

May 2, 2008

Ms. Eileen Chen  
Alameda County Water Agency  
43885 South Grimmer Boulevard  
Fremont, CA 94537-5110

RECEIVED

4:18 pm, Jun 05, 2009

Alameda County  
Environmental Health

**RE: Annual Summary Report  
Second Quarter 2007 through First Quarter 2008**  
Delta Project Number: C1Q5487604

Dear Ms. Chen:

On behalf of ConocoPhillips Company (COP), Delta Consultants (Delta) is pleased to submit the second quarter 2007 through first quarter 2008 annual summary report for the following location:



**Service Station**

**Location**

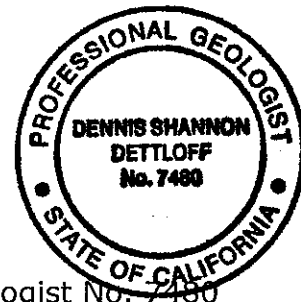
76 Service Station No 5487

28250 Hesperian Boulevard  
Hayward, California

Delta is also forwarding a copy of the *Annual Monitoring Report-April 2007 through March 2008*, dated February 22, 2008, prepared by TRC.

Sincerely,  
**DELTA CONSULTANTS**

Dennis S. Dettloff, P.G.  
Senior Project Manager  
California Registered Professional Geologist No. 7480



Enclosure

cc: Mr. Ted Moise-ConocoPhillips (1 via electronic upload only)

**ANNUAL SUMMARY REPORT**  
**Second Quarter 2007 through First Quarter 2008**  
**76 Service Station No. 5487**  
**28250 Hesperian Boulevard**  
**Hayward, California**

**SITE BACKGROUND AND PREVIOUS ENVIRONMENTAL WORK**

The site is located on the southeast corner of Hesperian Boulevard and Catalpa Way and is an active 76 service station. Two gasoline underground storage tanks (USTs) and two dispenser islands are present at the site.

In January 1989, two gasoline USTs, one waste oil UST, and associated piping were removed from the site and replaced. Seven soil samples were collected from the sidewalls of the gasoline UST excavation and one soil sample was collected beneath the former waste oil UST. Following collection of the soil samples, approximately 2,000 gallons of impacted groundwater were extracted from the gasoline UST excavation and disposed of. The soil samples collected from the gasoline UST excavation contained total petroleum hydrocarbons as gasoline (TPHg) at concentrations up to 130 milligrams per kilogram (mg/kg). The soil sample collected from beneath the former waste oil UST contained TPH as diesel (TPHd) at 800 mg/kg, TPHg at 60 mg/kg, and benzene at 3.6 mg/kg.

Based on the soil analytical data, additional soil was over-excavated from the waste oil UST excavation from all sides and the bottom of the excavation in February 1989. During the over-excavation activities, four additional sidewall samples were collected from the excavation. The soil samples contained TPHd at concentrations up to 180 mg/kg and TPHg at concentrations up to 110 mg/kg. The northeast sidewall of the waste oil UST excavation was extended an additional eight feet laterally. Confirmation soil samples collected from the final excavation did not contain petroleum hydrocarbons. However, a groundwater sample collected from the excavation contained TPHd at 1,300 micrograms per liter ( $\mu\text{g/L}$ ), TPHg at 500  $\mu\text{g/L}$ , and benzene at 52  $\mu\text{g/L}$ . Subsequent to sample collection, approximately 4,500 gallons of groundwater were extracted from the waste oil UST excavation and disposed.

Also in February 1989, an additional approximately 17,500 gallons of impacted groundwater was extracted from the gasoline UST excavation and disposed. A groundwater sample collected during the extraction event contained TPHd at 110  $\mu\text{g/L}$  and benzene at 2.2  $\mu\text{g/L}$ .

Based on the data from the soil and groundwater samples collected from the UST excavation areas, five groundwater monitoring wells (MW-1 through MW-5) were installed at the site. Soil samples collected from the borings for monitoring wells MW-1 through MW-4 generally did not contain TPHg or benzene, toluene, ethyl-benzene and total xylenes (BTEX) with the exception of TPHg at 1.4 mg/kg in the sample collected from well boring MW-4 at a depth of 9 feet below ground surface (bgs). A soil sample collected from well boring MW-5 contained TPHg at 900 mg/kg and benzene at 3.1 mg/kg.

Groundwater samples collected from monitoring wells MW-1 through MW-5 generally did not contain petroleum hydrocarbons with the exception of benzene in the samples collected from monitoring wells MW-1 and MW-4 at 2.1  $\mu\text{g/L}$  and 0.33  $\mu\text{g/L}$ ,

respectively. Based on this information, a monthly monitoring and quarterly groundwater sampling program was initiated at the site.

Due to fluctuating concentrations of petroleum hydrocarbons in groundwater samples collected from monitoring well MW-5, an additional on-site monitoring well (MW-6) and an off-site monitoring well (MW-7) were installed at the site in June 1992. Analytical data from soil samples collected from well boring MW-7 indicated that petroleum hydrocarbon were not present above the laboratory's indicated reporting limits. However, soil samples collected from well boring MW-6 contained TPHg at 410 mg/kg. A groundwater sample collected from monitoring well MW-7 did not contain petroleum hydrocarbons; however, groundwater samples collected from monitoring well MW-6 contained TPHg and benzene at concentrations ranging from 300 µg/L to 540 µg/L and 12 µg/L to 66 µg/L, respectively.

To further evaluate the extent of impacted groundwater, methyl tertiary butyl ether (MTBE) off-site, Delta prepared a *Work Plan-Additional Subsurface Assessment*, dated June 22, 2006, that proposed the advancement of seven off-site borings (SB-1 through SB-7) southwest of the site along Hesperian Boulevard and Tahoe Avenue and the collection of soil and groundwater samples for laboratory analysis. The work plan was submitted to the Alameda County Water District (ACWD). Based on conversations with Ms. Eileen Chen of the ACWD, Delta prepared a *Work Plan Addendum-Subsurface Assessment*, dated July 18, 2006, that revised the locations of proposed borings SB-6 and SB-7, specified that groundwater samples would be collected using a Hydropunch sampling device, specified equipment decontamination and borehole grouting procedures, and specified additional analyses to be performed during the monitoring events from specific wells.

Borings SB-1 through SB-7 were advanced on March 7 and 8, 2007. The results of the investigation indicated that the extend of the petroleum hydrocarbon impact to the soil and the groundwater down-gradient of the site had been assessed.

Currently, groundwater monitoring is performed on an annual basis during the first quarter of each year. The highest concentrations of benzene and MTBE have historically been reported in the monitoring wells adjacent to the USTs and pump islands (MW-5 and MW-6) near Hesperian Boulevard.

### **SENSITIVE RECEPTOR SURVEY**

Delta conducted a sensitive receptor survey (SRS) in March and April 2008. Using Department of Water Resources (DWR) well logs, a total of 16 wells had verifiable addresses within a one-mile radius of the site. Historically the groundwater flow direction at the site has been towards the southwest. The closest down-gradient water supply well is a domestic well located approximately 0.09 miles southwest of the site. This is also the closest well in general.

Other wells located in the vicinity of the site include monitoring wells, industrial wells and water supply wells whose associated DWR logs contained inadequate information to establish their precise location, or their location was outside of the one-mile radius search area.

Drinking water in the area is provided by the City of Hayward Municipal Water System, which obtains its water from the Hetch Hetchy reservoir.

A field survey was completed to identify any sensitive receptors within a 1,000 foot survey area. Two schools and one religious center were located within the survey area. Leadership Public School is located at 28000 Calaroga Ave, which is 1,400 feet northeast (up-gradient) of the site. A Buddhist center is located at 27878 Calaroga Ave, which is 1,700 feet northeast (up-gradient) of the site. Mount Eden High School is located at 2300 Panama St. The property begins 260 feet north (up- to cross-gradient) of the site.

Bodies of Water: No bodies of water were identified within 1000 feet of the site. The San Francisco Bay is located 3.2 miles west of the site.

## **MONITORING AND SAMPLING**

Groundwater monitoring is performed on an annual basis using monitoring wells MW-1 through MW-7 during the first quarter of each year. Samples collected from the monitoring wells are analyzed for total purgeable petroleum hydrocarbons (TPPH), benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and MTBE by Environmental Protection Agency (EPA) Method 8260B. As requested by the ACWD, samples collected from monitoring wells MW-1 through MW-3 were additionally analyzed for TPHd and TPH as motor oil (TPHo) by EPA Method 8015M. Samples collected from monitoring wells MW-4 and MW-6 were additionally analyzed for fuel oxygenates by EPA Method 8260B, and samples collected from monitoring wells MW-4 through MW-7 were additionally analyzed for ethanol by EPA Method 8260B.

## **SECOND QUARTER 2007 THROUGH FIRST QUARTER 2008 MONITORING AND SAMPLING RESULTS**

Groundwater monitoring and sampling was performed on January 25, 2008 by TRC. The groundwater elevation increased an average of 0.78 feet from the January 2007 event. Depth to groundwater in site monitoring wells ranged from 5.21 feet (MW-7) to 6.71 feet (MW-3) below top of casing (TOC). The groundwater flow direction and gradient were interpreted to be to the south at 0.007 foot per foot (ft/ft) as compared to the south-southwest at 0.01 ft/ft to during the previous event. Historic groundwater flow directions are shown on a Rose diagram presented as Attachment A.

### **Contaminants of Concern**

**TPPH:** TPPH was reported above the laboratory's indicated reporting limit in monitoring well MW-5 (85 µg/L) during the current event.

**Benzene:** Benzene was reported above the laboratory's indicated reporting limit in monitoring well MW-5 (3.7 µg/L) during the current event.

**MTBE:** MTBE was reported above the laboratory's indicated reporting limit in monitoring wells MW-5 (6.3 µg/L) and MW-6 (3.8 µg/L) during the current event.

**Other Fuel Oxygenates:** Tertiary butyl alcohol (TBA) was reported above the laboratory's indicated reporting limit in monitoring well MW-6 (270 µg/L) during the current event.

TPHd and TPHo were below the laboratory's indicated reporting limits in the monitoring wells sampled (MW-1, MW-2, and MW-3). Other fuel oxygenates, other than those mentioned above, were below the laboratory's indicated reporting limit in the monitoring wells sampled (MW-4 and MW-6). Ethanol was below the laboratory's indicated reporting limit in the samples collected from monitoring wells MW-4 through MW-7. Other BTEX compounds were below the laboratory's indicated reporting limit in the monitoring wells sampled.

### **REMEDIATION STATUS**

A total of approximately 650 cubic yards of soil were removed from UST excavations in January and February 1989; approximately 24,000 gallons of impacted groundwater were also extracted from the excavations.

### **CHARACTERIZATION STATUS**

Based on the analytical data from the soil samples collected during the UST over-excavation activities, it appears that the majority of the impacted soil has been removed from the site.

Based on the groundwater monitoring data, Delta believes that groundwater below the site is no longer impacted. The remaining TPHg and benzene concentrations are low; TPHg and benzene were reported above the laboratory's indicated reporting limits in monitoring well MW-5 at 85 µg/L and 3.7 µg/L, respectively, during the current event.

MTBE was above the laboratory's indicated reporting limit in on-site monitoring wells MW-5 and MW-6 at 6.3 µg/L and 3.8 µg/L, respectively, during the current event. MTBE concentrations in monitoring wells MW-5 and MW-6 have significantly decreased over the past several years; likely due to natural biodegradation. An elevated concentration of TBA (270 µg/L) was reported in monitoring well MW-6 during the current event. TBA is a known by-product of MTBE degradation.

### **RECOMMENDATION**

Based on the data obtained during quarterly groundwater monitoring activities and the previous subsurface investigations at this site the extent of the petroleum hydrocarbon impact to the soil and the groundwater has been assessed and are not significantly impacted, the source of the impact has been removed, and no sensitive receptors are likely to be impacted. Therefore, Delta recommends this site be considered for No Further Action.

## **RECENT CORRESPONDENCE**

No correspondence was received during second quarter 2007 through first quarter 2008.

## **SECOND QUARTER 2007 THROUGH FIRST QUARTER 2008 ACTIVITIES**

1. Delta prepared and submitted *Annual Summary Report*, dated April 23, 2007.
2. Delta submitted an Off-Site Soil and Groundwater Evaluation Report on April 23, 2007.
3. TRC performed annual monitoring and sampling on January 25, 2008.

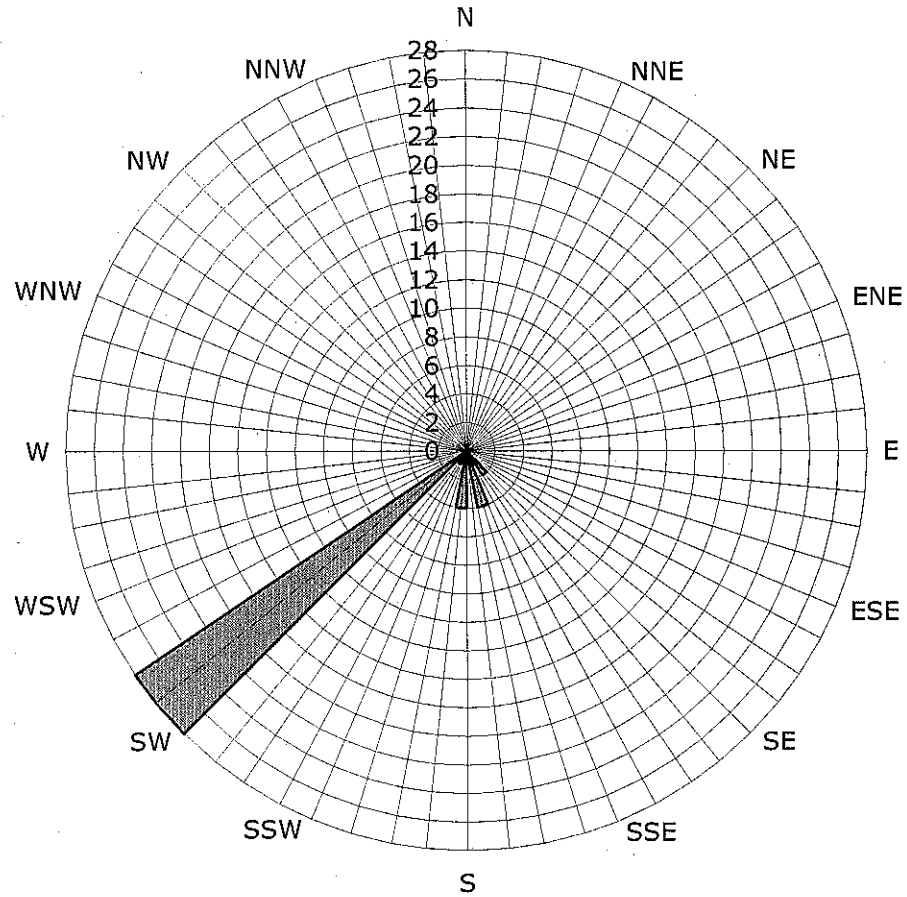
## **SECOND QUARTER 2008 THROUGH FIRST QUARTER 2009 ACTIVITIES**

1. Delta will submit a Sensitive Receptor Survey.
2. Delta will discuss with ACWD steps necessary to obtain No Further Action.
3. TRC to perform annual monitoring and sampling.
4. Delta to prepare and submit *Annual Summary Report*.

**CONSULTANT:** Delta Consultants

**Attachment A**  
**Historic Groundwater Flow Directions**

**Historic Groundwater Flow Directions**  
**ConocoPhillips Site No. 5487**  
28250 Hesperian Boulevard  
Hayward, California



Legend  
Concentric circles  
represent quarterly  
monitoring events  
Third Quarter 1989  
through First Quarter  
2008  
39 data points shown

■ Groundwater Flow Direction





21 Technology Drive  
Irvine, CA 92618

949.727.9336 PHONE  
949.727.7399 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

DATE: February 22, 2008

TO: ConocoPhillips Company  
76 Broadway  
Sacramento, CA 95818

ATTN: MR. BILL BORGH

SITE: 76 STATION 5487  
28250 HESPERIAN BOULEVARD  
HAYWARD, CALIFORNIA

RE: ANNUAL MONITORING REPORT  
APRIL 2007 THROUGH MARCH 2008

Dear Mr. Borgh:

Please find enclosed our Annual Monitoring Report for 76 Station 5487, located at 28250 Hesperian Boulevard, Hayward, California. If you have any questions regarding this report, please call us at (949) 727-9336.

Sincerely,

TRC

A handwritten signature in black ink, appearing to read "Anju Farfan".

Anju Farfan  
Groundwater Program Operations Manager

CC: Mr. Dennis Dettloff, Delta Environmental (1 copy)

Enclosures  
20-0400/5487R05.QMS

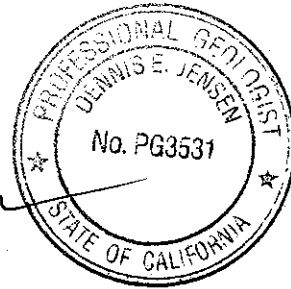
**ANNUAL MONITORING REPORT  
APRIL 2007 THROUGH MARCH 2008**

76 STATION 5487  
5487 Hesperian Boulevard  
Hayward, California

Prepared For:

Mr. Bill Borgh  
CONOCOPHILLIPS COMPANY  
76 Broadway  
Sacramento, California 95818

By:



Senior Project Geologist, Irvine Operations

Date: 2/21/08



### LIST OF ATTACHMENTS

Summary Sheet	Summary of Gauging and Sampling Activities
Tables	Table Key Contents of Tables Table 1: Current Fluid Levels and Selected Analytical Results Table 1a: Additional Current Analytical Results Table 2: Historic Fluid Levels and Selected Analytical Results Table 2a: Additional Historic Analytical Results
Figures	Figure 1: Vicinity Map Figure 2: Groundwater Elevation Contour Map Figure 3: Dissolved-Phase TPH-G (GC/MS) 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 Field Monitoring Data Sheet - 01/25/08 Groundwater Sampling Field Notes - 01/25/08
Laboratory Reports	Official Laboratory Reports Quality Control Reports Chain of Custody Records
Statements	Purge Water Disposal Limitations

**Summary of Gauging and Sampling Activities**  
**April 2007 through March 2008**  
**76 Station 5487**  
**28250 Hesperian Boulevard**  
**Hayward, CA**

Project Coordinator: **Bill Borgh**  
Telephone: **916-558-7612**

Water Sampling Contractor: **TRC**  
Compiled by: **Christina Carrillo**

Date(s) of Gauging/Sampling Event: **01/25/08**

**Sample Points**

Groundwater wells: **6** onsite, **1** offsite      Wells gauged: **7**      Wells sampled: **7**  
Purging method: **Submersible 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: **5.21 feet**      Maximum: **6.71 feet**  
Average groundwater elevation (relative to available local datum): **5.30 feet**  
Average change in groundwater elevation since previous event: **0.78 feet**  
Interpreted groundwater gradient and flow direction:  
    Current event: **0.007 ft/ft, south**  
    Previous event: **0.01 ft/ft, south to southwest (01/12/07)**

**Selected Laboratory Results**

Wells with detected **Benzene**: **1**      Wells above MCL (1.0 µg/l): **1**  
    Maximum reported benzene concentration: **3.7 µg/l (MW-5)**  
Wells with **TPH-G by GC/MS** **1**      Maximum: **85 µg/l (MW-5)**  
Wells with **MTBE 8260B** **2**      Maximum: **6.3 µg/l (MW-5)**

**Notes:**

# 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-G (GC/MS)	=	total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B
TPH-D	=	total petroleum hydrocarbons with diesel distinction
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: Surface Elevation – Measured Depth to Water + (Dp x 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 5487 in October 2003. Historical data compiled prior to that time were provided by Gettler-Ryan Inc.

**Contents of Tables 1 and 2**  
**Site: 76 Station 5487**

**Current Event**

Table 1	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	TPH-G (GC/MS)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	Comments
Table 1a	Well/ Date	TPH-D	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	TPH- Motor Oil				

**Historic Data**

Table 2	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	TPH-G (GC/MS)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	Comments
Table 2a	Well/ Date	TPH-D	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	TPH- Motor Oil	Total Oil and Grease			

**Table 1**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**January 25, 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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: 4.0-28.0)</b>												
01/25/08	11.73	6.13	0.00	5.60	0.44	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-2</b>		<b>(Screen Interval in feet: 4.0-24.0)</b>												
01/25/08	12.58	6.63	0.00	5.95	0.69	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-3</b>		<b>(Screen Interval in feet: 5.0-25.0)</b>												
01/25/08	11.99	6.71	0.00	5.28	0.19	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-4</b>		<b>(Screen Interval in feet: 5.0-25.0)</b>												
01/25/08	11.58	5.99	0.00	5.59	0.83	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-5</b>		<b>(Screen Interval in feet: 4.0-24.0)</b>												
01/25/08	10.79	5.64	0.00	5.15	0.99	--	85	3.7	ND<0.50	ND<0.50	ND<1.0	--	6.3	
<b>MW-6</b>		<b>(Screen Interval in feet: 5.0-18.0)</b>												
01/25/08	11.18	5.86	0.00	5.32	0.94	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.8	
<b>MW-7</b>		<b>(Screen Interval in feet: 3.5-19.0)</b>												
01/25/08	9.39	5.21	0.00	4.18	1.36	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	



**Table 1 a**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 5487**

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TPH- Motor Oil (µg/l)
<b>MW-1</b>									
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500
<b>MW-2</b>									
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500
<b>MW-3</b>									
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500
<b>MW-4</b>									
01/25/08	--	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--
<b>MW-5</b>									
01/25/08	--	--	ND<250	--	--	--	--	--	--
<b>MW-6</b>									
01/25/08	--	270	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--
<b>MW-7</b>									
01/25/08	--	--	ND<250	--	--	--	--	--	--

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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: 4.0-28.0)</b>												
04/26/89	--	--	0.00	--	--	ND	--	2.1	ND	ND	ND	--	--	
08/16/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/29/90	--	--	--	--	--	ND	--	ND	ND	ND	0.74	--	--	
11/15/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/11/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/10/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/02/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/07/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/04/92	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/03/93	12.57	6.87	0.00	5.70	--	--	--	--	--	--	--	--	--	
08/05/93	12.57	7.49	0.00	5.08	-0.62	ND	--	ND	ND	ND	ND	--	--	
11/05/93	11.73	6.98	0.00	4.75	-0.33	--	--	--	--	--	--	--	--	
02/07/94	11.73	6.26	0.00	5.47	0.72	--	--	--	--	--	--	--	--	
05/02/94	11.73	6.27	0.00	5.46	-0.01	--	--	--	--	--	--	--	--	
08/02/94	11.73	6.89	0.00	4.84	-0.62	ND	--	ND	ND	ND	ND	--	--	
11/02/94	11.73	7.07	0.00	4.66	-0.18	--	--	--	--	--	--	--	--	
02/01/95	11.73	5.17	0.00	6.56	1.90	--	--	--	--	--	--	--	--	
05/02/95	11.73	5.65	0.00	6.08	-0.48	--	--	--	--	--	--	--	--	
08/03/95	11.73	6.21	0.00	5.52	-0.56	ND	--	ND	ND	ND	ND	--	--	
11/06/95	11.73	6.80	0.00	4.93	-0.59	--	--	--	--	--	--	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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 continued</b>															
02/02/96	11.73	3.88	0.00	7.85	2.92	--	--	--	--	--	--	--	--	Sampled annually Sampling discontinued	
02/07/97	11.73	4.63	0.00	7.10	-0.75	--	--	--	--	--	--	--	--		
02/09/98	11.73	2.70	0.00	9.03	1.93	--	--	--	--	--	--	--	--		
02/02/99	11.73	5.42	0.00	6.31	-2.72	--	--	--	--	--	--	--	--		
02/04/00	11.73	4.08	0.00	7.65	1.34	--	--	--	--	--	--	--	--		
02/02/01	11.73	5.26	0.00	6.47	-1.18	--	--	--	--	--	--	--	--		
03/02/02	11.73	5.65	0.00	6.08	-0.39	--	--	--	--	--	--	--	--		
02/22/03	11.73	5.87	0.00	5.86	-0.22	--	--	--	--	--	--	--	--		
02/20/04	11.73	6.01	0.00	5.72	-0.14	--	--	--	--	--	--	--	--		Monitored Only Monitored only Monitored only
03/02/05	11.73	5.02	0.00	6.71	0.99	--	--	--	--	--	--	--	--		
02/13/06	11.73	5.39	0.00	6.34	-0.37	--	--	--	--	--	--	--	--		
01/12/07	11.73	6.57	0.00	5.16	-1.18	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50		
01/25/08	11.73	6.13	0.00	5.60	0.44	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50		
<b>MW-2 (Screen Interval in feet: 4.0-24.0)</b>															
04/26/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
08/16/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
11/14/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
02/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
05/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
08/29/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
11/15/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
02/11/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
05/10/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		
08/02/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--		

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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>														
11/07/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/04/92	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/03/93	12.89	7.30	0.00	5.59	--	--	--	--	--	--	--	--	--	
08/05/93	12.89	7.97	0.00	4.92	-0.67	ND	--	ND	ND	ND	ND	--	--	
11/05/93	12.58	7.97	0.00	4.61	-0.31	--	--	--	--	--	--	--	--	
02/07/94	12.58	7.09	0.00	5.49	0.88	--	--	--	--	--	--	--	--	
05/02/94	12.58	7.23	0.00	5.35	-0.14	--	--	--	--	--	--	--	--	
08/02/94	12.58	7.87	0.00	4.71	-0.64	ND	--	ND	ND	ND	ND	--	--	
11/02/94	12.58	7.98	0.00	4.60	-0.11	--	--	--	--	--	--	--	--	
02/01/95	12.58	6.13	0.00	6.45	1.85	--	--	--	--	--	--	--	--	
05/02/95	12.58	7.04	0.00	5.54	-0.91	--	--	--	--	--	--	--	--	
08/03/95	12.58	7.19	0.00	5.39	-0.15	ND	--	ND	ND	ND	ND	--	--	
11/06/95	12.58	7.80	0.00	4.78	-0.61	--	--	--	--	--	--	--	--	
02/02/96	12.58	5.91	0.00	6.67	1.89	--	--	--	--	--	--	--	--	
02/07/97	12.58	5.65	0.00	6.93	0.26	--	--	--	--	--	--	--	--	Sampled annually
02/09/98	12.58	3.63	0.00	8.95	2.02	--	--	--	--	--	--	--	--	Sampling discontinued
02/02/99	12.58	6.36	0.00	6.22	-2.73	--	--	--	--	--	--	--	--	
02/04/00	12.58	6.04	0.00	6.54	0.32	--	--	--	--	--	--	--	--	
02/02/01	12.58	6.44	0.00	6.14	-0.40	--	--	--	--	--	--	--	--	
03/02/02	12.58	6.61	0.00	5.97	-0.17	--	--	--	--	--	--	--	--	
02/22/03	12.58	--	--	--	--	--	--	--	--	--	--	--	--	
02/20/04	12.58	6.80	0.00	5.78	--	--	--	--	--	--	--	--	--	
03/02/05	12.58	5.75	0.00	6.83	1.05	--	--	--	--	--	--	--	--	Monitored Only
02/13/06	12.58	6.50	0.00	6.08	-0.75	--	--	--	--	--	--	--	--	Monitored only

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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>														
01/12/07	12.58	7.32	0.00	5.26	-0.82	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	
01/25/08	12.58	6.63	0.00	5.95	0.69	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-3 (Screen Interval in feet: 5.0-25.0)</b>														
04/26/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/16/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/29/90	--	--	--	--	--	ND	--	ND	0.52	ND	ND	--	--	
11/15/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/11/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/10/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/02/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/07/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/04/92	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/03/93	12.46	6.82	0.00	5.64	--	--	--	--	--	--	--	--	--	
08/05/93	12.46	7.50	0.00	4.96	-0.68	--	--	--	--	--	--	--	--	
11/05/93	11.99	7.35	0.00	4.64	-0.32	--	--	--	--	--	--	--	--	
02/07/94	11.99	6.58	0.00	5.41	0.77	--	--	--	--	--	--	--	--	
05/02/94	11.99	6.62	0.00	5.37	-0.04	--	--	--	--	--	--	--	--	
08/02/94	11.99	7.24	0.00	4.75	-0.62	ND	--	ND	ND	ND	ND	--	--	
11/02/94	11.99	7.42	0.00	4.57	-0.18	--	--	--	--	--	--	--	--	
02/01/95	11.99	5.55	0.00	6.44	1.87	--	--	--	--	--	--	--	--	
05/02/95	11.99	5.70	0.00	6.29	-0.15	--	--	--	--	--	--	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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>														
08/03/95	11.99	6.59	0.00	5.40	-0.89	ND	--	ND	ND	ND	ND	--	--	
11/06/95	11.99	7.20	0.00	4.79	-0.61	--	--	--	--	--	--	--	--	
02/02/96	11.99	4.08	0.00	7.91	3.12	--	--	--	--	--	--	--	--	
02/07/97	11.99	5.04	0.00	6.95	-0.96	--	--	--	--	--	--	--	--	Sampled annually
02/09/98	11.99	3.11	0.00	8.88	1.93	--	--	--	--	--	--	--	--	Sampling discontinued
02/02/99	11.99	5.69	0.00	6.30	-2.58	--	--	--	--	--	--	--	--	
02/04/00	11.99	4.26	0.00	7.73	1.43	--	--	--	--	--	--	--	--	
02/02/01	11.99	4.91	0.00	7.08	-0.65	--	--	--	--	--	--	--	--	
03/02/02	11.99	6.07	0.00	5.92	-1.16	--	--	--	--	--	--	--	--	
02/22/03	11.99	6.37	0.00	5.62	-0.30	--	--	--	--	--	--	--	--	
02/20/04	11.99	6.57	0.00	5.42	-0.20	--	--	--	--	--	--	--	--	
03/02/05	11.99	6.30	0.00	5.69	0.27	--	--	--	--	--	--	--	--	Monitored Only
02/13/06	11.99	6.80	0.00	5.19	-0.50	--	--	--	--	--	--	--	--	Monitored only
01/12/07	11.99	6.90	0.00	5.09	-0.10	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	Monitored only
01/25/08	11.99	6.71	0.00	5.28	0.19	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-4 (Screen Interval in feet: 5.0-25.0)</b>														
04/26/89	--	--	--	--	--	ND	--	0.33	ND	ND	ND	--	--	
08/16/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/29/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/15/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
02/11/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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>														
05/10/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/02/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/07/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/04/92	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/03/93	12.09	6.60	0.00	5.49	--	--	--	--	--	--	--	--	--	
08/05/93	12.09	7.28	0.00	4.81	-0.68	ND	--	ND	ND	ND	ND	--	--	
11/05/93	11.58	7.07	0.00	4.51	-0.30	--	--	--	--	--	--	--	--	
02/07/94	11.58	6.21	0.00	5.37	0.86	--	--	--	--	--	--	--	--	
05/02/94	11.58	6.32	0.00	5.26	-0.11	--	--	--	--	--	--	--	--	
08/02/94	11.58	6.95	0.00	4.63	-0.63	ND	--	ND	ND	ND	ND	--	--	
11/02/94	11.58	7.13	0.00	4.45	-0.18	--	--	--	--	--	--	--	--	Sampled annually
02/01/95	11.58	5.23	0.00	6.35	1.90	--	--	--	--	--	--	--	--	
05/02/95	11.58	5.43	0.00	6.15	-0.20	--	--	--	--	--	--	--	--	
08/03/95	11.58	6.33	0.00	5.25	-0.90	ND	--	ND	ND	ND	ND	--	--	
11/06/95	11.58	6.90	0.00	4.68	-0.57	--	--	--	--	--	--	--	--	
02/02/96	11.58	3.71	0.00	7.87	3.19	--	--	--	--	--	--	--	--	
02/07/97	11.58	4.46	0.00	7.12	-0.75	--	--	--	--	--	--	--	--	Sampling discontinued
02/09/98	11.58	2.55	0.00	9.03	1.91	--	--	--	--	--	--	--	--	
02/02/99	11.58	5.37	0.00	6.21	-2.82	--	--	--	--	--	--	--	--	
02/04/00	11.58	4.09	0.00	7.49	1.28	--	--	--	--	--	--	--	--	
02/02/01	11.58	5.12	0.00	6.46	-1.03	--	--	--	--	--	--	--	--	
03/02/02	11.58	5.51	0.00	6.07	-0.39	--	--	--	--	--	--	--	--	
02/22/03	11.58	6.12	0.00	5.46	-0.61	--	--	--	--	--	--	--	--	
02/20/04	11.58	5.83	0.00	5.75	0.29	--	--	--	--	--	--	--	--	Monitored Only

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**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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>														
03/02/05	11.58	4.78	0.00	6.80	1.05	--	--	--	--	--	--	--	--	Monitored only
02/13/06	11.58	6.03	0.00	5.55	-1.25	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	--	
01/12/07	11.58	6.82	0.00	4.76	-0.79	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	
01/25/08	11.58	5.99	0.00	5.59	0.83	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
<b>MW-5 (Screen Interval in feet: 4.0-24.0)</b>														
04/26/89	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/16/89	--	--	--	--	--	4400	--	1400	84	200	950	--	--	
08/31/89	--	--	--	--	--	910	--	120	7.1	50	53	--	--	
11/14/89	--	--	--	--	--	73	--	4.7	0.97	2.9	16	--	--	
02/16/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
05/16/90	--	--	--	--	--	1100	--	310	2.8	70	110	--	--	
08/29/90	--	--	--	--	--	ND	--	0.7	ND	0.57	1.1	--	--	
11/15/90	--	--	--	--	--	ND	--	ND	ND	ND	0.47	--	--	
02/11/91	--	--	--	--	--	58	--	23	ND	2.9	1.3	--	--	
05/10/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
08/02/91	--	--	--	--	--	100	--	43	0.33	12	5.2	--	--	
11/07/91	--	--	--	--	--	700	--	43	1.7	29	24	--	--	
02/05/92	--	--	--	--	--	120	--	20	ND	4.4	4.7	--	--	
05/05/92	--	--	--	--	--	170	--	45	0.48	9	6.8	--	--	
08/04/92	--	--	--	--	--	80	--	13	ND	4.5	6.9	--	--	
11/05/92	--	--	--	--	--	120	--	16	ND	3.5	3	--	--	
02/02/93	--	--	--	--	--	77	--	5	ND	1.2	1.3	--	--	
05/03/93	11.18	6.16	0.00	5.02	--	260	--	35	ND	2.3	3.1	--	--	
08/05/93	11.18	6.97	0.00	4.21	-0.81	530	--	210	0.62	54	44	--	--	



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**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-5 continued</b>														
11/05/93	10.79	6.81	0.00	3.98	-0.23	110	--	12	ND	2.3	2.3	--	--	
02/07/94	10.79	5.70	0.00	5.09	1.11	180	--	22	ND	6.4	5.9	--	--	
05/02/94	10.79	5.96	0.00	4.83	-0.26	170	--	38	0.73	8.5	8.4	--	--	
08/02/94	10.79	6.68	0.00	4.11	-0.72	59	--	16	ND	2.4	3.1	--	--	
11/02/94	10.79	6.86	0.00	3.93	-0.18	450	--	73	1.6	6.2	11	--	--	
02/01/95	10.79	4.85	0.00	5.94	2.01	170	--	11	ND	2.4	3.9	--	--	
05/02/95	10.79	4.95	0.00	5.84	-0.10	ND	--	7.5	0.51	1.2	1.6	--	--	
08/03/95	10.79	6.03	0.00	4.76	-1.08	ND	--	12	ND	0.7	ND	--	--	
11/06/95	10.79	6.70	0.00	4.09	-0.67	160	--	80	ND	7.4	10	120	--	
02/02/96	10.79	3.50	0.00	7.29	3.20	64	--	20	ND	3.9	6.1	150	--	
02/07/97	10.79	4.26	0.00	6.53	-0.76	85	--	16	0.56	1.7	3.8	250	--	
02/09/98	10.79	2.29	0.00	8.50	1.97	220	--	54	ND	3.2	5.9	230	--	
02/02/99	10.79	5.07	0.00	5.72	-2.78	61	--	19	ND	1.3	2.1	110	--	
02/04/00	10.79	3.68	0.00	7.11	1.39	ND	--	8.4	ND	ND	ND	86	--	
02/02/01	10.79	4.38	0.00	6.41	-0.70	ND	--	6.42	ND	ND	ND	223	--	
03/02/02	10.79	5.68	0.00	5.11	-1.30	93	--	11	ND<0.50	ND<0.50	ND<0.50	350	--	
02/22/03	10.79	5.84	0.00	4.95	-0.16	--	76	4.0	ND<0.50	ND<0.50	ND<1.0	--	180	
02/20/04	10.79	5.63	0.00	5.16	0.21	--	610	47	ND<1.0	2.7	ND<2.0	--	270	
03/02/05	10.79	4.74	0.00	6.05	0.89	--	110	8.2	1.2	0.88	2.1	--	350	
02/13/06	10.79	5.86	0.00	4.93	-1.12	--	170	8.1	ND<0.50	ND<0.50	ND<1.0	--	73	
01/12/07	10.79	6.63	0.00	4.16	-0.77	--	120	5.9	ND<0.50	ND<0.50	ND<0.50	--	26	
01/25/08	10.79	5.64	0.00	5.15	0.99	--	85	3.7	ND<0.50	ND<0.50	ND<1.0	--	6.3	
<b>MW-6 (Screen Interval in feet: 5.0-18.0)</b>														
08/04/92	--	--	--	--	--	540	--	12	7.9	35	110	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-6 continued</b>														
11/05/92	--	--	--	--	--	300	--	16	2.3	14	14	--	--	
02/02/93	--	--	--	--	--	400	--	66	5.5	32	13	--	--	
05/03/93	11.47	6.28	0.00	5.19	--	520	--	47	2.6	33	48	--	--	
08/05/93	11.47	7.05	0.00	4.42	-0.77	230	--	25	1.6	12	29	--	--	
11/05/93	11.18	7.02	0.00	4.16	-0.26	100	--	1.8	ND	0.79	2.2	--	--	
02/07/94	11.18	6.00	0.00	5.18	1.02	1100	--	130	14	13	130	--	--	
05/02/94	11.18	6.18	0.00	5.00	-0.18	440	--	20	4.2	11	26	--	--	
08/02/94	11.18	6.88	0.00	4.30	-0.70	220	--	13	1	12	28	--	--	
11/02/94	11.18	7.05	0.00	4.13	-0.17	840	--	30	2.5	26	57	--	--	
02/01/95	11.18	5.04	0.00	6.14	2.01	340	--	26	0.77	2.6	7	--	--	
05/02/95	11.18	5.00	0.00	6.18	0.04	ND	--	5.7	ND	0.81	1.1	--	--	
08/03/95	11.18	6.26	0.00	4.92	-1.26	ND	--	0.76	ND	ND	ND	--	--	
11/06/95	11.18	6.87	0.00	4.31	-0.61	210	--	17	0.66	14	37	130	--	
02/02/96	11.18	3.64	0.00	7.54	3.23	300	--	51	0.65	30	18	280	--	
02/07/97	11.18	4.41	0.00	6.77	-0.77	66	--	5.8	1.2	2.1	6.6	450	--	
02/09/98	11.18	2.51	0.00	8.67	1.90	ND	--	1	ND	ND	ND	450	--	
02/02/99	11.18	5.14	0.00	6.04	-2.63	ND	--	2.6	ND	1	2.9	490	--	
02/04/00	11.18	4.11	0.00	7.07	1.03	110	--	3.9	ND	ND	ND	830	--	
02/02/01	11.18	5.06	0.00	6.12	-0.95	ND	--	4.79	ND	ND	ND	1800	1790	
03/02/02	11.18	6.09	0.00	5.09	-1.03	69	--	3.8	ND<0.50	ND<0.50	ND<0.50	780	900	
02/22/03	11.18	6.05	0.00	5.13	0.04	--	ND<250	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	550	
02/20/04	11.18	5.63	0.00	5.55	0.42	--	1900	ND<13	ND<13	ND<13	ND<25	--	2800	
03/02/05	11.18	4.80	0.00	6.38	0.83	--	ND<200	3.0	0.58	0.68	ND<1.0	--	390	
02/13/06	11.18	6.12	0.00	5.06	-1.32	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**April 1989 Through January 2008**  
**76 Station 5487**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-6 continued</b>														
01/12/07	11.18	6.80	0.00	4.38	-0.68	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	3.0	
01/25/08	11.18	5.86	0.00	5.32	0.94	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.8	
<b>MW-7 (Screen Interval in feet: 3.5-19.0)</b>														
07/03/96	--	--	--	--	--	--	--	--	--	--	--	--	--	
07/30/96	9.39	--	--	--	--	ND	--	ND	ND	ND	ND	ND	--	
02/07/97	9.39	3.75	0.00	5.64	--	ND	--	ND	ND	ND	ND	ND	--	
02/09/98	9.39	1.69	0.00	7.70	2.06	ND	--	ND	ND	ND	ND	ND	--	
02/02/99	9.39	4.14	0.00	5.25	-2.45	ND	--	ND	ND	ND	ND	ND	--	
02/04/00	9.39	3.97	0.00	5.42	0.17	ND	--	ND	ND	ND	ND	ND	--	
02/02/01	9.39	4.05	0.00	5.34	-0.08	ND	--	ND	ND	ND	ND	ND	--	
03/02/02	9.39	4.32	0.00	5.07	-0.27	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
02/22/03	9.39	5.64	0.00	3.75	-1.32	--	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	69	
02/20/04	9.39	4.93	0.00	4.46	0.71	--	67	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	79	
03/02/05	9.39	4.01	0.00	5.38	0.92	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	120	
02/13/06	9.39	6.82	0.00	2.57	-2.81	--	51	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	73	
01/12/07	9.39	6.57	0.00	2.82	0.25	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	38	
01/25/08	9.39	5.21	0.00	4.18	1.36	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	

**Table 2 a**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5487**

Date Sampled	TPH-D	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	TPH-Motor Oil	Total Oil and Grease
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(mg/l)
<b>MW-1</b>										
11/14/89	ND	--	--	--	--	--	--	--	--	ND
02/16/90	ND	--	--	--	--	--	--	--	--	ND
05/16/90	ND	--	--	--	--	--	--	--	--	ND
08/29/90	ND	--	--	--	--	--	--	--	--	ND
11/15/90	ND	--	--	--	--	--	--	--	--	ND
02/11/91	ND	--	--	--	--	--	--	--	--	ND
01/12/07	ND<200	--	--	--	--	--	--	--	ND<500	--
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500	--
<b>MW-2</b>										
04/26/89	ND	--	--	--	--	--	--	--	--	ND
11/14/89	ND	--	--	--	--	--	--	--	--	ND
05/16/90	ND	--	--	--	--	--	--	--	--	ND
01/12/07	ND<200	--	--	--	--	--	--	--	ND<500	--
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500	--
<b>MW-3</b>										
04/26/89	ND	--	--	--	--	--	--	--	--	ND
01/12/07	ND<200	--	--	--	--	--	--	--	ND<500	--
01/25/08	ND<200	--	--	--	--	--	--	--	ND<500	--
<b>MW-4</b>										
04/26/89	ND	--	--	--	--	--	--	--	--	ND
02/13/06	--	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--
01/12/07	--	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--
01/25/08	--	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--
<b>MW-5</b>										
04/26/89	ND	--	--	--	--	--	--	--	--	ND


**Table 2 a**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5487**

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TPH- Motor Oil (µg/l)	Total Oil and Grease (mg/l)
<b>MW-5 continued</b>										
02/20/04	--	--	ND<1000	--	--	--	--	--	--	--
03/02/05	--	--	ND<100	--	--	--	--	--	--	--
02/13/06	--	--	ND<250	--	--	--	--	--	--	--
01/12/07	--	--	ND<250	--	--	--	--	--	--	--
01/25/08	--	--	ND<250	--	--	--	--	--	--	--
<b>MW-6</b>										
02/02/01	--	ND	ND	ND	ND	ND	ND	ND	--	--
03/02/02	--	ND<500	ND<2500	ND<10	ND<10	ND<10	ND<10	ND<10	--	--
02/22/03	--	ND<500	ND<2500	ND<10	ND<10	ND<10	ND<10	ND<10	--	--
02/20/04	--	ND<2500	ND<13000	ND<50	ND<50	ND<50	ND<50	ND<50	--	--
03/02/05	--	330	ND<200	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--
02/13/06	--	350	--	--	--	ND<0.50	ND<0.50	ND<0.50	--	--
01/12/07	--	400	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--
01/25/08	--	270	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--
<b>MW-7</b>										
02/20/04	--	--	ND<500	--	--	--	--	--	--	--
03/02/05	--	--	ND<50	--	--	--	--	--	--	--
02/13/06	--	--	ND<250	--	--	--	--	--	--	--
01/12/07	--	--	ND<250	--	--	--	--	--	--	--
01/25/08	--	--	ND<250	--	--	--	--	--	--	--


# FIGURES

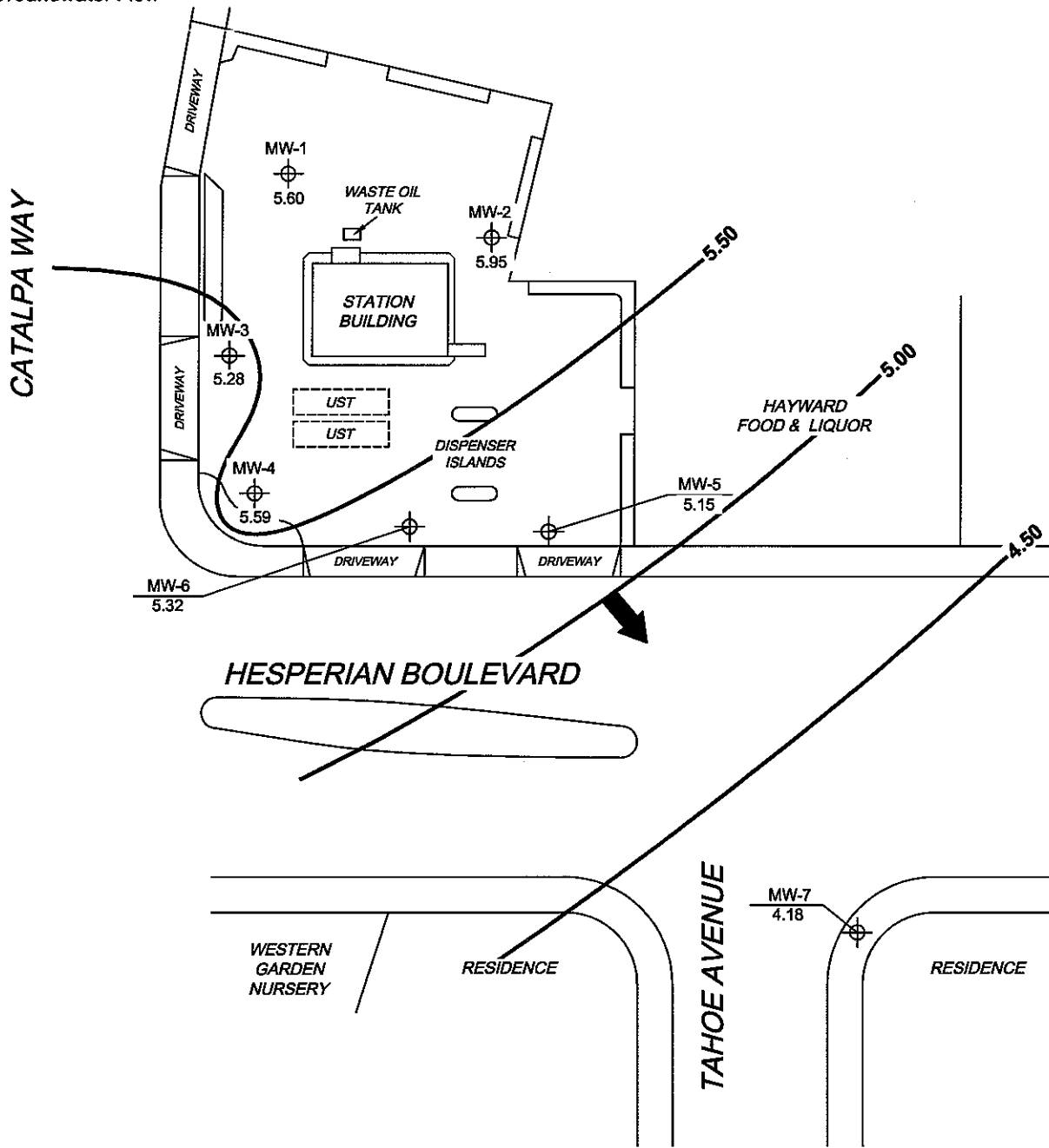
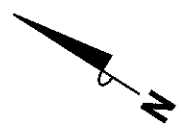


**LEGEND**

MW-7  Monitoring Well with Groundwater Elevation (feet)

5.50  Groundwater Elevation Contour

 General Direction of Groundwater Flow



**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.



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PROJECT: 154771  
FACILITY:  
76 STATION 5487  
28250 HESPERIAN BOULEVARD  
HAYWARD, CALIFORNIA

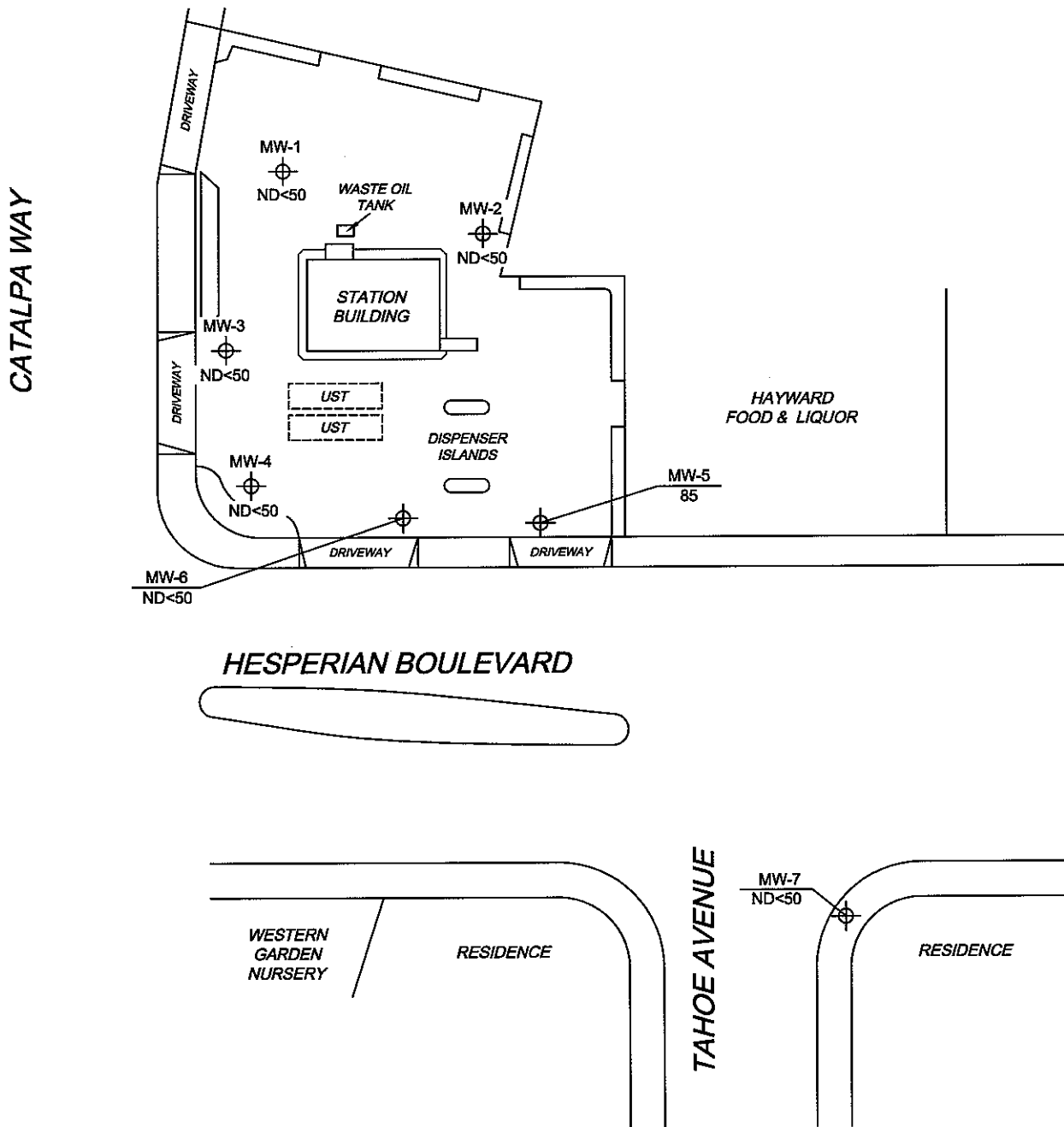
**GROUNDWATER ELEVATION  
CONTOUR MAP  
January 25, 2008**

**FIGURE 2**



**LEGEND**

MW-7  Monitoring Well with Dissolved-Phase TPH-G (GC/MS) Concentration ( $\mu\text{g/l}$ )



**NOTES:**

TPH-G (GC/MS) = total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank.

SCALE (FEET)



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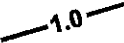
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 FACILITY:  
 76 STATION 5487  
 28250 HESPERIAN BOULEVARD  
 HAYWARD, CALIFORNIA

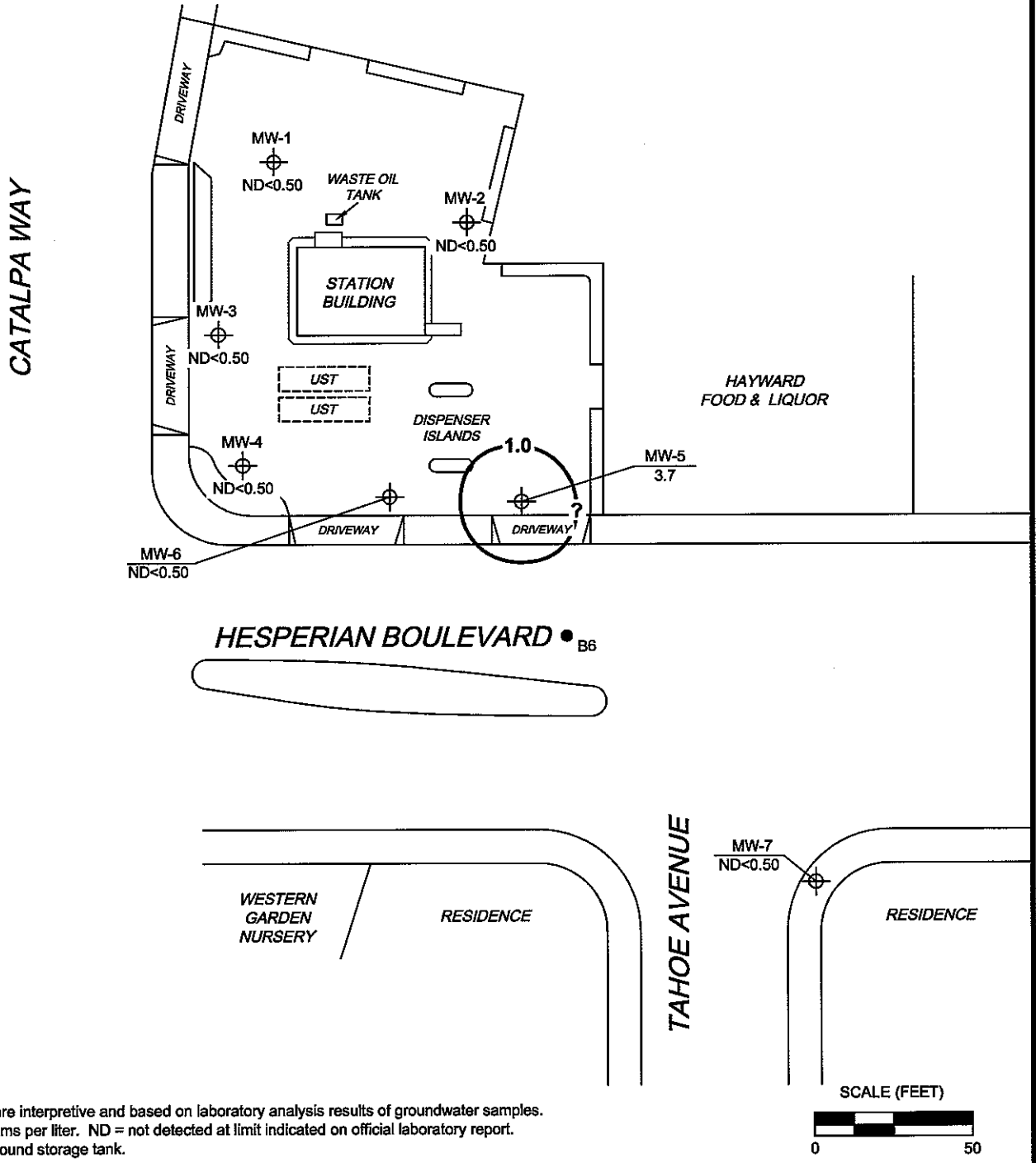
**DISSOLVED-PHASE TPH-G (GC/MS)  
 CONCENTRATION MAP**  
 January 25, 2008

**FIGURE 3**

**LEGEND**

MW-7  Monitoring Well with Dissolved-Phase Benzene Concentration ( $\mu\text{g/l}$ )

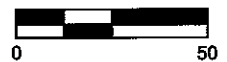
 1.0 Dissolved-Phase Benzene Contour ( $\mu\text{g/l}$ )



**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.

SCALE (FEET)



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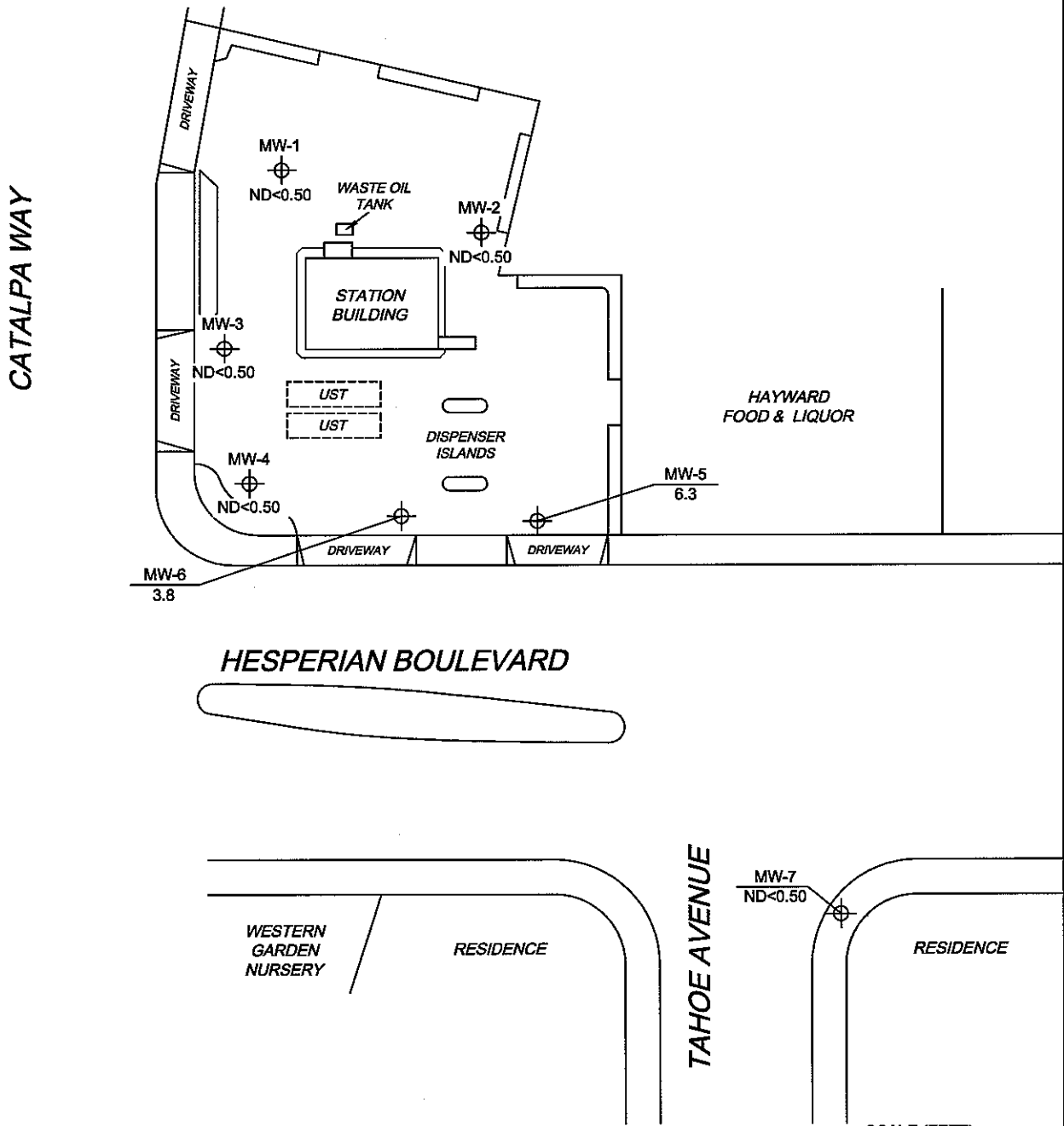
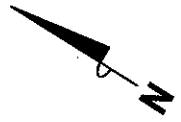
PROJECT: 154771  
 FACILITY:  
 76 STATION 5487  
 28250 HESPERIAN BOULEVARD  
 HAYWARD, CALIFORNIA

**DISSOLVED-PHASE BENZENE  
 CONCENTRATION MAP**  
 January 25, 2008

**FIGURE 4**

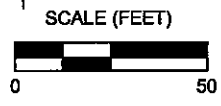
**LEGEND**

MW-7  Monitoring Well with Dissolved-Phase MTBE Concentration ( $\mu\text{g/l}$ )



**NOTES:**

MTBE = methyl tertiary butyl ether.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Results obtained using EPA Method 8260B.



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MS=1:1 5487-003



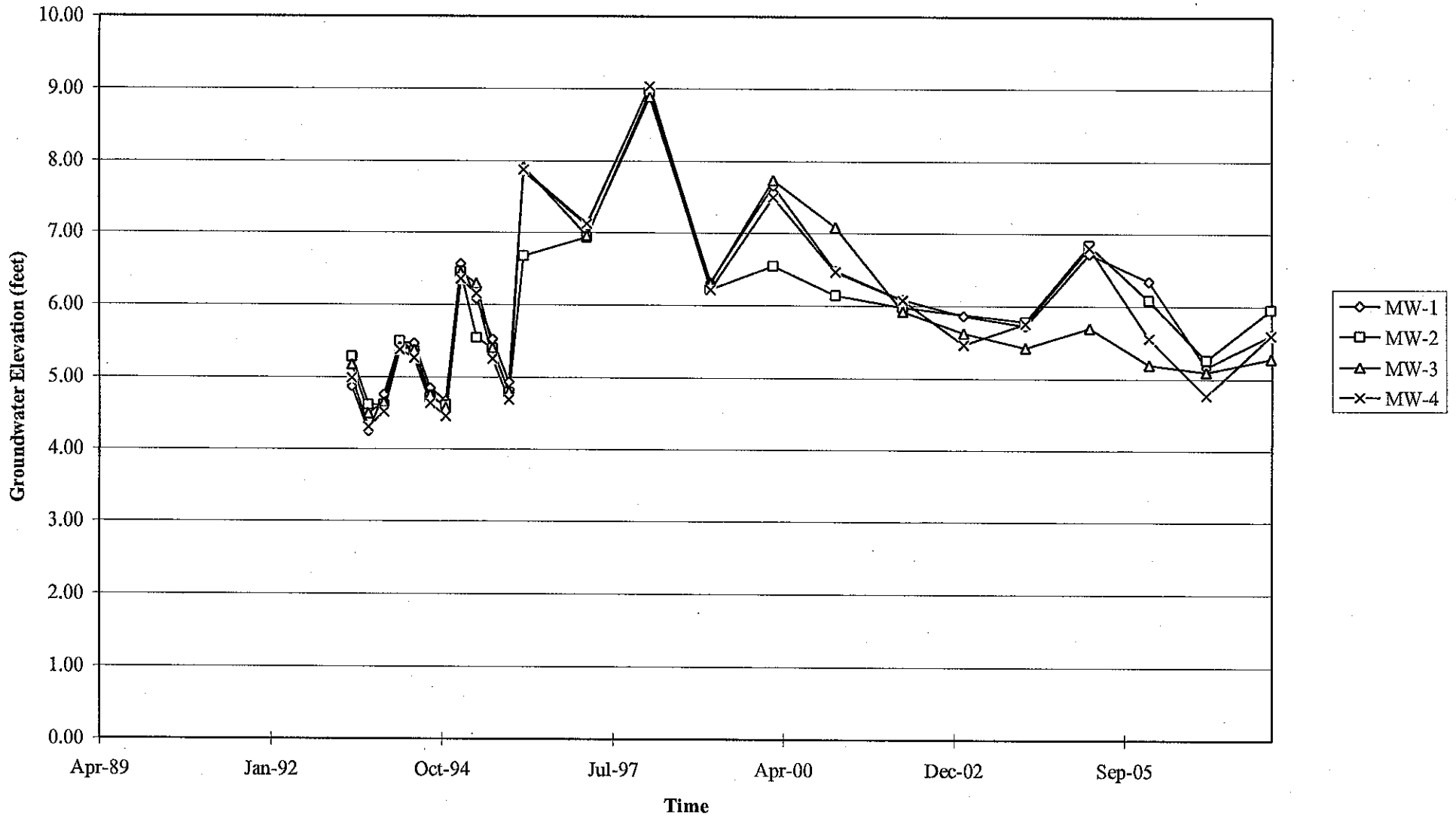
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 FACILITY:  
 76 STATION 5487  
 28250 HESPERIAN BOULEVARD  
 HAYWARD, CALIFORNIA

**DISSOLVED-PHASE MTBE  
 CONCENTRATION MAP  
 January 25, 2008**

**FIGURE 5**

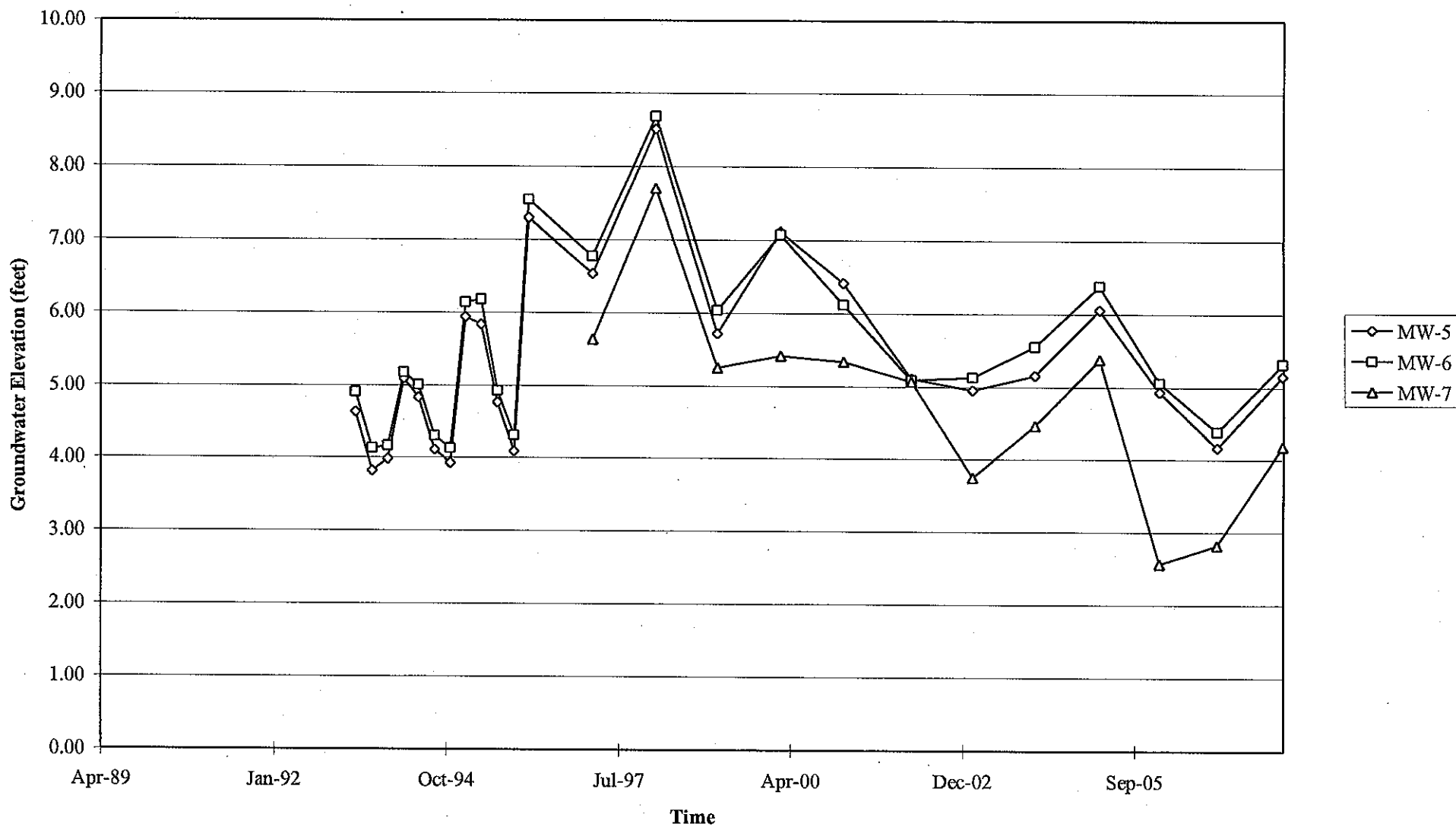
# GRAPHS

Groundwater Elevations vs. Time  
76 Station 5487



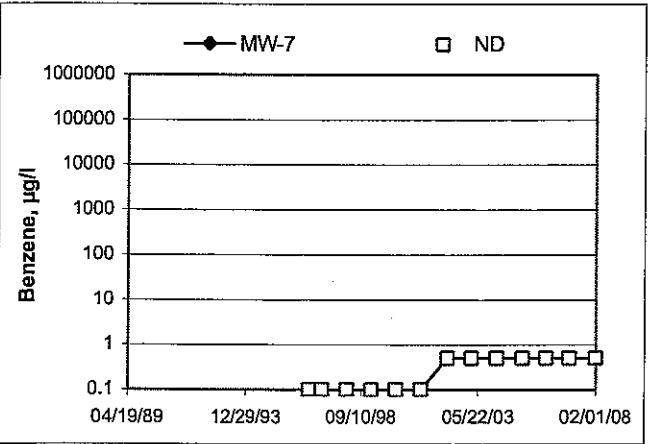
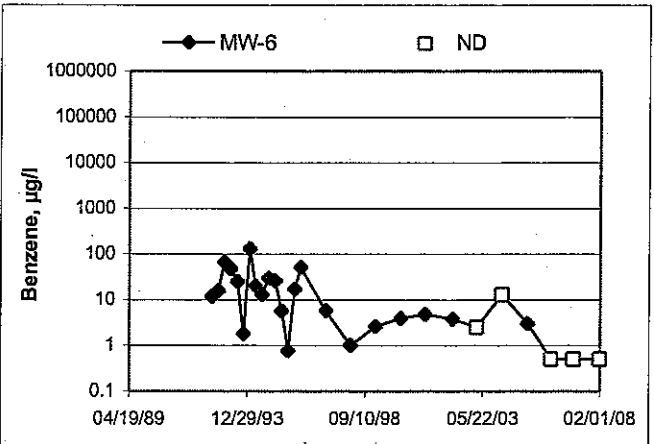
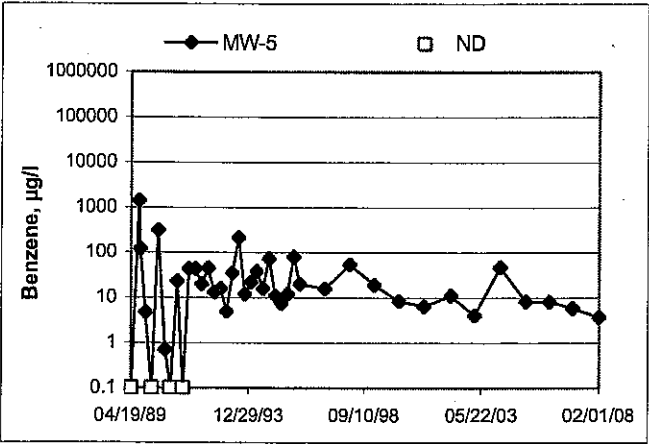
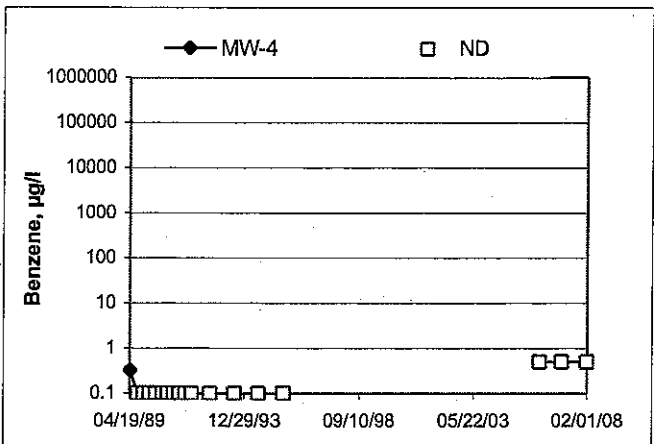
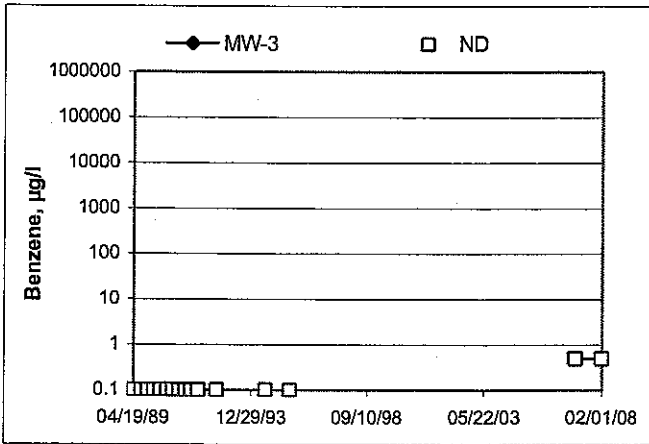
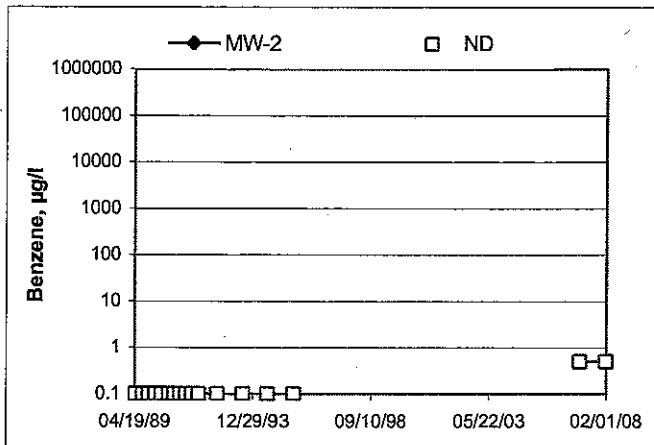
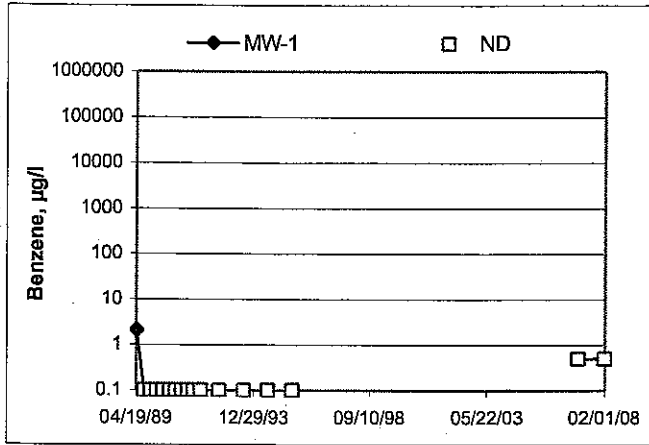
Elevations may have been corrected for apparent changes due to resurvey

Groundwater Elevations vs. Time  
76 Station 5487



Elevations may have been corrected for apparent changes due to resurvey

**Benzene Concentrations vs Time**  
76 Station 5487



# 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 (surveyor 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: Juan

Site: 5487

Project No.: 154771

Date: 1/25/08

Well No. MW-1

Purge Method: Sub

Depth to Water (feet): 6.13

Depth to Product (feet):           

Total Depth (feet): 27.14

LPH & Water Recovered (gallons):           

Water Column (feet): 21.01

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 10.33

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F. °C)	pH	D.O.	ORP	Turbidity
0825			3	1203	15.1	8.01			
			6	1260	17.3	7.65			
	0829		9	1257	17.9	7.51			
Static at Time Sampled		Total Gallons Purged			Sample Time				
6.19		9			0835				
Comments: well was in Auto shop area open between 7-8 am									

Well No. MW-2

Purge Method: Sub

Depth to Water (feet): 6.63

Depth to Product (feet):           

Total Depth (feet): 23.49

LPH & Water Recovered (gallons):           

Water Column (feet): 16.86

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 10.00

1 Well Volume (gallons): 2.5

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F. °C)	pH	D.O.	ORP	Turbidity
0847			2.5	1273	15.1	7.67			
			5	1285	15.4	7.59			
	0851		7.5	1289	15.7	7.54			
Static at Time Sampled		Total Gallons Purged			Sample Time				
7.27		7.5			0859				
Comments: well was in Auto shop area, open between 7-8 AM									

# GROUNDWATER SAMPLING FIELD NOTES

Technician: Juan

Site: 5487

Project No.: 154771

Date: 1/15/08

Well No. MW-3

Purge Method: Sub

Depth to Water (feet): 6.71

Depth to Product (feet): \_\_\_\_\_

Total Depth (feet): 24.36

LPH & Water Recovered (gallons): \_\_\_\_\_

Water Column (feet): 17.65

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 10.24

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
0714			5	1425	15.7	7.92			
			6	1414	17.2	7.50			
	0719		9	1418	18.1	7.47			
Static at Time Sampled			Total Gallons Purged		Sample Time				
10.21			9		0731				
Comments:									

Well No. MW-4

Purge Method: Sub

Depth to Water (feet): 5.99

Depth to Product (feet): \_\_\_\_\_

Total Depth (feet): 24.57

LPH & Water Recovered (gallons): \_\_\_\_\_

Water Column (feet): 18.58

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 9.70

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
0933			3	1334	16.6	7.49			
			6	1335	18.1	7.36			
	0937		9	1337	18.3	7.34			
Static at Time Sampled			Total Gallons Purged		Sample Time				
6.99			9		0945				
Comments:									

## GROUNDWATER SAMPLING FIELD NOTES

Technician: Juan

Site: 5487

Project No.: 154771

Date: 1/25/08

Well No. MW-4

Purge Method: Sub

Depth to Water (feet): 5.86

Depth to Product (feet):           

Total Depth (feet): 17.98

LPH & Water Recovered (gallons):           

Water Column (feet): 12.12

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 8.28

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F) (C)	pH	D.O.	ORP	Turbidity
0958			2	1358	15.7	7.53			
			4	1381	17.4	7.34			
	1001		6	1375	18.1	7.28			
Static at Time Sampled			Total Gallons Purged		Sample Time				
7.13			6		1008				
Comments:									

Well No. MW-5

Purge Method: sub

Depth to Water (feet): 5.64

Depth to Product (feet):           

Total Depth (feet): 24.08

LPH & Water Recovered (gallons):           

Water Column (feet): 18.44

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 9.32

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F) (C)	pH	D.O.	ORP	Turbidity
1020			3	1583	16.8	7.57			
			6	1570	18.2	7.43			
	1024		9	1553	19.0	7.38			
Static at Time Sampled			Total Gallons Purged		Sample Time				
6.03			9		1033				
Comments:									

# GROUNDWATER SAMPLING FIELD NOTES

Technician: Juan

Site: 5487

Project No.: 154771

Date: 1/25/08

Well No. MW-7

Purge Method: Sub

Depth to Water (feet): 5.21

Depth to Product (feet): \_\_\_\_\_

Total Depth (feet): 18.98

LPH & Water Recovered (gallons): \_\_\_\_\_

Water Column (feet): 13.77

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 7.96

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
1044			2	1427	15.1	7.91			
			4	1436	15.7	7.73			
	1047		6	1410	16.0	7.70			
Static at Time Sampled			Total Gallons Purged			Sample Time			
6.37			6			1053			
Comments:									

Well No. \_\_\_\_\_

Purge Method: \_\_\_\_\_

Depth to Water (feet): \_\_\_\_\_

Depth to Product (feet): \_\_\_\_\_

Total Depth (feet): \_\_\_\_\_

LPH & Water Recovered (gallons): \_\_\_\_\_

Water Column (feet): \_\_\_\_\_

Casing Diameter (Inches): \_\_\_\_\_

80% Recharge Depth(feet): \_\_\_\_\_

1 Well Volume (gallons): \_\_\_\_\_

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
Static at Time Sampled			Total Gallons Purged			Sample Time			
Comments:									



Date of Report: 02/08/2008

Anju Farfan

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

RE: 5487

BC Work Order: 0801196

Enclosed are the results of analyses for samples received by the laboratory on 01/25/2008 22:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Molly Meyers".

Contact Person: Molly Meyers  
Client Service Rep

A handwritten signature in black ink, which is stylized and difficult to read.

Authorized Signature

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

Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
0801196-01	<b>COC Number:</b> --- <b>Project Number:</b> 5487 <b>Sampling Location:</b> MW-1 <b>Sampling Point:</b> MW-1 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 01/25/2008 22:40 <b>Sampling Date:</b> 01/25/2008 08:35 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order:</b> Global ID: T0600101462 Matrix: W Sample QC Type (SACode): CS Cooler ID:
0801196-02	<b>COC Number:</b> --- <b>Project Number:</b> 5487 <b>Sampling Location:</b> MW-2 <b>Sampling Point:</b> MW-2 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 01/25/2008 22:40 <b>Sampling Date:</b> 01/25/2008 08:59 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order:</b> Global ID: T0600101462 Matrix: W Sample QC Type (SACode): CS Cooler ID:
0801196-03	<b>COC Number:</b> --- <b>Project Number:</b> 5487 <b>Sampling Location:</b> MW-3 <b>Sampling Point:</b> MW-3 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 01/25/2008 22:40 <b>Sampling Date:</b> 01/25/2008 07:31 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order:</b> Global ID: T0600101462 Matrix: W Sample QC Type (SACode): CS Cooler ID:
0801196-04	<b>COC Number:</b> --- <b>Project Number:</b> 5487 <b>Sampling Location:</b> MW-4 <b>Sampling Point:</b> MW-4 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 01/25/2008 22:40 <b>Sampling Date:</b> 01/25/2008 09:45 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order:</b> Global ID: T0600101462 Matrix: W Sample QC Type (SACode): CS Cooler ID:
0801196-05	<b>COC Number:</b> --- <b>Project Number:</b> 5487 <b>Sampling Location:</b> MW-6 <b>Sampling Point:</b> MW-6 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 01/25/2008 22:40 <b>Sampling Date:</b> 01/25/2008 10:08 <b>Sample Depth:</b> --- <b>Sample Matrix:</b> Water	<b>Delivery Work Order:</b> Global ID: T0600101462 Matrix: W Sample QC Type (SACode): CS Cooler ID:



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 Irvine, CA 92618-2302

Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information				
0801196-06	COC Number:	---	Receive Date:	01/25/2008 22:40	Delivery Work Order:
	Project Number:	5487	Sampling Date:	01/25/2008 10:33	Global ID: T0600101462
	Sampling Location:	MW-5	Sample Depth:	---	Matrix: W
	Sampling Point:	MW-5	Sample Matrix:	Water	Sample QC Type (SACode): CS
	Sampled By:	TRCI			Cooler ID:
0801196-07	COC Number:	---	Receive Date:	01/25/2008 22:40	Delivery Work Order:
	Project Number:	5487	Sampling Date:	01/25/2008 10:53	Global ID: T0600101462
	Sampling Location:	MW-7	Sample Depth:	---	Matrix: W
	Sampling Point:	MW-7	Sample Matrix:	Water	Sample QC Type (SACode): CS
	Sampled By:	TRCI			Cooler ID:

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 Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0801196-01		Client Sample Name: 5487, MW-1, MW-1, 1/25/2008 8:35:00AM											
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		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657	ND	
1,2-Dichloroethane-d4 (Surrogate)	97.5	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657		
Toluene-d8 (Surrogate)	95.8	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657		
4-Bromofluorobenzene (Surrogate)	104	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 14:11	MWB	MS-V13	1	BRA1657		



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

Project: 5487  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 0801196-01		Client Sample Name: 5487, MW-1, MW-1, 1/25/2008 8:35:00AM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
TPH - Diesel (FFP)	ND	ug/L	200		Luft/FFP	01/30/08	02/04/08 23:24	PTL	GC-2	1	BRB0163	ND	
TPH - Motor Oil	ND	ug/L	500		Luft/FFP	01/30/08	02/04/08 23:24	PTL	GC-2	1	BRB0163	ND	
Tetracosane (Surrogate)	72.1	%	37 - 134 (LCL - UCL)		Luft/FFP	01/30/08	02/04/08 23:24	PTL	GC-2	1	BRB0163		

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 Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0801196-02		Client Sample Name: 5487, MW-2, MW-2, 1/25/2008 8:59:00AM											
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		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657	ND	
1,2-Dichloroethane-d4 (Surrogate)	99.2	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657		
Toluene-d8 (Surrogate)	96.8	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657		
4-Bromofluorobenzene (Surrogate)	110	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:15	MWB	MS-V13	1	BRA1657		

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Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 0801196-02	Client Sample Name: 5487, MW-2, MW-2, 1/25/2008 8:59:00AM												
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru- ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
TPH - Diesel (FFP)	ND	ug/L	200		Luft/FFP	01/30/08	02/04/08 23:47	PTL	GC-2	1.020	BRB0163	ND	
TPH - Motor Oil	ND	ug/L	500		Luft/FFP	01/30/08	02/04/08 23:47	PTL	GC-2	1.020	BRB0163	ND	
Tetracosane (Surrogate)	79.9	%	37 - 134 (LCL - UCL)		Luft/FFP	01/30/08	02/04/08 23:47	PTL	GC-2	1.020	BRB0163		

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 Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0801196-03													
Client Sample Name:	5487, MW-3, MW-3, 1/25/2008 7:31:00AM													
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		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657	ND		
1,2-Dichloroethane-d4 (Surrogate)	98.7	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657			
Toluene-d8 (Surrogate)	97.9	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657			
4-Bromofluorobenzene (Surrogate)	106	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:34	MWB	MS-V13	1	BRA1657			

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 21 Technology Drive  
 Irvine, CA 92618-2302

Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID:	Client Sample Name: 5487, MW-3, MW-3, 1/25/2008 7:31:00AM												
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
TPH - Diesel (FFP)	ND	ug/L	200		Luft/FFP	01/30/08	02/05/08 00:10	PTL	GC-2	1.031	BRB0163	ND	
TPH - Motor Oil	ND	ug/L	500		Luft/FFP	01/30/08	02/05/08 00:10	PTL	GC-2	1.031	BRB0163	ND	
Tetracosane (Surrogate)	91.0	%	37 - 134 (LCL - UCL)		Luft/FFP	01/30/08	02/05/08 00:10	PTL	GC-2	1.031	BRB0163		

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

 Project: 5487  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0801196-04		Client Sample Name:	5487, MW-4, MW-4, 1/25/2008 9:45:00AM										
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		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
t-Butyl alcohol	ND	ug/L	10		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Ethanol	ND	ug/L	250		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657	ND		
1,2-Dichloroethane-d4 (Surrogate)	92.6	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657			
Toluene-d8 (Surrogate)	100	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657			
4-Bromofluorobenzene (Surrogate)	111	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:56	MWB	MS-V13	1	BRA1657			



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## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0801196-05												
Client Sample Name:	5487, MW-6, MW-6, 1/25/2008 10:08:00AM												
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		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Methyl t-butyl ether	3.8	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
t-Butyl alcohol	270	ug/L	10		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Ethanol	ND	ug/L	250		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657	ND	
1,2-Dichloroethane-d4 (Surrogate)	98.7	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657		
Toluene-d8 (Surrogate)	96.4	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657		
4-Bromofluorobenzene (Surrogate)	104	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 12:02	MWB	MS-V13	1	BRA1657		

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## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0801196-06		Client Sample Name: 5487, MW-5, MW-5, 1/25/2008 10:33:00AM												
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instrument ID	Dilution	QC Batch ID	MB Bias	Lab Quals	
Benzene	3.7	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Methyl t-butyl ether	6.3	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Ethanol	ND	ug/L	250		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
Total Purgeable Petroleum Hydrocarbons	85	ug/L	50		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522	ND		
1,2-Dichloroethane-d4 (Surrogate)	95.1	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522			
Toluene-d8 (Surrogate)	98.6	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522			
4-Bromofluorobenzene (Surrogate)	109	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 13:52	MWB	MS-V13	1	BRA1522			

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## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0801196-07												
Client Sample Name:	5487, MW-7, MW-7, 1/25/2008 10:53:00AM												
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		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Toluene	ND	ug/L	0.50		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Ethanol	ND	ug/L	250		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602	ND	
1,2-Dichloroethane-d4 (Surrogate)	93.5	%	76 - 114 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602		
Toluene-d8 (Surrogate)	98.5	%	88 - 110 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602		
4-Bromofluorobenzene (Surrogate)	106	%	86 - 115 (LCL - UCL)		EPA-8260	01/29/08	01/29/08 11:43	MWB	MS-V13	1	BRA1602		

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## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits	
										RPD	Percent Recovery Lab Quals
Benzene	BRA1522	Matrix Spike	0801030-04	0	24.880	25.000	ug/L	0.3	99.5	20	70 - 130
		Matrix Spike Duplicate	0801030-04	0	24.790	25.000					
Toluene	BRA1522	Matrix Spike	0801030-04	0	25.840	25.000	ug/L	1.9	103	20	70 - 130
		Matrix Spike Duplicate	0801030-04	0	26.140	25.000					
1,2-Dichloroethane-d4 (Surrogate)	BRA1522	Matrix Spike	0801030-04	ND	9.6000	10.000	ug/L		96.0		76 - 114
		Matrix Spike Duplicate	0801030-04	ND	9.9300	10.000					
Toluene-d8 (Surrogate)	BRA1522	Matrix Spike	0801030-04	ND	9.7900	10.000	ug/L		97.9		88 - 110
		Matrix Spike Duplicate	0801030-04	ND	9.9400	10.000					
4-Bromofluorobenzene (Surrogate)	BRA1522	Matrix Spike	0801030-04	ND	9.6800	10.000	ug/L		96.8		86 - 115
		Matrix Spike Duplicate	0801030-04	ND	9.9200	10.000					
Benzene	BRA1602	Matrix Spike	0801068-17	0	25.890	25.000	ug/L	5.1	104	20	70 - 130
		Matrix Spike Duplicate	0801068-17	0	24.700	25.000					
Toluene	BRA1602	Matrix Spike	0801068-17	0	26.830	25.000	ug/L	2.8	107	20	70 - 130
		Matrix Spike Duplicate	0801068-17	0	26.060	25.000					
1,2-Dichloroethane-d4 (Surrogate)	BRA1602	Matrix Spike	0801068-17	ND	9.6300	10.000	ug/L		96.3		76 - 114
		Matrix Spike Duplicate	0801068-17	ND	9.4300	10.000					
Toluene-d8 (Surrogate)	BRA1602	Matrix Spike	0801068-17	ND	9.8100	10.000	ug/L		98.1		88 - 110
		Matrix Spike Duplicate	0801068-17	ND	9.8400	10.000					
4-Bromofluorobenzene (Surrogate)	BRA1602	Matrix Spike	0801068-17	ND	9.6000	10.000	ug/L		96.0		86 - 115
		Matrix Spike Duplicate	0801068-17	ND	9.3900	10.000					
Benzene	BRA1657	Matrix Spike	0801222-03	0	24.850	25.000	ug/L	2.3	99.4	20	70 - 130
		Matrix Spike Duplicate	0801222-03	0	24.270	25.000					
Toluene	BRA1657	Matrix Spike	0801222-03	0	26.180	25.000	ug/L	1.0	105	20	70 - 130
		Matrix Spike Duplicate	0801222-03	0	25.970	25.000					
1,2-Dichloroethane-d4 (Surrogate)	BRA1657	Matrix Spike	0801222-03	ND	9.4900	10.000	ug/L		94.9		76 - 114
		Matrix Spike Duplicate	0801222-03	ND	9.3200	10.000					

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## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits	
									Percent Recovery	RPD
Toluene-d8 (Surrogate)	BRA1657	Matrix Spike	0801222-03	ND	9.8000	10.000	ug/L		98.0	88 - 110
		Matrix Spike Duplicate	0801222-03	ND	9.6200	10.000	ug/L		96.2	88 - 110
4-Bromofluorobenzene (Surrogate)	BRA1657	Matrix Spike	0801222-03	ND	9.8400	10.000	ug/L		98.4	86 - 115
		Matrix Spike Duplicate	0801222-03	ND	9.8400	10.000	ug/L		98.4	86 - 115

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## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

### Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
TPH - Diesel (FFP)	BRB0163	Matrix Spike	0714775-46	0	2190.7	2500.0	ug/L	3.0	87.6	24	50 - 127	
		Matrix Spike Duplicate	0714775-46	0	2126.0	2500.0						
Tetracosane (Surrogate)	BRB0163	Matrix Spike	0714775-46	ND	82.625	100.00	ug/L		82.6		37 - 134	
		Matrix Spike Duplicate	0714775-46	ND	80.025	100.00						

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## 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	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Benzene	BRA1522	BRA1522-BS1	LCS	25.360	25.000	0.50	ug/L	101		70 - 130		
Toluene	BRA1522	BRA1522-BS1	LCS	27.020	25.000	0.50	ug/L	108		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BRA1522	BRA1522-BS1	LCS	9.9200	10.000		ug/L	99.2		76 - 114		
Toluene-d8 (Surrogate)	BRA1522	BRA1522-BS1	LCS	9.9700	10.000		ug/L	99.7		88 - 110		
4-Bromofluorobenzene (Surrogate)	BRA1522	BRA1522-BS1	LCS	9.8200	10.000		ug/L	98.2		86 - 115		
Benzene	BRA1602	BRA1602-BS1	LCS	24.630	25.000	0.50	ug/L	98.5		70 - 130		
Toluene	BRA1602	BRA1602-BS1	LCS	26.100	25.000	0.50	ug/L	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BRA1602	BRA1602-BS1	LCS	9.3100	10.000		ug/L	93.1		76 - 114		
Toluene-d8 (Surrogate)	BRA1602	BRA1602-BS1	LCS	9.8100	10.000		ug/L	98.1		88 - 110		
4-Bromofluorobenzene (Surrogate)	BRA1602	BRA1602-BS1	LCS	9.7200	10.000		ug/L	97.2		86 - 115		
Benzene	BRA1657	BRA1657-BS1	LCS	23.900	25.000	0.50	ug/L	95.6		70 - 130		
Toluene	BRA1657	BRA1657-BS1	LCS	26.000	25.000	0.50	ug/L	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BRA1657	BRA1657-BS1	LCS	9.4800	10.000		ug/L	94.8		76 - 114		
Toluene-d8 (Surrogate)	BRA1657	BRA1657-BS1	LCS	9.7000	10.000		ug/L	97.0		88 - 110		
4-Bromofluorobenzene (Surrogate)	BRA1657	BRA1657-BS1	LCS	9.9300	10.000		ug/L	99.3		86 - 115		

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## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

### \*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	
TPH - Diesel (FFP)	BRB0163	BRB0163-BS1	LCS	2189.0	2500.0	200	ug/L	87.6	52 - 128	
Tetracosane (Surrogate)	BRB0163	BRB0163-BS1	LCS	84.175	100.00		ug/L	84.2	37 - 134	





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## 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	BRA1522	BRA1522-BLK1	ND	ug/L	0.50		
Ethylbenzene	BRA1522	BRA1522-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BRA1522	BRA1522-BLK1	ND	ug/L	0.50		
Toluene	BRA1522	BRA1522-BLK1	ND	ug/L	0.50		
Total Xylenes	BRA1522	BRA1522-BLK1	ND	ug/L	1.0		
Ethanol	BRA1522	BRA1522-BLK1	ND	ug/L	250		
Total Purgeable Petroleum Hydrocarbons	BRA1522	BRA1522-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BRA1522	BRA1522-BLK1	97.4	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BRA1522	BRA1522-BLK1	97.3	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BRA1522	BRA1522-BLK1	109	%	86 - 115 (LCL - UCL)		
Benzene	BRA1602	BRA1602-BLK1	ND	ug/L	0.50		
Ethylbenzene	BRA1602	BRA1602-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BRA1602	BRA1602-BLK1	ND	ug/L	0.50		
Toluene	BRA1602	BRA1602-BLK1	ND	ug/L	0.50		
Total Xylenes	BRA1602	BRA1602-BLK1	ND	ug/L	1.0		
Ethanol	BRA1602	BRA1602-BLK1	ND	ug/L	250		
Total Purgeable Petroleum Hydrocarbons	BRA1602	BRA1602-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BRA1602	BRA1602-BLK1	95.8	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BRA1602	BRA1602-BLK1	96.9	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BRA1602	BRA1602-BLK1	106	%	86 - 115 (LCL - UCL)		
Benzene	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
Ethylbenzene	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		

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## 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
Methyl t-butyl ether	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
Toluene	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
Total Xylenes	BRA1657	BRA1657-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BRA1657	BRA1657-BLK1	ND	ug/L	10		
Diisopropyl ether	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
Ethanol	BRA1657	BRA1657-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BRA1657	BRA1657-BLK1	ND	ug/L	0.50		
Total Purgeable Petroleum Hydrocarbons	BRA1657	BRA1657-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BRA1657	BRA1657-BLK1	91.2	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BRA1657	BRA1657-BLK1	97.8	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BRA1657	BRA1657-BLK1	105	%	86 - 115 (LCL - UCL)		

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## Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
TPH - Diesel (FFP)	BRB0163	BRB0163-BLK1	ND	ug/L	200		
TPH - Motor Oil	BRB0163	BRB0163-BLK1	ND	ug/L	500		
Tetracosane (Surrogate)	BRB0163	BRB0163-BLK1	83.3	%	37 - 134 (LCL - UCL)		

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Project Manager: Anju Farfan

Reported: 02/08/2008 14:50

**Notes And Definitions**

MDL Method Detection Limit  
ND Analyte Not Detected at or above the reporting limit  
PQL Practical Quantitation Limit  
RPD Relative Percent Difference

Submission #: 0801196

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

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

COC Received

YES  NO

Ice Chest ID RIW Temperature: 1 °C Thermometer ID: 48

Emissivity 97 Container amber

Date/Time 1/25 2240

Analyst Init INW

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
100ml TOTAL ORGANIC CARBON										
QT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL - 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA-525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT QA/QC										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

B.C.D

Comments: Sample Numbering Completed By: INW

Date/Time: 1/25 2340

Submission #: 0801196 Project Code: TB Batch #

<b>SHIPPING INFORMATION</b> Federal Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____	<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (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 <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Ice Chest ID <u>Blue</u> Temperature: <u>.5</u> °C Thermometer ID: <u>48</u>	Emissivity <u>.97</u> Container <u>amber</u>	Date/Time <u>1/25 2004</u> Analyst Init <u>JNW</u>
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SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
100ml TOTAL ORGANIC CARBON										
QT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL		A.3	A.3	A.3	A.3	A.3	A.3	A.3		
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL - 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT QA/QC										
QT AMBER		EEG	BOD EEG	BOD EEG						
1 OZ. JAR										
1/2 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

CHK BY DISTRIBUTION  
AJW 1/25/04  
 SUB OUT

Comments: \_\_\_\_\_  
 Sample Numbering Completed By: JNW Date/Time: 1/25 2004

**BC LABORATORIES, INC.**

4100 Atlas Court Bakersfield, CA 93308  
(661) 327-4911 FAX (661) 327-1918

**CHAIN OF CUSTODY**

**Analysis Requested**

Bill to: Conoco Phillips/ TRC		Consultant Firm: TRC		MATRIX (GW) Ground-water (S) Soil (WW) Waste-water (SL) Sludge	BTEX/MTBE by 8021B, Gas by 8015 TPH GAS by 8015M TPH DIESEL by 8015M / silica gel / C18 8260 full list w/ oxygenates BTEX/MTBE/OXYS BY 8260B Ethanol by 8260B TPH - G by GC/MS TPH - MO by 8015M / silica gel OXYS/Ethanol by 8260B OXYS/EDB/EDC/Ethanol by 8260B Turnaround Time Requested
Address: 24250 Hesperian Boulevard		21 Technology Drive Irvine, CA 92618-2302 Attn: Anju Farfan			
City: Hayward		4-digit site#: 5487			
State: CA Zip:		Workorder #			
Conoco Phillips Mgr: Bill Borgh		Project #: 154771			
		Sampler Name: Juan			

Lab#	Sample Description	Field Point Name	Date & Time Sampled	MATRIX	BTEX/MTBE by 8021B, Gas by 8015	TPH GAS by 8015M	TPH DIESEL by 8015M / silica gel / C18	8260 full list w/ oxygenates	BTEX/MTBE/OXYS BY 8260B	ETHANOL by 8260B	TPH - G by GC/MS	TPH - MO by 8015M / silica gel	OXYS/Ethanol by 8260B	OXYS/EDB/EDC/Ethanol by 8260B	Turnaround Time Requested
-1	MW-1		1/25/08 0835	GW		X			X		X				STD
-2	MW-2		0859			X					X				
-3	MW-3		0731			X					X				
-4	MW-4		0945										X		
-5	MW-6		1008											X	
-6	MW-5		1033							X					
-7	MW-7		1053							X					

Comments:  GLOBAL ID: T0600101462	Relinquished by: (Signature)	Received by:	Date & Time
	<i>[Signature]</i>	Refrigerated	1/25/08 1223
	Relinquished by: (Signature)	Received by:	Date & Time
	<i>[Signature]</i>	Ross Dickey	1/25/08 1500
	Relinquished by: (Signature)	Received by:	Date & Time
	<i>[Signature]</i>	R. [Signature]	1-25-08 1915

R. [Signature] 1-25-08 2240 Am 1/25/08 2240

## **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 a licensed carrier, 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 others.

### **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.