



R0 2444

76 Broadway  
Sacramento, CA 95818  
phone 916.558.7676  
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Alameda County

AUG 05 2005

Environmental Health

August 2, 2005

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

Re: **Document Transmittal**  
Fuel Leak Case  
76 Station #7124  
10151 International Blvd.  
Oakland, CA

Dear Mr. Hwang:

Please find attached Secor's *Quarterly Summary Report*, dated 8/3/05, and TRC's *Quarterly Monitoring Report*, dated 7/14/05 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 are 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: Tom Potter, Secor



SECOR  
INTERNATIONAL  
INCORPORATED

3017 Kigore Road, Suite 100  
Rancho Cordova, CA 95670  
916-861-0400 TEL  
916-861-0430 FAX

August 3, 2005

**Alameda County**

**AUG 05 2005**

**Environmental Health**

Mr. Donald Hwang  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway Suite 250  
Alameda, CA 94502

RE: **Quarterly Summary and Monitoring Report – Second Quarter 2005**  
SECOR Project No.: 77CP.60008.01.7124

Dear Mr. Hwang:

On behalf of ConocoPhillips, SECOR International Incorporated (SECOR) is forwarding the quarterly summary report for the following location:

**Service Station**

**Location**

76 Service Station No. 7124

10151 International Blvd  
Oakland, California

If there are questions or comments regarding this quarterly summary report, please contact me at (916) 861-0400.

Sincerely,  
**SECOR International Incorporated**

Thomas M. Potter  
Project Scientist

Attachments: *SECOR's Quarterly Summary Report – Second Quarter 2005.*

cc: Mr. Thomas Kosel, ConocoPhillips

**QUARTERLY SUMMARY REPORT  
Second Quarter 2005**

76 Service Station No. 7124  
10151 East 14th Street  
Oakland, California

City/County ID #: Oakland

County: Alameda

**SITE DESCRIPTION**

The site is currently an active 76 Service Station located on the northwestern corner of the intersection of 14th Street and 102nd Avenue in Oakland, California. Site facilities include three underground storage tanks (USTs) and associated piping and fuel dispensers.

**PREVIOUS ASSESSMENT**

On March 22, 2000, SECOR supervised the removal and replacement of product lines and dispensers by Balch Petroleum (Balch) of Milpitas, California. Soil samples collected from beneath the dispensers and product lines revealed the presence of total petroleum hydrocarbons as gasoline (TPHg) at a maximum concentration of 6,200 milligrams per kilogram (mg/kg), MtBE at a maximum concentration of 120 mg/kg, and benzene at a maximum concentration of 7.4 mg/kg. Excavation and sampling activities were observed and approved by Inspector Gomez of the City of Oakland Fire Services Agency (COFSA).

On March 27, 2000, SECOR observed the over-excavation of approximately 60 cubic yards of soil from the beneath those portions of the dispensers and product lines where soil samples with elevated concentrations of petroleum hydrocarbons were located. Areas measuring approximately 8-10 feet long by 8-10 feet wide were over-excavated to an approximate depth of 8 feet below ground surface (bgs) in each of these areas. Additional over-excavation in these areas was not possible due to their proximity to the footings of the service station canopy. TPHg was detected in 2 of the 3 samples at a maximum concentration of 108 mg/kg; benzene was detected in 1 of the 3 samples at a maximum concentration of 0.162 mg/kg; and MtBE was detected in all 3 samples at a maximum concentration of 43.8 mg/kg. Lead was not detected at or above laboratory reporting limits in any samples.

During February 2002, SECOR supervised the installation of four on-Site groundwater monitor wells. Prior to well installation, all borings were advanced to 26.5 feet bgs, and subsurface soil samples were collected every five feet. Soil samples were analyzed for gasoline range organics (GRO), BTEX, and fuel oxygenates via Method 8260B. The maximum reported concentrations were 42 mg/kg GRO, 0.36 mg/kg ethylbenzene, 0.26 mg/kg xylenes, and 1.2 mg/kg MtBE.

## **SENSITIVE RECEPTORS**

During third quarter 2004 SECOR completed a ½-mile radius agency receptor survey and obtained an Environmental Data Resources (EDR) radius map for the site from Environmental Data Resources, Incorporated. The agency survey identified 2 industrial supply wells, 3 cathodic protection wells, and 2 wells of unknown type within the search radius. The survey also identified 12 wells of unknown type that could not be located precisely because the records on file with DWR did not include this information. These wells may or may not be located within the search radius. The EDR radius map did not identify any water supply wells within the search radius but did identify two water supply wells within one mile of the site.

## **MONITORING AND SAMPLING**

The site has been monitored and sampled since third quarter 2002. Currently, four wells are monitored quarterly (MW-1 through MW-4). Samples are analyzed for total purgeable petroleum hydrocarbons (TPPH), BTEX, and the fuel oxygenates tert-butyl alcohol (TBA), MtBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (EtBE), tert-amyl methyl ether (TAME), 1,2-dichloroethane (1,2-DCA), ethylene di-bromide (EDB), and ethanol by EPA Method 8260B.

## **DISCUSSION**

During the second quarter 2005, depth to groundwater ranged between 14.38 and 16.63 feet bgs, which was in range of historical levels. Historical groundwater depths have been reported between 12.83 feet and 18.66 feet bgs. The direction of groundwater flow was toward the west at a gradient of 0.012 feet/foot.

Evaluation of dissolved concentrations through the second quarter 2005 indicates that the highest concentrations of residual petroleum hydrocarbons and MtBE continue to be detected in on-site wells MW-3 and MW-4. TPPH was reported at a maximum concentration in well MW-3 this quarter at 1,900 µg/L. The dissolved plume remains undefined by the existing monitoring well network.

On October 14, 2004, SECOR submitted a workplan for the installation of monitoring wells offsite to delineate the dissolved phase hydrocarbons in groundwater. However, in a letter dated April 12, 2005, the Alameda County Environmental Health Services (ACEHS) disapproved the workplan stating that it was premature to install more monitoring wells without additional groundwater sampling to determine the location of the plume for optimal well locations. Therefore, an addendum to the October 14, 2004 workplan will be prepared during the third quarter 2005.

## **CHARACTERIZATION STATUS**

Contamination in soil is adequately delineated. The highest concentrations of residual TPHg and MtBE contamination are localized in the area of the northern dispenser island. The extent of dissolved contamination is undefined in the downgradient (northwest) direction. MW-3 and MW-4 contain elevated concentrations of TPPH and MtBE.

## REMEDIATION STATUS

Currently, there is no active remediation at this site.

## RECENT SUBMITTALS/CORRESPONDENCE

### Submitted:

*Quarterly Summary and Monitoring Report – First Quarter 2005*, dated April 25, 2005.

### Received:

Disapproval letter for the *October 14, 2004 Workplan for Additional Off-Site Monitoring Well Installation*, dated April 12, 2005.

## WASTE DISPOSAL SUMMARY

The volume of purged groundwater generated and disposed of during the quarterly groundwater monitoring event is documented in TRC's *Quarterly Monitoring Report, April through June 2005*, dated July 14, 2005 (Attachment 1).

## THIS QUARTER ACTIVITIES (Second Quarter 2005)

1. TRC performed coordinated groundwater monitoring and sampling event.
2. SECOR prepared and submitted quarterly summary report.
3. TRC located and repaired MW-2.

## NEXT QUARTER ACTIVITIES (Third Quarter 2005)

1. TRC to perform coordinated groundwater monitoring and sampling event.
2. SECOR to prepare and submit quarterly summary and monitoring report.
3. SECOR to prepare and submit addendum to the *Workplan for Additional Off-Site Monitoring Well Installation*.

**LIMITATIONS**

This report presents our understanding of existing conditions at the subject site. The conclusions contained herein are based on the analytical results, and professional judgment in accordance with current standards of professional practice; no other warranty is expressed or implied. SECOR assumes no responsibility for exploratory borings or data reported by other consultants or contractors.

Sincerely,  
**SECOR International Incorporated**



Rusty Benkosky, P.E.  
Principal Engineer



Attachment 1: TRC's *Quarterly Monitoring Report – April through June 2005*, dated July 14, 2005

**ATTACHMENT 1**  
**TRC'S QUARTERLY MONITORING REPORT**  
**APRIL THROUGH JUNE 2005**

76 Service Station No. 7124  
10151 East 14th Street  
Oakland, California  
August 3, 2005



Customer-Focused Solutions

July 14, 2005

ConocoPhillips Company  
76 Broadway  
Sacramento, CA 95818

Alameda County

AUG 05 2005

Environmental Health

ATTN: MR. THOMAS KOSEL  
  
SITE: 76 STATION 7124  
10151 INTERNATIONAL BLVD.  
OAKLAND, CALIFORNIA  
  
RE: QUARTERLY MONITORING REPORT  
APRIL THROUGH JUNE 2005

Dear Mr. Kosel:

Please find enclosed our Quarterly Monitoring Report for 76 Station 7124, located at 10151 International Blvd., 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: Mr. Thomas Potter, Secor International, Inc (2 copies)

Enclosures  
200400/7124R07.QMS.doc

RECEIVED  
JUL 25 2005

21 Technology Drive • Irvine, California 92618  
Telephone 949-727-9336 • Fax 949-727-7399

BY:.....





# TRC

Customer-Focused Solutions

Alameda County

AUG 05 2005

Environmental Health

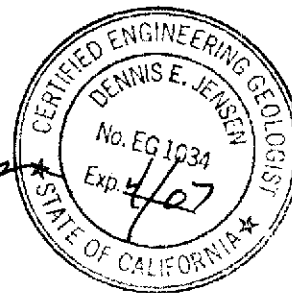
**QUARTERLY MONITORING REPORT  
APRIL THROUGH JUNE 2005**

76 STATION 7124  
10151 International Blvd.  
Oakland, California

Prepared For:

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

By:



Senior Project Geologist, Irvine Operations  
July 13, 2005

### 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
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 MTBE 8260B Concentrations vs. Time
Field Activities	General Field Procedures Groundwater Sampling Field Notes
Laboratory Reports	Official Laboratory Reports Quality Control Reports Chain of Custody Records
Statements	Purge Water Disposal Limitations

**Summary of Gauging and Sampling Activities**  
**April 2005 through June 2005**  
**76 Station 7124**  
**10151 International Blvd.**  
**Oakland, CA**

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

Water Sampling Contractor: **TRC**  
Compiled by: **Tim Simpkins**

Date(s) of Gauging/Sampling Event: **06/20/05**

**Sample Points**

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

**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**

**Hydrogeologic Parameters**

Depth to groundwater (below TOC):      Minimum: **14.38 feet**      Maximum: **16.63 feet**  
Average groundwater elevation (relative to available local datum): **22.12 feet**  
Average change in groundwater elevation since previous event: **-1.41 feet**  
Interpreted groundwater gradient and flow direction:  
    Current event: **0.012 ft/ft, west**  
    Previous event: **0.015 ft/ft, west (01/12/05)**

**Selected Laboratory Results**

Wells with detected **Benzene**: **0**      Wells above MCL (1.0 µg/l): **n/a**  
    Maximum reported benzene concentration: **n/a**

Wells with **TPPH 8260B**      **3**      Maximum: **1,900 µg/l (MW-3)**  
Wells with **MTBE**      **3**      Maximum: **960 µg/l (MW-3)**

**Notes:**

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This report presents the results of groundwater monitoring and sampling activities performed by TRC. Please contact the primary consultant for other specific information on this site.

# TABLES

## 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 7124 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**  
**June 20, 2005**  
**76 Station 7124**

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>														
06/20/05	37.37	14.38	0.00	22.99	-1.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-2</b>														
06/20/05	37.87	15.94	0.00	21.93	--	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	46	
<b>MW-3</b>														
06/20/05	37.72	15.91	0.00	21.81	-1.27	--	1900	ND<0.50	0.21J	0.52	0.46J	--	960	
<b>MW-4</b>														
06/20/05	38.36	16.63	0.00	21.73	-1.41	--	980	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	110	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 2002 Through June 2005**  
**76 Station 7124**

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>														
10/29/04	37.87	--	0.00	--	--	--	--	--	--	--	--	--	--	Well is paved over.
01/12/05	37.87	--	--	--	--	--	--	--	--	--	--	--	--	Well was paved over.
06/20/05	37.87	15.94	0.00	21.93	--	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	46	
<b>MW-3</b>														
04/08/02	37.72	15.86	0.00	21.86	--	8700	--	65	ND<25	400	ND<25	6500	8300	
07/28/02	37.72	17.22	0.00	20.50	-1.36	--	4500	ND<25	ND<25	ND<25	ND<50	--	1100	
11/03/02	37.72	17.90	0.00	19.82	-0.68	--	25000	ND<5.0	ND<5.0	25	ND<10	--	470	
01/24/03	37.72	15.57	0.00	22.15	2.33	--	6000	ND<25	ND<25	94	ND<50	--	10000	
04/02/03	37.72	16.45	0.00	21.27	-0.88	--	130000	ND<100	ND<100	ND<100	ND<200	--	4400	
07/01/03	37.72	16.88	0.00	20.84	-0.43	--	9400	ND<10	ND<10	ND<10	ND<20	--	2200	
10/02/03	37.72	17.85	0.00	19.87	-0.97	--	73000	ND<50	ND<50	ND<50	ND<100	--	460	
01/09/04	37.72	15.31	0.00	22.41	2.54	--	8700	ND<25	ND<25	98	ND<50	--	3800	
04/26/04	37.72	16.62	0.00	21.10	-1.31	--	6700	ND<25	ND<25	ND<25	ND<50	--	3900	
07/22/04	37.72	17.62	0.00	20.10	-1.00	--	13000	ND<25	ND<25	ND<25	ND<50	--	980	
10/29/04	37.72	17.29	0.00	20.43	0.33	--	4600	ND<5.0	ND<5.0	13	ND<10	--	640	
01/12/05	37.72	14.64	0.00	23.08	2.65	--	6100	0.88	0.99	30	2.2	--	6900	
06/20/05	37.72	15.91	0.00	21.81	-1.27	--	1900	ND<0.50	0.21J	0.52	0.46J	--	960	
<b>MW-4</b>														
04/08/02	38.36	16.59	0.00	21.77	--	13000	--	ND<5.0	ND<5.0	28	ND<5.0	790	980	
07/28/02	38.36	17.93	0.00	20.43	-1.34	--	18000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	170	
11/03/02	38.36	18.66	0.00	19.70	-0.73	--	220	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.7	
01/24/03	38.36	16.27	0.00	22.09	2.39	--	ND<1000	ND<10	ND<10	ND<10	ND<20	--	1000	
04/02/03	38.36	17.19	0.00	21.17	-0.92	--	130000	ND<100	ND<100	ND<100	ND<200	--	ND<400	
07/01/03	38.36	17.61	0.00	20.75	-0.42	--	15000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	170	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 2002 Through June 2005**  
**76 Station 7124**

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-4 continued</b>														
10/02/03	38.36	18.58	0.00	19.78	-0.97	--	7100	ND<10	ND<10	ND<10	ND<20	--	70	
01/09/04	38.36	16.15	0.00	22.21	2.43	--	18000	ND<10	ND<10	ND<10	ND<20	--	530	
04/26/04	38.36	17.20	0.00	21.16	-1.05	--	6500	ND<10	ND<10	ND<10	ND<20	--	240	
07/22/04	38.36	18.34	0.00	20.02	-1.14	--	18000	ND<10	ND<10	ND<10	ND<20	--	48	
10/29/04	38.36	18.13	0.00	20.23	0.21	--	2700	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	76	
01/12/05	38.36	15.22	0.00	23.14	2.91	--	1300	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	620	
06/20/05	38.36	16.63	0.00	21.73	-1.41	--	980	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	110	



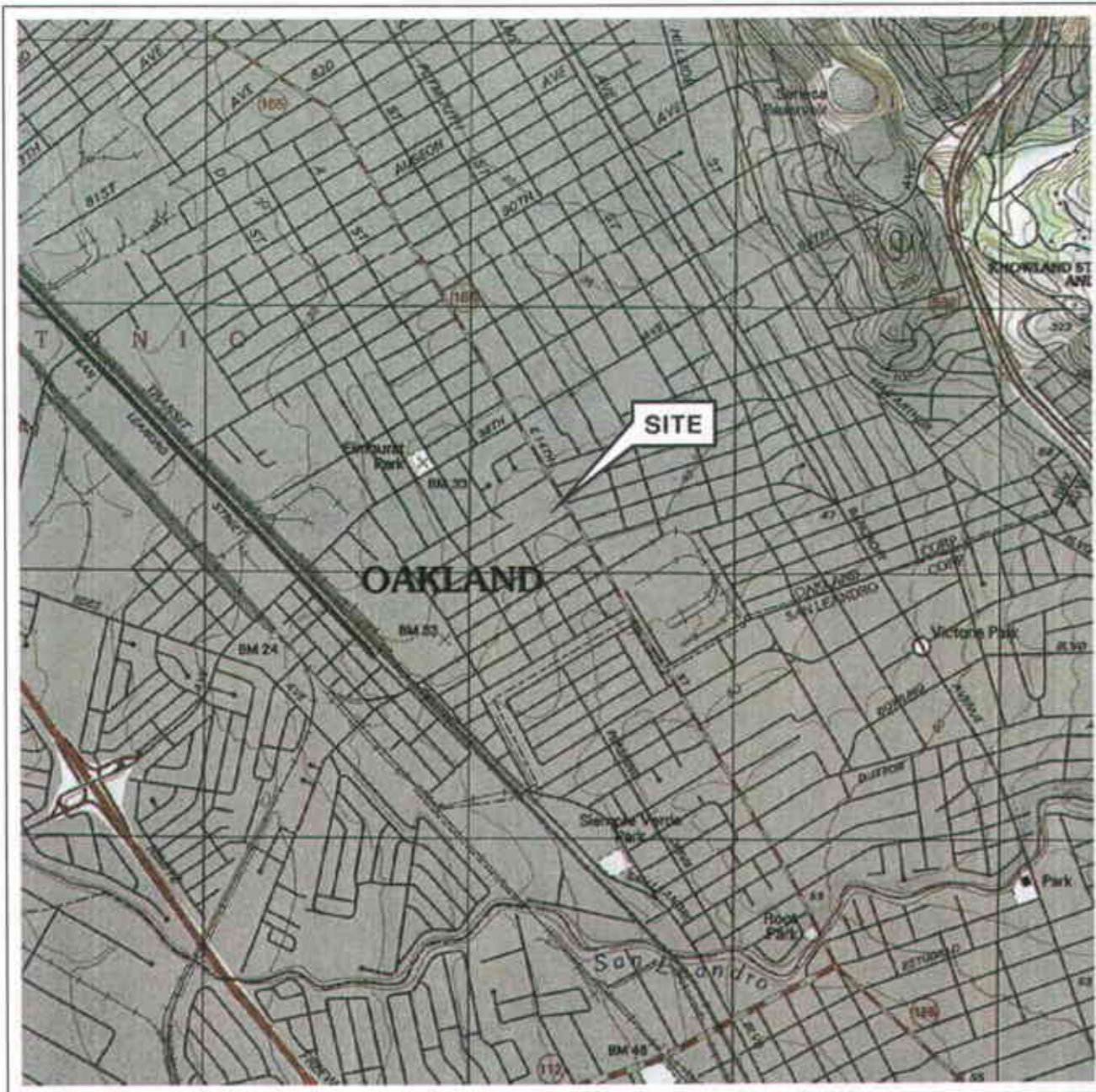
**Table 3**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 7124**

Date Sampled	EDC (µg/l)	EDB (µg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Ethanol 8015B (mg/l)	Ethanol 8260B (µg/l)	1,2 DCE (µg/l)
<b>MW-1</b>									
07/28/02	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
11/03/02	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
01/24/03	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
04/02/03	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
07/01/03	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
10/02/03	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	--	ND<500	--
01/09/04	ND<2.0	ND<2	ND<2	ND<100	ND<2	ND<2	--	ND<500	ND<2
04/26/04	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<1.0	ND<0.50	--	ND<50	--
07/22/04	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<1.0	ND<0.50	--	ND<50	ND<0.50
10/29/04	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<1.0	ND<0.50	--	ND<50	--
01/12/05	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<1.0	ND<0.50	--	ND<50	--
06/20/05	ND<0.50	ND<0.50	ND<0.50	ND<10	ND<0.50	ND<0.50	--	ND<1000	--
<b>MW-2</b>									
04/08/02	ND<40	ND<40	ND<40	ND<2000	ND<40	ND<40	ND<10000	--	--
07/28/02	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	ND<2500	--	--
11/03/02	ND<20	ND<20	ND<20	ND<1000	ND<20	ND<20	ND<5000	--	--
01/24/03	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	ND<2500	--	--
04/02/03	ND<20	ND<20	ND<20	ND<1000	ND<20	ND<20	ND<5000	--	--
07/01/03	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	ND<2500	--	--
10/02/03	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	--	ND<500	--
01/09/04	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	--	ND<2500	ND<10
06/20/05	ND<0.50	ND<0.50	ND<0.50	25	ND<0.50	ND<0.50	--	ND<1000	--
<b>MW-3</b>									
10/02/03	ND<200	ND<200	ND<200	ND<10000	ND<200	ND<200	--	ND<50000	--
01/09/04	ND<100	ND<100	ND<100	ND<5000	ND<100	ND<100	--	ND<25000	ND<100
04/26/04	ND<25	ND<25	ND<25	ND<250	ND<50	ND<25	--	ND<2500	--

**Table 3**  
**ADDITIONAL ANALYTICAL RESULTS**  
**76 Station 7124**

Date Sampled	EDC	EDB	TAME 8260B	TBA 8260B	DIPE 8260B	ETBE 8260B	Ethanol 8015B	Ethanol 8260B	1,2 DCE
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(mg/l)	(µg/l)	(µg/l)
<b>MW-3 continued</b>									
07/22/04	ND<25	ND<25	ND<25	ND<250	ND<50	ND<25	--	ND<2500	ND<25
10/29/04	ND<5.0	ND<5.0	ND<5.0	ND<50	ND<10	ND<5.0	--	ND<500	--
01/12/05	ND<25	ND<25	ND<25	1300	ND<50	ND<25	--	ND<2500	--
06/20/05	ND<0.50	ND<0.50	0.31J	39	ND<0.50	ND<0.50	--	ND<1000	--
<b>MW-4</b>									
04/08/02	ND<100	ND<100	ND<100	ND<5000	ND<100	ND<100	ND<25000	--	--
07/28/02	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	ND<2500	--	--
11/03/02	ND<2.0	ND<2.0	ND<2.0	ND<100	ND<2.0	ND<2.0	ND<500	--	--
01/24/03	ND<40	ND<40	ND<40	ND<2000	ND<40	ND<40	ND<10000	--	--
04/02/03	ND<400	ND<400	ND<400	ND<20000	ND<400	ND<400	ND<100000	--	--
07/01/03	ND<10	ND<10	ND<10	ND<500	ND<10	ND<10	ND<2500	--	--
10/02/03	ND<40	ND<40	ND<40	ND<2000	ND<40	ND<40	--	ND<10000	--
01/09/04	ND<40	ND<40	ND<40	ND<2000	ND<40	ND<40	--	ND<10000	ND<40
04/26/04	ND<10	ND<10	ND<10	430	ND<20	ND<10	--	ND<1000	--
07/22/04	ND<10	ND<10	ND<10	ND<100	ND<20	ND<10	--	ND<1000	ND<10
10/29/04	ND<2.5	ND<2.5	ND<2.5	63	ND<5.0	ND<2.5	--	ND<250	--
01/12/05	ND<2.5	ND<10	ND<2.5	1300	ND<5.0	ND<2.5	--	ND<250	--
06/20/05	ND<0.50	ND<0.50	ND<0.50	580	ND<0.50	ND<0.50	--	ND<1000	--

# FIGURES



**VICINITY MAP**

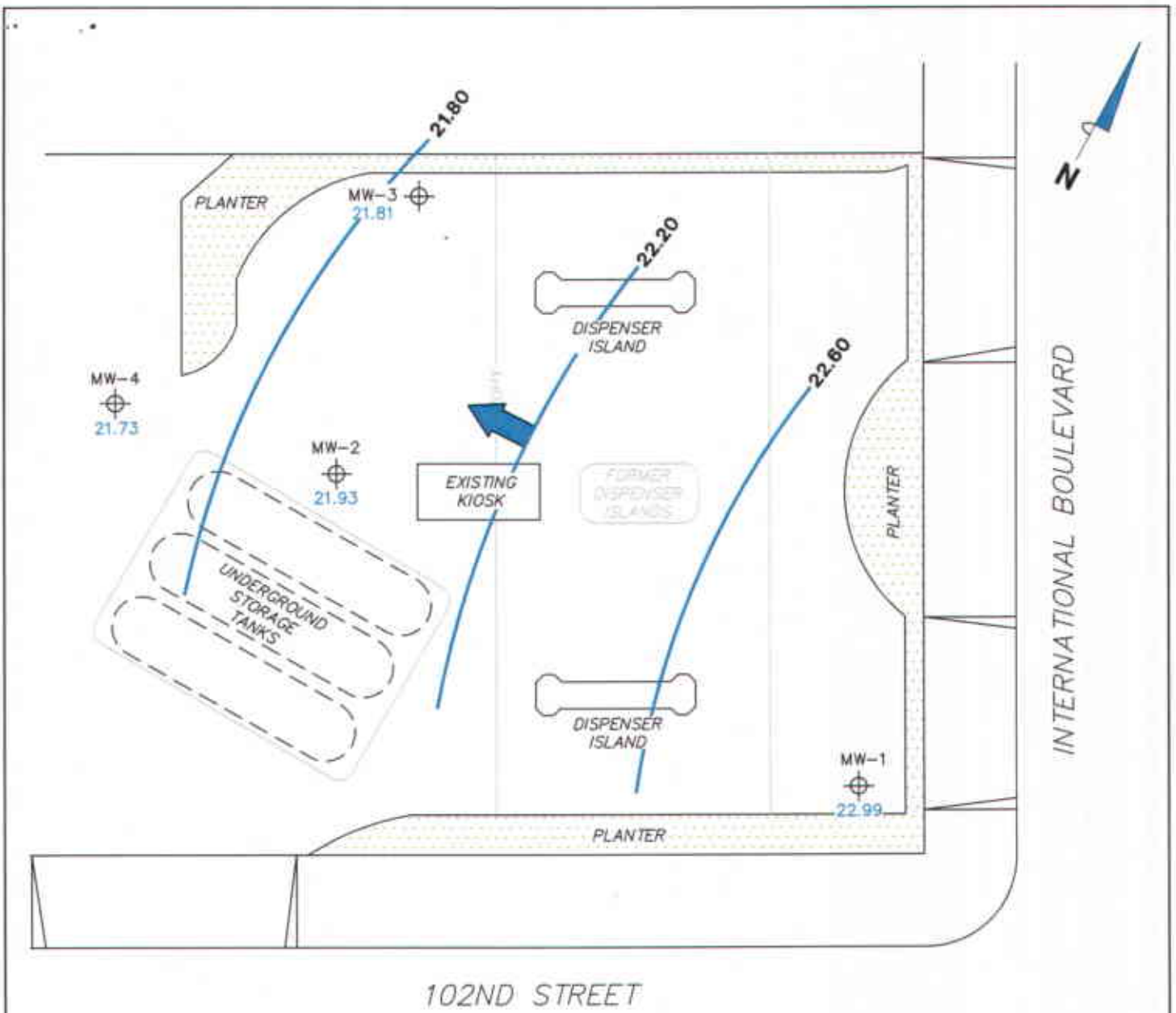
76 Station 7124  
 10151 International Boulevard  
 Oakland, California

**SOURCE:**  
 United States Geological Survey  
 7.5 Minute Topographic Map:  
 Oakland West Quadrangle

**FIGURE 1**



PS = 1:1






102ND STREET

INTERNATIONAL BOULEVARD

**NOTES:**

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

**LEGEND**

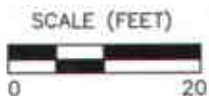
- MW-4  Monitoring Well with Groundwater Elevation (feet)
- 22.60  Groundwater Elevation Contour
-  General Direction of Groundwater Flow

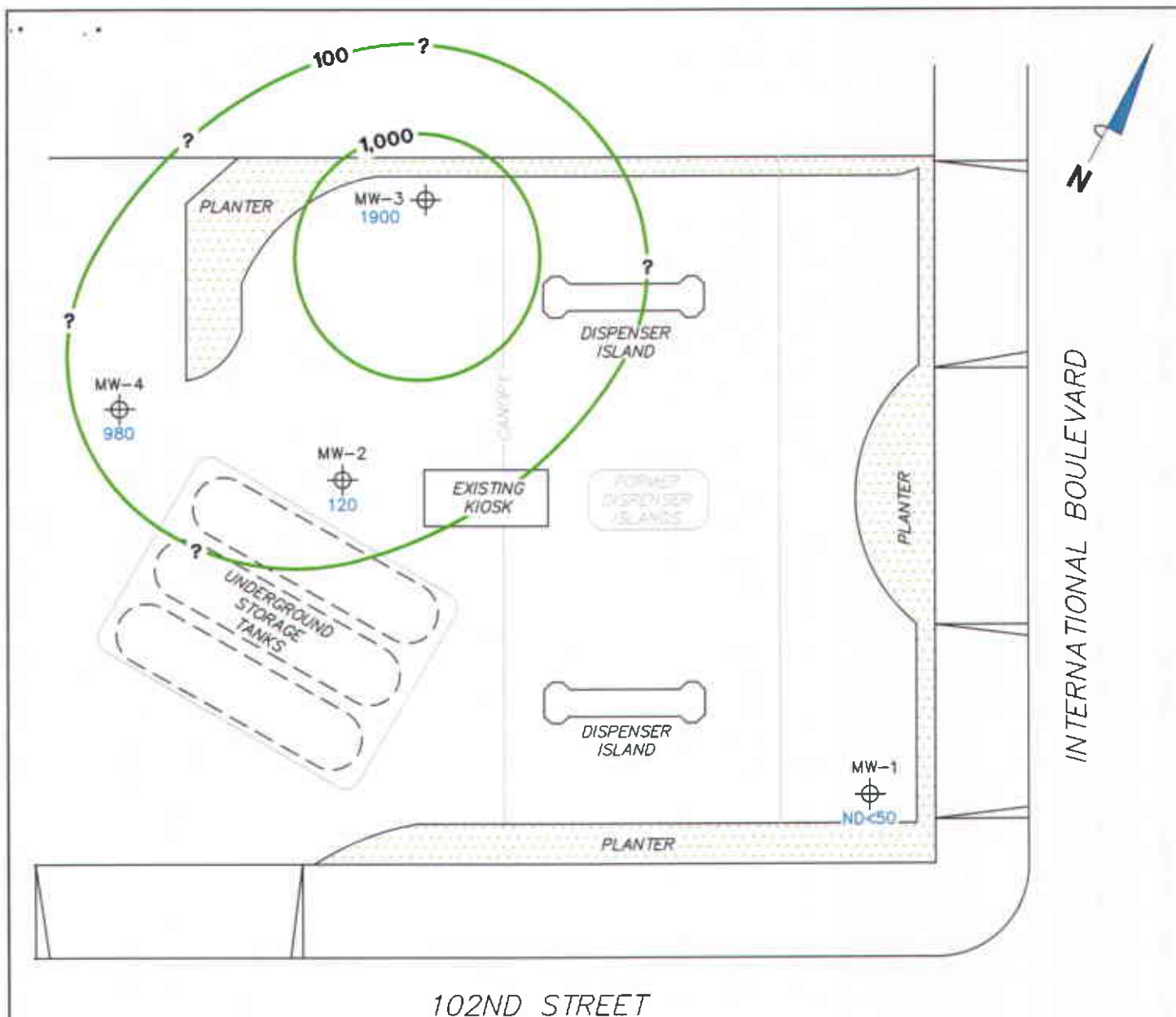
**GROUNDWATER ELEVATION CONTOUR MAP  
June 20, 2005**

76 Station 7124  
10151 International Boulevard  
Oakland, California

**FIGURE 2**

PS=1:1 7124-003





102ND STREET

**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. TPPH = total purgeable petroleum hydrocarbons.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. Results obtained using EPA Method 8260B.

**LEGEND**

- MW-4  Monitoring Well with Dissolved-Phase TPPH Concentration ( $\mu\text{g/l}$ )
-  Dissolved-Phase TPPH Contour ( $\mu\text{g/l}$ )

**DISSOLVED-PHASE TPPH CONCENTRATION MAP**  
June 20, 2005

76 Station 7124  
10151 International Boulevard  
Oakland, California

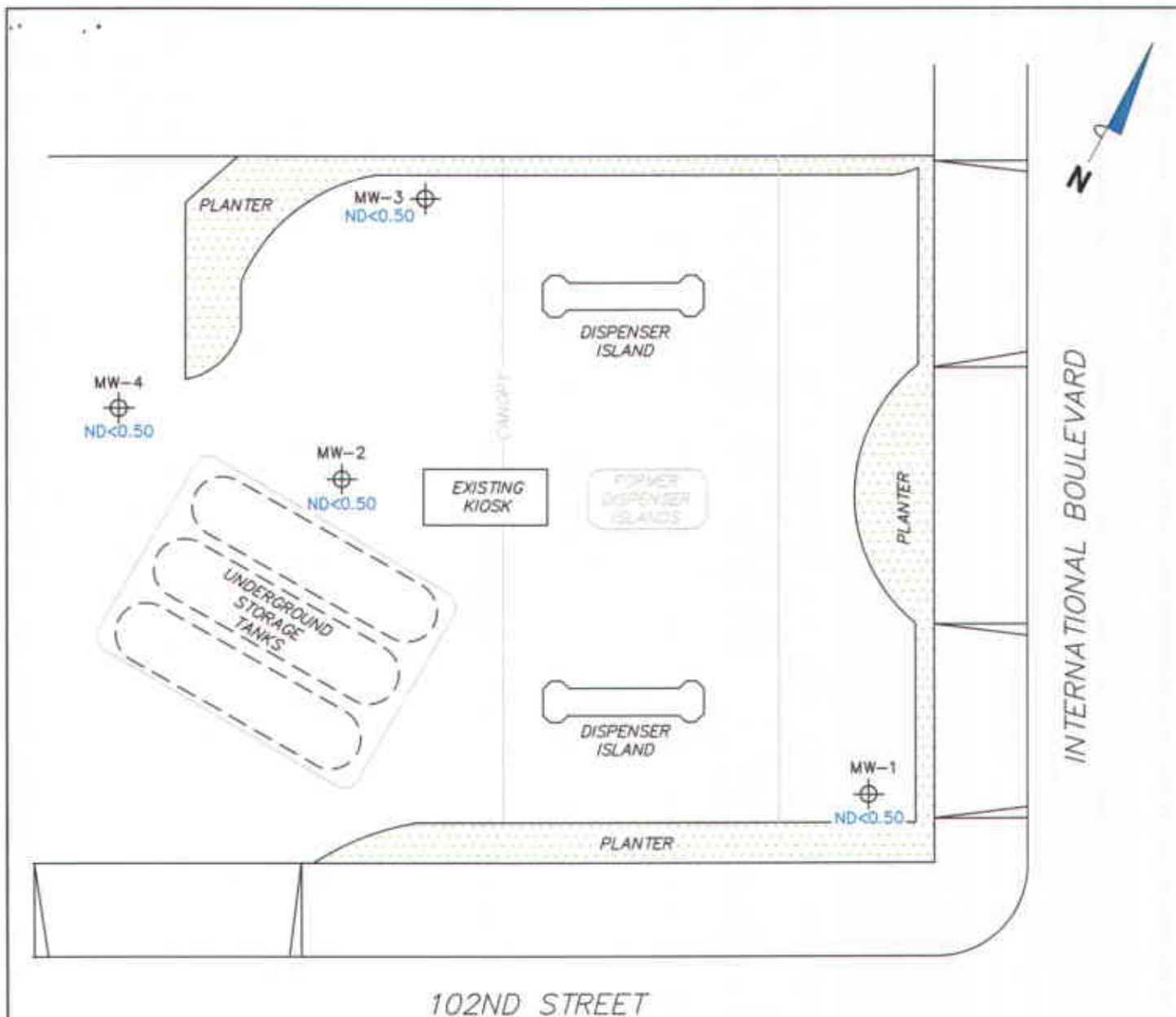
**TRC**

SCALE (FEET)



**FIGURE 3**

PS=1:1 7124-003



102ND STREET

INTERNATIONAL BOULEVARD

**NOTES:**

$\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report.

**LEGEND**

MW-4  Monitoring Well with Dissolved-Phase Benzene Concentration ( $\mu\text{g/l}$ )

**DISSOLVED-PHASE BENZENE CONCENTRATION MAP  
June 20, 2005**

76 Station 7124  
10151 International Boulevard  
Oakland, California

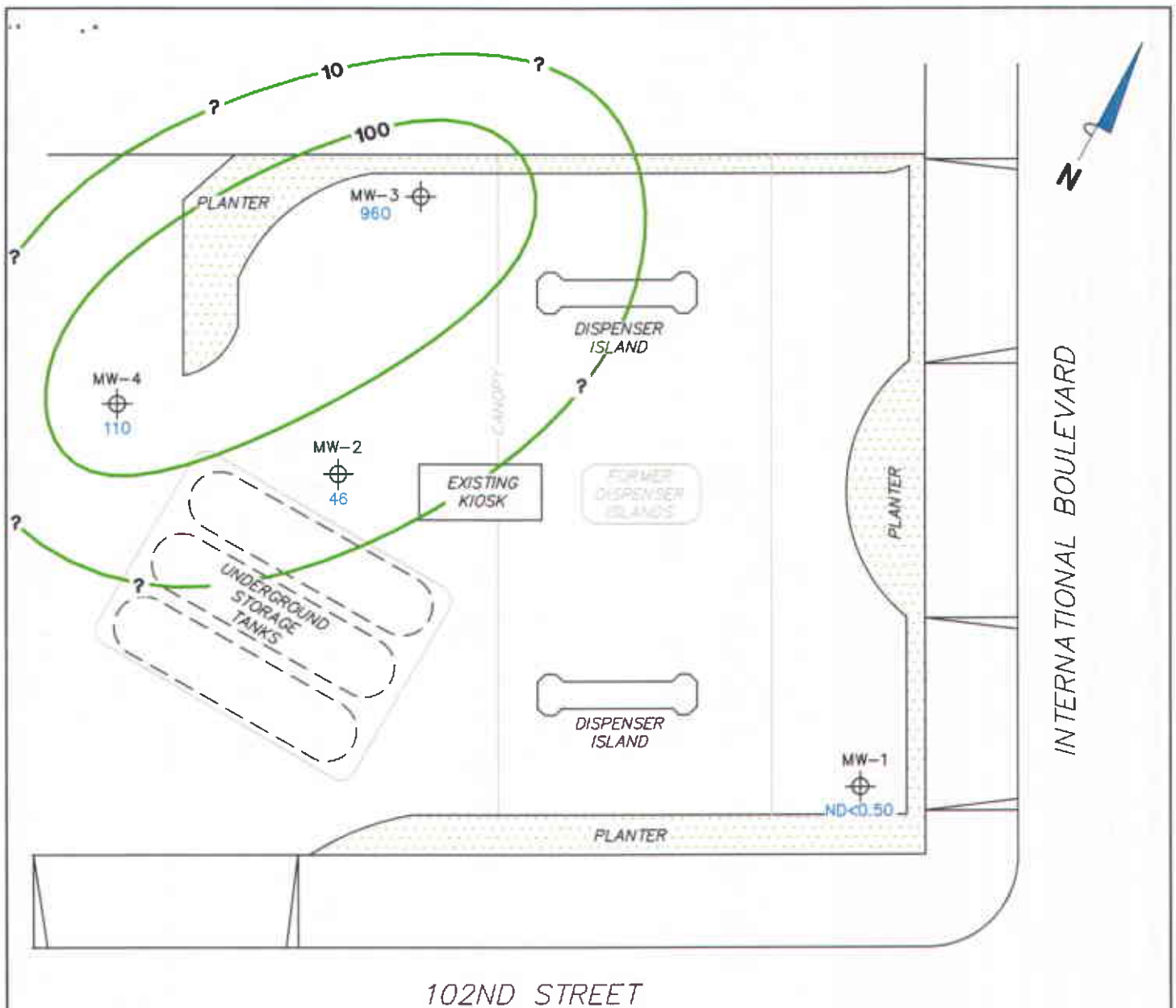
**TRC**

SCALE (FEET)



**FIGURE 4**



PS=1:1 7124-003



**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. MTBE = methyl tertiary butyl ether. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. Results obtained using EPA Method 8260B.

**LEGEND**

- MW-4  Monitoring Well with Dissolved-Phase MTBE Concentration (µg/l)
-  100 Dissolved-Phase MTBE Contour (µg/l)

**DISSOLVED-PHASE MTBE  
CONCENTRATION MAP  
June 20, 2005**

76 Station 7124  
10151 International Boulevard  
Oakland, California



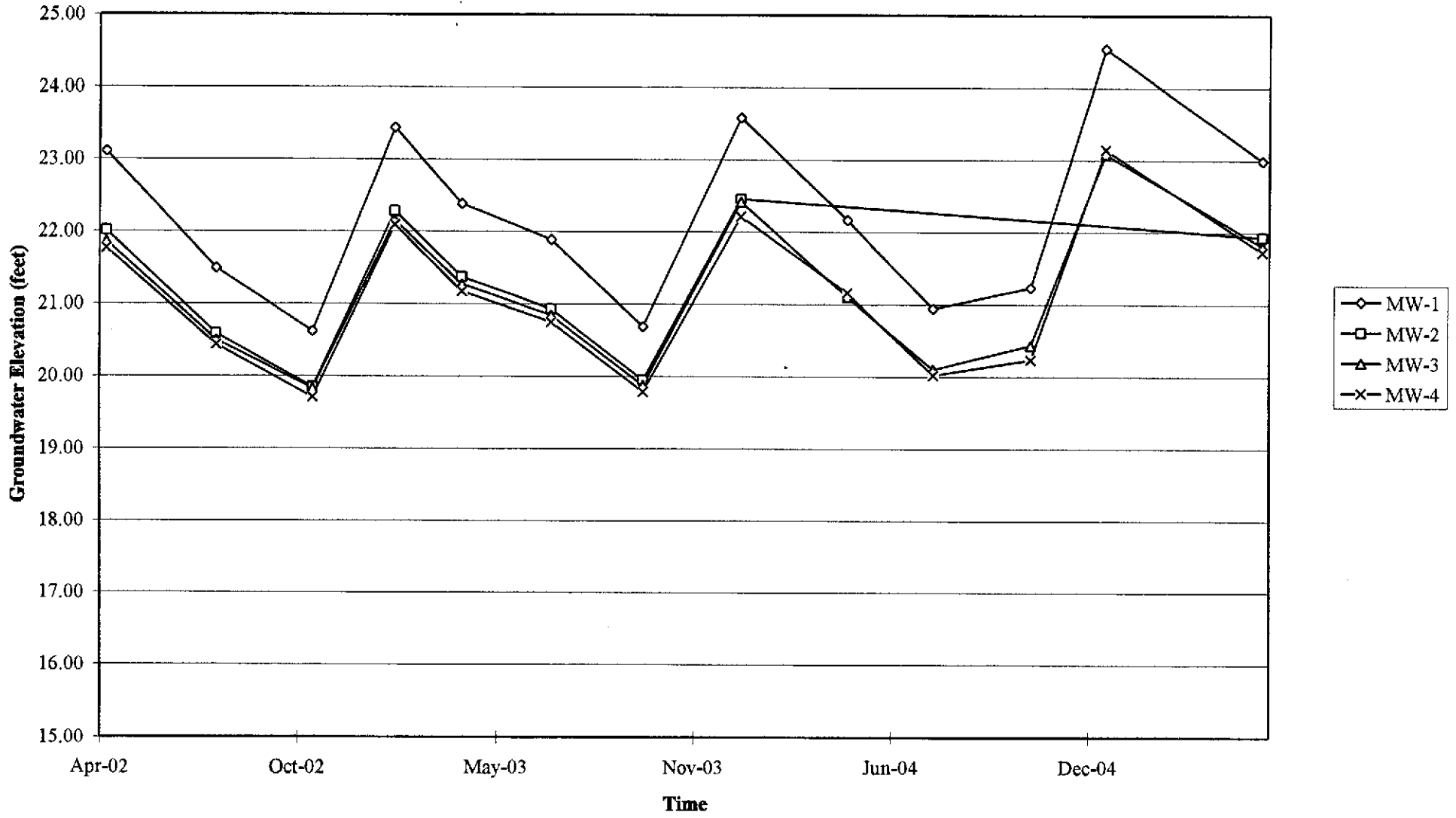
**FIGURE 5**

PS=1:1 7124-003



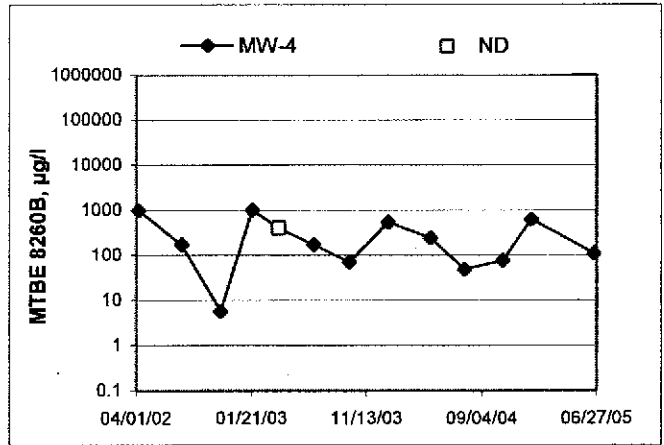
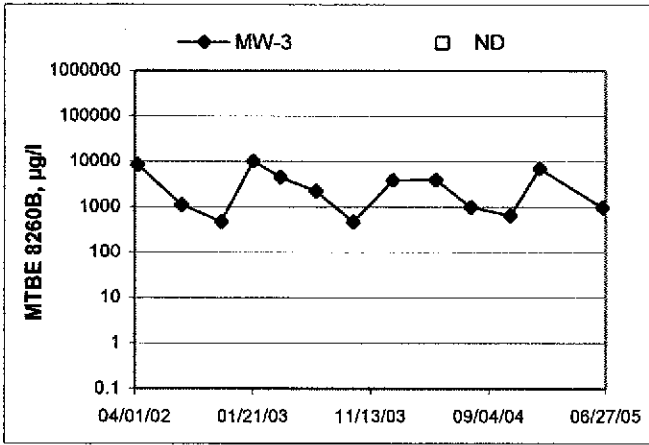
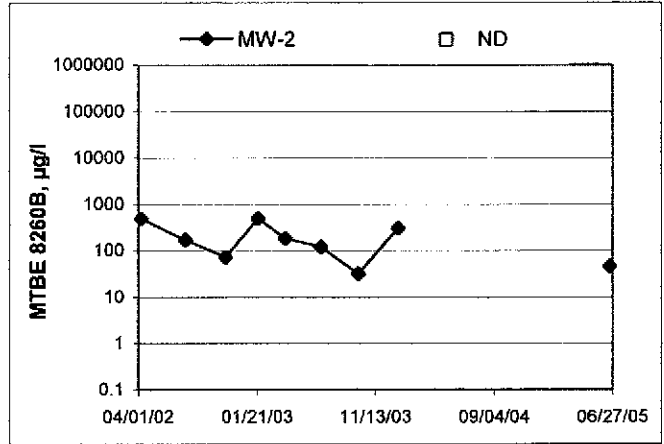
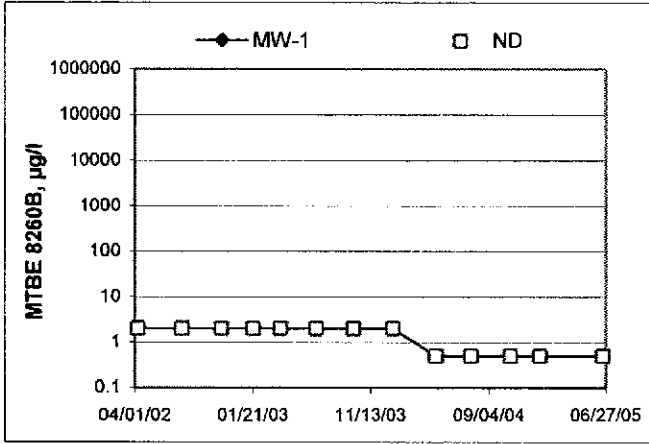
# GRAPHS

Groundwater Elevations vs. Time  
76 Station 7124



# MTBE 8260B Concentrations vs Time

76 Station 7124



# 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 measurements 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, sample time, and the sampler's 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 the 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 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 wells, 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: B. Rossi

Site: 7124

Project No.: 41050001/FA20

Date: 06/20/05

Well No.: NW-4  
 Depth to Water (feet): 16.63  
 Total Depth (feet): 24.94  
 Water Column (feet): 8.31  
 80% Recharge Depth (feet): 18.29

Purge Method: DM  
 Depth to Product (feet): 0  
 LPH & Water Recovered (gallons): 0  
 Casing Diameter (Inches): 4"  
 1 Well Volume (gallons): 5

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0815			5	378	18.3	8.26		
			10	388	18.5	8.05		
	0827		15	386	18.5	8.22		
Static at Time Sampled			Total Gallons Purged		Time Sampled			
16.69			15		0856			
Comments:								

Well No.: NW-3  
 Depth to Water (feet): 15.91  
 Total Depth (feet): 25.11  
 Water Column (feet): 9.20  
 80% Recharge Depth (feet): 17.75

Purge Method: pin  
 Depth to Product (feet): 0  
 LPH & Water Recovered (gallons): 0  
 Casing Diameter (Inches): 4"  
 1 Well Volume (gallons): 6

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0832			6	315	18.6	8.15		
			12	344	18.4	7.97		
	0841		18	345	17.9	8.18		
Static at Time Sampled			Total Gallons Purged		Time Sampled			
15.96			18		0912			
Comments:								

GROUNDWATER SAMPLING FIELD NOTES

Technician: Z. S. S.

Site: 7124

Project No.: 4105200-1/AR20

Date: 06/20/05

Well No.: nlw-1

Purge Method: DIA

Depth to Water (feet): 14.38

Depth to Product (feet): 0

Total Depth (feet): 24.74

LPH & Water Recovered (gallons): 0

Water Column (feet): 10.36

Casing Diameter (Inches): 4"

80% Recharge Depth (feet): 16.45

1 Well Volume (gallons): 7

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
07:42			7	360	18.1	8.40		
			14	348	18.3	7.95		
	0753		21	348	18.2	8.04		
Static at Time Sampled			Total Gallons Purged		Time Sampled			
14.41			21		0845			
Comments:								

Well No.: nlw-2

Purge Method: DIA

Depth to Water (feet): 15.54

Depth to Product (feet): 0

Total Depth (feet): 25.22

LPH & Water Recovered (gallons): 0

Water Column (feet): 9.28

Casing Diameter (Inches): 4"

80% Recharge Depth (feet): 17.79

1 Well Volume (gallons): 6

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
0757			6	383	18.7	8.16		
			12	376	18.8	7.78		
	0811		18	366	18.9	8.01		
Static at Time Sampled			Total Gallons Purged		Time Sampled			
16.01			18		0851			
Comments:								





**Laboratories, Inc**

Date of Report: 06/30/2005

Anju Farfan

TRC Alton Geoscience

21 Technology Drive  
Irvine, CA 92618-2302

RE: 7124

BC Lab Number: 0506214

Enclosed are the results of analyses for samples received by the laboratory on 06/21/05 22:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Molly Meyers".

Contact Person: Molly Meyers

Client Service Rep

A handwritten signature in cursive script, which is mostly illegible but appears to be a name.

Authorized Signature



TRC Alton Geoscience  
21 Technology Drive  
Irvine CA, 92618-2302

Project: 7124  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 06/30/05 13:49

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>0506214-01</b> <b>COC Number:</b> --- <b>Project Number:</b> 7124 <b>Sampling Location:</b> MW-1 <b>Sampling Point:</b> MW-1 <b>Sampled By:</b> Basi Foster of TRCI	<b>Receive Date:</b> 06/21/05 22:31 <b>Sampling Date:</b> 06/20/05 08:45 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order (LabW):</b> <b>Global ID:</b> <b>Matrix:</b> W <b>Sample QC Type (SACode):</b> CS <b>Cooler ID:</b>
---	--	--

<b>0506214-02</b> <b>COC Number:</b> --- <b>Project Number:</b> 7124 <b>Sampling Location:</b> MW-2 <b>Sampling Point:</b> MW-2 <b>Sampled By:</b> Basi Foster of TRCI	<b>Receive Date:</b> 06/21/05 22:31 <b>Sampling Date:</b> 06/20/05 08:51 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order (LabW):</b> <b>Global ID:</b> <b>Matrix:</b> W <b>Sample QC Type (SACode):</b> CS <b>Cooler ID:</b>
---	--	--

<b>0506214-03</b> <b>COC Number:</b> --- <b>Project Number:</b> 7124 <b>Sampling Location:</b> MW-4 <b>Sampling Point:</b> MW-4 <b>Sampled By:</b> Basi Foster of TRCI	<b>Receive Date:</b> 06/21/05 22:31 <b>Sampling Date:</b> 06/20/05 08:56 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order (LabW):</b> <b>Global ID:</b> <b>Matrix:</b> W <b>Sample QC Type (SACode):</b> CS <b>Cooler ID:</b>
---	--	--

<b>0506214-04</b> <b>COC Number:</b> --- <b>Project Number:</b> 7124 <b>Sampling Location:</b> MW-3 <b>Sampling Point:</b> MW-3 <b>Sampled By:</b> Basi Foster of TRCI	<b>Receive Date:</b> 06/21/05 22:31 <b>Sampling Date:</b> 06/20/05 09:12 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order (LabW):</b> <b>Global ID:</b> <b>Matrix:</b> W <b>Sample QC Type (SACode):</b> CS <b>Cooler ID:</b>
---	--	--

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine CA, 92618-2302

 Project: 7124  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 06/30/05 13:49

## Volatile Organic Analysis (EPA Method 8260)

**BCL Sample ID:** 0506214-01    **Client Sample Name:** 7124, MW-1, MW-1, 6/20/2005 8:45:00AM, Basi Foster

Constituent	Result	Units	PQL	MDL	Method	Prep	Run	Analyst	Instru- ment ID	Dilution	QC	MB	Lab
						Date	Date/Time				Batch ID	Bias	Quals
Benzene	ND	ug/L	0.50	0.12	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
1,2-Dibromoethane	ND	ug/L	0.50	0.11	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Ethylbenzene	ND	ug/L	0.50	0.13	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Methyl t-butyl ether	ND	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Toluene	ND	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Total Xylenes	ND	ug/L	1.0	0.40	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
t-Amyl Methyl ether	ND	ug/L	0.50	0.31	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	V11
t-Butyl alcohol	ND	ug/L	10	10	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	V11
Diisopropyl ether	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Ethanol	ND	ug/L	1000	110	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Ethyl t-butyl ether	ND	ug/L	0.50	0.27	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50	23	EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane-d4 (Surrogate)	98.0	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334		
Toluene-d8 (Surrogate)	96.4	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334		
4-Bromofluorobenzene (Surrogate)	97.8	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 00:43	MGC	MS-V5	1	BOF1334		

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine CA, 92618-2302

 Project: 7124  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 06/30/05 13:49

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0506214-02		Client Sample Name: 7124, MW-2, MW-2, 6/20/2005 8:51:00AM, Basi Foster											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instrument ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Benzene	ND	ug/L	0.50	0.12	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
1,2-Dibromoethane	ND	ug/L	0.50	0.11	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Ethylbenzene	ND	ug/L	0.50	0.13	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Methyl t-butyl ether	46	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Toluene	ND	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Total Xylenes	ND	ug/L	1.0	0.40	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
t-Amyl Methyl ether	ND	ug/L	0.50	0.31	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	V11
t-Butyl alcohol	25	ug/L	10	10	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	V11
Diisopropyl ether	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Ethanol	ND	ug/L	1000	110	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Ethyl t-butyl ether	ND	ug/L	0.50	0.27	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
Total Purgeable Petroleum Hydrocarbons	120	ug/L	50	23	EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane-d4 (Surrogate)	99.2	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334		
Toluene-d8 (Surrogate)	88.7	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334		
4-Bromofluorobenzene (Surrogate)	100	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 01:16	MGC	MS-V5	1	BOF1334		

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 21 Technology Drive  
 Irvine CA, 92618-2302

 Project: 7124  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 06/30/05 13:49

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0506214-03		Client Sample Name: 7124, MW-4, MW-4, 6/20/2005 8:56:00AM, Basi Foster											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Benzene	ND	ug/L	0.50	0.12	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
1,2-Dibromoethane	ND	ug/L	0.50	0.11	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Ethylbenzene	ND	ug/L	0.50	0.13	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Methyl t-butyl ether	110	ug/L	10	3.0	EPA-8260	06/27/05	06/28/05 12:00	MGC	MS-V5	20	BOF1334	ND	A01
Toluene	ND	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Total Xylenes	ND	ug/L	1.0	0.40	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
t-Amyl Methyl ether	ND	ug/L	0.50	0.31	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
t-Butyl alcohol	580	ug/L	10	10	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Diisopropyl ether	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Ethanol	ND	ug/L	1000	110	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Ethyl t-butyl ether	ND	ug/L	0.50	0.27	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
Total Purgeable Petroleum Hydrocarbons	980	ug/L	50	23	EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334		
1,2-Dichloroethane-d4 (Surrogate)	102	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 12:00	MGC	MS-V5	20	BOF1334		
Toluene-d8 (Surrogate)	102	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 12:00	MGC	MS-V5	20	BOF1334		
Toluene-d8 (Surrogate)	97.3	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334		
4-Bromofluorobenzene (Surrogate)	115	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 13:40	MGC	MS-V5	1	BOF1334		
4-Bromofluorobenzene (Surrogate)	101	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 12:00	MGC	MS-V5	20	BOF1334		

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 Project: 7124  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 06/30/05 13:49

## Volatile Organic Analysis (EPA Method 8260)

**BCL Sample ID:** 0506214-04    **Client Sample Name:** 7124, MW-3, MW-3, 6/20/2005 9:12:00AM, Basi Foster

Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Benzene	ND	ug/L	0.50	0.12	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
1,2-Dibromoethane	ND	ug/L	0.50	0.11	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Ethylbenzene	0.52	ug/L	0.50	0.13	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Methyl t-butyl ether	960	ug/L	10	3.0	EPA-8260	06/27/05	06/28/05 11:26	MGC	MS-V5	20	BOF1334	ND	A01
Toluene	0.21	ug/L	0.50	0.15	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	J
Total Xylenes	0.46	ug/L	1.0	0.40	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	J
t-Amyl Methyl ether	0.31	ug/L	0.50	0.31	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	J
t-Butyl alcohol	39	ug/L	10	10	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Diisopropyl ether	ND	ug/L	0.50	0.25	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Ethanol	ND	ug/L	1000	110	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Ethyl t-butyl ether	ND	ug/L	0.50	0.27	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
Total Purgeable Petroleum Hydrocarbons	1900	ug/L	50	23	EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334	ND	
1,2-Dichloroethane-d4 (Surrogate)	100	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334		
1,2-Dichloroethane-d4 (Surrogate)	92.1	%	76 - 114 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 11:26	MGC	MS-V5	20	BOF1334		
Toluene-d8 (Surrogate)	100	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334		
Toluene-d8 (Surrogate)	98.0	%	88 - 110 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 11:26	MGC	MS-V5	20	BOF1334		
4-Bromofluorobenzene (Surrogate)	97.5	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 14:13	MGC	MS-V5	1	BOF1334		
4-Bromofluorobenzene (Surrogate)	104	%	86 - 115 (LCL - UCL)		EPA-8260	06/27/05	06/28/05 11:26	MGC	MS-V5	20	BOF1334		



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Project: 7124  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 06/30/05 13:49

### Volatile Organic Analysis (EPA Method 8260) Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample ID	QC Sample Type	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits	
										RPD	Percent Recovery Lab Quals
Benzene	BOF1334	BOF1334-MS1	Matrix Spike	ND	25.930	25.000	ug/L		104		70 - 130
		BOF1334-MSD1	Matrix Spike Duplicate	ND	25.160	25.000	ug/L	2.93	101	20	70 - 130
Toluene	BOF1334	BOF1334-MS1	Matrix Spike	ND	24.560	25.000	ug/L		98.2		70 - 130
		BOF1334-MSD1	Matrix Spike Duplicate	ND	24.210	25.000	ug/L	1.44	96.8	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	BOF1334	BOF1334-MS1	Matrix Spike	ND	10.800	10.000	ug/L		108		76 - 114
		BOF1334-MSD1	Matrix Spike Duplicate	ND	9.8900	10.000	ug/L		98.9		76 - 114
Toluene-d8 (Surrogate)	BOF1334	BOF1334-MS1	Matrix Spike	ND	9.8400	10.000	ug/L		98.4		88 - 110
		BOF1334-MSD1	Matrix Spike Duplicate	ND	9.8100	10.000	ug/L		98.1		88 - 110
4-Bromofluorobenzene (Surrogate)	BOF1334	BOF1334-MS1	Matrix Spike	ND	9.5300	10.000	ug/L		95.3		86 - 115
		BOF1334-MSD1	Matrix Spike Duplicate	ND	9.7000	10.000	ug/L		97.0		86 - 115

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 Project: 7124  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 06/30/05 13:49

## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Control Limits			Lab Quals
								Percent Recovery	RPD	Percent Recovery	
Benzene	BOF1334	BOF1334-BS1	LCS	26.060	25.000	0.50	ug/L	104		70 - 130	
Toluene	BOF1334	BOF1334-BS1	LCS	25.290	25.000	0.50	ug/L	101		70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	BOF1334	BOF1334-BS1	LCS	9.9700	10.000		ug/L	99.7		76 - 114	
Toluene-d8 (Surrogate)	BOF1334	BOF1334-BS1	LCS	9.9800	10.000		ug/L	99.8		88 - 110	
4-Bromofluorobenzene (Surrogate)	BOF1334	BOF1334-BS1	LCS	9.6300	10.000		ug/L	96.3		86 - 115	





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Project: 7124  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 06/30/05 13:49

### Volatile Organic Analysis (EPA Method 8260) Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Benzene	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.12	
1,2-Dibromoethane	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.11	
1,2-Dichloroethane	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.25	
Ethylbenzene	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.13	
Methyl t-butyl ether	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.15	
Toluene	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.15	
Total Xylenes	BOF1334	BOF1334-BLK1	ND	ug/L	1.0	0.40	
t-Amyl Methyl ether	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.31	
t-Butyl alcohol	BOF1334	BOF1334-BLK1	ND	ug/L	10	10	
Diisopropyl ether	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.25	
Ethanol	BOF1334	BOF1334-BLK1	ND	ug/L	1000	110	
Ethyl t-butyl ether	BOF1334	BOF1334-BLK1	ND	ug/L	0.50	0.27	
Total Purgeable Petroleum Hydrocarbons	BOF1334	BOF1334-BLK1	ND	ug/L	50	23	
1,2-Dichloroethane-d4 (Surrogate)	BOF1334	BOF1334-BLK1	101	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BOF1334	BOF1334-BLK1	100	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BOF1334	BOF1334-BLK1	94.8	%	86 - 115 (LCL - UCL)		



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21 Technology Drive  
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Project: 7124  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 06/30/05 13:49

**Notes and Definitions**

- V11 The Continuing Calibration Verification (CCV) recovery is not within established control limits.
- M03 Analyte detected in the Method Blank at a level between the PQL and the MDL.
- J Estimated value
- A01 PQL's and MDL's are raised due to sample dilution.
- ND Analyte NOT DETECTED at or above the reporting limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Submission #: 05-6214

Project Code:           

TB Batch #           

SHIPPING INFORMATION

Federal Express  UPS  Hand Delivery   
BC Lab Field Service  Other  (Specify)           

SHIPPING CONTAINER

Ice Chest  None   
Box  Other  (Specify)           

Refrigerant: Ice  Blue Ice  None  Other  Comments:           

Custody Seals: Ice Chest  Containers  None  Comments:             
Intact? Yes  No  Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received  
 YES  NO

Ice Chest ID: 610  
Temperature: 4.1 °C  
Thermometer ID: #18

Emissivity .95  
Container V009

Date/Time 6/21/05  
Analyst Init OTO 223

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
1T GENERAL MINERAL-GENERAL PHYSICAL										
1T PE UNPRESERVED										
1T INORGANIC CHEMICAL METALS										
1T INORGANIC CHEMICAL METALS										
1T CYANIDE										
1T NITROGEN FORMS										
1T TOTAL SULFIDE										
102 NITRATE / NITRITE										
100ml TOTAL ORGANIC CARBON										
1T TOX										
1T CHEMICAL OXYGEN DEMAND										
1A PHENOLICS										
10ml VOA VIAL TRAVEL BLANK										
10ml VOA VIAL	A3	A3	A3	A3						
1T EPA 413.1, 413.2, 418.1										
1T ODOR										
2 RADIOLOGICAL										
3 BACTERIOLOGICAL										
10 ml VOA VIAL- 504										
1T EPA 508/608/8080										
1T EPA 515.1/8150										
1T EPA 525										
1T EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
1T EPA 548										
1T EPA 549										
1T EPA 632										
1T EPA 8015M										
1T QA/QC										
1T AMBER										
1 OZ. JAR										
1/2 OZ. JAR										
1 OIL SLEEVE										
1 CB VIAL										
1 PLASTIC BAG										
1 FERROUS IRON										
1 CORE										

Comments:             
Sample Numbering Completed By: OTO Date/Time: 6/23/05 2000

# Chain of Custody Form

PLEASE COMPLETE:  
BCL QUOTE ID:  
Page 1 of 1

36578

Report To: TRC  
 Client: TRC  
 Attn: Angie Farn  
 Street Address: 21 Technology  
 City, State, Zip: Lawrence, CA 92608  
 Phone: (949) 841-7111 Fax: (949) 553-0111  
 Email Address: afarn@trc-solutions.com  
 Submittal #: 05-6214

Project #: 4105001  
 Project Name: 7124  
 Project Code: ↓  
 Sampler(s): SAS  
 GLOBAL # 1000  
 WOH # 1634TRC501

**Analysis Requested**

TRC by BCL  
 BCL by TRC  
 TRC by BCL  
 BCL by TRC

Please refer to the back of this page for completion instructions and method legend.

Comments:

Sample #	Description	Date Sampled	Time Sampled
Alw-2	-1	06/20/05	0845
Ulw-2	-2	↓	0851
Ulw-4	-3	↓	0856
Ulw-3	-4	↓	0912

**Sample Matrix**

Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other
		X			

Turnaround # of work days\*: 50

Are there any tests with holding times less than or equal to 48 hours?  
 Yes  No

\* Standard Turnaround = 15 work days

**Notes**

3 Vials w/ HPLC  
 ↓ ↓ ↓

CHK BY: MM DISTRIBUTION  
 SUB-OUT

**Billing**

Same as above

Client: Caroco Phelps  
 Address: 3611 S. Alhambra, Suite 200  
 City: South Ana State: CA Zip: 92704  
 Attn: Dr. Hutchinson  
 PO #: WOH # 1634 TRC 501

Report Drinking Waters on State Form?  
 Yes  No

Send Copy to State of CA?  
 Yes  No

**Sample Disposal**

Return to Client  Disposal by lab  Archive: Months \_\_\_\_\_

1. Relinquished By: <u>[Signature]</u>	Date: <u>06-20-05</u>	Time: <u>16:00</u>
2. Relinquished By: <u>[Signature]</u>	Date: <u>06-21-05</u>	Time: <u>15:30</u>
3. Relinquished By: <u>[Signature]</u>	Date: <u>6/21/05</u>	Time: <u>18:32</u>

**Special Reporting**

QC  WIP  Raw Data

1. Received By: <u>refrigerator</u>	Date: <u>06-20-05</u>	Time: <u>16:00</u>
2. Received By: <u>[Signature]</u>	Date: <u>6/21/05</u>	Time: <u>15:30</u>
3. Received By: <u>[Signature]</u>	Date: <u>6-21-05</u>	Time: <u>18:32</u>

... Name (Caroco) BCLabs 6/21/05 BCLabs 2230

## **STATEMENTS**

### **Purge Water Disposal**

Non-hazardous groundwater produced during purging and sampling of monitoring 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.