	21.91	76.46	520	74	<0.50	0.58	1.5	<5.0
MW-5	06/12/97	98.37	—	—	140	5.3	<0.50	<0.50	<0.50	<5.0
MW-5	09/29/97	98.37	31.74	66.63	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	12/01/97	98.37	34.05	64.32	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	03/19/98	98.37	20.93	77.44	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	05/29/98	98.37	21.30	77.07	540	4.1	<0.50	<0.50	0.52	<5.0
MW-5	09/15/98	98.37	31.32	67.05	67	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	11/30/98	98.37	35.44	62.93	430	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	01/17/99	98.37	29.59	68.78	500	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	06/10/99	98.37	28.05	70.32	66	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	09/07/99	98.37	31.11	67.26	820	46	1.7	10	21	<5.0
MW-5	12/13/99	98.37	32.66	65.71	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	03/13/00	98.37	25.87	72.50	270	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	06/12/00	98.37	28.15	70.22	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-5	11/10/00	98.37	30.05	68.32	2,200	42	1.1	25	30	8.6
MW-5	12/31/00	98.37	31.81	66.56	1,300	21	<0.50	4.3	2.6	10
MW-5	03/27/01	98.37	30.57	67.80	1,200	11	<0.50	2.6	<0.50	21
MW-5	06/30/01	98.37	37.24	61.13	1,400	4.8	<0.50	1.5	0.56	14
MW-5	09/26/01	98.37	44.53	53.84	660	<0.50	<0.50	<0.50	<0.50	3.0
MW-5	12/18/01	98.37	40.65	57.72	240	<0.50	<0.50	<0.50	<0.50	<0.50
MW-5	01/22/02	481.94	Well resurveyed to new reference point							
MW-5	03/18/02	481.94	38.75	443.19	890	0.65	<0.50	<0.50	<0.50	3.1
MW-5	06/05/02	481.94	36.21	445.73	—	—	—	—	—	—
MW-5	08/21/02	481.94	36.76	445.18	2,100	20	<0.50	63	4	7
MW-6	03/30/94	97.62	33.38	64.24	63,000	21,000	8,600	1,700	12,000	—
MW-6	04/25/94	97.62	35.49	62.13	77,000	22,000	12,000	2,300	16,000	—
MW-6	08/12/94	97.62	45.14	52.48	65,000	12,000	8,100	2,200	16,000	—
MW-6	12/14/94	97.62	40.99	56.63	65,000	18,000	9,500	2,200	14,000	—
MW-6	02/10/95	97.62	33.34	64.28	63,000	21,000	8,400	2,000	14,000	—
MW-6	06/15/95	97.62	26.88	70.74	75,000	20,000	11,000	2,100	15,000	—
MW-6	09/26/95	97.62	33.55	64.07	62,000	15,000	9,600	1,700	12,000	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-6	12/15/95	97.62	30.32	67.30	61,000	15,000	9,000	2,300	15,000	—
MW-6	03/21/96	97.62	18.89	78.73	65,000	18,000	9,800	2,400	16,000	—
MW-6	06/13/96	97.62	24.62	73.00	29,000	8,600	3,300	2,200	12,000	<250
MW-6	09/16/96	97.62	32.64	64.98	42,000	6,400	1,800	2,100	11,000	<250
MW-6	12/02/96	97.62	27.42	70.20	28,000	3,000	1,100	970	8,300	<500
MW-6	03/07/97	97.62	22.13	75.49	12,000	2,000	190	520	2,300	<250
MW-6	06/12/97	97.62	31.02	66.60	37,000	3,900	470	1,600	6,200	<100
MW-6	09/29/97	97.62	35.77	61.85	34,000	3,500	370	1,600	5,200	<100
MW-6	12/01/97	97.62	37.14	60.48	20,000	2,100	<10	1,200	2,200	<100
MW-6	03/19/98	97.62	21.10	76.52	24,000	2,900	460	1,100	3,400	<100
MW-6	05/29/98	97.62	23.26	74.36	38,000	3,500	700	1,800	5,200	<100
MW-6	09/15/98	97.62	33.50	64.12	22,000	1,900	110	1,400	3,000	<100
MW-6	11/30/98	97.62	38.73	58.89	9,900	770	16	820	710	<100
MW-6	01/17/99	97.62	32.05	65.57	14,000	2,200	160	1,700	3,600	<100
MW-6	06/10/99	97.62	31.44	66.18	22,000	1,600	160	1,400	2,900	5.5
MW-6	09/07/99	97.62	33.94	63.68	17,000	1,400	33	1,300	1,800	<50
MW-6	12/13/99	97.62	35.84	61.78	16,000	790	9.2	840	780	<25
MW-6	03/13/00	97.62	28.45	69.17	16,000	790	85	780	1,600	<25
MW-6	06/12/00	97.62	30.52	67.10	24,000	1,100	150	1,300	2,300	5,600
MW-6	11/10/00	97.62	32.99	64.63	13,000	440	6.6	760	350	1,000
MW-6	12/31/00	97.62	34.95	62.67	12,000	680	7.6	820	190	1,400
MW-6	03/27/01	97.62	32.72	64.90	14,000	330	17	940	670	380
MW-6	06/30/01	97.62	39.86	57.76	750	45	0.93	47	14	54
MW-6	09/26/01	97.62	Dry	—	—	—	—	—	—	—
MW-6	12/18/01	97.62	43.36	54.26	43,000	3,800	350	1,900	3,000	900
MW-6	01/22/02	481.20	Well resurveyed to new reference point							
MW-6	03/18/02	481.20	41.29	439.91	33,000	2,600	120	1,800	2,800	740
MW-6	06/05/02	481.20	38.35	442.85	10,000	1,100	16	700	180	600
MW-6	08/21/02	481.20	39.02	442.18	10,000	1,200	23	710	290	370
MW-7	03/30/94	98.03	31.98	66.05	43,000	7,200	2,400	1,600	11,000	—
MW-7	04/25/94	98.03	33.56	64.47	30,000	3,900	1,000	940	6,900	—
MW-7	08/12/94	98.03	43.35	54.68	30,000	3,800	1,400	1,300	7,500	—
MW-7	12/14/94	98.03	39.34	58.69	31,000	3,600	1,200	900	6,400	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-7	02/10/95	98.03	32.11	65.92	27,000	4,000	900	890	5,100	—
MW-7	06/15/95	98.03	25.51	72.52	17,000	920	680	740	4,100	—
MW-7	09/26/95	98.03	31.43	66.60	7,000	200	150	170	810	—
MW-7	12/15/95	98.03	28.97	69.06	11,000	350	170	540	1,900	—
MW-7	03/21/96	98.03	17.36	80.67	12,000	320	100	730	2,500	—
MW-7	06/13/96	98.03	23.47	74.56	5,900	98	19	370	620	<50
MW-7	09/16/96	98.03	31.35	66.68	7,800	140	43	440	590	<25
MW-7	12/02/96	98.03	27.11	70.92	6,300	87	29	290	430	<50
MW-7	03/07/97	98.03	21.33	76.70	4,500	35	19	360	470	<25
MW-7	06/12/97	98.03	29.90	68.13	3,900	29	5.2	170	48	<5.0
MW-7	09/29/97	98.03	34.37	63.66	6,100	56	9	340	190	<25
MW-7	12/01/97	98.03	36.46	61.57	6,500	24	<2.5	400	250	<25
MW-7	03/19/98	98.03	20.33	77.70	2,000	20	<2.5	73	79	<25
MW-7	05/29/98	98.03	22.30	75.73	5,700	22	7.3	290	350	<25
MW-7	09/15/98	98.03	32.54	65.49	1,700	15	<2.5	44	5.1	<25
MW-7	11/30/98	98.03	37.96	60.07	4,800	42	12	270	640	<25
MW-7	01/17/99	98.03	31.04	66.99	3,400	33	<5.0	200	190	<50
MW-7	06/10/99	98.03	29.89	68.14	1,700	7.8	1.5	23	4.1	<5.0
MW-7	09/07/99	98.03	32.38	65.65	1,900	9.7	2.1	70	2.9	<5.0
MW-7	12/13/99	98.03	33.98	64.05	1,900	8.0	1.1	10	1.1	<5.0
MW-7	03/13/00	98.03	27.09	70.94	1,500	7.5	<0.50	6.7	2.9	<5.0
MW-7	06/12/00	98.03	28.76	69.27	1,200	5.4	<0.50	5.2	1.0	<5.0
MW-7	11/10/00	98.03	31.54	66.49	1,000	3.9	<0.50	<0.50	<0.50	<0.50
MW-7	12/31/00	98.03	32.76	65.27	620	1.8	<0.50	<0.50	<0.50	<0.50
MW-7	03/27/01	98.03	30.97	67.06	1,200	4.8	<0.50	6.7	0.94	<0.50
MW-7	06/30/01	98.03	37.50	60.53	2,800	10	1.7	75	170	<0.50
MW-7	09/26/01	98.03	45.11	52.92	1,900	16	0.89	2.3	25	<0.50
MW-7	12/18/01	98.03	41.13	56.90	3,000	13	0.88	3.4	3.4	<0.50
MW-7	01/22/02	481.61	Well resurveyed to new reference point							
MW-7	03/18/02	481.61	39.22	442.39	3,100	7.3	1.5	38	110	<0.50
MW-7	06/05/02	481.61	36.55	445.06	1,800	7.6	1.0	39	20	<0.50
MW-7	08/21/02	481.61	36.81	444.80	3,300	7.6	0.7	85	36	<0.50
MW-A	01/17/99	—	30.13	—	5,800	1,700	85	65	320	<5.0

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)
MW-A	06/10/99	Well abandoned								
MW-B	01/17/99	—	30.29	—	4,400	240	30	21	39	<5.0
MW-B	06/10/99	Well abandoned								
MW-C	01/17/99	—	30.60	—	—	—	—	—	—	—
MW-C	06/10/99	Well abandoned								
MW-D	01/17/99	—	31.32	—	5,600	1,600	130	66	220	<5.0
MW-D	06/10/99	Well abandoned								
MW-E	01/17/99	—	31.36	—	5,700	1,600	180	180	310	<50
MW-E	06/10/99	—	—	—	5,000	1,300	130	320	450	<25
MW-E	09/07/99	Well abandoned								
MW-W	01/17/99	—	30.91	—	23,000	7,600	760	1,400	5,000	<50
MW-W	06/10/99	—	—	—	16,000	4,100	420	1,300	4,000	<50
MW-W	09/07/99	Well abandoned								

NOTES:

1 Measurement and reference elevation taken from notch/mark on top of well casing.
MSL = Mean sea level
µg/l = micrograms per liter (parts per billion)
— = not measured / not analyzed
TPH-G = total petroleum hydrocarbons as gasoline
MTBE = methyl tert butyl ether
< = not detected at or above the stated method detection limit
* = product is not typical gasoline

FIELD PROCEDURES

The following section describes procedures used by field personnel in the performance of groundwater sampling.

Groundwater Level and Total Depth Determination

A water level indicator is lowered down the well and a measurement of the depth to water from an established reference point on the casing is taken. The indicator probe is used to sound the bottom of the well and a measurement of the total depth of the well is taken. Both the water level and total depth measurements are taken to the nearest 0.01-foot.

Visual Analysis of Groundwater

Prior to purging and sampling groundwater monitoring wells, a water sample is collected from each well for subjective analysis. The visual analysis involves gently lowering a clean, disposable polyethylene bailer to approximately one-half the bailer length past the water table interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating product or the appearance of a petroleum product sheen. If measurable free product is noted in the bailer, a water/product interface probe is used to determine the thickness of the free product to the nearest 0.01-foot. The thickness of free product is determined by subtracting the depth to product from the depth to water.

Monitoring Well Purging and Sampling

Monitoring wells are purged by removing approximately four casing volumes of water from the well using a clean disposable bailer or electrical submersible purge pump. Purge volumes are calculated prior to purging. During purging, the temperature, pH, and electrical conductivity of the purge water are monitored. The well is considered to be sufficiently purged when the four casing volumes have been removed; the temperature, pH, and conductivity values have stabilized to within 10% of the initial readings; and the groundwater being removed is relatively free of suspended solids. After purging, groundwater levels are allowed to stabilize to within 80% of the initial water level reading. A water sample is then collected from each well with a clean, disposable polyethylene bailer. If the well is bailed or pumped dry prior to removing the minimum amount of water, the groundwater is allowed to recharge. If the well has recharged to within 80% of the initial depth to water reading within two hours, the well will continue to be purged until the minimum volume of water has been removed. If the well has not recharged to at least 80% of the initial depth to water reading within two hours, the well is considered to contain formational water and a groundwater sample is collected. Groundwater removed from the well is stored in 55-gallon drums at the site and labeled pending disposal.

In wells where free product is detected, the wells will be bailed to remove the free product. An estimate of the volume of product and water will be recorded. If the free product thickness is reduced to the point where a measurable thickness is no longer present in the well, a groundwater sample will be collected. If free product persists throughout the purging process, a final free product thickness measurement will be taken and a groundwater sample will not be collected.

Groundwater samples are stored in 40-milliliter vials so that air passage through the sample is minimized (to prevent volatilization of the sample). The vial is tilted and filled slowly until an upward convex meniscus forms over the mouth of the vial. The Teflon™ side of the septum (in cap) is then placed against the meniscus, and the cap is screwed on tightly. The sample is then inverted and the bottle is tapped lightly to check for air bubbles. If an air bubble is present in the vial, the cap is removed and more sample is transferred from the bailer. The vial is then resealed and rechecked for air bubbles. The sample is then appropriately labeled and stored on ice from the time of collection through the time of delivery to the laboratory. The chain-of-custody form is completed to ensure sample integrity. Groundwater samples are transported to a state-certified laboratory and analyzed within the U.S. Environmental Protection Agency-specified hold times for the specified analytes.

APPENDIX B

DOULOS ENVIRONMENTAL FIELD DATA SHEETS

TRC

DOULOS ENVIRONMENTAL, INC.
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: 1619 First St. Livermore

Date: 8.21.02

Project No.: 67076

Recorded by: Jerry

Well No.	Time	Well Elev. TOC	Depth to Groundwater	Measured Total Depth	Groundwater Elevation	Depth to Product	Product Thickness	Comments
MW-1	13:43		36.71	69.56				
MW-2	13:46		37.15	67.89				
MW-3	13:50		36.21	69.15				
MW-4	13:53		36.58	69.36				
MW-5	14:00		36.76	69.80				
MW-6	14:05		39.02	64.90				
MW-7	13:53		36.81	69.05				

Notes:

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 8.21.02

Site: 1619 First St. Project No.: _____

Livermore, Ca. Well Designation: MW-2

_____

Is setup of traffic control devices required? ~~NO~~ YES time: _____ hours
Is there standing water in the well box? ~~NO~~ YES Above TOC Below TOC
Is top of casing cut level? NO ~~YES~~ If no, see remarks
Is well cap sealed and locked? NO ~~YES~~ If no, see remarks
Height of well casing riser (in inches): 4
Well cover type: 8" or 12" UV_____ 12" EMCO_____ 8" or 12" BK_____ 8" Christy_____
12" Christy_____ 8" M&D_____ 12" M&D_____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco X Other: _____
General condition of wellhead assembly: Excellent _____ Good X Fair_____ Poor_____

Purging Equipment: _____2" disposable bailer _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer ___X___Centrifugal pump
Sampled with: Disposable bailer ___X___ Teflon bailer _____ Disposable Tubing_____

Well Diameter: 2" _____ 4" X 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.
Initial Measurement Recharge Measurement
Time: 13:46 Time: NA Calculated purge: _____
Depth of well: 67.89 Depth to water: NA Actual purge: NA
Depth to water: 37.15

Start purge: NA Sampling time: 14:30

Time	Temperature	E.C.	pH	Turbidity	Volume
		N	A		

Sample appearance: clear Lock: D6/Phw

Equipment replaced: (check all that apply) Note condition of replaced item(s)
2" Locking Cap: _____ Lock: _____ 7/32 Allenhead: _____
4" Locking Cap: _____ Lock-Dolphin: _____ 9/16 Bolt: _____
6" Locking Cap: _____ Pinned Allenhead (DWP): _____

Remarks: _____

_____

Signature: _____

DOULOS ENVIRONMENTAL, INC. SAMPLING INFORMATION SHEET

Client: Tesoro 67076 Sampling Date: 8-21-02

Site: 1619 First St. Project No.:

Livermore, Ca. Well Designation: MW-5

Is setup of traffic control devices required? (NO) YES time: _____ hours
Is there standing water in the well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 5
Well cover type: 8" or 12" UV X 12" EMCO_____ 8" or 12" BK_____ 8" Christy_____
12" Christy_____ 8" M&D_____ 12" M&D_____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco_____ Other: _____
General condition of wellhead assembly: Excellent _____ Good X Fair_____ Poor_____

Purging Equipment: _____2" disposable bailer _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer X Centrifugal pump
Sampled with: Disposable bailer X Teflon bailer _____ Disposable Tubing_____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 14.00
Depth of well: 67.80
Depth to water: 36.76

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: NA
Actual purge: NA

Start purge: NA Sampling time: 14:15

Time	Temperature	E.C.	pH	Turbidity	Volume
		N	A		

Sample appearance: clear Lock: Dolphin

Equipment replaced: (check all that apply) Note condition of replaced item(s)
2" Locking Cap: _____ Lock: _____ 7/32 Allenhead: _____
4" Locking Cap: _____ Lock-Dolphin: _____ 9/16 Bolt: _____
6" Locking Cap: _____ Pinned Allenhead (DWP): _____

Remarks: _____

Signature: _____

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 8-21-02

Site: 1619 First St. Project No.:

Livermore, Ca. Well Designation: MW-6

Is setup of traffic control devices required?	~~NO~~	YES	time: _____ hours
Is there standing water in the well box?	~~NO~~	YES	Above TOC Below TOC
Is top of casing cut level?	NO	~~YES~~	If no, see remarks
Is well cap sealed and locked?	NO	~~YES~~	If no, see remarks

Height of well casing riser (in inches): 4

Well cover type: 8" or 12" UV X 12" EMCO_____ 8" or 12" BK_____ 8" Christy_____

12" Christy_____ 8" M&D_____ 12" M&D_____ 12" DWP _____

12" CNI _____ 36" CNI _____ 12" Pomeco_____ Other: _____

General condition of wellhead assembly: Excellent _____ Good X Fair_____ Poor_____

Purging Equipment: _____ 2" disposable bailer _____ Submersible pump

_____ 2" PVC bailer _____ Dedicated bailer

_____ 4" PVC bailer X Centrifugal pump

Sampled with: Disposable bailer X Teflon bailer _____ Disposable Tubing_____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement

Time: 14:05

Depth of well: 64.90

Depth to water: 39.02

Recharge Measurement

Time: NA

Depth to water: NA

Calculated purge: _____

Actual purge: NA

Start purge: NA Sampling time: 14:09

Time	Temperature	E.C.	pH	Turbidity	Volume
		N	A		

Sample appearance: clear Lock: Dolphin

Equipment replaced: (check all that apply)

2" Locking Cap: _____

4" Locking Cap: _____

6" Locking Cap: _____

Lock: _____

Lock-Dolphin: _____

Note condition of replaced item(s)

7/32 Allenhead: _____

9/16 Bolt: _____

Pinned Allenhead (DWP): _____

Remarks: _____

Signature: _____

DOULOS ENVIRONMENTAL, INC. — SAMPLING INFORMATION SHEET

Client: Tesoro 67076 — Sampling Date: 8-21-02

Site: 1619 First St. — Project No.: _____

Livermore, Ca. — Well Designation: MW-7

Is setup of traffic control devices required? (NO) YES — time: _____ hours
Is there standing water in the well box? (NO) YES — Above TOC Below TOC
Is top of casing cut level? NO (YES) — If no, see remarks
Is well cap sealed and locked? NO (YES) — If no, see remarks
Height of well casing riser (in inches): 6
Well cover type: 8" or 12" UV X 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____
12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____
General condition of wellhead assembly: Excellent _____ Good X Fair _____ Poor _____

Purging Equipment: _____ 2" disposable bailer _____ Submersible pump
_____ 2" PVC bailer _____ Dedicated bailer
_____ 4" PVC bailer X Centrifugal pump
Sampled with: Disposable bailer X Teflon bailer _____ Disposable Tubing _____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 13:57
Depth of well: 67.05
Depth to water: 36.81

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: _____
Actual purge: NP

Start purge: NA Sampling time: 14:45

Time	Temperature	E.C.	pH	Turbidity	Volume
	NP	NP			

Sample appearance: _____ Lock: _____

Equipment replaced: (check all that apply)
2" Locking Cap: _____
4" Locking Cap: _____
6" Locking Cap: _____
Lock: _____
Lock-Dolphin: _____

Note condition of replaced item(s)
7/32 Allenhead: _____
9/16 Bolt: _____
Pinned Allenhead (DWP): _____

Remarks: _____

Signature: _____

APPENDIX C

OFFICIAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

TRC

KIFF ANALYTICAL LLC

Report Number : 28166
Date : 8/28/02

Tracy Walker
TRC Alton Geoscience
5052 Commercial Circle
Concord, CA 94520

Subject : 4 Water Samples
Project Name : Tesoro (Former Beacon 604)
Project Number : 67076 Livermore
P.O. Number : AFE 023139615

Dear Mr. Walker,

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.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 28166
Date : 8/28/02

Project Name : **Tesoro (Former Beacon 604)**
Project Number : **67076 Livermore**

Sample : **MW-2** Matrix : Water Lab Number : 28166-01
Sample Date :8/21/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1200**	10	ug/L	EPA 8260B	8/25/02
Toluene	**32**	10	ug/L	EPA 8260B	8/25/02
Ethylbenzene	**620**	10	ug/L	EPA 8260B	8/25/02
Total Xylenes	**300**	10	ug/L	EPA 8260B	8/25/02
Methyl-t-butyl ether (MTBE)	**160**	10	ug/L	EPA 8260B	8/25/02
TPH as Gasoline	**10000**	1000	ug/L	EPA 8260B	8/25/02
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	8/25/02
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	8/25/02

Sample : **MW-5** Matrix : Water Lab Number : 28166-02
Sample Date :8/21/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**20**	0.50	ug/L	EPA 8260B	8/25/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	8/25/02
Ethylbenzene	**63**	0.50	ug/L	EPA 8260B	8/25/02
Total Xylenes	**3.5**	0.50	ug/L	EPA 8260B	8/25/02
Methyl-t-butyl ether (MTBE)	**6.6**	0.50	ug/L	EPA 8260B	8/25/02
TPH as Gasoline	**2100**	50	ug/L	EPA 8260B	8/25/02
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	8/25/02
4-Bromofluorobenzene (Surr)	97.8		% Recovery	EPA 8260B	8/25/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 28166

Date : 8/28/02

Project Name : **Tesoro (Former Beacon 604)**

Project Number : **67076 Livermore**

Sample : **MW-6** Matrix : Water Lab Number : 28166-03

Sample Date :8/21/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1200**	5.0	ug/L	EPA 8260B	8/25/02
Toluene	**23**	5.0	ug/L	EPA 8260B	8/25/02
Ethylbenzene	**710**	5.0	ug/L	EPA 8260B	8/25/02
Total Xylenes	**290**	5.0	ug/L	EPA 8260B	8/25/02
Methyl-t-butyl ether (MTBE)	**370**	5.0	ug/L	EPA 8260B	8/25/02
TPH as Gasoline	**10000**	500	ug/L	EPA 8260B	8/25/02
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	8/25/02
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	8/25/02

Sample : **MW-7** Matrix : Water Lab Number : 28166-04

Sample Date :8/21/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**7.6**	0.50	ug/L	EPA 8260B	8/26/02
Toluene	**0.73**	0.50	ug/L	EPA 8260B	8/26/02
Ethylbenzene	**85**	0.50	ug/L	EPA 8260B	8/26/02
Total Xylenes	**36**	0.50	ug/L	EPA 8260B	8/26/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	8/26/02
TPH as Gasoline	**3300**	50	ug/L	EPA 8260B	8/26/02
Toluene - d8 (Surr)	93.5		% Recovery	EPA 8260B	8/26/02
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	8/26/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 28166

Date : 8/28/02

QC Report : Method Blank Data

Project Name : **Tesoro (Former Beacon 604)**

Project Number : **67076 Livermore**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/25/02
Toluene - d8 (Surr)	99.1		%	EPA 8260B	8/25/02
4-Bromofluorobenzene (Surr)	100		%	EPA 8260B	8/25/02
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/25/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/25/02
Toluene - d8 (Surr)	92.1		%	EPA 8260B	8/25/02
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	8/25/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 28166

Date : 8/28/02

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro (Former Beacon**

Project Number : **67076 Livermore**

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	28163-06	<0.50	19.6	19.7	21.1	20.5	ug/L	EPA 8260B	8/25/02	108	104	3.42	70-130	25
Toluene	28163-06	<0.50	19.6	19.7	21.4	20.7	ug/L	EPA 8260B	8/25/02	109	105	4.17	70-130	25
Tert-Butanol	28163-06	<5.0	97.9	98.4	98.7	95.0	ug/L	EPA 8260B	8/25/02	101	96.6	4.30	70-130	25
Methyl-t-Butyl Ether	28163-06	<0.50	19.6	19.7	18.9	18.7	ug/L	EPA 8260B	8/25/02	96.3	95.2	1.20	70-130	25
Benzene	28165-02	<0.50	40.0	40.0	43.4	42.5	ug/L	EPA 8260B	8/25/02	108	106	2.17	70-130	25
Toluene	28165-02	<0.50	40.0	40.0	37.6	37.4	ug/L	EPA 8260B	8/25/02	94.1	93.4	0.800	70-130	25
Tert-Butanol	28165-02	<5.0	200	200	199	202	ug/L	EPA 8260B	8/25/02	99.3	101	1.64	70-130	25
Methyl-t-Butyl Ether	28165-02	<0.50	40.0	40.0	47.1	45.8	ug/L	EPA 8260B	8/25/02	118	115	2.65	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 28166

Date : 8/28/02

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro (Former Beacon**

Project Number : **67076 Livermore**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	8/25/02	107	70-130
Toluene	40.0	ug/L	EPA 8260B	8/25/02	108	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/25/02	97.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/25/02	94.0	70-130
Benzene	40.0	ug/L	EPA 8260B	8/25/02	101	70-130
Toluene	40.0	ug/L	EPA 8260B	8/25/02	90.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/25/02	95.0	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/25/02	116	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 28166

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Tracy Walker	EDF Report? [X] Yes [ ] No
Company/Address: TRC	Recommended but not mandatory to complete this section: Sampling Company Log Code: DEIO
Phone No.: 925-688-1200 / FAX No.: 925+688-0388	Global ID: T0600101410
Project Number: 67076 Livermore / P.O. No.: AFE 023139615	EDF Deliverable to (Email Address): twalker@trcsolutions.com
Project Name: Tesoro (Former Bonded Oil)	Project Address: Livermore
Sampler Signature (below):	

Analysis Request

Sample Designation	Date	Time	40 ml VOA	SLEEVE				HCl	HNO_3	ICE	NONE		WATER	SOIL		BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)					TAT 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
MW-2	8 21 02	14:30	3					X		X			X							X														01
MW-5	"	14:15	"					"		"			"							"														02
MW-6	"	14:07	"					"		"			"							"														03
MW-7	"	14:45	"					"		"			"							"														04

	Date	Time		
Relinquished by:	8-22-02		Received by:	
Relinquished by:			Received by:	
Relinquished by:	08202	1615	Received by Laboratory: KIFF	

Remarks:

Bill to: Rob Donovan

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9