



R0231

76 Broadway  
Sacramento, CA 95818  
phone 916.558.7676  
fax 916.558.7639

October 29, 2004

Mr. Don Hwang  
Alameda County Health Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Re: **Document Transmittal**  
Fuel Leak Case  
76 Station #0752  
800 Harrison Street  
Oakland, CA

Dear Mr. Hwang:

Please find attached TRC's *Quarterly Status Report, dated 10/29/04*, and TRC's *Quarterly Monitoring Report, dated 10/19/04* for the above referenced site. I declare, under penalty of perjury, that to the best of my knowledge the information and/or recommendations contained in the attached proposal or report is true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,

Thomas H. Kosel  
Site Manger, Risk Management and Remediation  
ConocoPhillips  
76 Broadway, Sacramento, CA 95818

Attachment

cc: Roger Batra, TRC



Customer-Focused Solutions

October 29, 2004

TRC Project No. 42016201

Mr. Don Hwang  
Alameda County Health Services  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577

**RE: Quarterly Status Report - Third Quarter 2004  
76 Service Station #0752, 800 Harrison Street, Oakland, California  
Alameda County**

Dear Mr. Hwang:

On behalf of ConocoPhillips Company (ConocoPhillips), TRC is submitting the Third Quarter 2004 Quarterly Status Report for the subject site, shown on the attached Figures 3 through 5.

#### **PREVIOUS ASSESSMENTS**

The subject site contains a 76 service station. The site is located northeast and across 8th Street from a Shell service station that is located adjacent to and northeast of a currently closed Arco service station. In addition, a gasoline and diesel service station referred to as "Mandarin Auto Service" is located east-southeast of the 76 service station.

November 1990: Kaprealian Engineering, Inc.'s (KEI) initial fieldwork was conducted when two underground gasoline storage tanks (USTs) and a waste oil tank were removed from the site. The tanks were made of steel, and no apparent holes or cracks were observed in the fuel tanks; however, one 1/8th-inch square hole was observed in the waste oil tank. KEI collected an additional soil sample from the fuel tank pit at a depth of approximately 19 feet below ground surface (bgs).

December 1990: KEI returned to the site to collect soil samples from beneath the pump islands. KEI returned to the site in order to collect a sample from the pump island excavation.

January 1991: At the request of the Alameda County Health Care Services (ACHCS), KEI returned to the site in order to collect one additional soil sample from the waste oil tank pit. After sampling, the waste oil tank pit was excavated to the sample depth of 9.5 feet bgs.

May 1991: Three monitoring wells and two exploratory borings were installed at the site. The monitoring wells were drilled and completed to total depths ranging from 33 to 35 feet bgs. The exploratory borings were each drilled to total depths of 23 feet bgs. Groundwater was encountered at depths ranging from about 22.5 to 24 feet bgs during drilling. Based on the analytical results, a monthly groundwater monitoring and quarterly groundwater-sampling

program was implemented.

September-October 1992: Three additional monitoring wells were installed to further delineate the extent of groundwater contamination. These wells were drilled to total depths ranging from 32 to 33 feet bgs. Groundwater was encountered at depths ranging from 21.5 to 23 feet bgs.

April 1993: Two additional monitoring wells were installed in the vicinity of the site. These monitoring wells were drilled to a total depth of 31 to 33 feet bgs. Groundwater was encountered at depths of 21 to 21.5 feet bgs. Based on the analytical results of all of the soil samples collected, KEI concluded that the horizontal extent of the soil contamination at the site had been defined, and that the contamination was limited to the areas beneath the fuel tanks and the southernmost pump island. Based on the groundwater monitoring data collected and evaluated through April of 1993, the groundwater flow direction had been consistently to the southwest or south-southwest. In addition, no free product or sheen had been detected in any well through April of 1993. KEI recommended quarterly monitoring frequency.

October 2003: Site environmental consulting responsibilities were transferred to TRC.

#### **SENSITIVE RECEPTORS**

Lake Merritt and the Oakland Estuary are located approximately 0.5 miles from the site.

#### **MONITORING AND SAMPLING**

Currently, eight wells are monitored semi-annually. All wells were sampled this quarter. The groundwater gradient and flow direction were 0.006 foot/foot to the southwest.

#### **CHARACTERIZATION STATUS**

Total purgeable petroleum hydrocarbons (TPPH) were detected in five of eight monitoring wells, with a maximum concentration of 7,900 micrograms per liter ( $\mu\text{g/l}$ ) in MW-6.

Benzene was detected in six of eight monitoring wells, with a maximum concentration of 120  $\mu\text{g/l}$  in MW-7.

Methyl tertiary butyl ether (MTBE) was detected in eight monitoring wells, with a maximum concentration of 20,000  $\mu\text{g/l}$  in MW-3.

#### **REMEDIATION STATUS**

Remediation is not currently being conducted at the site.

## RECENT CORRESPONDENCE

No correspondence this quarter.

## CURRENT QUARTER ACTIVITIES

August 11, 2004: TRC performed groundwater monitoring and sampling. Wastewater generated from well purging and equipment cleaning was stored at TRC's groundwater monitoring facility in Concord, California, and transported by Onyx to the ConocoPhillips Refinery in Rodeo, California, for treatment and disposal.

## NEXT QUARTER ACTIVITIES

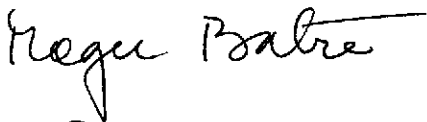
Await agency directives for additional assessment work, if any.

Continue semi-annual monitoring and sampling to assess plume stability and concentration trends at key wells.

If you have any questions regarding this report, please call me at (925) 688-2466.

Sincerely,

TRC



Roger Batra  
Senior Project Manager

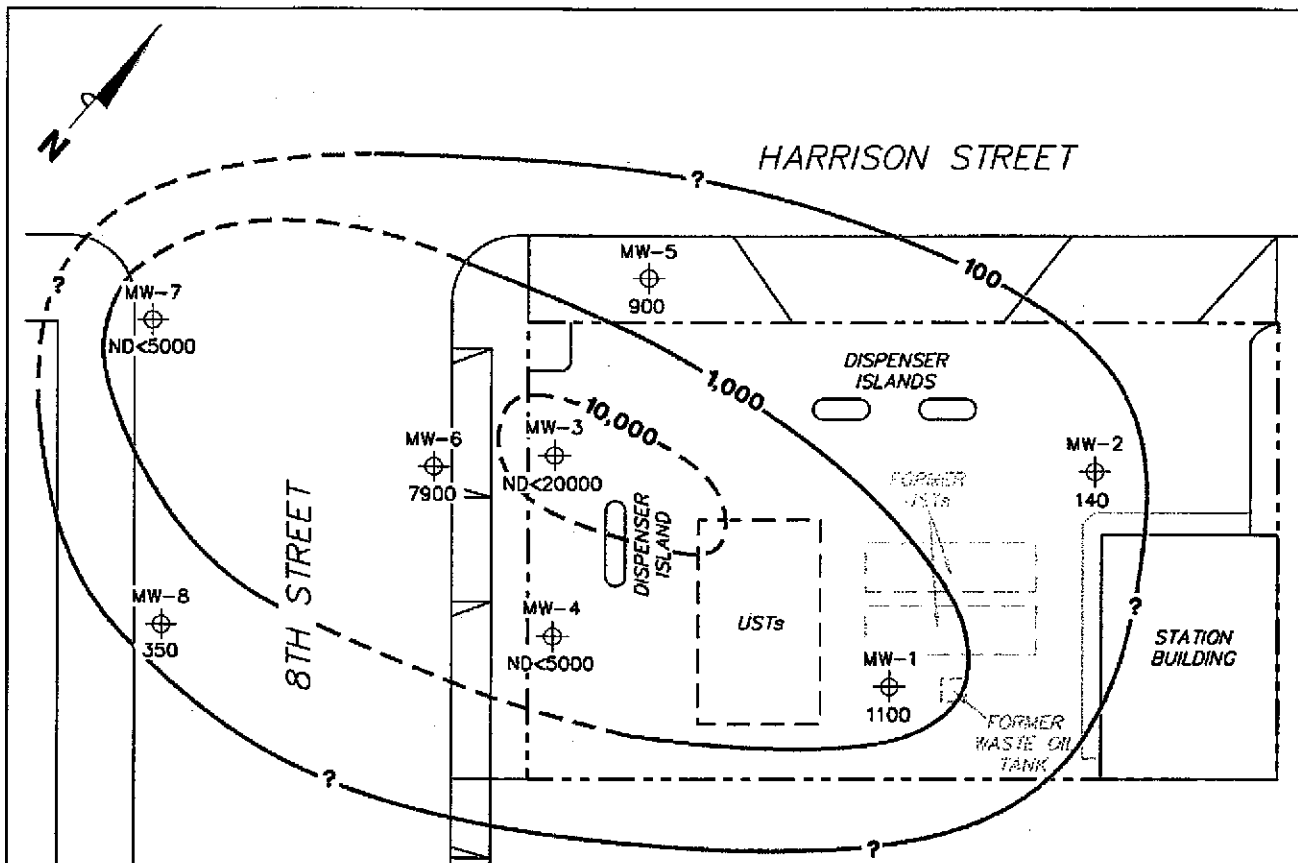
### Attachments:

Figure 3 – Dissolved-Phase TPH Concentration Map, August 11, 2004, from Semi-Annual Monitoring Report April through September 2004, dated October 19, 2004 by TRC.

Figure 4 – Dissolved-Phase Benzene Concentration Map, August 11, 2004, from Semi-Annual Monitoring Report April through September 2004, dated October 19, 2004 by TRC.

Figure 5 – Dissolved-Phase MTBE Concentration Map, August 11, 2004, from Semi-Annual Monitoring Report April through September 2004, dated October 19, 2004 by TRC.

cc: Thomas Kosel, ConocoPhillips (hard copy and electronic upload)



**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. TPPH = total purgeable petroleum hydrocarbons. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Dashes indicate contour based on non-detect at elevated detection limit. Results obtained using EPA Method 8260B.

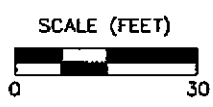
**LEGEND**

MW-8 ⊕ Monitoring Well with Dissolved-Phase TPPH Concentration (µg/l)

-10,000- Dissolved-Phase TPPH Contour (µg/l)

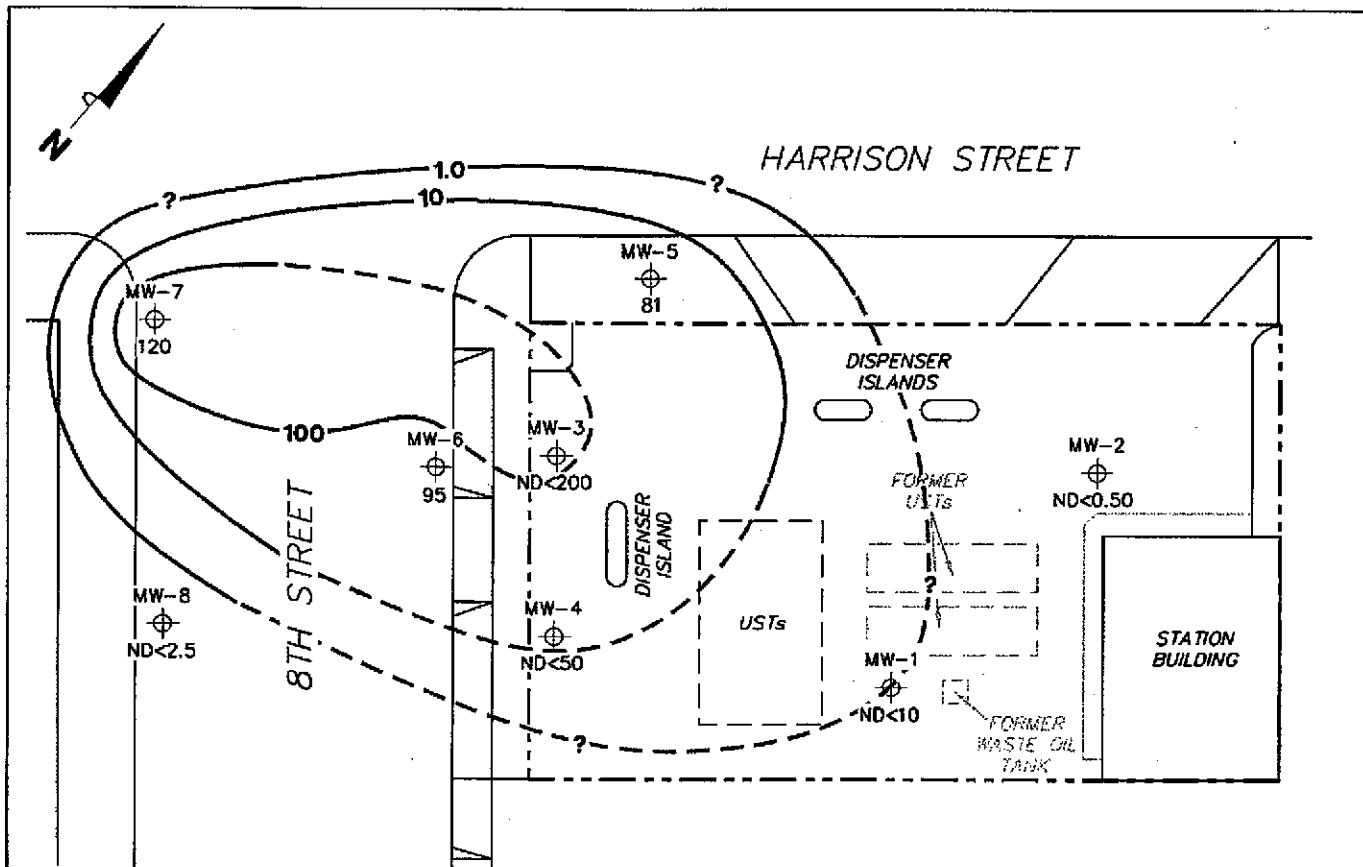
**DISSOLVED-PHASE TPPH CONCENTRATION MAP August 11, 2004**

76 Station 0752  
800 Harrison Street  
Oakland, California



**FIGURE 3**

PS=1:1 0752-003



**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Dashes indicate contour based on non-detect at elevated detection limit.

**LEGEND**

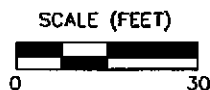
MW-8 Monitoring Well with Dissolved-Phase Benzene Concentration ( $\mu\text{g/l}$ )

100 Dissolved-Phase Benzene Contour ( $\mu\text{g/l}$ )

**DISSOLVED-PHASE BENZENE CONCENTRATION MAP**  
August 11, 2004

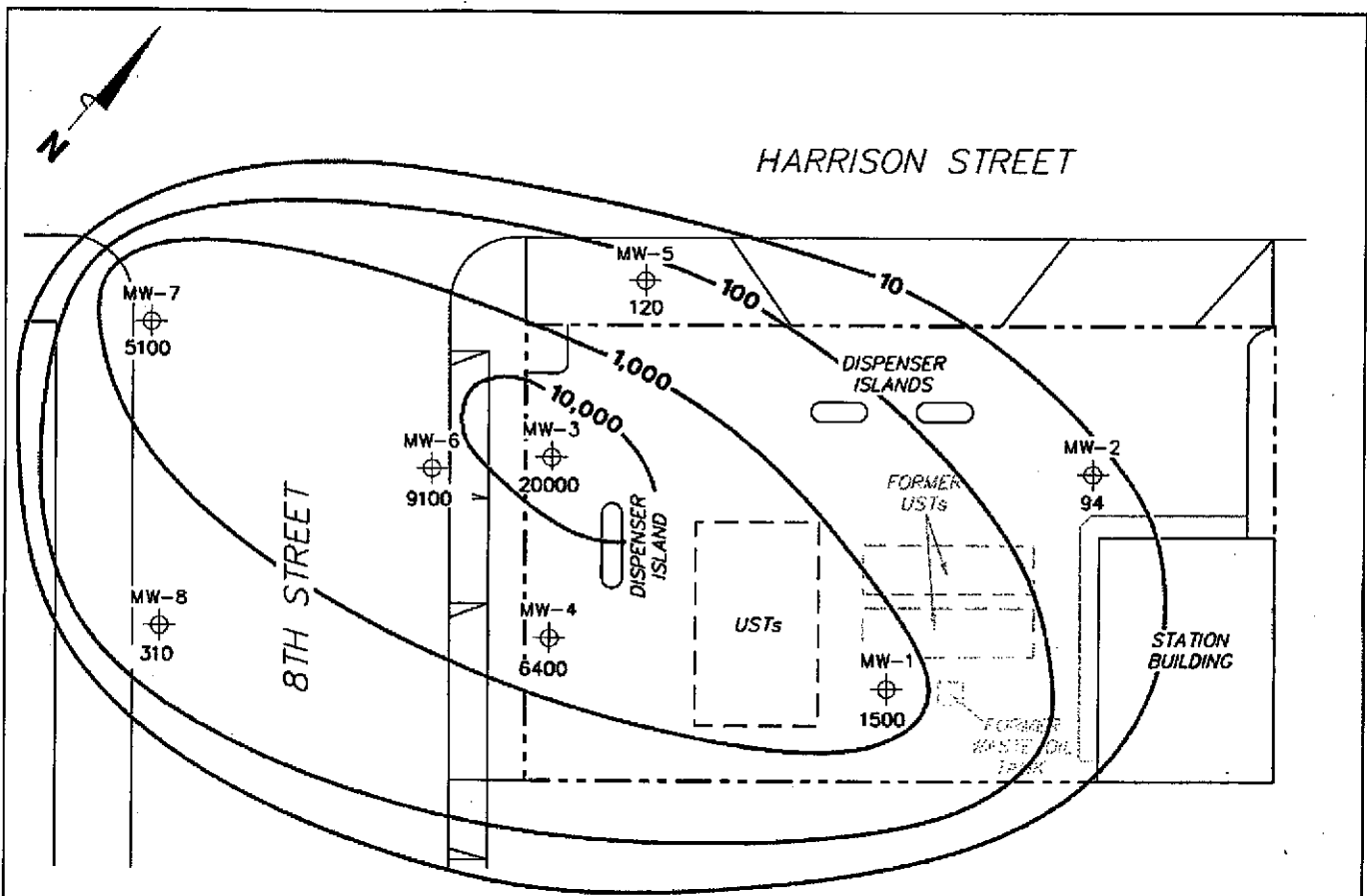
76 Station 0752  
800 Harrison Street  
Oakland, California

**TRC**



**FIGURE 4**


PS=1:1 0752-003

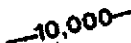


**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. MTBE = methyl tertiary butyl ether.  $\mu\text{g/l}$  = micrograms per liter. UST = underground storage tank. Results obtained using EPA Method 8260B.

**LEGEND**

MW-8  Monitoring Well with Dissolved-Phase MTBE Concentration ( $\mu\text{g/l}$ )

 10,000 Dissolved-Phase MTBE Contour ( $\mu\text{g/l}$ )

**DISSOLVED-PHASE MTBE  
CONCENTRATION MAP  
August 11, 2004**

76 Station 0752  
800 Harrison Street  
Oakland, California

TRC

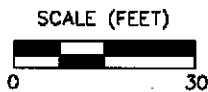


FIGURE 5

PS=1:1 0752-003

RO 231

**TRC**  
Customer-Focused Solutions

October 19, 2004

ConocoPhillips Company  
76 Broadway  
Sacramento, California 95818

ATTN: MR. THOMAS H. KOSEL

SITE: 76 STATION 0752  
800 HARRISON STREET  
OAKLAND, CALIFORNIA

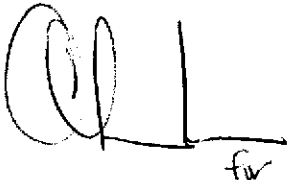
RE: SEMI-ANNUAL MONITORING REPORT  
APRIL THROUGH SEPTEMBER 2004

Dear Mr. Kosel:

Please find enclosed our Semi-Annual Monitoring Report for 76 Station 0752, located at 800 Harrison Street, Oakland, California. If you have any questions regarding this report, please call us at (949) 753-0101.

Sincerely,

TRC



Anju Farfan  
QMS Operations Manager

CC: Roger Batra, TRC (2 copies)

Enclosures  
20-0400/0752R03.QMS





Customer-Focused Solutions

**SEMI-ANNUAL MONITORING REPORT  
APRIL THROUGH SEPTEMBER 2004**

76 Station 0752  
800 Harrison Street  
Oakland, California

Prepared For:

Mr. Thomas H. Kosel  
CONOCOPHILLIPS  
76 Broadway  
Sacramento, California 95818

By:



Senior Project Geologist, Irvine Operations  
October 6, 2004

## LIST OF ATTACHMENTS

Summary Sheet	Summary of Gauging and Sampling Activities
Tables	Table Key Table 1: Current Fluid Levels and Selected Analytical Results Table 2: Historic Fluid Levels and Selected Analytical Results Table 3: Additional Analytical Results Table 3b: Additional Analytical Results
Figures	Figure 1: Vicinity Map Figure 2: Groundwater Elevation Contour Map Figure 3: Dissolved-Phase TPPH Concentration Map Figure 4: Dissolved-Phase Benzene Concentration Map Figure 5: Dissolved-Phase MTBE Concentration Map
Graphs	Groundwater Elevations vs. Time Benzene Concentrations vs. Time
Field Activities	General Field Procedures Groundwater Sampling Field Notes
Laboratory Reports	Official Laboratory Reports Quality Control Reports Chain of Custody Records
Statement	Purge Water Disposal Limitations

**Summary of Gauging and Sampling Activities**  
**April 2004 through September 2004**  
**76 Station 0752**  
**800 Harrison Street**  
**Oakland, CA**

Project Coordinator: **Thomas H. Kosel**  
Telephone: **916-558-7666**

Water Sampling Contractor: **TRC**  
Compiled by: **Valentina Tobon**

Date(s) of Gauging/Sampling Event: **08/11/04**

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**Sample Points**

Groundwater wells: **4** onsite, **4** offsite      Wells gauged: **8**      Wells sampled: **8**  
Purging method: **Diaphragm pump**  
Purge water disposal: **Onyx/Rodeo Unit 100**  
Other Sample Points: **0**      Type: **n/a**

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**Liquid Phase Hydrocarbons (LPH)**

Wells with LPH: **0**      Maximum thickness (feet): **n/a**  
LPH removal frequency: **n/a**      Method: **n/a**  
Treatment or disposal of water/LPH: **n/a**

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**Hydrogeologic Parameters**

Depth to groundwater (below TOC):      Minimum: **15.81 feet**      Maximum: **17.84 feet**  
Average groundwater elevation (relative to available local datum): **16.52 feet**  
Average change in groundwater elevation since previous event: **-0.21 feet**  
Interpreted groundwater gradient and flow direction:  
    Current event: **0.006 ft/ft, southwest**  
    Previous event: **0.007 ft/ft, southwest (02/04/04)**

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**Selected Laboratory Results**

Wells with detected **Benzene**: **3**      Wells above MCL (1.0 µg/l): **3**  
    Maximum reported benzene concentration: **120 µg/l (MW-7)**  
  
Wells with **TPPH 8260B**      **5**      Maximum: **7,900 µg/l (MW-6)**  
Wells with **MTBE**      **8**      Maximum: **20,000 µg/l (MW-3)**

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**Notes:**

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## TABLE KEY

### STANDARD ABBREVIATIONS

--	=	not analyzed, measured, or collected
LPH	=	liquid-phase hydrocarbons
Trace	=	less than 0.01 foot of LPH in well
µg/l	=	micrograms per liter (approx. equivalent to parts per billion, ppb)
mg/l	=	milligrams per liter (approx. equivalent to parts per million, ppm)
ND<	=	not detected at or above laboratory detection limit
TOC	=	top of casing (surveyed reference elevation)

### ANALYTES

BTEX	=	benzene, toluene, ethylbenzene, and (total) xylenes
DIPE	=	di-isopropyl ether
ETBE	=	ethyl tertiary butyl ether
MTBE	=	methyl tertiary butyl ether
PCB	=	polychlorinated biphenyls
PCE	=	tetrachloroethene
TBA	=	tertiary butyl alcohol
TCA	=	trichloroethane
TCE	=	trichloroethene
TPH-G	=	total petroleum hydrocarbons with gasoline distinction
TPH-D	=	total petroleum hydrocarbons with diesel distinction
TPPH	=	total purgeable petroleum hydrocarbons
TRPH	=	total recoverable petroleum hydrocarbons
TAME	=	tertiary amyl methyl ether
1,1-DCA	=	1,1-dichloroethane
1,2-DCA	=	1,2-dichloroethane (same as EDC, ethylene dichloride)
1,1-DCE	=	1,1-dichloroethene
1,2-DCE	=	1,2-dichloroethene (cis- and trans-)

### NOTES

1. Elevations are in feet above mean sea level. Depths are in feet below surveyed top-of-casing.
2. Groundwater elevations for wells with LPH are calculated as:  $\text{Surface Elevation} - \text{Measured Depth to Water} + (\text{Dp} \times \text{LPH Thickness})$ , where Dp is the density of the LPH, if known. A value of 0.75 is used for gasoline and when the density is not known. A value of 0.83 is used for diesel.
3. Wells with LPH are generally not sampled for laboratory analysis (see General Field Procedures).
4. Comments shown on tables are general. Additional explanations may be included in field notes and laboratory reports, both of which are included as part of this report.
5. A "J" flag indicates that a reported analytical result is an estimated concentration value between the method detection limit (MDL) and the practical quantification limit (PQL) specified by the laboratory.
6. Other laboratory flags (qualifiers) may have been reported. See the official laboratory report (attached) for a complete list of laboratory flags.
7. Concentration graphs based on tables (presented following Figures) show non-detect results prior to the Second Quarter 2000 plotted at fixed values for graphical display. Non-detect results reported since that time are plotted at reporting limits stated in the official laboratory report.
8. Groundwater vs. Time graphs may be corrected for apparent level changes due to resurvey.

### REFERENCE

TRC began groundwater monitoring and sampling for 76 Station 0752 in October 2003. Historical data compiled prior to that time were provided by Gettler-Ryan Inc.

**Table 1**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**August 11, 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
		<b>(Screen Interval in feet: 13.5-33.5)</b>												
MW-1 8/11/2004	34.69	17.84	0.00	16.85	0.14	--	1100	ND<10	ND<10	ND<10	ND<20	--	1500	
		<b>(Screen Interval in feet: 15-33)</b>												
MW-2 8/11/2004	34.72	17.61	0.00	17.11	-0.25	--	140	ND<0.50	0.60	ND<0.50	ND<1.0	--	94	
		<b>(Screen Interval in feet: 15-33)</b>												
MW-3 8/11/2004	33.14	16.64	0.00	16.50	-0.49	--	ND<20000	ND<200	ND<200	ND<200	ND<400	--	20000	
		<b>(Screen Interval in feet: 15-33)</b>												
MW-4 8/11/2004	32.71	16.16	0.00	16.55	-0.04	--	ND<5000	ND<50	ND<50	ND<50	ND<100	--	6400	
		<b>(Screen Interval in feet: 15-32)</b>												
MW-5 8/11/2004	32.95	16.38	0.00	16.57	-0.30	--	900	81	14	2.8	11	--	120	
		<b>(Screen Interval in feet: 15-32)</b>												
MW-6 8/11/2004	32.16	15.81	0.00	16.35	-0.32	--	7900	95	ND<50	ND<50	ND<100	--	9100	
		<b>(Screen Interval in feet: 13-33)</b>												
MW-7 8/11/2004	32.20	16.12	0.00	16.08	-0.22	--	ND<5000	120	ND<50	ND<50	ND<100	--	5100	
		<b>(Screen Interval in feet: 11-29)</b>												
MW-8 8/11/2004	32.00	15.86	0.00	16.14	-0.21	--	350	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	310	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**June 1991 Through August 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
<b>MW-1</b>		<b>(Screen Interval in feet: 13.5-33.5)</b>												
12/30/1991	34.94	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
4/2/1992	34.94	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
6/30/1992	34.94	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
9/15/1992	34.94	--	--	--	--	76	--	1.0	ND	ND	ND	--	--	
12/21/1992	34.94	21.17	0.00	13.77	--	95	--	0.69	ND	ND	1.0	--	--	
4/28/1993	34.94	--	--	--	--	920	--	3.1	2.3	1.2	9.7	--	--	
7/23/1993	34.94	20.13	0.00	14.81	--	ND	--	0.5	0.66	ND	ND	--	--	
10/5/1993	34.69	20.30	0.00	14.39	-0.42	92	--	1.5	ND	ND	0.72	--	--	
1/3/1994	34.69	20.52	0.00	14.17	-0.22	ND	--	ND	ND	ND	ND	--	--	
4/2/1994	34.69	20.16	0.00	14.53	0.36	ND	--	ND	ND	ND	ND	--	--	
7/5/1994	34.69	19.27	0.00	15.42	0.89	250	--	4.8	13	1.2	7.3	--	--	
10/6/1994	34.69	20.87	0.00	13.82	-1.60	540	--	1.4	ND	0.7	11	--	--	
1/2/1995	34.69	19.67	0.00	15.02	1.20	140	--	ND	ND	ND	ND	--	--	
4/3/1995	34.69	17.61	0.00	17.08	2.06	580	--	3.6	0.8	ND	4.0	--	--	
7/14/1995	34.69	18.58	0.00	16.11	-0.97	260	--	2.1	ND	ND	1.2	--	--	
10/10/1995	34.69	19.60	0.00	15.09	-1.02	220	--	2.0	ND	25	5.6	29	--	
1/3/1996	34.69	19.69	0.00	15.00	-0.09	190	--	2.4	ND	0.7	1.2	--	--	
4/10/1996	34.69	17.65	0.00	17.04	2.04	540	--	8.9	1.7	1.5	7.4	50	--	
7/9/1996	34.69	18.52	0.00	16.17	-0.87	490	--	3.0	1.4	1.3	2.5	150	--	
1/24/1997	34.69	17.72	0.00	16.97	0.80	760	--	27	0.9	5.2	10	510	--	
7/23/1997	34.69	19.42	0.00	15.27	-1.70	ND	--	ND	ND	ND	ND	550	--	
1/26/1998	34.69	17.46	0.00	17.23	1.96	1800	--	ND	ND	ND	ND	4800	--	
7/3/1998	34.69	18.61	0.00	16.08	-1.15	ND	--	ND	ND	ND	ND	1800	--	
1/14/1999	34.69	18.92	0.00	15.77	-0.31	83	--	ND	ND	ND	ND	230	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**June 1991 Through August 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
<b>MW-1 continued</b>														
7/15/1999	34.69	17.84	0.00	16.85	1.08	110	--	ND	ND	ND	1.0	290	--	
1/7/2000	34.69	19.13	0.00	15.56	-1.29	ND	--	ND	ND	ND	ND	260	--	
7/19/2000	34.69	20.27	0.00	14.42	-1.14	ND	--	ND	ND	ND	ND	648	--	
1/2/2001	34.69	20.04	0.00	14.65	0.23	ND	--	ND	ND	ND	ND	119	--	
5/23/2001	34.69	18.27	0.00	16.42	1.77	84	--	ND	ND	ND	ND	760	--	
7/30/2001	34.69	18.56	0.00	16.13	-0.29	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	350	--	
10/15/2001	34.69	18.72	0.00	15.97	-0.16	96	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	160	--	
1/14/2002	34.69	16.78	0.00	17.91	1.94	450	--	ND<2.5	ND<2.5	ND<2.5	3.3	4,100	--	
4/15/2002	34.69	17.35	0.00	17.34	-0.57	ND<1,000	--	ND<10	ND<10	ND<10	ND<10	10,000	--	
7/15/2002	34.69	17.63	0.00	17.06	-0.28	2,100	--	ND<10	ND<10	ND<10	ND<20	--	2,100	
1/18/2003	34.69	17.04	0.00	17.65	0.59	ND<25,000	--	ND<250	ND<250	ND<250	ND<500	--	29,000	
7/11/2003	34.69	17.91	0.00	16.78	-0.87	4000	--	ND<25	ND<25	ND<25	ND<50	--	6,300	
2/4/2004	34.69	17.98	0.00	16.71	-0.07	--	8000	ND<50	ND<50	ND<50	ND<100	--	8500	
8/11/2004	34.69	17.84	0.00	16.85	0.14	--	1100	ND<10	ND<10	ND<10	ND<20	--	1500	
<b>MW-2 (Screen Interval in feet: 15-33)</b>														
6/5/1991	34.97	--	--	--	--	49	--	ND	ND	ND	ND	--	--	
9/30/1991	34.97	--	--	--	--	130	--	18	0.53	14	9.6	--	--	
12/30/1991	34.97	--	--	--	--	91	--	16	0.89	11	1.9	--	--	
4/2/1992	34.97	--	--	--	--	88	--	12	0.32	6.3	7.2	--	--	
6/30/1992	34.97	--	--	--	--	76	--	9.3	0.76	4.8	6.9	--	--	
9/15/1992	34.97	--	--	--	--	1300	--	91	5.7	80	110	--	--	
12/21/1992	34.97	20.85	0.00	14.12	--	960	--	97	3.2	74	96	--	--	
4/28/1993	34.97	--	--	--	--	1300	--	76	1.9	130	87	--	--	
7/23/1993	34.97	19.81	0.00	15.16	--	66	--	1.8	ND	2.5	2.0	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**June 1991 Through August 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
MW-2 continued														
10/5/1993	34.72	19.95	0.00	14.77	-0.39	120	--	12	ND	2.1	12	--	--	
1/3/1994	34.72	20.21	0.00	14.51	-0.26	260	--	25	ND	5.5	26	--	--	
4/2/1994	34.72	19.88	0.00	14.84	0.33	ND	--	0.65	ND	ND	0.99	--	--	
7/5/1994	34.72	19.07	0.00	15.65	0.81	160	--	16	ND	0.73	10	--	--	
10/6/1994	34.72	20.55	0.00	14.17	-1.48	170	--	15	ND	1.4	11	--	--	
1/2/1995	34.72	19.25	0.00	15.47	1.30	190	--	27	ND	0.95	11	--	--	
4/3/1995	34.72	17.49	0.00	17.23	1.76	2400	--	65	6.6	19	63	--	--	
7/14/1995	34.72	18.30	0.00	16.42	-0.81	750	--	270	ND	ND	13	--	--	
10/10/1995	34.72	19.25	0.00	15.47	-0.95	50	--	1.6	ND	ND	ND	200	--	
1/3/1996	34.72	19.40	0.00	15.32	-0.15	ND	--	ND	ND	ND	ND	--	--	
4/10/1996	34.72	17.35	0.00	17.37	2.05	300	--	42	ND	2.4	9	620	--	
7/9/1996	34.72	18.22	0.00	16.50	-0.87	760	--	230	ND	1.3	2.4	1500	--	
1/24/1997	34.72	17.59	0.00	17.13	0.63	2900	--	400	350	190	720	1300	--	
7/23/1997	34.72	19.13	0.00	15.59	-1.54	ND	--	ND	ND	ND	ND	65	--	
1/26/1998	34.72	17.12	0.00	17.60	2.01	ND	--	ND	ND	ND	0.58	13	--	
7/3/1998	34.72	18.20	0.00	16.52	-1.08	140	--	26	ND	0.95	5.0	330	--	
1/14/1999	34.72	18.56	0.00	16.16	-0.36	ND	--	0.54	ND	ND	ND	350	--	
7/15/1999	34.72	17.39	0.00	17.33	1.17	ND	--	0.88	ND	ND	ND	39	--	
1/7/2000	34.72	18.78	0.00	15.94	-1.39	ND	--	ND	ND	ND	ND	24	--	
7/19/2000	34.72	19.68	0.00	15.04	-0.90	ND	--	1.45	ND	ND	ND	117	--	
1/2/2001	34.72	19.73	0.00	14.99	-0.05	ND	--	ND	ND	ND	ND	11.4	--	
5/23/2001	34.72	18.16	0.00	16.56	1.57	ND	--	ND	ND	ND	ND	33	--	
7/30/2001	34.72	18.34	0.00	16.38	-0.18	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	67	--	
10/15/2001	34.72	18.52	0.00	16.20	-0.18	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	31	--	



**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**June 1991 Through August 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
<b>MW-2 continued</b>														
1/14/2002	34.72	16.72	0.00	18.00	1.80	ND<50	--	ND<0.50	ND<0.50	ND<0.50	0.56	11	--	
4/15/2002	34.72	17.26	0.00	17.46	-0.54	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	110	--	
7/15/2002	34.72	17.46	0.00	17.26	-0.20	270	--	21	ND<0.50	3.8	4.0	--	73	
1/18/2003	34.72	16.93	0.00	17.79	0.53	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	22	
7/11/2003	34.72	17.68	0.00	17.04	-0.75	130	--	3.0	ND<0.50	ND<0.50	ND<1.0	--	89	
2/4/2004	34.72	17.36	0.00	17.36	0.32	--	61	2.9	ND<0.50	ND<0.50	ND<1.0	--	22	
8/11/2004	34.72	17.61	0.00	17.11	-0.25	--	140	ND<0.50	0.60	ND<0.50	ND<1.0	--	94	
<b>MW-3 (Screen Interval in feet: 15-33)</b>														
6/5/1991	33.39	--	--	--	--	5800	--	1200	40	140	97	--	--	
9/30/1991	33.39	--	--	--	--	6800	--	1400	130	290	240	--	--	
12/30/1991	33.39	--	--	--	--	7200	--	2100	690	410	550	--	--	
4/2/1992	33.39	--	--	--	--	8000	--	1400	200	300	310	--	--	
6/30/1992	33.39	--	--	--	--	8900	--	1900	210	430	550	--	--	
9/15/1992	33.39	--	--	--	--	10000	--	1900	330	400	580	--	--	
12/21/1992	33.39	20.02	0.00	13.37	--	8500	--	1500	150	310	330	--	--	
4/28/1993	33.39	--	--	--	--	2600	--	220	7.6	41	27	--	--	
7/23/1993	33.39	19.00	0.00	14.39	--	4400	--	660	26	160	82	--	--	
10/5/1993	33.14	19.20	0.00	13.94	-0.45	9200	--	720	88	140	140	--	--	
1/3/1994	33.14	19.40	0.00	13.74	-0.20	4900	--	830	100	170	150	--	--	
4/2/1994	33.14	19.01	0.00	14.13	0.39	6000	--	800	30	140	110	--	--	
7/5/1994	33.14	18.14	0.00	15.00	0.87	25000	--	ND	ND	ND	ND	--	--	
10/6/1994	33.14	19.73	0.00	13.41	-1.59	49000	--	1300	200	280	300	--	--	
1/2/1995	33.14	18.36	0.00	14.78	1.37	480	--	1.6	ND	1.4	ND	--	--	
4/3/1995	33.14	16.38	0.00	16.76	1.98	8100	--	65	ND	ND	ND	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**June 1991 Through August 2004**  
**76 Station 0752**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
<b>MW-3 continued</b>														
7/14/1995	33.14	17.49	0.00	15.65	-1.11	ND	--	1300	ND	ND	ND	--	--	
10/10/1995	33.14	18.50	0.00	14.64	-1.01	3100	--	1400	36	50	53	190000	--	
1/3/1996	33.14	18.54	0.00	14.60	-0.04	ND	--	2300	110	150	140	--	--	
2/4/2004	33.14	16.15	0.00	16.99	--	--	130	7.9	ND<0.50	ND<0.50	ND<1.0	--	63	
8/11/2004	33.14	16.64	0.00	16.50	-0.49	--	ND<20000	ND<200	ND<200	ND<200	ND<400	--	20000	
<b>MW-4 (Screen Interval in feet: 15-33)</b>														
2/4/2004	32.71	16.12	0.00	16.59	--	--	1300	ND<10	ND<10	ND<10	ND<20	--	1700	
8/11/2004	32.71	16.16	0.00	16.55	-0.04	--	ND<5000	ND<50	ND<50	ND<50	ND<100	--	6400	
<b>MW-5 (Screen Interval in feet: 15-32)</b>														
2/4/2004	32.95	16.08	0.00	16.87	--	--	82	16	1.6	0.65	ND<1.0	--	16	
8/11/2004	32.95	16.38	0.00	16.57	-0.30	--	900	81	14	2.8	11	--	120	
<b>MW-6 (Screen Interval in feet: 15-32)</b>														
2/4/2004	32.16	15.49	0.00	16.67	--	--	ND<50	2.6	ND<0.50	ND<0.50	ND<1.0	--	2.4	
8/11/2004	32.16	15.81	0.00	16.35	-0.32	--	7900	95	ND<50	ND<50	ND<100	--	9100	
<b>MW-7 (Screen Interval in feet: 13-33)</b>														
2/4/2004	32.20	15.90	0.00	16.30	--	--	ND<50	3.6	ND<0.50	ND<0.50	ND<1.0	--	3.2	
8/11/2004	32.20	16.12	0.00	16.08	-0.22	--	ND<5000	120	ND<50	ND<50	ND<100	--	5100	
<b>MW-8 (Screen Interval in feet: 11-29)</b>														
2/4/2004	32.00	15.65	0.00	16.35	--	--	52	2.3	ND<0.50	ND<0.50	ND<1.0	--	2.4	
8/11/2004	32.00	15.86	0.00	16.14	-0.21	--	350	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	310	

**Table 3**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 0752**

Date Sampled	TPH-D (µg/l)	EDC (µg/l)	PCE (µg/l)	Chloro- form (µg/l)	TCE (µg/l)	EDB (µg/l)	T-Lead (mg/l)	Pre-Purge DO (mg/l)	Post Purge DO (mg/l)	Sulfate (mg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Calcium (mg/l)
<b>MW-1</b>															
12/30/1991	ND	--	2.1	6.4	0.9	--	0.0057	--	--	--	--	--	--	--	--
4/2/1992	94	--	2.6	7.1	1.4	--	0.016	--	--	--	--	--	--	--	--
6/30/1992	120	--	2.2	9.5	1.3	--	0.009	--	--	--	--	--	--	--	--
9/15/1992	ND	--	2.2	12	1.3	--	--	--	--	--	--	--	--	--	--
12/21/1992	ND	--	1.4	12	0.83	--	--	--	--	--	--	--	--	--	--
4/28/1993	470	1.1	0.89	12	0.85	--	--	--	--	--	--	--	--	--	--
7/23/1993	ND	--	1.3	16	0.91	--	--	--	--	--	--	--	--	--	--
10/5/1993	57	--	1.3	13	0.66	--	--	--	--	--	--	--	--	--	--
1/3/1994	ND	--	1.4	18	0.93	--	--	--	--	--	--	--	--	--	--
4/2/1994	ND	--	1.1	15	0.68	--	--	--	--	--	--	--	--	--	--
4/10/1996	--	--	--	--	--	--	--	--	3.04	--	--	--	--	--	21
7/9/1996	--	--	--	--	--	--	--	--	3.13	--	--	--	--	--	--
1/24/1997	--	--	--	--	--	--	--	--	2.56	--	--	--	--	--	--
7/23/1997	--	--	--	--	--	--	--	2.26	2.81	--	--	--	--	--	--
1/26/1998	--	--	--	--	--	--	--	3.97	--	--	--	--	--	--	--
7/3/1998	--	--	--	--	--	--	--	3.58	--	--	--	--	--	--	--
7/15/2002	--	ND<0.5	--	--	--	ND<0.5	--	--	--	--	ND<0.5	ND<5.0	ND<1.0	ND<0.5	--
7/11/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<10000	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-2</b>															
1/3/1996	--	--	--	--	--	--	--	--	1.80	97	--	--	--	--	27
4/10/1996	--	--	--	--	--	--	--	--	5.88	--	--	--	--	--	58
7/9/1996	--	--	--	--	--	--	--	--	0.71	--	--	--	--	--	--
1/24/1997	--	--	--	--	--	--	--	--	2.37	--	--	--	--	--	--
7/23/1997	--	--	--	--	--	--	--	1.40	0.97	--	--	--	--	--	--

**Table 3**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 0752**

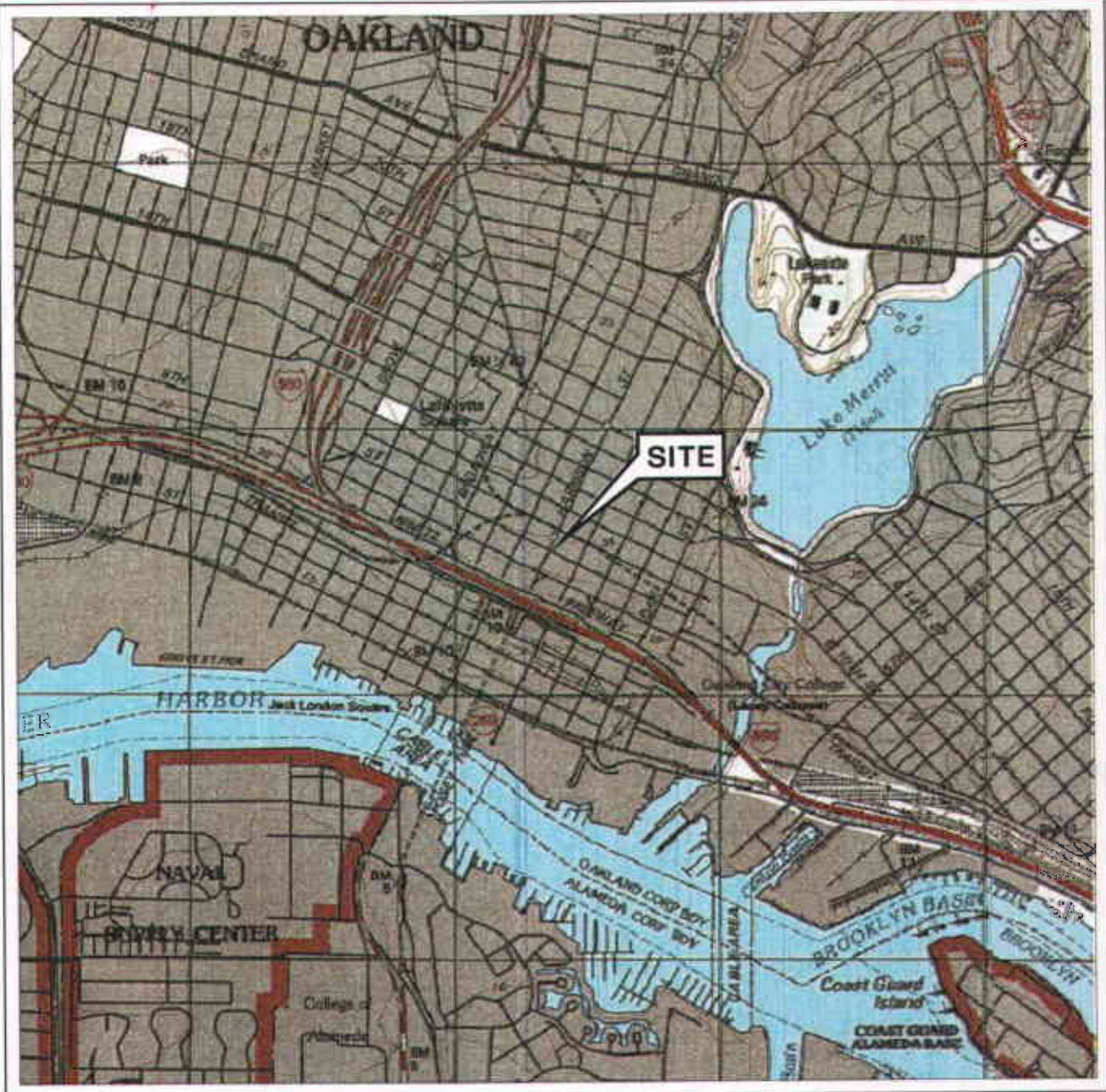
Date Sampled	TPH-D (µg/l)	EDC (µg/l)	PCE (µg/l)	Chloro- form (µg/l)	TCE (µg/l)	EDB (µg/l)	T-Lead (mg/l)	Pre-Purge DO (mg/l)	Post Purge DO (mg/l)	Sulfate (mg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Calcium (mg/l)
<b>MW-2 continued</b>															
1/26/1998	--	--	--	--	--	--	--	4.12	--	--	--	--	--	--	--
7/3/1998	--	--	--	--	--	--	--	3.99	--	--	--	--	--	--	--
7/11/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-3</b>															
1/3/1996	--	--	--	--	--	--	--	--	1.50	16	--	--	--	--	43
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-4</b>															
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<2000	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-5</b>															
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-6</b>															
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-7</b>															
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-8</b>															
2/4/2004	--	--	--	--	--	--	--	--	--	--	--	ND<100	--	--	--
8/11/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Table 3b**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 0752**

Date Sampled	Mang (mg/l)	Zinc (mg/l)	Ethanol 8260B (µg/l)	Nickel (mg/l)	Cadmium (mg/l)	Chromium (mg/l)	BOD (mg/l)	Nitrate (mg/l)	TOG (mg/l)	T-Iron (mg/l)	B- Alkalinity (mg/l)
<b>MW-1</b>											
12/30/1991	--	0.046	--	ND	ND	0.0078	--	--	ND	--	--
4/2/1992	--	0.02	--	ND	ND	0.015	--	--	ND	--	--
6/30/1992	--	0.087	--	0.1	ND	0.079	--	--	ND	--	--
9/15/1992	--	--	--	--	--	--	--	--	--	--	--
12/21/1992	--	--	--	--	--	--	--	--	--	--	--
4/28/1993	--	--	--	--	--	--	--	--	--	--	--
7/23/1993	--	--	--	--	--	--	--	--	--	--	--
10/5/1993	--	--	--	--	--	--	--	--	--	--	--
1/3/1994	--	--	--	--	--	--	--	--	--	--	--
4/2/1994	--	--	--	--	--	--	--	--	--	--	--
4/10/1996	2.6	--	--	--	--	--	--	--	--	15	160
7/9/1996	--	--	--	--	--	--	--	--	--	--	--
1/24/1997	--	--	--	--	--	--	--	--	--	--	--
7/23/1997	--	--	--	--	--	--	--	--	--	--	--
1/26/1998	--	--	--	--	--	--	--	--	--	--	--
7/3/1998	--	--	--	--	--	--	--	--	--	--	--
7/15/2002	--	--	ND<25	--	--	--	--	--	--	--	--
7/11/2003	--	--	ND<25,000	--	--	--	--	--	--	--	--
2/4/2004	--	--	ND<50000	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<1000	--	--	--	--	--	--	--	--
<b>MW-2</b>											
1/3/1996	3.0	--	--	--	--	--	2.2	0.22	--	77	130
4/10/1996	7.0	--	--	--	--	--	--	--	--	60	460
7/9/1996	--	--	--	--	--	--	--	--	--	--	--
1/24/1997	--	--	--	--	--	--	--	--	--	--	--
7/23/1997	--	--	--	--	--	--	--	--	--	--	--

**Table 3b**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 0752**

Date Sampled	Mang (mg/l)	Zinc (mg/l)	Ethanol 8260B (µg/l)	Nickel (mg/l)	Cadmium (mg/l)	Chromium (mg/l)	BOD (mg/l)	Nitrate (mg/l)	TOG (mg/l)	T-Iron (mg/l)	B- Alkalinity (mg/l)
<b>MW-2 continued</b>											
1/26/1998	--	--	--	--	--	--	--	--	--	--	--
7/3/1998	--	--	--	--	--	--	--	--	--	--	--
7/11/2003	--	--	ND<500	--	--	--	--	--	--	--	--
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<50	--	--	--	--	--	--	--	--
<b>MW-3</b>											
1/3/1996	--	--	--	--	--	--	--	--	--	--	--
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<20000	--	--	--	--	--	--	--	--
<b>MW-4</b>											
2/4/2004	--	--	ND<10000	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<5000	--	--	--	--	--	--	--	--
<b>MW-5</b>											
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<50	--	--	--	--	--	--	--	--
<b>MW-6</b>											
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<5000	--	--	--	--	--	--	--	--
<b>MW-7</b>											
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<5000	--	--	--	--	--	--	--	--
<b>MW-8</b>											
2/4/2004	--	--	ND<500	--	--	--	--	--	--	--	--
8/11/2004	--	--	ND<250	--	--	--	--	--	--	--	--



SCALE 1:24,000



**VICINITY MAP**

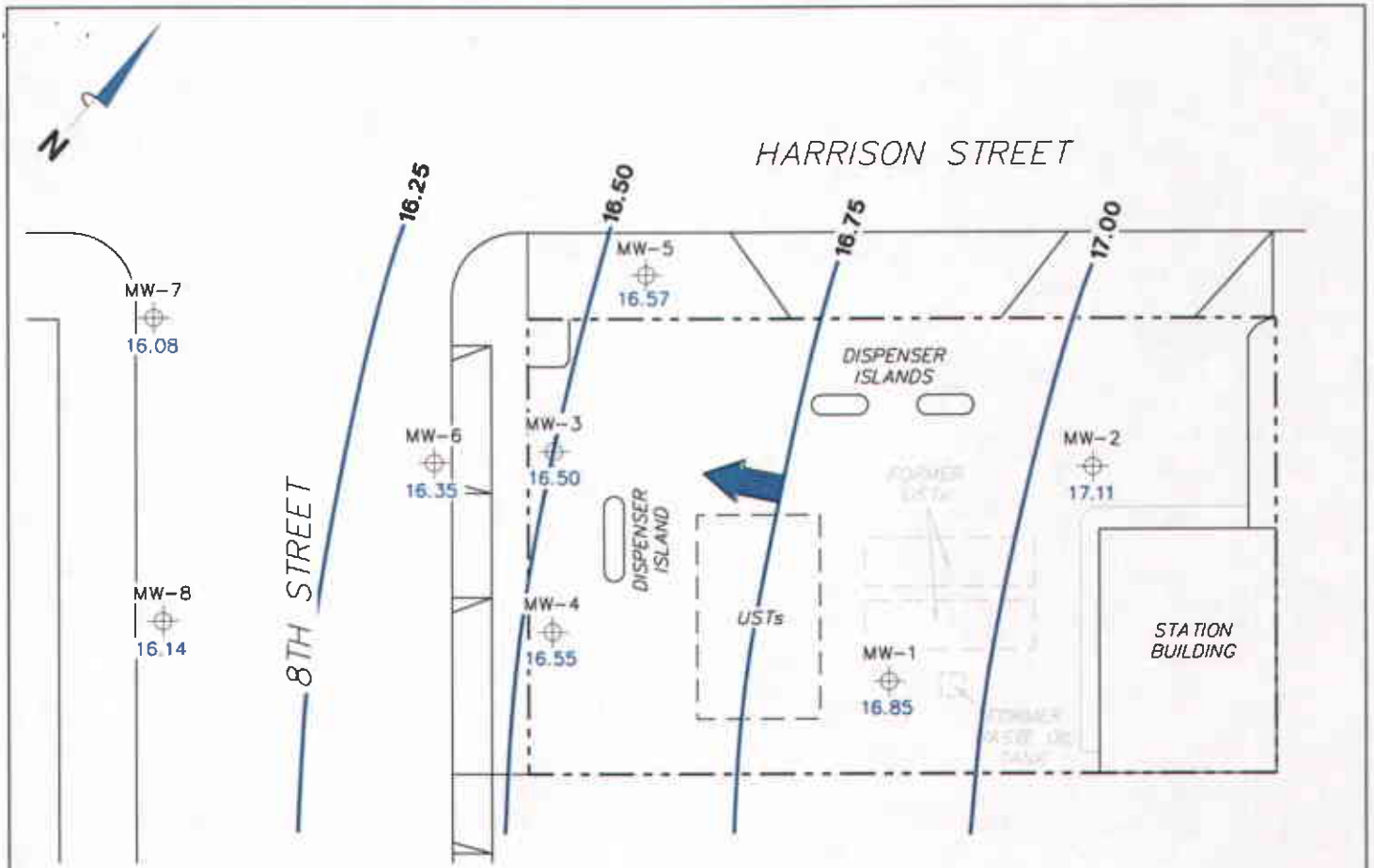
76 Station 0752  
800 Harrison Street  
Oakland, California

SOURCE:  
United States Geological Survey  
7.5 Minute Topographic Map:  
Oakland East & Oakland West  
Quadrangles

**FIGURE 1**






G.S. = 1:1



**NOTES:**

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

**LEGEND**

- MW-8  Monitoring Well with Groundwater Elevation (feet)
- 17.00  Groundwater Elevation Contour
-  General Direction of Groundwater Flow

**GROUNDWATER ELEVATION CONTOUR MAP**  
August 11, 2004

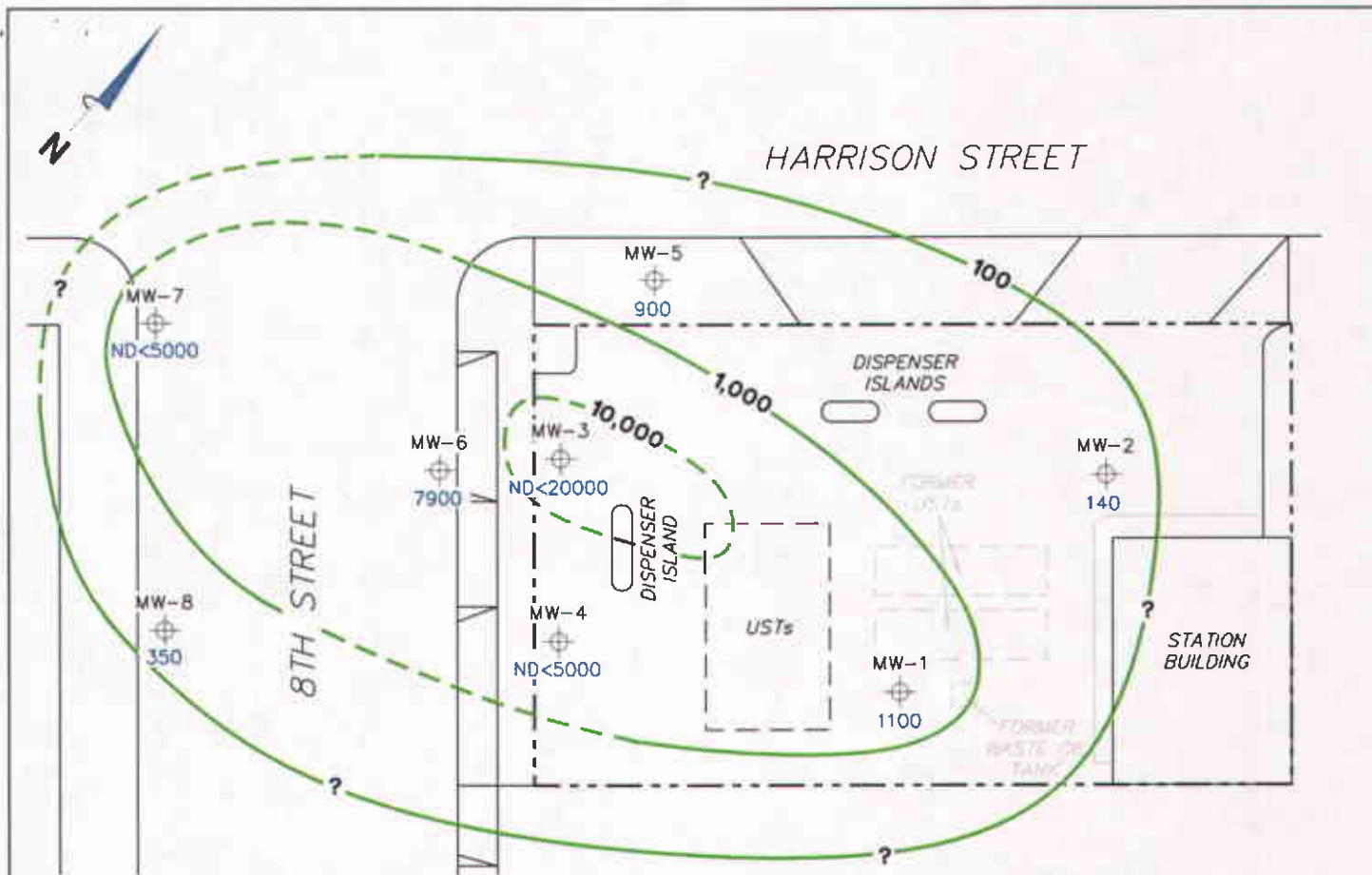
76 Station 0752  
800 Harrison Street  
Oakland, California

PS=1:1 0752-003



**FIGURE 2**







**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. TPHH = total purgeable petroleum hydrocarbons.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Dashes indicate contour based on non-detect at elevated detection limit. Results obtained using EPA Method 8260B.

**LEGEND**

MW-8  Monitoring Well with Dissolved-Phase TPHH Concentration ( $\mu\text{g/l}$ )

 Dissolved-Phase TPHH Contour ( $\mu\text{g/l}$ )

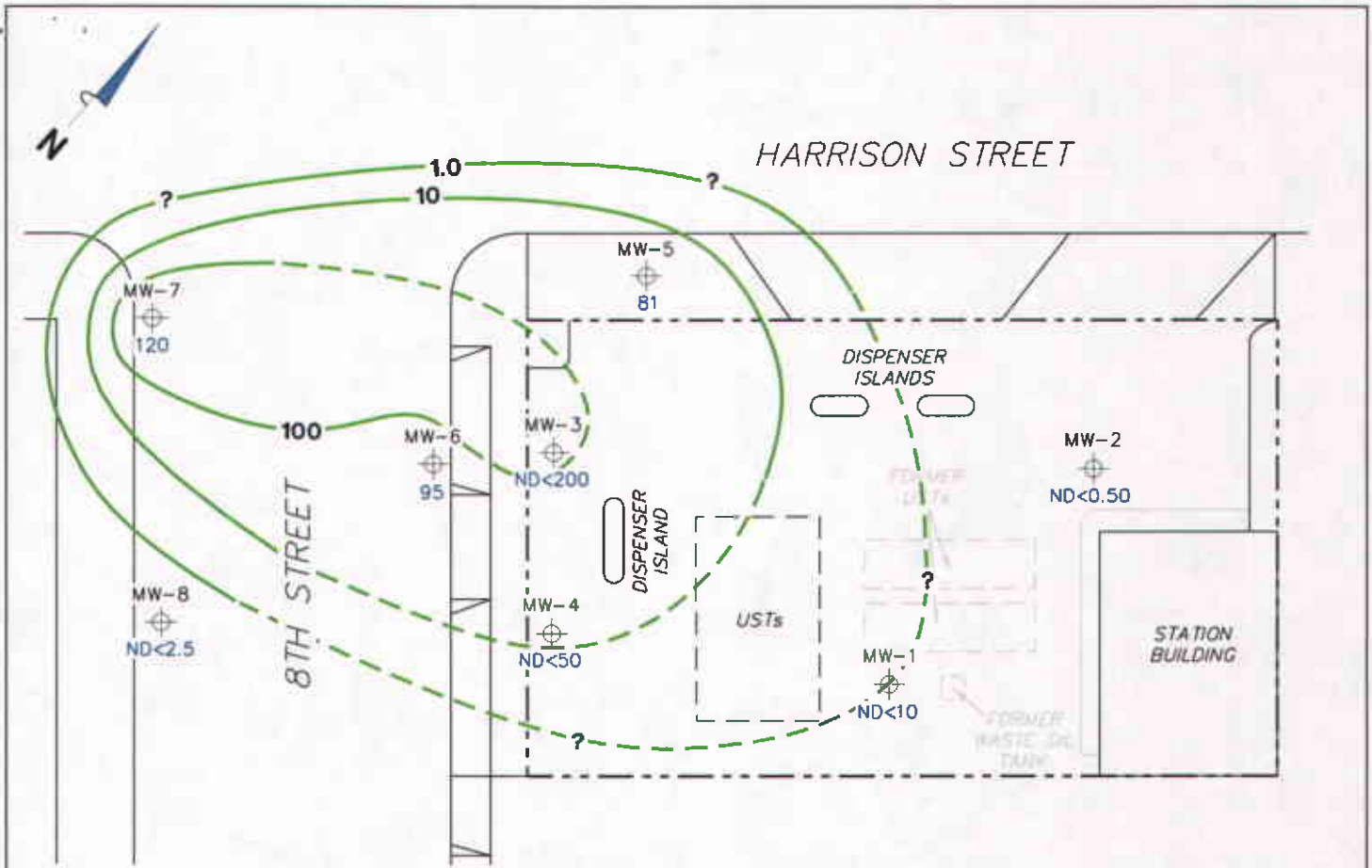
**DISSOLVED-PHASE TPHH CONCENTRATION MAP**  
**August 11, 2004**

76 Station 0752  
 800 Harrison Street  
 Oakland, California

**FIGURE 3**

PS=1:1 0752-003







**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Dashes indicate contour based on non-detect at elevated detection limit.

**LEGEND**

MW-8  Monitoring Well with Dissolved-Phase Benzene Concentration (µg/l)

 100 Dissolved-Phase Benzene Contour (µg/l)

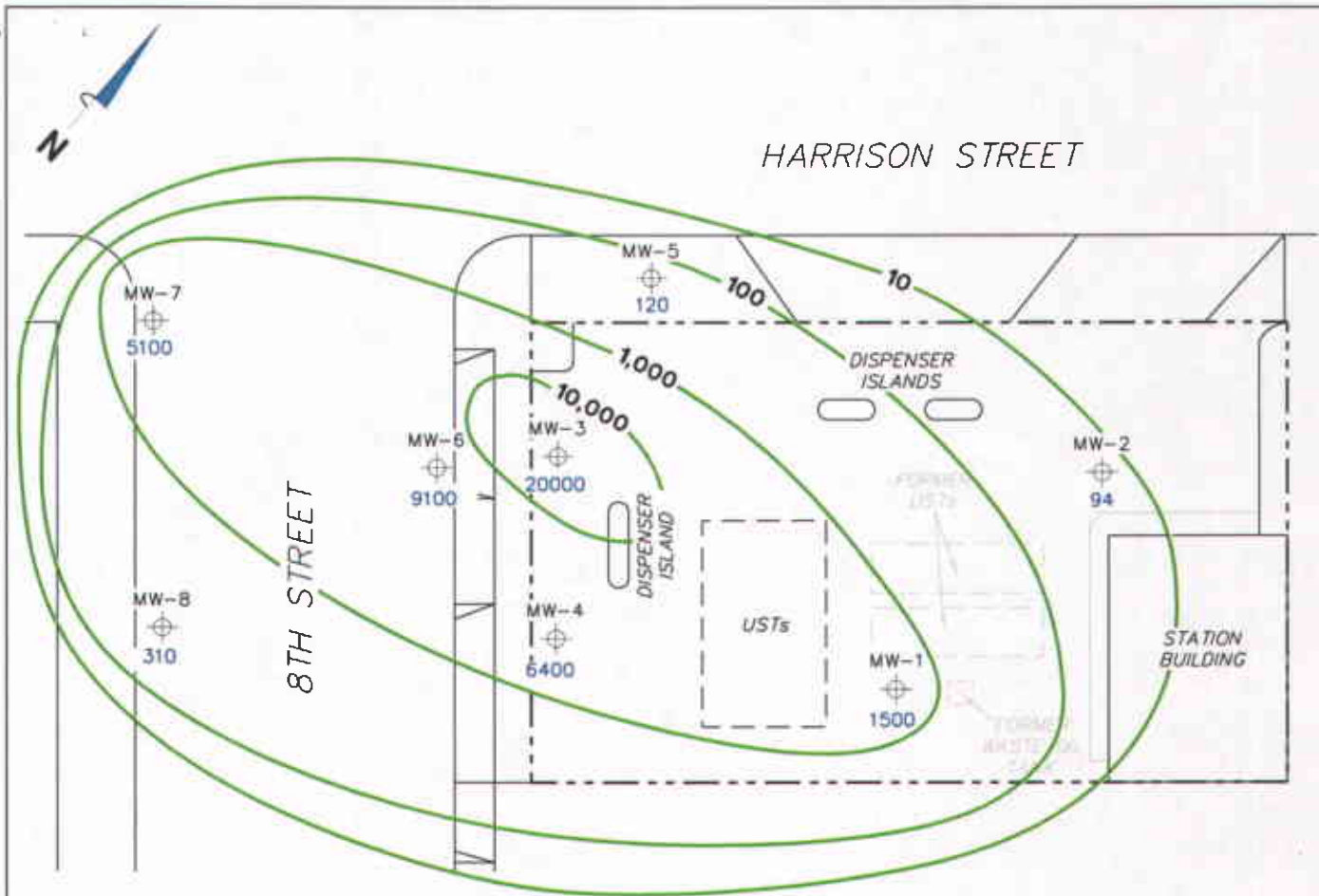
**DISSOLVED-PHASE BENZENE CONCENTRATION MAP**  
August 11, 2004

76 Station 0752  
800 Harrison Street  
Oakland, California



**FIGURE 4**


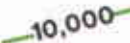
PS:1:1 0752-003



**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. MTBE = methyl tertiary butyl ether. µg/l = micrograms per liter. UST = underground storage tank. Results obtained using EPA Method 8260B.

**LEGEND**

- MW-8  Monitoring Well with Dissolved-Phase MTBE Concentration (µg/l)
-  Dissolved-Phase MTBE Contour (µg/l)

**DISSOLVED-PHASE MTBE CONCENTRATION MAP August 11, 2004**

76 Station 0752  
800 Harrison Street  
Oakland, California



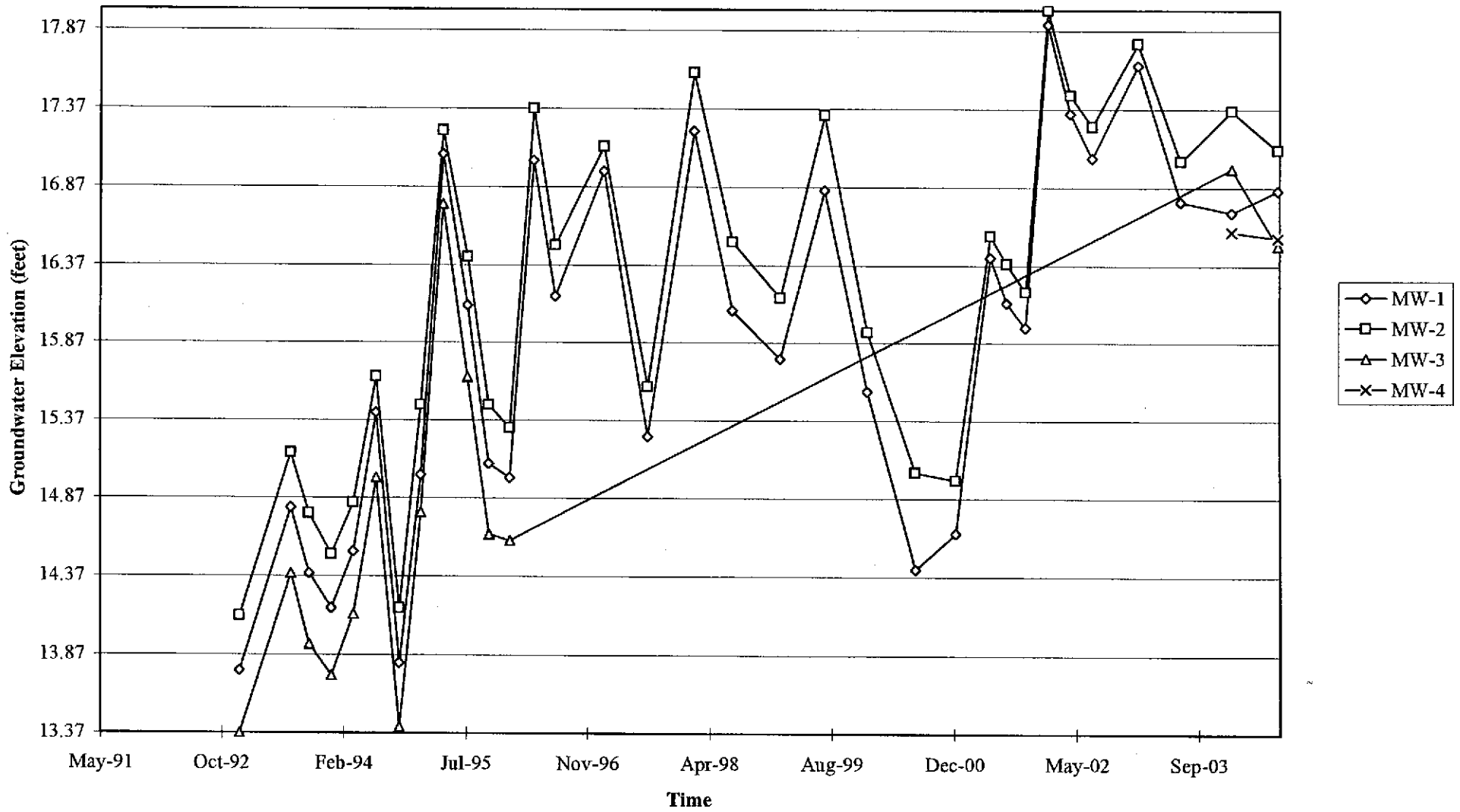
SCALE (FEET)



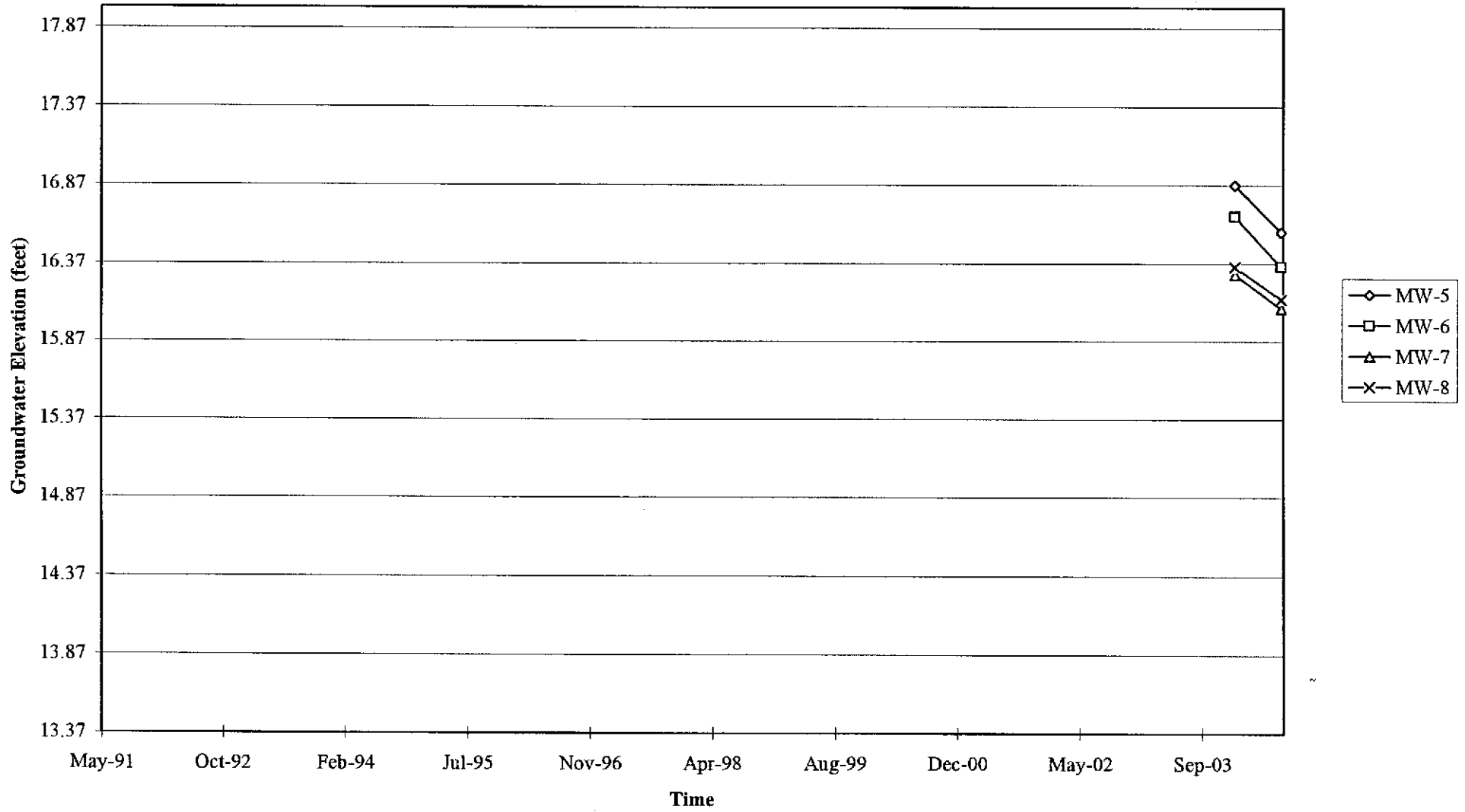
**FIGURE 5**

PS=1:1 0752-003

Groundwater Elevations vs. Time  
76 Station 0752



Groundwater Elevations vs. Time  
76 Station 0752





## GENERAL FIELD PROCEDURES

### **Groundwater Monitoring and Sampling Assignments**

For each site, TRC technicians are provided with a Technical Service Request (TSR) that specifies activities required to complete the groundwater monitoring and sampling assignment for the site. TSRs are based on client directives, instructions from the primary environmental consultant for the site, regulatory requirements, and TRC's previous experience with the site.

### **Fluid Level Measurements**

Initial site activities include determination of well locations based on a site map provided with the TSR. Well boxes are opened and caps are removed. Indications of well or well box damage, or of pressure buildup in the well are noted.

Fluid levels in each well are measured using a coated cloth tape equipped with an electronic interface probe, which distinguishes between liquid phase hydrocarbon (LPH) and water. The depth to LPH (if it is present), to water, and to the bottom of the well are measured from the top of the well casing (surveyors mark or notch if present) to the nearest 0.01 foot. Unless otherwise instructed, a well with less than 0.67 foot between the measured top of water and the measured bottom of the well casing is considered dry, and is not sampled. If the well contains 0.67 foot or more of water, an attempt is made to bail and/or sample as specified on the TSR.

Wells that are found to contain LPH are not purged or sampled. Instead, one casing volume of fluid is bailed from the well and the well is re-sealed. Bailed fluids are placed in a container separate from normal purge water, and properly disposed.

### **Purging and Groundwater Parameter Measurement**

TSR instructions may specify that a well not be purged (no-purge sampling), be purged using low-flow methods, or be purged using conventional pump and/or bail methods. Conventional purging generally consists of pumping or bailing until a minimum of three casing volumes of water have been removed or until the well has been pumped dry. Pumping is generally accomplished using submersible electric or pneumatic diaphragm pumps.

During conventional purging, three groundwater parameters (temperature, pH, and conductivity) are measured after removal of each casing volume. Stabilization of these parameters, to within 10 percent, confirm that sufficient purging has been completed. In some cases, the TSR indicates that other parameters are also to be measured during purging. TRC commonly measures dissolved oxygen (DO), oxidation-reduction potential (ORP), and/or turbidity. Instruments used for groundwater parameter measurement are calibrated daily according to manufacturer's instructions.

Low-flow purging utilizes a bladder or peristaltic pump to remove water from the well at a low rate. Groundwater parameters specified by the TSR are measured continuously until they become stable in general accordance with EPA guidelines.

Purge water is generally collected in labeled drums for disposal. Drums may be left on site for disposal by others, or transported to a collection location for eventual transfer to a licensed treatment or recycling facility. In some cases, purge water may be collected directly from the site by a licensed vacuum truck company, or may be treated on site by an active remediation system, if so directed.

### **Groundwater Sample Collection**

After wells are purged, or not purged, according to TSR instructions, samples are collected for laboratory analysis. For wells that have been purged using conventional pump or bail methods, sampling is conducted after the well has recovered to 80 percent of its original volume or after two hours if the well does not recover to at least 80 percent. If there is insufficient recharge of water in the well after two hours, the well is not sampled.

Samples are collected by lowering a new, disposable, ½-inch to 4-inch polyethylene bottom-fill bailer to just below the water level in the well. The bailer is retrieved and the water sample is carefully transferred to containers specified for the laboratory analytical methods indicated by the TSR. Particular care is given to containers for volatile organic analysis (VOAs) which require filling to zero headspace and fitting with Teflon-sealed caps.

After filling, all containers are labeled with project number (or site number), well designation, sample date, and the samplers initials, and placed in an insulated chest with ice. Samples remain chilled prior to and during transport to a state-certified laboratory for analysis. Sample container descriptions and requested analyses are entered onto a chain-of-custody form in order to provide instructions to the laboratory. The chain-of-custody form accompanies the samples during transportation to provide a continuous record of possession from the field to the laboratory. If a freight or overnight carrier transports the samples, the carrier is noted on the form.

For wells that have been purged using low-flow methods, sample containers are filled from the effluent stream of the bladder or peristaltic pump. In some cases, if so specified by the TSR, samples are taken from the sample ports of actively pumping remediation wells.

### **Sequence of Gauging, Purging, and Sampling**

The sequence in which monitoring activities are conducted are specified on the TSR. In general, wells are gauged beginning with the least-affected well and ending with the well that has highest concentration based on previous analytic results. After all gauging for the site is completed, wells are purged and/or sampled from the least-affected well to the most-affected well.

### **Decontamination**

In order to reduce the possibility of cross-contamination between wells, strict isolation and decontamination procedures are observed. Portable pumps are not used in wells with LPH. Technicians wear nitrile gloves during all gauging, purging and sampling activities. Gloves are changed between wells and more often if warranted. Any equipment that could come in contact with fluids are either dedicated to a particular well, decontaminated prior to each use, or discarded after a single use. Decontamination consists of washing in a solution of Liqui-nox and water and rinsing twice. The final rinse is in deionized water.

### **Exceptions**

Additional tasks or non-standard procedures, if any, that may be requested or required for a particular site, and noted on the site TSR, are documented in field notes on the following pages.





## GROUNDWATER SAMPLING FIELD NOTES

Technician: WJSA  
 Site: 0752 Project No.: 4100001 Date: 8/11/04  
 Well No.: MW-4 Purge Method: DIA  
 Depth to Water (feet): 14.16 Depth to Product (feet): 0  
 Total Depth (feet): 32.33 LPH & Water Recovered (gallons): 6  
 Water Column (feet): 14.17 Casing Diameter (inches): 2"  
 80% Recharge Depth (feet): 19.39 1 Well Volume (gallons): 3

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0805			3	403	19.9	6.69		
			6	406	20.9	6.46		
	0809		9	272	20.2	6.41		
		Static at Time Sampled	Total Gallons Purged		Time Sampled			
		16.65	9		0816			
Comments:								

Well No.: MW-6 Purge Method: DIA  
 Depth to Water (feet): 45.81 Depth to Product (feet): 0  
 Total Depth (feet): 30.82 LPH & Water Recovered (gallons): 0  
 Water Column (feet): 15.01 Casing Diameter (inches): 2"  
 80% Recharge Depth (feet): 18.81 1 Well Volume (gallons): 2

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0820			3	351	20.4	6.48		
			4	362	20.8	6.34		
	0824		6	395	20.4	6.38		
		Static at Time Sampled	Total Gallons Purged		Time Sampled			
		16.00	6		0830			
Comments:								

## GROUNDWATER SAMPLING FIELD NOTES

Technician: L. G. ...  
 Site: 0752 Project No.: 44050001 Date: 8/11/04  
 Well No.: MW-5 Purge Method: O15  
 Depth to Water (feet): 16.38 Depth to Product (feet): 0  
 Total Depth (feet): 31.66 LPH & Water Recovered (gallons): 0  
 Water Column (feet): 15.28 Casing Diameter (Inches): 2"  
 80% Recharge Depth (feet): 19.43 1 Well Volume (gallons): 2

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conduc-tivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0731			2	437	19.4	6.34		
			4	372	20.4	6.29		
	0735		6	385	20.6	6.27		
Static at Time Sampled		Total Gallons Purged			Time Sampled			
16.98		6			0740			
Comments:								

Well No.: MW-3 Purge Method: O19  
 Depth to Water (feet): 16.64 Depth to Product (feet): 0  
 Total Depth (feet): 30.42 LPH & Water Recovered (gallons): 0  
 Water Column (feet): 13.78 Casing Diameter (Inches): 2"  
 80% Recharge Depth (feet): 19.39 1 Well Volume (gallons): 2

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conduc-tivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0749			2	768	20.1	6.33		
			4	644	20.5	6.28		
	0753		6	569	20.3	6.43		
Static at Time Sampled		Total Gallons Purged			Time Sampled			
16.95		6			0800			
Comments:								

## GROUNDWATER SAMPLING FIELD NOTES

Technician: W. DeW

Site: 0752

Project No.: 91050001

Date: 8/11/84

Well No.: MW-1

Purge Method: 019

Depth to Water (feet): 17.84

Depth to Product (feet): 0

Total Depth (feet): 33.60

LPH & Water Recovered (gallons): 0

Water Column (feet): 15.76

Casing Diameter (Inches): 2"

80% Recharge Depth (feet): 20.99

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0657			3	224	19.0	7.82		
			6	298	19.6	7.23		
	0703		9	371	19.5	6.82		
Static at Time Sampled			Total Gallons Purged			Time Sampled		
18.17			9			0710		
Comments:								

Well No.: MW-2

Purge Method: 019

Depth to Water (feet): 17.61

Depth to Product (feet): 0

Total Depth (feet): 30.18

LPH & Water Recovered (gallons): 0

Water Column (feet): 12.57

Casing Diameter (Inches): 2"

80% Recharge Depth (feet): 20.12

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0714			2	666	19.4	6.37		
			4	646	19.5	6.23		
	0718		6	636	19.7	6.23		
Static at Time Sampled			Total Gallons Purged			Time Sampled		
17.82			6			0728		
Comments:								

# GROUNDWATER SAMPLING FIELD NOTES

Technician: UNDEL

Date: 8/11/04

Site: 0752

Project No.: 41050001

Well No.: MW-7

Purge Method: DIA

Depth to Water (feet): 16.12

Depth to Product (feet): 0

Total Depth (feet): 31.38

LPH & Water Recovered (gallons): 0

Water Column (feet): 15.26

Casing Diameter (inches): 2"

20% Recharge Depth (feet): 19.17

Well Volume (gallons): 2

Well No.	Depth (feet)	Volume Pumped (gallons)	Conductivity (µmhos/cm)	Temperature (°C)	pH	Time Sampled
0759	2	325	20.5	6.65		
	4	350	20.7	6.48		
	6	378	20.6	6.44		
0908	6					
06-29	6				0918	

Well No.: MW-8

Purge Method: DIA

Depth to Water (feet): 15.86

Depth to Product (feet): 0

Total Depth (feet): 27.98

LPH & Water Recovered (gallons): 0

Water Column (feet): 12.12

Casing Diameter (inches): 2"

20% Recharge Depth (feet): 18.28

Well Volume (gallons): 2

Well No.	Depth (feet)	Volume Pumped (gallons)	Conductivity (µmhos/cm)	Temperature (°C)	pH	Time Sampled
0841	2	464	26.1	6.57		
	4	455	20.5	6.38		
	6	436	20.5	6.27		
0845	6					
06-28	6				0852	

Comments:

TRC Alton Geoscience- Irvine

August 26, 2004

21 Technology Drive  
Irvine, CA 92718

Attn.: Anju Farfan

Project#: 41050001/FA20

Project: Conoco Phillips #0752

Site: 800 Harrison St., Oakland

Attached is our report for your samples received on 08/12/2004 17:46

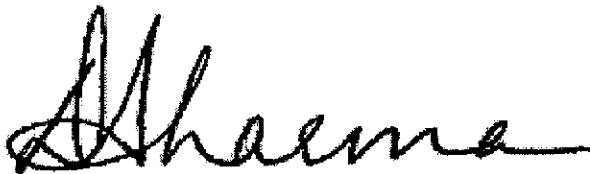
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 09/26/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: [dsharma@stl-inc.com](mailto:dsharma@stl-inc.com)

Sincerely,



Dimple Sharma  
Project Manager

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* [www.stl-inc.com](http://www.stl-inc.com) \* CA DHS ELAP# 2496

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-5	08/11/2004 07:40	Water	1
MW-3	08/11/2004 08:00	Water	2
MW-4	08/11/2004 08:16	Water	3
MW-2	08/11/2004 07:28	Water	4
MW-1	08/11/2004 07:10	Water	5
MW-6	08/11/2004 08:30	Water	6
MW-7	08/11/2004 09:18	Water	7
MW-8	08/11/2004 08:52	Water	8

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

08/25/2004 08:53

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-5	Lab ID:	2004-08-0351 - 1
Sampled:	08/11/2004 07:40	Extracted:	8/19/2004 09:54
Matrix:	Water	QC Batch#:	2004/08/19-1E.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	900	50	ug/L	1.00	08/19/2004 09:54	
Benzene	81	0.50	ug/L	1.00	08/19/2004 09:54	
Toluene	14	0.50	ug/L	1.00	08/19/2004 09:54	
Ethylbenzene	2.8	0.50	ug/L	1.00	08/19/2004 09:54	
Total xylenes	11	1.0	ug/L	1.00	08/19/2004 09:54	
Methyl tert-butyl ether (MTBE)	120	0.50	ug/L	1.00	08/19/2004 09:54	
Ethanol	ND	50	ug/L	1.00	08/19/2004 09:54	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	102.1	72-128	%	1.00	08/19/2004 09:54	
Toluene-d8	94.7	80-113	%	1.00	08/19/2004 09:54	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

08/25/2004 08:53



**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B Test(s): 8260FAB  
 Sample ID: MW-3 Lab ID: 2004-08-0351 - 2  
 Sampled: 08/11/2004 08:00 Extracted: 8/19/2004 10:17  
 Matrix: Water QC Batch#: 2004/08/19-1E.64  
 Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	20000	ug/L	400.00	08/19/2004 10:17	
Benzene	ND	200	ug/L	400.00	08/19/2004 10:17	
Toluene	ND	200	ug/L	400.00	08/19/2004 10:17	
Ethylbenzene	ND	200	ug/L	400.00	08/19/2004 10:17	
Total xylenes	ND	400	ug/L	400.00	08/19/2004 10:17	
Methyl tert-butyl ether (MTBE)	20000	200	ug/L	400.00	08/19/2004 10:17	
Ethanol	ND	20000	ug/L	400.00	08/19/2004 10:17	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.5	72-128	%	400.00	08/19/2004 10:17	
Toluene-d8	97.1	80-113	%	400.00	08/19/2004 10:17	

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive  
Irvine, CA 92718  
Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20  
Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B Test(s): 8260FAB  
Sample ID: MW-4 Lab ID: 2004-08-0351 - 3  
Sampled: 08/11/2004 08:16 Extracted: 8/19/2004 10:39  
Matrix: Water QC Batch#: 2004/08/19-1E.64  
Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	5000	ug/L	100.00	08/19/2004 10:39	
Benzene	ND	50	ug/L	100.00	08/19/2004 10:39	
Toluene	ND	50	ug/L	100.00	08/19/2004 10:39	
Ethylbenzene	ND	50	ug/L	100.00	08/19/2004 10:39	
Total xylenes	ND	100	ug/L	100.00	08/19/2004 10:39	
Methyl tert-butyl ether (MTBE)	6400	50	ug/L	100.00	08/19/2004 10:39	
Ethanol	ND	5000	ug/L	100.00	08/19/2004 10:39	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	101.3	72-128	%	100.00	08/19/2004 10:39	
Toluene-d8	101.3	80-113	%	100.00	08/19/2004 10:39	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

08/25/2004 08:53

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-2	Lab ID:	2004-08-0351 - 4
Sampled:	08/11/2004 07:28	Extracted:	8/20/2004 22:58
Matrix:	Water	QC Batch#:	2004/08/20-2D.66

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	140	50	ug/L	1.00	08/20/2004 22:58	
Benzene	ND	0.50	ug/L	1.00	08/20/2004 22:58	
Toluene	0.60	0.50	ug/L	1.00	08/20/2004 22:58	
Ethylbenzene	ND	0.50	ug/L	1.00	08/20/2004 22:58	
Total xylenes	ND	1.0	ug/L	1.00	08/20/2004 22:58	
Methyl tert-butyl ether (MTBE)	94	0.50	ug/L	1.00	08/20/2004 22:58	
Ethanol	ND	50	ug/L	1.00	08/20/2004 22:58	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	107.3	72-128	%	1.00	08/20/2004 22:58	
Toluene-d8	103.0	80-113	%	1.00	08/20/2004 22:58	

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B Test(s): 8260FAB  
 Sample ID: MW-1 Lab ID: 2004-08-0351 - 5  
 Sampled: 08/11/2004 07:10 Extracted: 8/19/2004 11:24  
 Matrix: Water QC Batch#: 2004/08/19-1E.64  
 Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1100	1000	ug/L	20.00	08/19/2004 11:24	dp
Benzene	ND	10	ug/L	20.00	08/19/2004 11:24	
Toluene	ND	10	ug/L	20.00	08/19/2004 11:24	
Ethylbenzene	ND	10	ug/L	20.00	08/19/2004 11:24	
Total xylenes	ND	20	ug/L	20.00	08/19/2004 11:24	
Methyl tert-butyl ether (MTBE)	1500	10	ug/L	20.00	08/19/2004 11:24	
Ethanol	ND	1000	ug/L	20.00	08/19/2004 11:24	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.7	72-128	%	20.00	08/19/2004 11:24	
Toluene-d8	99.6	80-113	%	20.00	08/19/2004 11:24	

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine  
Attn.: Anju Farfan

21 Technology Drive  
Irvine, CA 92718  
Phone: (949) 341-7440 Fax: (949) 753-0111  
Project: 41050001/FA20  
Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-6	Lab ID: 2004-08-0351 - 6
Sampled: 08/11/2004 08:30	Extracted: 8/21/2004 15:58
Matrix: Water	QC Batch#: 2004/08/21-1D.62
Analysis Flag: o ( See Legend and Note Section )	

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	7900	5000	ug/L	100.00	08/21/2004 15:58	
Benzene	95	50	ug/L	100.00	08/21/2004 15:58	
Toluene	ND	50	ug/L	100.00	08/21/2004 15:58	
Ethylbenzene	ND	50	ug/L	100.00	08/21/2004 15:58	
Total xylenes	ND	100	ug/L	100.00	08/21/2004 15:58	
Methyl tert-butyl ether (MTBE)	9100	50	ug/L	100.00	08/21/2004 15:58	
Ethanol	ND	5000	ug/L	100.00	08/21/2004 15:58	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	111.9	72-128	%	100.00	08/21/2004 15:58	
Toluene-d8	105.4	80-113	%	100.00	08/21/2004 15:58	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

08/25/2004 08:53

**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B Test(s): 8260FAB  
 Sample ID: MW-7 Lab ID: 2004-08-0351 - 7  
 Sampled: 08/11/2004 09:18 Extracted: 8/19/2004 12:31  
 Matrix: Water QC Batch#: 2004/08/19-1E.64  
 Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	5000	ug/L	100.00	08/19/2004 12:31	
Benzene	120	50	ug/L	100.00	08/19/2004 12:31	
Toluene	ND	50	ug/L	100.00	08/19/2004 12:31	
Ethylbenzene	ND	50	ug/L	100.00	08/19/2004 12:31	
Total xylenes	ND	100	ug/L	100.00	08/19/2004 12:31	
Methyl tert-butyl ether (MTBE)	5100	50	ug/L	100.00	08/19/2004 12:31	
Ethanol	ND	5000	ug/L	100.00	08/19/2004 12:31	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.6	72-128	%	100.00	08/19/2004 12:31	
Toluene-d8	98.8	80-113	%	100.00	08/19/2004 12:31	

**Gas/BTEX Fuel Oxygenates by 8260B**

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Irvine, CA 92718  
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Project: 41050001/FA20  
Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

Prep(s): 5030B Test(s): 8260FAB  
Sample ID: MW-8 Lab ID: 2004-08-0351 - 8  
Sampled: 08/11/2004 08:52 Extracted: 8/21/2004 16:20  
Matrix: Water QC Batch#: 2004/08/21-1D.62  
Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	350	250	ug/L	5.00	08/21/2004 16:20	
Benzene	ND	2.5	ug/L	5.00	08/21/2004 16:20	
Toluene	ND	2.5	ug/L	5.00	08/21/2004 16:20	
Ethylbenzene	ND	2.5	ug/L	5.00	08/21/2004 16:20	
Total xylenes	ND	5.0	ug/L	5.00	08/21/2004 16:20	
Methyl tert-butyl ether (MTBE)	310	2.5	ug/L	5.00	08/21/2004 16:20	
Ethanol	ND	250	ug/L	5.00	08/21/2004 16:20	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	108.1	72-128	%	5.00	08/21/2004 16:20	
Toluene-d8	101.6	80-113	%	5.00	08/21/2004 16:20	

**Gas/BTEX Fuel Oxygenates by 8260B**

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Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/08/19-1E.64-007

Water

Test(s): 8260FAB

QC Batch # 2004/08/19-1E.64

Date Extracted: 08/19/2004 07:07

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	08/19/2004 07:07	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	08/19/2004 07:07	
Benzene	ND	0.5	ug/L	08/19/2004 07:07	
Toluene	ND	0.5	ug/L	08/19/2004 07:07	
Ethylbenzene	ND	0.5	ug/L	08/19/2004 07:07	
Total xylenes	ND	1.0	ug/L	08/19/2004 07:07	
Ethanol	ND	50	ug/L	08/19/2004 07:07	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	102.0	72-128	%	08/19/2004 07:07	
Toluene-d8	96.0	80-113	%	08/19/2004 07:07	

Severn Trent Laboratories, Inc.

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08/25/2004 08:53



**Gas/BTEX Fuel Oxygenates by 8260B**

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Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/08/20-2D.66-018

Water

Test(s): 8260FAB

QC Batch # 2004/08/20-2D.66

Date Extracted: 08/20/2004 18:18

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	08/20/2004 18:18	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	08/20/2004 18:18	
Benzene	ND	0.5	ug/L	08/20/2004 18:18	
Toluene	ND	0.5	ug/L	08/20/2004 18:18	
Ethylbenzene	ND	0.5	ug/L	08/20/2004 18:18	
Total xylenes	ND	1.0	ug/L	08/20/2004 18:18	
Ethanol	ND	50	ug/L	08/20/2004 18:18	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	103.8	72-128	%	08/20/2004 18:18	
Toluene-d8	98.8	80-113	%	08/20/2004 18:18	

**Gas/BTEX Fuel Oxygenates by 8260B**

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Irvine, CA 92718

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Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/08/21-1D.62-052

Water

Test(s): 8260FAB

QC Batch # 2004/08/21-1D.62

Date Extracted: 08/21/2004 09:52

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	08/21/2004 09:52	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	08/21/2004 09:52	
Benzene	ND	0.5	ug/L	08/21/2004 09:52	
Toluene	ND	0.5	ug/L	08/21/2004 09:52	
Ethylbenzene	ND	0.5	ug/L	08/21/2004 09:52	
Total xylenes	ND	1.0	ug/L	08/21/2004 09:52	
Ethanol	ND	50	ug/L	08/21/2004 09:52	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	102.2	72-128	%	08/21/2004 09:52	
Toluene-d8	107.4	80-113	%	08/21/2004 09:52	

**Gas/BTEX Fuel Oxygenates by 8260B**

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Irvine, CA 92718  
Phone: (949) 341-7440 Fax: (949) 753-0111  
Project: 41050001/FA20  
Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260FAB

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/08/19-1E.64**

LCS 2004/08/19-1E.64-022

Extracted: 08/19/2004

Analyzed: 08/19/2004 06:22

LCSD 2004/08/19-1E.64-045

Extracted: 08/19/2004

Analyzed: 08/19/2004 06:45

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	21.6	22.2	25	86.4	88.8	2.7	65-165	20		
Benzene	23.1	22.7	25	92.4	90.8	1.7	69-129	20		
Toluene	23.3	22.5	25	93.2	90.0	3.5	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	478	473	500	95.6	94.6		72-128			
Toluene-d8	516	496	500	103.2	99.2		80-113			

**Gas/BTEX Fuel Oxygenates by 8260B**

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Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260FAB

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/08/20-2D.66**

LCS 2004/08/20-2D.66-041

Extracted: 08/20/2004

Analyzed: 08/20/2004 18:41

LCSD 2004/08/20-2D.66-042

Extracted: 08/20/2004

Analyzed: 08/20/2004 19:03

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	22.2	24.2	25	88.8	96.8	8.6	65-165	20		
Benzene	26.1	26.0	25	104.4	104.0	0.4	69-129	20		
Toluene	25.3	24.0	25	101.2	96.0	5.3	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	433	428	500	86.6	85.6		72-128			
Toluene-d8	497	488	500	99.4	97.6		80-113			

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**Gas/BTEX Fuel Oxygenates by 8260B**

TRC Alton Geoscience- Irvine

Attn.: Anju Farfan

21 Technology Drive  
Irvine, CA 92718  
Phone: (949) 341-7440 Fax: (949) 753-0111

Project: 41050001/FA20  
Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260FAB

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/08/21-1D.62**

LCS 2004/08/21-1D.62-033

Extracted: 08/21/2004

Analyzed: 08/21/2004 08:33

LCSD 2004/08/21-1D.62-055

Extracted: 08/21/2004

Analyzed: 08/21/2004 08:55

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	24.1	25.0	25	96.4	100.0	3.7	65-165	20		
Benzene	25.3	24.9	25	101.2	99.6	1.6	69-129	20		
Toluene	25.9	27.2	25	103.6	108.8	4.9	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	478	465	500	95.6	93.0		72-128			
Toluene-d8	521	514	500	104.2	102.8		80-113			

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08/25/2004 08:53

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Project: 41050001/FA20

Conoco Phillips #0752

Received: 08/12/2004 17:46

Site: 800 Harrison St., Oakland

---

**Legend and Notes**

---

**Analysis Flag**

o

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

**Result Flag**

dp

Sample contains discrete peak in gasoline range.

Severn Trent Laboratories, Inc.

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08/25/2004 08:53

STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- DB-0351

Checklist completed by: (initials) JB Date: 8, 13 /04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_

Chain of custody agrees with sample labels? Yes  No \_\_\_

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes  No \_\_\_

Container/Temp Blank temperature in compliance ( $4^{\circ}C \pm 2$ )? Temp: 6 °C Yes  No \_\_\_

Ice Present Yes  No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted Yes  No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc -Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_

\_\_\_\_\_

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

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ /04

Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ML

STL-San Francisco

1220 Quarry Lane

Pleasanton, CA 94566

(925) 484-1919 (925) 484-1096 fax

# ConocoPhillips Chain Of Custody Record

90049

ConocoPhillips Site Manager:

INVOICE REMITTANCE ADDRESS:

CONOCOPHILLIPS  
Attn: Dee Hutchinson  
3675 Scott Harbo, Suite 200  
San Antonio, TX 78204

ConocoPhillips Work Order Number:

TRC 500

ConocoPhillips Cost Object:

DATE: 8/11/04

PAGE: 1 of 1

## 2004-08-0351

SAMPLING COMPANY: <b>TRC</b>		Valid Value ID:	CONOCOPHILLIPS SITE NUMBER: <b>0752</b>		GLOBAL ID NO.: <b>TD600101486</b>
ADDRESS: <b>21 Technology Drive, Irvine CA 92618</b>		SITE ADDRESS (Street and City): <b>800 HARRISON ST. OAKLAND</b>		CONOCOPHILLIPS SITE MANAGER: <b>THOMAS KESER</b>	
PROJECT CONTACT (Hardcopy or PDF Report to): <b>Anju Farfan</b>		EDF DELIVERABLE TO (RP or Designee): <b>Peter Thomson, TRC</b>		PHONE NO.: <b>949-341-7408</b>	E-MAIL: <b>pthomson@trcsolutions.com</b>
TELEPHONE: <b>949-341-7440</b>	FAX: <b>949-753-0111</b>	E-MAIL: <b>afarfan@trcsolutions.com</b>	LAB USE ONLY		
SAMPLER NAME(S) (Print): <b>UMEN</b>		CONSULTANT PROJECT NUMBER: <b>41050001/FA20</b>		REQUESTED ANALYSES	

TURNAROUND TIME (CALENDAR DAYS):  
 14 DAYS  7 DAYS  72 HOURS  48 HOURS  24 HOURS  LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDF IS NEEDED

Sample Identification/Field Point		SAMPLING		MATRIX	NO. OF CONT.	8015m - TPHd Extractable	8260B - TPHg/BTEX/MBE	8260B - TPHg / BTEX / 8 Oxygenates	8260B - TPHg / BTEX / 8 oxygenates + methanol (8015M)	8260B - Full Scan VOCs (does not include oxygenates)	8270C - Semi-Volatiles	8015M / 8021B - TPHg/BTEX/MBE	Lead <input type="checkbox"/> Total <input type="checkbox"/> DTCLP <input type="checkbox"/>	TEMPERATURE ON RECEIPT C°
MLD-5	8/11/04	0740	GL		5									
MLD-3		0740												
MLD-4		0716												
MLD-2		0728												
MLD-1		0716												
MLD-6		0800												
MLD-7		0818												
MLD-8		0852												

FIELD NOTES:

Container/Preservative or PID Readings or Laboratory Notes

Relinquished by: (Signature) 	Received by: (Signature) 	Date: <b>8/11/04</b>	Time: <b>1615</b>
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <b>8/12/04</b>	Time: <b>1017</b>
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <b>8/12/04</b>	Time: <b>1746</b>



## **STATEMENTS**

### **Purge Water Disposal**

Non-hazardous groundwater produced during purging and sampling was accumulated at TRC's groundwater monitoring facility at Concord, California, for transportation by Onyx Transportation, Inc., to the ConocoPhillips Refinery at Rodeo, California. Disposal at the Rodeo facility was authorized by ConocoPhillips in accordance with "ESD Standard Operating Procedures - Water Quality and Compliance", as revised on February 7, 2003. Documentation of compliance with ConocoPhillips requirements is provided by an ESD Form R-149, which is on file at TRC's Concord Office. Purge water suspected of containing potentially hazardous material, such as liquid-phase hydrocarbons, was accumulated separately in a drum for transportation and disposal by Filter Recycling, Inc.

### **Limitations**

The fluid level monitoring and groundwater sampling activities summarized in this report have been performed under the responsible charge of a California Registered Geologist or Registered Civil Engineer and have been conducted in accordance with current practice and the standard of care exercised by geologists and engineers performing similar tasks in this area. No warranty, express or implied, is made regarding the conclusions and professional opinions presented in this report. The conclusions are based solely upon an analysis of the observed conditions. If actual conditions differ from those described in this report, our office should be notified.