



January 14, 2002

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 2500  
Alameda, California 94502-6577

SITE: SHELL-BRANDED SERVICE STATION  
5755 BROADWAY  
OAKLAND, CALIFORNIA

94618

RE: THIRD QUARTER 2002 GROUNDWATER MONITORING REPORT

DH  
Alameda County  
JAN 21 2003  
Environmental Health

Dear Mr. Chan:

Miller Brooks Environmental, Inc. (Miller Brooks), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), submits this report to summarize Third Quarter 2002 groundwater monitoring and sampling activities for the Shell Service Station located at 5755 Broadway, Oakland, California. See Figure 1 for the site location.

#### REMEDIATION SUMMARY

Mobile groundwater extraction (GWE) using a vacuum truck was conducted periodically at the site from April to November 2000. A single dual-phase vacuum extraction (DVE) event was performed at the site on February 7, 2001, and monthly mobile DVE was conducted at the site from May to November 2001. Mobile DVE is the process of using a vacuum truck to apply high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance GWE from the saturated zone. GWE and DVE have collectively extracted approximately 20,038 gallons of groundwater from wells S-2, H-1, and T-2, and removed 0.46 pounds of methyl tertiary-butyl ether (MTBE). Subsequent to Alameda County Health Care Services Agency (ACHCSA) notification in the November 7, 2001 *Third Quarter 2001 Monitoring Report*, monthly DVE was suspended from wells S-2 and H-1 due to the low influent volume of groundwater from S-2 and the low influent MTBE concentrations from H-1.

## THIRD QUARTER 2002 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

### Groundwater Monitoring and Sampling

On July 25, 2002, Monitoring Wells S-1, S-2, S-3, H-1 and T-2 were monitored and sampled by Blaine Tech Services, Inc. (Blaine Tech), the groundwater monitoring program contractor for Shell. Groundwater levels in the wells were measured prior to sampling activities using an electronic water-level meter. During purging activities, groundwater was measured for pH, conductivity, turbidity, and temperature to show stabilization prior to sampling. Following purging and stabilization of the measured groundwater parameters, groundwater samples were collected in accordance with standard regulatory protocol. Fluid-level monitoring data are presented in Attachment A, and a groundwater elevation contour map is presented on Figure 2. A general description of groundwater monitoring and sampling procedures is included with a copy of the field data sheets in Attachment B.

### Waste Disposal

Groundwater generated during well purging and equipment decontamination activities (approximately 246 gallons) was transported to the Shell refinery in Martinez, California.

### Laboratory Analysis

Groundwater samples collected during the investigation were submitted to Kiff Analytical (Kiff), a State-certified laboratory, for analysis. The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) using Environmental Protection Agency (EPA) Method 8260B. Benzene and MTBE results of laboratory analysis of groundwater samples are presented on Figure 3 and in Attachment A, and copies of Kiff's laboratory report and chain of custody record are included in Attachment C.

## Findings

Groundwater was measured at depths of 1.53 feet to 2.83 feet below ground surface (bgs) in the monitoring wells (groundwater elevations of 98.97 feet to 96.89 feet above mean sea level [North American Vertical Datum, 1988]). The groundwater flow direction beneath the site is generally toward the south under a hydraulic gradient of approximately 0.02 foot per foot, which is consistent with previous investigation findings.

Results of laboratory analysis of groundwater samples collected during this investigation indicated the following:

- Detectable TPH-G concentrations were found in the groundwater samples collected from Wells S-2, H-1, and T-2 at concentrations ranging from 660 micrograms per liter ( $\mu\text{g}/\text{L}$ ) in Well T-2 to 37,000  $\mu\text{g}/\text{L}$  in Well S-2.
- Detectable benzene concentrations were found in groundwater samples collected from Wells S-2, H-1, and T-2 at concentrations ranging from 2.2  $\mu\text{g}/\text{L}$  in Well H-1 to 350  $\mu\text{g}/\text{L}$  in Well S-2.
- Detectable toluene concentrations were found in groundwater samples collected from Wells H-1 and T-2 at concentrations of 46  $\mu\text{g}/\text{L}$  and 0.59  $\mu\text{g}/\text{L}$ , respectively.
- Detectable ethylbenzene concentrations were found in groundwater samples collected from Wells S-2 and H-1 at concentrations of 660  $\mu\text{g}/\text{L}$  and 5.3  $\mu\text{g}/\text{L}$ , respectively.
- Detectable total xylene concentrations were found in groundwater samples collected from Wells S-2, H-1 and T-2 at concentrations ranging from 2.6  $\mu\text{g}/\text{L}$  in Well T-2 to 2,400  $\mu\text{g}/\text{L}$  in Well S-2.
- Detectable MTBE concentrations were found in groundwater samples collected from Wells S-2 and T-2 at concentrations of 10,000  $\mu\text{g}/\text{L}$  and 97  $\mu\text{g}/\text{L}$ , respectively.

## PROPOSED WORK ACTIVITIES

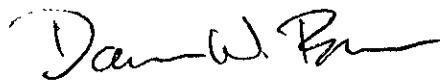
Proposed work activities for the Fourth Quarter of 2002 are as follows:

- Based on review of current site conditions, installation of a groundwater extraction and treatment system at the site is recommended. An Interim Remediation Work Plan outlining proposed remediation activities is currently being prepared and will be submitted for agency review during the first quarter of 2003.
- Continue the quarterly groundwater monitoring and sampling program to monitor hydrocarbon plume stability and groundwater quality trends over time.

If you have any questions regarding this site, please call Diane Lundquist of Cambria Environmental Technology, Inc. at (510) 420-3334 as they have taken over this project for Shell.

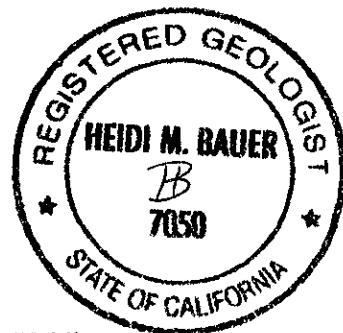
Sincerely,

MILLER BROOKS ENVIRONMENTAL, INC.



Darren W. Butler

Senior Staff Scientist



Heidi M. Bauer, RG 7050

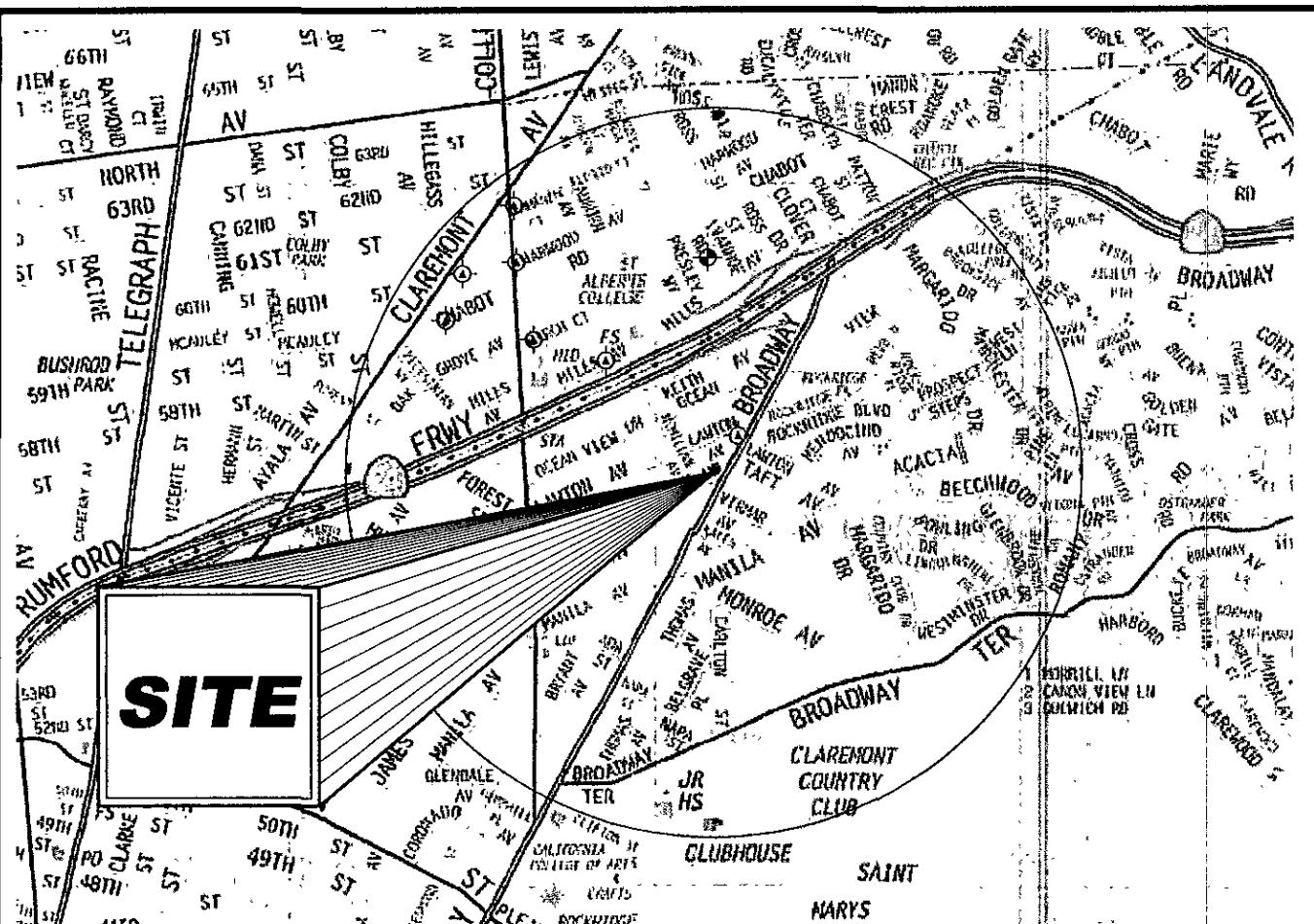
Senior Geologist

Figures:      1 - Vicinity and Well Survey Map  
                  2 - Groundwater Elevation Contour Map  
                  3 - Dissolved-Phase Hydrocarbon Distribution Map

Attachments:   A - Blaine Tech Services, Inc. - Groundwater Gauging and Analytical Data  
                  B - Blaine Tech Services, Inc. - General Field Procedures and Field Data Sheets  
                  C - Kiff Laboratory Report and Chain of Custody Record

cc:      Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869  
             Zimskigutman Enterprises, 6046 Lawton, Oakland, CA 94618-1803

## **FIGURES**



## LEGEND

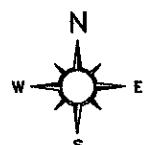
 WATER PRODUCING WELL

**STUDY AREA (1/2 MILE RADIUS)**

 OTHER WELLS

FROM: U.S. GEOLOGICAL SURVEY, 1967  
QUADRANGLE: OAKLAND  
COUNTY: ALAMEDA  
SERIES: 7.5-MINUTE QUAD

NOTE: ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE



0 2000 Feet  
SCALE



2425 W. 14TH STREET, D-2  
OAKLAND, CA.  
(510) 891-0092

DRAWN BY:  
PEL  
  
DATE:  
02/05/01  
  
REVISED BY:

VICINITY AND  
WELL SURVEY MAP

## **FIGURE**

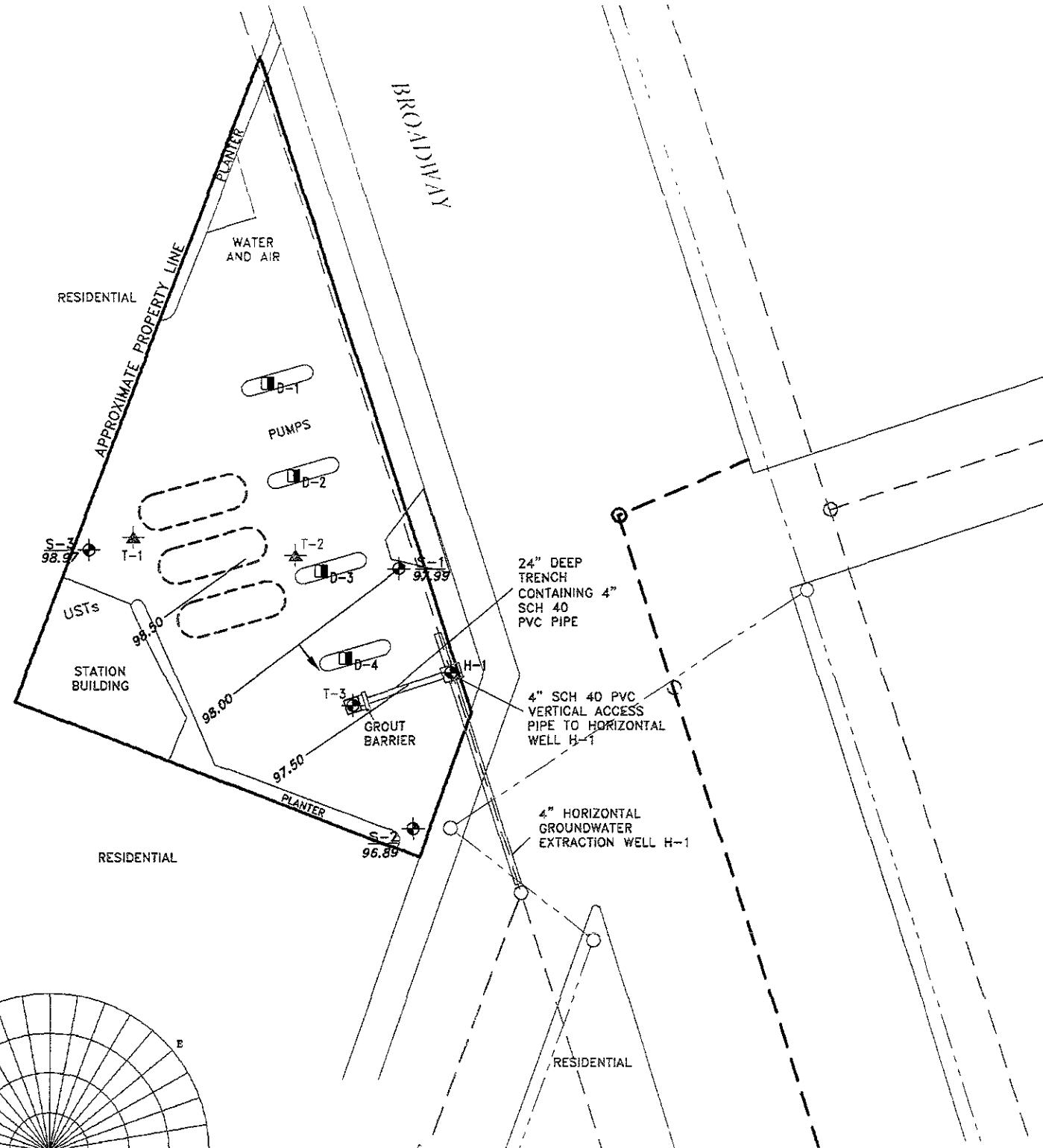
1

SHELL SERVICE STATION  
5755 BROADWAY  
OAKLAND, CA.

PROJECT NO. 06-155-0303-01

DATE:

FILE: K:\DWGS\EQUILON\OAKLAND (105 5TH ST.)\HYD. IN SOIL MAP  
DATE PLOTTED: 09/26/02

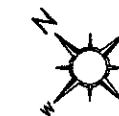


## LEGEND

- S-3 GROUNDRATE MONITORING WELL
- T-1 TANK BACK FILL
- D-2 DISPENSER SAMPLE LOCATION
- 圈 SOIL SAMPLE LOCATION (2/93)
- SANITARY SEWER LINE
- STORM DRAIN
- OVERHEAD POWERLINE
- UST
- DISPENSER ISLAND (PUMP)
- GROUNDRATE ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE DIRECTION OF GROUNDRATE FLOW

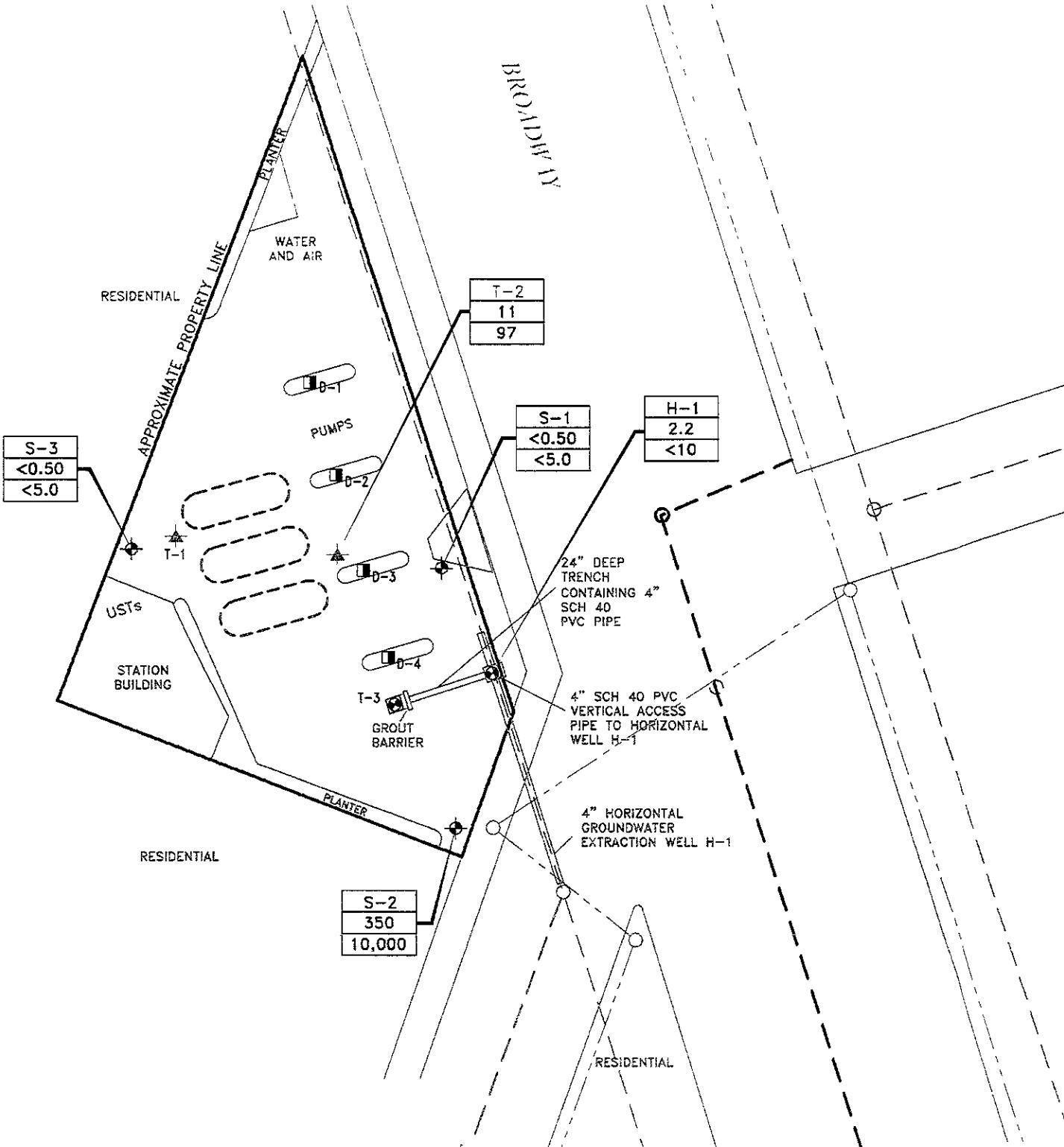
### NOTES:

- 1) CONTOUR LINES ARE INTERPRETIVE BASED ON GROUNDRATE LEVELS MEASURED ON JULY 25, 2002.



0 30 FEET  
SCALE

DRAWN BY AIL DATE: 10/01/02 REVISED BY DWB	GROUNDWATER ELEVATION CONTOUR MAP JULY 25, 2002	<b>FIGURE</b> <b>2</b>
2425 W. 14TH STREET, D-2 OAKLAND, CA. (510) 891-0092	REvised: 10/28/02 APPROVED BY DWB	
PROJECT NO. 06-155-0303-01	DATE: 10/28/02	FILE K:\DWGS\EQUILON\ANAHEIM\2100 S HARBOR B.VD\ SITE PLAN DATE PLOTTED:



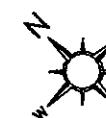
## LEGEND

- S-3 GROUNDWATER MONITORING WELL
- D-2 DISPENSER SAMPLE LOCATION
- T-1 TANK BACKFILL WELL
- (@) SOIL SAMPLE LOCATION (2/93)
- SANITARY SEWER LINE
- STORM DRAIN
- OVERHEAD POWER LINE
- UNDERGROUND STORAGE TANK (UST)
- DISPENSER ISLAND (PUMP)
- |         |
|---------|
| WELL ID |
| BENZENE |
| MTBE    |

 DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS (ug/L)

### NOTES:

- 1) DISSOLVED-PHASE DATA ARE BASED ON GROUNDWATER SAMPLING CONDUCTED ON JULY 25, 2002.
- 2) BENZENE (EPA METHOD 8260B), MTBE = METHYL TERTIARY BUTYL ETHER (EPA METHOD 8260B), ug/L = MICROGRAMS PER LITER, ND = NOT DETECTED AT LIMIT INDICATED ON OFFICIAL LABORATORY REPORT.



0 30 FEET  
SCALE

<p>DRAWN BY AIL DATE: 10/01/02 REVISED BY DWB</p> <p>2425 W. 14TH STREET, D-2 OAKLAND, CA. (510) 891-0092</p> <p>PROJECT NO. 06-155-0303-01</p>	<p>DISSOLVED-PHASE HYDROCARBON DISTRIBUTION MAP JULY 25, 2002</p> <p>SHELL SERVICE STATION 5755 BROADWAY OAKLAND, CA.</p>	<p><b>FIGURE</b> <b>3</b></p>
	REvised: 10/28/02	
	APPROVED BY: DWB	

FILE K:\DWGS\EQJILON\ANAHEIM\2100 S HARBOR BLVD\ SITE PLAN  
DATE PLOTTED:

**ATTACHMENT A**

**BLAINE  
TECH SERVICES, INC.**



1680 ROGERS AVENUE  
SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE  
CONTRACTOR'S LICENSE #746684  
[www.blainetech.com](http://www.blainetech.com)

August 15, 2002

Karen Petryna  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 91510-7869

Third Quarter 2002 Groundwater Monitoring at  
Shell-branded Service Station  
5755 Broadway  
Oakland, CA

Monitoring performed on July 25, 2002

---

**Groundwater Monitoring Report 020725-DW-2**

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Leon Gearhart  
Project Coordinator

LG/jt

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Anni Kreml  
Cambria Environmental Technology, Inc.  
1144 65<sup>th</sup> Street, Suite C  
Oakland, CA 94608-2411

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	------------------------

S-1	1/25/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	100.00	3.88	96.12	NA
S-1	6/3/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	100.00	3.51	96.49	NA
S-1	8/30/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	100.00	4.24	95.76	NA
S-1	11/22/1991	<30	2.3	<0.46	0.3	<0.65	NA	NA	100.00	4.29	95.71	NA
S-1	3/13/1992	<30	<0.52	<0.3	<0.3	<0.3	NA	NA	100.00	2.87	97.13	NA
S-1	5/28/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.79	96.21	NA
S-1	8/19/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	4.43	95.57	NA
S-1	11/18/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	4.34	95.66	NA
S-1	2/10/1993	51	1.4	<0.5	<0.5	<0.5	NA	NA	100.00	4.20	95.80	NA
S-1 (D)	2/10/1993	<50	1.2	<0.5	<0.5	<0.5	NA	NA	100.00	4.20	95.80	NA
S-1	6/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.39	96.61	NA
S-1	8/3/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.69	96.31	NA
S-1	11/2/1993	70a	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	4.26	95.74	NA
S-1	12/16/1993	NA	NA	NA	NA	NA	NA	NA	100.00	2.73	97.27	NA
S-1	2/1/1994	60a	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.38	96.62	NA
S-1	5/4/1994	<50	1.1	<0.5	<0.5	<0.5	NA	NA	100.00	3.00	97.00	NA
S-1	8/18/1994	<50	0.6	<0.5	<0.5	<0.5	NA	NA	100.00	3.70	96.30	NA
S-1 (D)	8/18/1994	60a	0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.70	96.30	NA
S-1	11/9/1994	<50	4	<0.5	<0.5	<0.5	NA	NA	100.00	2.52	97.48	NA
S-1	2/22/1995	50	0.8	0.7	<0.5	1.3	NA	NA	100.00	4.08	95.92	NA
S-1	5/2/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	2.58	97.42	NA
S-1	8/30/1995	<50	1.7	<0.5	<0.5	<0.5	NA	NA	100.00	3.48	96.52	NA
S-1	11/28/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.99	96.01	NA
S-1	2/2/1996	<50	11	<0.5	0.9	<0.5	NA	NA	100.00	2.00	98.00	NA
S-1	3/9/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.38	99.62	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-1	8/22/1996	<50	1.5	<0.5	<0.5	<0.5	130	NA	100.00	3.43	96.57	NA
S-1	11/7/1996	<50	<0.5	<0.5	<0.5	<0.5	57	NA	100.00	3.70	96.30	4.33
S-1	2/20/1997	<50	0.64	<0.50	<0.50	1.6	6.5	NA	100.00	3.60	96.40	2
S-1	5/30/1997	<50	<0.50	<0.50	<0.50	<0.50	46	NA	100.00	3.47	96.53	7
S-1 (D)	5/30/1997	<50	<0.50	<0.50	<0.50	<0.50	47	NA	100.00	3.47	96.53	7
S-1	8/21/1997	<50	<0.50	<0.50	<0.50	0.84	26	NA	100.00	3.01	96.99	3.1
S-1	11/3/1997	<50	<0.50	1.1	<0.50	1.3	190	NA	100.00	3.66	96.34	2
S-1	1/20/1998	110	7.9	2.8	4.4	13	53	NA	100.00	1.84	98.16	4.6
S-1 (D)	1/20/1998	130	9.2	6.9	5.2	15	93	NA	100.00	1.84	98.16	4.6
S-1	2/16/1999	<50	<0.50	<0.50	<0.50	<0.50	8.6	NA	100.00	2.43	97.57	2.2
S-1	9/7/1999	NA	NA	NA	NA	NA	NA	NA	100.00	2.84	97.16	NA
S-1	2/2/2000	<50.0	<0.500	<0.500	<0.500	<0.500	202	NA	100.00	3.10	96.90	2.1
S-1	4/26/2000	NA	NA	NA	NA	NA	NA	NA	100.00	2.91	97.09	NA
S-1	7/25/2000	<50.0	<0.500	<0.500	<0.500	<0.500	811	NA	100.00	3.21	96.79	1.8
S-1	11/15/2000	NA	NA	NA	NA	NA	NA	NA	100.00	3.18	96.82	NA
S-1	2/12/2001	<50.0	<0.500	<0.500	<0.500	<0.500	209	NA	100.00	1.34	98.66	2.2
S-1	6/7/2001	NA	NA	NA	NA	NA	NA	NA	100.00	1.27	98.73	NA
S-1	8/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	100.00	3.16	96.84	4.0
S-1	12/5/2001	NA	NA	NA	NA	NA	NA	2.6	100.00	1.90	98.10	NA
S-1	1/31/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	100.00	2.67	97.33	NA
S-1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	100.00	1.87	98.13	NA
S-1	7/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	100.00	2.01	97.99	NA
S-2	1/25/1991	450	140	1.8	6.2	15	NA	NA	98.92	4.52	94.40	NA
S-2	6/3/1991	490	150	2.7	8.2	7	NA	NA	98.92	4.02	94.90	NA
S-2	8/30/1991	70	0.37	<0.3	<0.3	<0.3	NA	NA	98.92	4.70	94.22	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2	11/22/1991	1,600	110	9.3	29	150	NA	NA	98.92	4.72	94.20	NA
S-2	3/13/1992	1,300	210	5.7	34	79	NA	NA	98.92	3.47	95.45	NA
S-2	5/28/1992	100	28	<0.5	<0.5	<0.5	NA	NA	98.92	4.45	94.45	NA
S-2	8/19/1992	470	42	<0.5	8.3	4	NA	NA	98.92	4.84	94.08	NA
S-2	11/18/1992	490	43	39	17	29	NA	NA	98.92	4.73	94.19	NA
S-2	2/10/1993	19,000	710	760	80	370	NA	NA	98.92	4.83	94.09	NA
S-2	6/11/1993	33,000	3,100	1,600	370	1,100	NA	NA	98.92	3.74	95.18	NA
S-2	8/3/1993	18,000	1,400	130	81	130	NA	NA	98.92	4.23	94.69	NA
S-2 (D)	8/3/1993	19,000	1,400	140	86	150	NA	NA	98.92	4.23	94.69	NA
S-2	11/2/1993	12,000a	470	47	31	92	NA	NA	98.92	4.72	94.20	NA
S-2 (D)	11/2/1993	13,000a	530	47	35	96	NA	NA	98.92	4.72	94.20	NA
S-2	12/16/1993	NA	NA	NA	NA	NA	NA	NA	98.92	3.00	95.92	NA
S-2	2/1/1994	31,000a	430	46	50	130	NA	NA	98.92	3.48	95.44	NA
S-2 (D)	2/1/1994	31,000a	300	33	30	100	NA	NA	98.92	3.48	95.44	NA
S-2	5/4/1994	3,900	1,200	31	53	71	NA	NA	98.92	3.26	95.66	NA
S-2 (D)	5/4/1994	4,500	1,200	37	57	110	NA	NA	98.92	3.26	95.66	NA
S-2	8/18/1994	24,000	600	8.3	15	27	NA	NA	98.92	3.98	94.94	NA
S-2	11/9/1994	1,400a	240	9.3	13	20	NA	NA	98.92	3.10	95.82	NA
S-2 (D)	11/9/1994	1,800	260	8.5	13	21	NA	NA	98.92	3.10	95.82	NA
S-2	2/22/1995	29,000	550	18	12	63	NA	NA	98.92	4.02	94.90	NA
S-2 (D)	2/22/1995	28,000	530	17	10	60	NA	NA	98.92	4.02	94.90	NA
S-2	5/2/1995	4,400	1,000	25	38	77	NA	NA	98.92	2.86	96.06	NA
S-2 (D)	5/2/1995	4,400	1,000	26	41	83	NA	NA	98.92	2.86	96.06	NA
S-2	8/30/1995	800	350	20	6.7	16	NA	NA	98.92	4.06	94.86	NA
S-2 (D)	8/30/1995	960	220	22	12	48	NA	NA	98.92	4.06	94.86	NA
S-2	11/28/1995	2,000	230	220	50	230	NA	NA	98.92	4.48	94.44	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2 (D)	11/28/1995	2,100	240	230	51	230	NA	NA	98.92	4.48	94.44	NA
S-2	2/2/1996	18,000	540	18	12	22	NA	NA	98.92	1.99	96.93	NA
S-2 (D)	2/2/1996	11,000	600	18	13	28	NA	NA	98.92	1.99	96.93	NA
S-2	3/9/1996	3,800	1,500	27	30	58	NA	NA	98.92	3.27	95.65	NA
S-2 (D)	3/9/1996	3,500	1,300	24	21	53	NA	NA	98.92	3.27	95.65	NA
S-2	8/22/1996	<20,000	490	<200	<200	<200	43,000	NA	98.92	3.85	95.07	NA
S-2 (D)	8/22/1996	<20,000	570	<200	<200	<200	59,000	51,000	98.92	3.85	95.07	NA
S-2	11/7/1996	<5,000	290	<50	<50	<50	32,000	NA	98.92	4.00	94.92	3.51
S-2 (D)	11/7/1996	<5,000	290	<50	<50	<50	32,000	NA	98.92	4.00	94.92	3.51
S-2	2/20/1997	<10,000	520	<100	<100	<100	28,000	NA	98.92	3.20	95.72	1
S-2 (D)	2/20/1997	<10,000	520	<100	<100	<100	35,000	NA	98.92	3.20	95.72	1
S-2	5/30/1997	150	15	11	3.5	15	11	NA	98.92	3.87	95.05	6
S-2	8/21/1997	1,600	220	<10	20	<10	18,000	NA	98.92	3.29	95.63	3.3
S-2 (D)	8/21/1997	1,500	180	<10	16	<10	21,000	NA	98.92	3.29	95.63	3.3
S-2	11/3/1997	1,000	94	<10	<10	<10	<50	NA	98.92	4.02	94.90	1.8
S-2	1/20/1998	590	110	8.3	18	23	7,800	NA	98.92	1.54	97.38	3.2
S-2	7/23/1998	2,600	840	<10	44	22	15,000	NA	98.92	2.89	96.03	NA
S-2	2/16/1999	680	140	6.1	10	18	19,000	NA	98.92	1.86	97.06	2.0
S-2	9/7/1999	<2,000	248	<20.0	<20.0	<20.0	22,800	NA	98.92	3.66	95.26	1.8
S-2	2/2/2000	103	0.825	<0.500	<0.500	<0.500	11,700	10,500	98.92	4.02	94.90	2.0
S-2	4/26/2000	4,040	799	<20.0	40.9	255	19,000	17,100b	98.92	2.63	96.29	2.3
S-2	7/25/2000	1,120	195	5.94	5.62	11.3	26,600	21,100	98.92	3.42	95.50	0.6
S-2b	11/15/2000	613	35.6	<5.00	<5.00	7.36	18,100	17,800	98.92	3.31	95.61	1.8
S-2	2/12/2001	9,010	1,430	<20.0	219	848	28,300	17,000	98.92	1.47	97.45	2.0
S-2	6/7/2001	31,000	1,000	<25	630	3,200	NA	17,000	98.92	3.43	95.49	10.4
S-2	8/31/2001	50,000	950	<20	1,500	6,000	NA	17,000	98.92	4.72	94.20	0.9

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G ( $\mu\text{g/L}$ )	B ( $\mu\text{g/L}$ )	T ( $\mu\text{g/L}$ )	E ( $\mu\text{g/L}$ )	X ( $\mu\text{g/L}$ )	MTBE 8020 ( $\mu\text{g/L}$ )	MTBE 8260 ( $\mu\text{g/L}$ )	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
---------	------	------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	-------------------------------------	--------------	----------------------------	--------------------------	------------------------

S-2	12/5/2001	49,000	590	7.2	1,400	4,900	NA	11,000	98.92	1.53	97.39	NA
S-2	1/31/2002	37,000	860	<25	1,100	4,000	NA	14,000	98.92	2.13	96.79	NA
S-2	6/4/2002	150,000	800	<20	1,200	4,000	NA	9,200	98.92	2.24	96.68	NA
S-2	7/25/2002	37,000	350	<20	660	2,400	NA	10,000	98.92	2.03	96.89	NA

S-3	1/25/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	101.67	3.84	97.83	NA
S-3	6/3/1991	<30	<0.3	0.3	0.3	0.3	NA	NA	101.67	3.25	98.42	NA
S-3	8/3/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	101.67	4.73	96.94	NA
S-3	11/22/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	101.67	4.81	96.86	NA
S-3	3/13/1992	<30	<0.3	0.3	0.3	0.3	NA	NA	101.67	2.29	99.38	NA
S-3	5/28/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.62	98.05	NA
S-3	8/19/1992	<50	<0.5	<0.5	<0.5	0.5	NA	NA	101.67	4.66	97.01	NA
S-3	11/18/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	4.51	97.16	NA
S-3	2/10/1993	30	1.9	3.2	2.4	5.6	NA	NA	101.67	4.36	97.31	NA
S-3	6/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.91	98.76	NA
S-3 (D)	6/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.91	98.76	NA
S-3	8/3/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.70	97.97	NA
S-3	11/2/1993	Well inaccessible		NA	NA	NA	NA	NA	101.67	NA	NA	NA
S-3	12/16/1993	NA	NA	NA	NA	NA	NA	NA	101.67	2.12	99.55	NA
S-3	2/1/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.90	98.77	NA
S-3	5/4/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.54	99.13	NA
S-3	8/18/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.51	98.16	NA
S-3	11/9/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.44	99.23	NA
S-3	2/22/1995	80	<0.5	0.5	<0.5	0.5	NA	NA	101.67	4.12	97.55	NA
S-3	5/2/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.83	98.84	NA
S-3	8/30/1995	<50	0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.16	98.51	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-3	11/28/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.87	97.80	NA
S-3	2/2/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.24	99.43	NA
S-3	3/9/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.05	98.62	NA
S-3	8/22/1996	<50	0.8	<0.5	<0.5	<0.5	<2.5	NA	101.67	2.85	98.82	4.6
S-3	11/7/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	101.67	3.35	98.32	4.6
S-3	2/20/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.00	98.67	1
S-3	5/30/1997	140	14	10	3.3	14	8.6	NA	101.67	3.00	98.67	8
S-3	8/21/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	2.94	98.73	3.3
S-3	11/3/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.36	98.31	2.4
S-3 (D)	11/3/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.36	98.31	2.4
S-3	1/20/1998	Well inaccessible		NA	NA	NA	NA	NA	101.67	NA	NA	NA
S-3	7/23/1998	NA	NA	NA	NA	NA	NA	NA	101.67	2.69	98.98	NA
S-3	2/16/1999	<50	<0.50	0.92	0.59	3.9	3.7	NA	101.67	2.20	99.47	2.8
S-3	9/7/1999	NA	NA	NA	NA	NA	NA	NA	101.67	2.81	98.86	NA
S-3	2/2/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	101.67	3.97	97.70	2.7
S-3	4/26/2000	NA	NA	NA	NA	NA	NA	NA	101.67	2.96	98.71	NA
S-3	7/25/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	101.67	3.00	98.67	0.8
S-3	11/15/2000	NA	NA	NA	NA	NA	NA	NA	101.67	2.86	98.81	NA
S-3	2/12/2001	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	101.67	2.47	99.20	2.3
S-3	6/7/2001	NA	NA	NA	NA	NA	NA	NA	101.67	2.78	98.89	NA
S-3	8/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	101.67	3.94	97.73	0.5
S-3	12/5/2001	NA	NA	NA	NA	NA	NA	NA	101.67	2.05	99.62	NA
S-3	1/31/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	101.67	2.29	99.38	NA
S-3	6/4/2002	NA	NA	NA	NA	NA	NA	NA	101.67	2.56	99.11	NA
S-3	7/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	101.67	2.70	98.97	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	------------------------

H-1	12/5/2001	150	<0.50	8.3	1.6	16	NA	52	NA	1.43	NA	NA
H-1	1/31/2002	3,200	12	<0.50	5.7	3.7	NA	650	NA	2.34	NA	NA
H-1	6/4/2002	280,000	<10	150	62	9,500	NA	<100	NA	2.56	NA	NA
H-1	7/25/2002	8,200	2.2	46	5.3	99	NA	<10	NA	2.83	NA	NA

T-1	5/30/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.65	NA	NA
T-1	8/21/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.69	NA	NA
T-1	11/3/1997	NA	NA	NA	NA	NA	NA	NA	NA	3.09	NA	NA
T-1	1/20/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.61	NA	NA
T-1	7/23/1998	NA	NA	NA	NA	NA	NA	NA	NA	2.32	NA	NA
T-1	2/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	1.95	NA	NA
T-1	9/7/1999	NA	NA	NA	NA	NA	NA	NA	NA	2.48	NA	NA
T-1	2/2/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	NA	2.66	NA	2.5
T-1	4/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.56	NA	NA
T-1	7/25/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.60	NA	NA
T-1	11/15/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.47	NA	NA
T-1	2/12/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.20	NA	NA
T-1	6/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	2.36	NA	NA
T-1	8/31/2001	NA	NA	NA	NA	NA	NA	NA	NA	3.45	NA	NA

T-2	5/30/1997	NA	1.81	NA	NA							
T-2	8/21/1997	NA	1.89	NA	NA							
T-2	11/3/1997	NA	2.25	NA	NA							
T-2	1/20/1998	NA	0.55	NA	NA							
T-2	7/23/1998	NA	1.21	NA	NA							
T-2	2/16/1999	NA	1.08	NA	NA							

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G ( $\mu\text{g/L}$ )	B ( $\mu\text{g/L}$ )	T ( $\mu\text{g/L}$ )	E ( $\mu\text{g/L}$ )	X ( $\mu\text{g/L}$ )	MTBE 8020 ( $\mu\text{g/L}$ )	MTBE 8260 ( $\mu\text{g/L}$ )	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
---------	------	------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	-------------------------------------	--------------	----------------------------	--------------------------	------------------------

T-2	9/7/1999	NA	NA	NA	NA	NA	NA	NA	NA	0.72	NA	NA
T-2	2/2/2000	1,540	53.4	20.8	11.4	21.8	1,330	NA	NA	0.98	NA	3.0
T-2	4/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	1.02	NA	NA
T-2	7/25/2000	815	17.6	10.8	1.63	3.47	133	NA	NA	1.80	NA	0.8
T-2	11/15/2000	NA	NA	NA	NA	NA	NA	NA	NA	1.68	NA	NA
T-2	2/12/2001	310	7.48	7.76	0.693	2.28	301	NA	NA	1.45	NA	1.6
T-2	6/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.57	NA	NA
T-2	8/31/2001	720	30	0.67	<0.50	2.3	NA	540	NA	2.69	NA	0.8
T-2	12/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	0.58	NA	NA
T-2	1/31/2002	NA	NA	NA	NA	NA	NA	NA	NA	1.32	NA	NA
T-2	2/4/2002	1,000	41	30	4.6	20	NA	1,200	NA	1.46	NA	NA
T-2	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	1.50	NA	NA
T-2	7/25/2002	660	11	0.59	<0.50	2.6	NA	97	NA	1.53	NA	NA

T-3	5/30/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.31	NA	NA
T-3	8/21/1997	NA	NA	NA	NA	NA	NA	NA	NA	1.57	NA	NA
T-3	11/3/1997	NA	NA	NA	NA	NA	NA	NA	NA	3.50	NA	NA
T-3	1/20/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.76	NA	NA
T-3	7/23/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.82	NA	NA
T-3	2/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	0.55	NA	NA
T-3	9/7/1999	NA	NA	NA	NA	NA	NA	NA	NA	2.89	NA	NA
T-3	2/2/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	NA	3.02	NA	2.9
T-3	4/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.81	NA	NA
T-3	7/25/2000	NA	NA	NA	NA	NA	NA	NA	NA	3.00	NA	NA
T-3	11/15/2000	NA	NA	NA	NA	NA	NA	NA	NA	1.70	NA	NA
T-3	2/12/2001	NA	NA	NA	NA	NA	NA	NA	NA	2.11	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
T-3	6/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.68	NA	NA
T-3	8/31/2001	NA	NA	NA	NA	NA	NA	NA	NA	3.14	NA	NA

**Abbreviations:**

TPH-G = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 7, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 7, 2001, analyzed by EPA Method 8020.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

SPH = Separate-Phase Hydrocarbons

GW = Groundwater

DO = Dissolved Oxygen

µg/L = Parts per billion

ppm = Parts per million

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

**Notes:**

a = Chromatogram pattern indicated an unidentified hydrocarbon.

b = This sample analyzed outside of EPA recommended hold time.

Top of casing elevations referenced to arbitrary elevation of 100 ft.

**ATTACHMENT B**

**BLAINE TECH SERVICES, INC.  
METHODS AND PROCEDURES  
FOR THE ROUTINE MONITORING OF  
GROUNDWATER WELLS AT EQUIVA SITES**

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684 ) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

---

## SAMPLING PROCEDURES OVERVIEW

### SAFETY

All groundwater monitoring assignments performed for Equiva comply with Equiva's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40 hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any Equiva site.

### INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic sounders, which are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing over two-hundredths of a foot (0.02') of product.

### EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well. Small volumes of purgewater are often removed by hand bailing with a disposable bailer.

## PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

## DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewatered and does not recharge.

Wells known to dewater are evacuated as early as possible during each site visit in order to allow for the greatest amount of recovering. Any well that does not recharge to 80% of its original volume will be sampled prior to the departure of our personnel from the site in order to eliminate the need of a return visit.

In jurisdictions where a certain percentage of recovery is included in the local completion standard, our personnel follow the regulatory expectation.

## PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to an Equiva approved disposal facility.

## SAMPLE COLLECTION DEVICES

All samples are collected using a stainless steel, teflon or disposable bailers.

## SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

## TRIP BLANKS

Upon request, a Trip Blank is carried to each site and is kept inside the cooler for the duration of the sampling event. It is turned over to the laboratory for analysis with the samples from that site.

## DUPLICATES

Upon request, one Duplicate sample is collected at each site. It is up to the Field Technician to choose the well at which the Duplicate is collected. Typically, a duplicate is collected from one of the most contaminated wells. The Duplicate sample is labeled DUP thus rendering the sample blind.

## SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the analytical laboratory that will perform the intended analytical procedures. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

## DOCUMENTATION CONVENTIONS

Each and every sample container has a label affixed to it. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time at which the sample was collected and the initials of the person collecting the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

## **DECONTAMINATION**

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is detuned to function as a hot pressure washer, which is then operated with high quality deionized water which is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, sounder etc.) that cannot be washed using the hot high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

**EXAMPLE:** The sounder is cleaned between wells using the non-phosphate soap and deionized water solution followed by deionized water rinses. The sounder is then washed with the steam cleaner between sites or as necessitated by use in a particularly contaminated well.

## **DISSOLVED OXYGEN READINGS**

All Dissolved Oxygen readings are taken using YSI meters (e.g. YSI Model 58 or equivalent YSI meter). These meters are equipped with a YSI stirring device that enables them to collect accurate in-situ readings. The probe/stirring devices are modified to allow downhole measurements to be taken from wells as small as two-inch diameter.

The probe and reel is decontaminated between wells as described above. The meter is calibrated between wells as per the instructions in the operating manual. The probe and stirrer is lowered into the water column allowed to stabilize before use.

## **OXIDATION REDUCTION POTENTIAL READINGS**

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual. In use the probe is placed in a cup of freshly obtained monitoring well water and allowed to stabilize.

## **WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER**

Client She

**Inspection Date**

7/30/02

**Site Address**

5755 Broadway Oakland

Inspected By

EM

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken
5-3	Bad cap + lock. Bolts/tabs	New 4" cap + 2357 lock. cleaned
	corroded	bolts, tapped 2 tabs
5-2	Bad cap + lock	New 4" cap + 2357 lock

**Note below all deficiencies that could not be corrected and still need to be corrected.**

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected
T-1	Bolt holes packed w/cfirt and don't align w/holes on lid			
(1)	1" well. Same, as T-1			
S-1	Old Christy Box - needs 3.125" cap			
S-2	Needs (1) 5/8" helicoil			

## WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Shell

Inspection Date 7-25-02

Site Address 5755 Broadway Oakland

Inspected By Dave Walter

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected

## WELL GAUGING DATA

Project # 020725-DW-2 Date 7-25-02 Client Shell

Site 5755 Broadway Oakland

# SHELL WELL MONITORING DATA SHEET

BTS #: 020725-PW-2	Site: 5755 Broadway Oakland	
Sampler: Dave Walter	Date: 7-25-02	
Well I.D.: S-1	Well Diameter: 2 (3) 4 6 8	
Total Well Depth: 11.68	Depth to Water: 2.01	
Depth to Free Product:	Thickness of Free Product (feet):	
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer  
 Disposable Bailer  
 Middleburg  
 Electric Submersible

Waterra  
 Peristaltic  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method:  Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing

Other: \_\_\_\_\_

Well Diameter	Multipier	Well Diameter	Multipier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

3.6 (Gals.) X 3 = 10.8 Gals.  
 1 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
12:57	72.2	7.7	613	33	4	
12:59	73.7	7.7	475	76	8	
13:00	73.3	7.6	444	96	12	cloudy

Did well dewater? Yes  No Gallons actually evacuated: 12

Sampling Time: 13:05 Sampling Date: 7-25-02

Sample I.D.: S-1 Laboratory: Kiff SPL Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Other: \_\_\_\_\_

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other: \_\_\_\_\_

D.O. (if req'd): Pre-purge: mg/L Post-purge: mg/L

O.R.P. (if req'd): Pre-purge: mV Post-purge: mV

# SHELL WELL MONITORING DATA SHEET

BTS #: 020725-PW-2	Site: 5755 Broadway Oakland		
Sampler: Dave Walter	Date: 7-25-02		
Well I.D.: S-2	Well Diameter: 2 3 (4) 6 8		
Total Well Depth: 9.63	Depth to Water: 2.03		
Depth to Free Product:	Thickness of Free Product (feet):		
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI	HACH

Purge Method:  Bailer       Waterra       Sampling Method:  Bailer  
 Disposable Bailer       Peristaltic       Disposable Bailer  
 Middleburg       Extraction Pump       Extraction Port  
 Electric Submersible       Other \_\_\_\_\_       Dedicated Tubing  
 Other: \_\_\_\_\_

1 Case Volume	(Gals.) X	Specified Volumes	Calculated Volume	Well Diameter	Multiplier	Well Diameter	Multiplier
4.9		3	= 14.7 Gals.	1"	0.04	4"	0.65
				2"	0.16	6"	1.47
				3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
14:16	70.9	7.0	885	14	5	odor
14:18	71.1	6.9	906	12	10	
14:19	70.8	6.9	929	29	15	

Did well dewater? Yes  No Gallons actually evacuated: 15

Sampling Time: 14:24 Sampling Date: 7-25-02

Sample I.D.: S-2 Laboratory:  Kiff  SPL  Other \_\_\_\_\_

Analyzed for:  TPH-G  BTEX  MTBE  TPH-D Other:

EB I.D. (if applicable): @ \_\_\_\_\_ Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Pre-purge: \_\_\_\_\_ mg/L Post-purge: \_\_\_\_\_ mg/L

O.R.P. (if req'd): Pre-purge: \_\_\_\_\_ mV Post-purge: \_\_\_\_\_ mV

# SHELL WELL MONITORING DATA SHEET

BTS #: 020725-PW-2	Site: 5755 Broadway Oakland					
Sampler: Dave Walter	Date: 7-25-02					
Well I.D.: S-3	Well Diameter: 2 3 (4) 6 8					
Total Well Depth: 9.71	Depth to Water: 2.70					
Depth to Free Product:	Thickness of Free Product (feet):					
Referenced to: PVC	Grade	D.O. Meter (if req'd):	YSI HACH			
Purge Method: Bailer Disposable Bailer Middleburg <input checked="" type="checkbox"/> Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: <input checked="" type="checkbox"/> Bailer Disposable Bailer Extraction Port Dedicated Tubing	Other: _____			
$\frac{4.6 \text{ (Gals.)} \times 3}{\text{Specified Volumes}} = \frac{13.8}{\text{Calculated Volume}}$		Well Diameter Multiplier Well Diameter Multiplier	1" 0.04 4" 0.65 2" 0.16 6" 1.47 3" 0.37 Other radius <sup>2</sup> * 0.163			
Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
12:38	72.5	7.1	922	8	5	Clear
12:39	73.6	7.1	918	1.2	10	
12:41	73.0	7.2	1043	1.2	15	
Did well dewater?	Yes	No	Gallons actually evacuated: 15			
Sampling Time: 12:46				Sampling Date: 7-25-02		
Sample I.D.: S-3				Laboratory: Kiff	SPL	Other: _____
Analyzed for: TPH-G BTEX MTBE	TPH-D	Other: _____				
EB I.D. (if applicable): @	Time	Duplicate I.D. (if applicable):				
Analyzed for: TPH-G BTEX MTBE	TPH-D	Other: _____				
D.O. (if req'd): Pre-purge:		mg/L	Post-purge:		mg/L	
O.R.P. (if req'd): Pre-purge:		mV	Post-purge:		mV	

# SHELL WELL MONITORING DATA SHEET

BTS #: 020725-PW-2	Site: 5755 Broadway Oakland																		
Sampler: Dave Walter	Date: 7-25-02																		
Well I.D.: H-1	Well Diameter: 2 3 (4) 6 8																		
Total Well Depth: 12.04	Depth to Water: 2.83																		
Depth to Free Product:	Thickness of Free Product (feet):																		
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI	HACH																
Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible	Wateria Peristaltic Extraction Pump Other	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other:																	
(Gals.) X Specified Volumes		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multipplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>		Well Diameter	Multiplier	Well Diameter	Multipplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multipplier																
1"	0.04	4"	0.65																
2"	0.16	6"	1.47																
3"	0.37	Other	radius <sup>2</sup> * 0.163																
1 Case Volume	Calculated Volume																		
Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations													
12:14	77.4	6.1	264	23	—														
product not detected using interface probe, but bailed created in oil when sampled																			
Did well dewater? Yes No		Gallons actually evacuated: —																	
Sampling Time: 12:14		Sampling Date: 7-25-02																	
Sample I.D.: H-1		Laboratory: Kiff SPL Other																	
Analyzed for: TPH-G BTEX MTBE		TPH-D Other:																	
EB I.D. (if applicable): @ Time		Duplicate I.D. (if applicable):																	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:																	
D.O. (if req'd): Pre-purge:		mg/L	Post-purge:		mg/L														
O.R.P. (if req'd): Pre-purge:		mV	Post-purge:		mV														

# SHELL WELL MONITORING DATA SHEET

BTS #: 020725-PW-2	Site: 5755 Broadway Oakland	
Sampler: Dave Walter	Date: 7-25-02	
Well I.D.: T-2	Well Diameter: 2 3 4 6 8 <u>12"</u>	
Total Well Depth: 13.02	Depth to Water: 1.53	
Depth to Free Product:	Thickness of Free Product (feet):	
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Baile  Waterra  Sampling Method:  Baile  
 Disposable Baile  Peristaltic  Disposable Baile  
 Middleburg  Extraction Pump  Extraction Port  
 Electric Submersible  Other \_\_\_\_\_  Dedicated Tubing

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

67.4 (Gals.) X 3 = 202.2 Gals.  
 1 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
13:45	71.1	7.2	786	37	68	
13:54	70.3	7.2	839	12	136	
14:03	73.0	7.2	781	4	204	

Did well dewater? Yes (No) Gallons actually evacuated: 204

Sampling Time: 14108 Sampling Date: 7-25-02

Sample I.D.: T-2 Laboratory: Kiff SPL Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Pre-purge: mg/L Post-purge: mg/L

O.R.P. (if req'd): Pre-purge: mV Post-purge: mV

**ATTACHMENT C**



Report Number : 27696

Date : 8/1/2002

Leon Gearhart  
Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject : 5 Water Samples  
Project Name : 5755 Broadway, Oakland  
Project Number : 020725-DW-2  
P.O. Number : 98995756

Dear Mr. Gearhart,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

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

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff". Below the signature, the name "Joel Kiff" is printed in a smaller, black, sans-serif font.



Report Number : 27696

Date : 8/1/2002

Project Name : 5755 Broadway, Oakland

Project Number : 020725-DW-2

Sample : S-1

Matrix : Water

Lab Number : 27696-01

Sample Date : 7/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/29/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/29/2002
Toluene - d8 (Surr)	81.3		% Recovery	EPA 8260B	7/29/2002
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	7/29/2002

Sample : S-2

Matrix : Water

Lab Number : 27696-02

Sample Date : 7/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	350	20	ug/L	EPA 8260B	7/29/2002
Toluene	< 20	20	ug/L	EPA 8260B	7/29/2002
Ethylbenzene	660	20	ug/L	EPA 8260B	7/29/2002
Total Xylenes	2400	20	ug/L	EPA 8260B	7/29/2002
Methyl-t-butyl ether (MTBE)	10000	200	ug/L	EPA 8260B	7/29/2002
TPH as Gasoline	37000	2000	ug/L	EPA 8260B	7/29/2002
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	7/29/2002
4-Bromofluorobenzene (Surr)	92.7		% Recovery	EPA 8260B	7/29/2002

Approved By: Joel Kiff

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



Report Number : 27696

Date : 8/1/2002

Project Name : 5755 Broadway, Oakland

Project Number : 020725-DW-2

Sample : S-3

Matrix : Water

Lab Number : 27696-03

Sample Date : 7/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/29/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/29/2002
Toluene - d8 (Surr)	89.3		% Recovery	EPA 8260B	7/29/2002
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	7/29/2002

Sample : H-1

Matrix : Water

Lab Number : 27696-04

Sample Date : 7/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	2.2	1.0	ug/L	EPA 8260B	7/30/2002
Toluene	46	1.0	ug/L	EPA 8260B	7/30/2002
Ethylbenzene	5.3	1.0	ug/L	EPA 8260B	7/30/2002
Total Xylenes	99	1.0	ug/L	EPA 8260B	7/30/2002
Methyl-t-butyl ether (MTBE)	< 10	10	ug/L	EPA 8260B	7/30/2002
TPH as Gasoline	8200	100	ug/L	EPA 8260B	7/30/2002
Toluene - d8 (Surr)	110		% Recovery	EPA 8260B	7/30/2002
4-Bromofluorobenzene (Surr)	88.3		% Recovery	EPA 8260B	7/30/2002

Approved By: Joel Kiff

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



Report Number : 27696

Date : 8/1/2002

Project Name : 5755 Broadway, Oakland

Project Number : 020725-DW-2

Sample : T-2

Matrix : Water

Lab Number : 27696-05

Sample Date : 7/25/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	11	0.50	ug/L	EPA 8260B	7/30/2002
Toluene	0.59	0.50	ug/L	EPA 8260B	7/30/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/30/2002
Total Xylenes	2.6	0.50	ug/L	EPA 8260B	7/30/2002
Methyl-t-butyl ether (MTBE)	97	5.0	ug/L	EPA 8260B	7/30/2002
TPH as Gasoline	660	50	ug/L	EPA 8260B	7/29/2002
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	7/30/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	7/30/2002

Approved By: Joel Kiff

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

Report Number : 27696

Date : 8/1/2002

QC Report : Method Blank Data

Project Name : 5755 Broadway, Oakland

Project Number : 020725-DW-2

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/30/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/30/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/30/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/30/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/30/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/30/2002
Toluene - d8 (Surrogate)	99.2		%	EPA 8260B	7/30/2002
4-Bromofluorobenzene (Surrogate)	104		%	EPA 8260B	7/30/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/29/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/29/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/29/2002
Toluene - d8 (Surrogate)	92.1		%	EPA 8260B	7/29/2002
4-Bromofluorobenzene (Surrogate)	101		%	EPA 8260B	7/29/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

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

Report Number : 27696

Date : 8/1/2002

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 5755 Broadway, Oakland

Project Number : 020725-DW-2

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	27641-04	<0.50	19.9	19.9	19.5	18.7	ug/L	EPA 8260B	7/29/02	97.8	93.6	4.39	70-130	25
Toluene	27641-04	<0.50	19.9	19.9	19.4	18.5	ug/L	EPA 8260B	7/29/02	97.6	92.8	5.02	70-130	25
Tert-Butanol	27641-04	<5.0	99.6	99.7	105	102	ug/L	EPA 8260B	7/29/02	105	102	2.93	70-130	25
Methyl-t-Butyl Ether	27641-04	8.1	19.9	19.9	31.2	30.7	ug/L	EPA 8260B	7/29/02	116	114	2.14	70-130	25
Benzene	27696-01	<0.50	40.0	40.0	43.6	43.2	ug/L	EPA 8260B	7/29/02	109	108	0.876	70-130	25
Toluene	27696-01	<0.50	40.0	40.0	38.3	38.4	ug/L	EPA 8260B	7/29/02	95.8	95.9	0.156	70-130	25
Tert-Butanol	27696-01	<5.0	200	200	204	195	ug/L	EPA 8260B	7/29/02	102	97.6	4.59	70-130	25
Methyl-t-Butyl Ether	27696-01	1.7	40.0	40.0	44.4	44.6	ug/L	EPA 8260B	7/29/02	107	107	0.233	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 27696

Date : 8/1/2002

QC Report : Laboratory Control Sample (LCS)

Project Name : **5755 Broadway, Oakland**

Project Number : **020725-DW-2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	7/29/02	89.2	70-130
Toluene	20.0	ug/L	EPA 8260B	7/29/02	89.3	70-130
Tert-Butanol	100	ug/L	EPA 8260B	7/29/02	99.3	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	7/29/02	100	70-130
Benzene	40.0	ug/L	EPA 8260B	7/29/02	107	70-130
Toluene	40.0	ug/L	EPA 8260B	7/29/02	96.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/29/02	99.5	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/29/02	104	70-130

KIFF ANALYTICAL, LLC

Approved By:

*Joel Kiff*

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

LAB: Kiff

## SHELL Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

## Shell Project Manager to be invoiced:

- SCIENCE & ENGINEERING  
 TECHNICAL SERVICES  
 CMIT: HOUSTON

Karen Petryna

27696

## INCIDENT NUMBER (SAE ONLY):

9 8 9 9 5 7 5 6

SAFETY, ENVIRONMENTAL, ENERGY, PETROLEUM

DATE: 7-25-02PAGE: 1 of 1

SAMPLING COMPANY <b>Blaine Tech Services</b>		LOG CODE: <b>BTSS</b>	SITE ADDRESS (Street and City): <b>5755 Broadway, Oakland</b>		GLOBAL ID NO <b>T0600101270</b>		CONSULTANT PROJECT NO. <b>020725-DW-2</b>						
ADDRESS <b>1680 Rogers Avenue, San Jose, CA 95112</b>		EDF DELIVERABLE TO (Responsible Party or Designee): <b>Anni Kremi</b>		PHONE NO <b>510-420-3335</b>	E-MAIL <b>ShellOaklandEDF@cambrria-env.com</b>	STS #							
PROJECT CONTACT (Handcopy or PDF Report to): <b>Leon Gearhart</b>		SAMPLER NAME(S) (Phm): <b>Dave Walter</b>				LAD USE ONLY							
TELEPHONE <b>408-573-0555</b>		FAX <b>408-573-7771</b>	EMAIL <b>lgearhart@blainetech.com</b>	REQUESTED ANALYSIS									
TURNAROUND TIME (BUSINESS DAYS): <input checked="" type="checkbox"/> 10 DAYS <input type="checkbox"/> 5 DAYS <input type="checkbox"/> 72 HOURS <input type="checkbox"/> 48 HOURS <input type="checkbox"/> 24 HOURS <input type="checkbox"/> LESS THAN 24 HOURS													
<input type="checkbox"/> LA - RWQCB REPORT FORMAT <input type="checkbox"/> UST AGENCY:													
GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____													
SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED <input type="checkbox"/>													
LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes							
		DATE	TIME			TPH - Gas, Purgeable	BTEX	MTBE (8021B - 8ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	1,2-DCA (8260B)	EDB (8260B)
✓	S-1	7-25	13:05	W	3	X X X							-01
✓	S-2		14:24	I	1	X X X							-02
✓	S-3		12:46		1	X X X							-03
✓	H-1		12:14			X X X							-04
✓	T-2	V	14:08	V	V	X X X							-05
Relinquished by (Signature) <u>David C. Clark</u>		Received by (Signature)						Date: <u>7/26/02</u>	Time: <u>1016</u>				
Relinquished by (Signature)		Received by (Signature)						Date: _____	Time: _____				
Relinquished by (Signature)		Received by (Signature)						Date: _____	Time: _____				

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

John Cutts/Kiff Analytical 072602

10/16/00 Revision