

C A M B R I A

*Roll*

July 20, 2001

Susan Hugo  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California, 94502-6577

Re: **Second Quarter 2001 Monitoring Report**  
Shell-branded Service Station  
5755 Broadway  
Oakland, California  
Incident #98995756  
Cambria Project #243-0483-002

**JUL 25 2001**



Dear Ms. Hugo:

On behalf of Equiva Services LLC, Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

## REMEDIATION SUMMARY

Mobile groundwater extraction (GWE) was conducted periodically at the site using a vacuum truck from April to November 2000. A single dual-phase vacuum extraction (DVE) event was performed at the site on February 7, 2001, and monthly DVE commenced in May 2001. DVE is the process of applying high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance groundwater extraction from the saturated zone. Mobile DVE uses a vacuum truck to create the vacuum and contain extracted fluids.

GWE and DVE have collectively extracted approximately 13,888 gallons of groundwater from wells S-2, H-1, and T-2, and removed 0.30203 pounds of methyl tertiary-butyl ether (MTBE). Cumulative mass removal data are presented in Tables 1 and 2. Monitoring data indicates that MTBE concentrations in well S-2 have remained relatively stable since DVE began in February 2001.

Oakland, CA  
San Ramon, CA  
Sonoma, CA

**Cambria  
Environmental  
Technology, Inc.**

1144 65th Street  
Suite B  
Oakland, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

**SECOND QUARTER 2001 ACTIVITIES**

**Groundwater Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged and sampled selected site wells, calculated groundwater elevations, and compiled the analytical data. Cambria prepared a groundwater elevation contour map (Figure 1). Blaine's report, presenting the laboratory report and supporting field documents, is included as Attachment A.

**DVE:** On May 31 and June 13, 2001, Advanced Cleanup Technologies Inc. of Benicia, California conducted mobile DVE events at the site using a vacuum truck. The DVE was performed on wells S-2 and H-1 (Figure 1). After extracting groundwater and vapors from S-2 for six hours, the truck extracted groundwater from well H-1 for two hours. Mass removal data from these events are presented in Tables 1 and 2.

**Site Conceptual Model (SCM) Addendum - Soil Boring Logs:** Soil boring logs S-1, S-2, and T-3 were not included with the SCM submitted with the first quarter 2001 monitoring report. Copies of soil boring logs for S-1, S-2, and T-3 are presented as Attachment B.

**ANTICIPATED THIRD QUARTER 2001 ACTIVITIES**

**Groundwater Monitoring:** Blaine will gauge and sample all wells, including the horizontal well (without purging), and tabulate the data. Cambria will prepare a monitoring report.

**DVE:** Cambria plans to perform monthly DVE from well S-2 and H-1 throughout the third quarter.

**CLOSING**

We appreciate the opportunity to work with you on this project. Please call James Loetterle at (510) 420-3136 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc**



James Loetterle  
Staff Geologist

Stephan A. Bork, C.E.G., C.HG.  
Associate Hydrogeologist

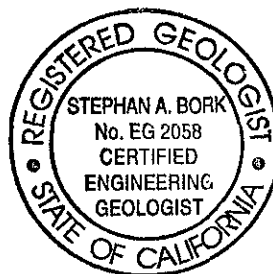


Figure: 1 - Groundwater Elevation Contour Map

Tables: 1 - Groundwater Extraction - Mass Removal Data  
2 - Vapor Extraction - Mass Removal Data

Attachment: A - Blaine Groundwater Monitoring Report and Field Notes  
B - Soil Boring Logs

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, CA, 91510-7869  
Zimskigutman Enterprises, 6046 Lawton, Oakland, CA 94618-1803

g:\oakland5755broadway\qm\2q01qm.doc

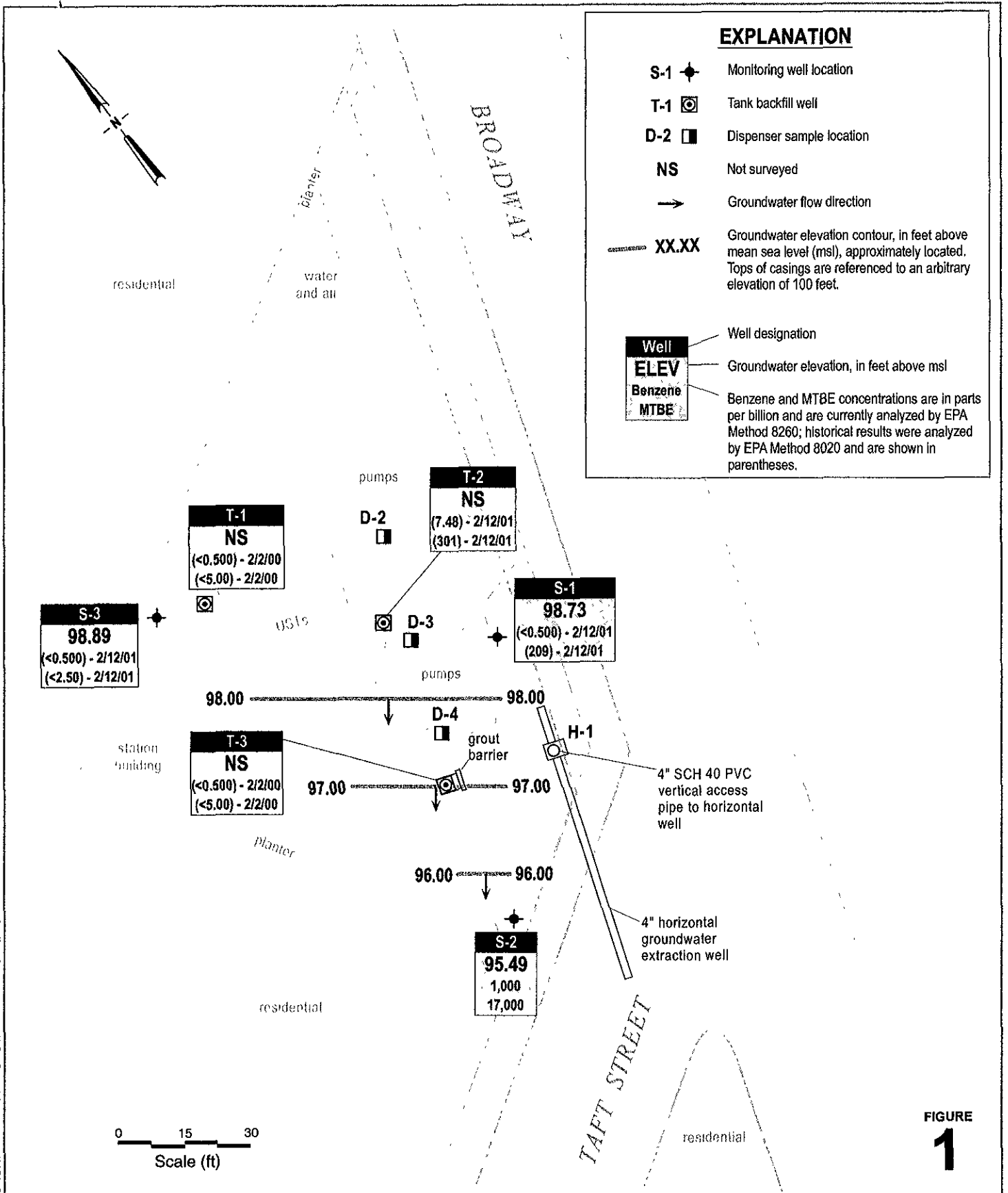


FIGURE 1

### Shell-branded Service Station

5755 Broadway  
Oakland, California  
Incident #98995756



C A M B R I A

### Groundwater Elevation Contour Map

June 7, 2001

G:\OAKLAND\5755BROADWAY\FIGURES\2QM01-MP.A1

**Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995756, 5755 Broadway, Oakland, California**

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
04/21/00	S-2	30	30	02/02/00	103	0.00003	0.00003	0.825	0.00000	0.00000	10,500	0.00263	0.00263
05/23/00	S-2	50	80	04/26/00	4,040	0.00169	0.00171	799	0.00033	0.00033	19,000	0.00793	0.01056
07/12/00	S-2	1,007	1,087	04/26/00	4,040	0.03395	0.03566	799	0.00671	0.00705	19,000	0.15965	0.17021
08/12/00	S-2	50	1,137	07/25/00	1,120	0.00047	0.03613	195	0.00008	0.00713	21,100	0.00880	0.17901
09/14/00	S-2	0	1,137	07/25/00	1,120	0.00000	0.03613	195	0.00000	0.00713	21,100	0.00000	0.17901
10/11/00	S-2	0	1,137	07/25/00	1,120	0.00000	0.03613	195	0.00000	0.00713	21,100	0.00000	0.17901
10/30/00	S-2	32	1,169	07/25/00	1,120	0.00030	0.03642	195	0.00005	0.00718	21,100	0.00563	0.18465
11/06/00	S-2	35	1,204	07/25/00	1,120	0.00033	0.03675	195	0.00006	0.00724	21,100	0.00616	0.19081
11/15/00	S-2	12	1,216	11/15/00	613	0.00006	0.03681	35.6	0.00000	0.00724	17,800	0.00178	0.19259
02/07/01	S-2	35	1,251	11/15/00	613	0.00018	0.03699	35.6	0.00001	0.00725	17,800	0.00520	0.19779
05/31/01	S-2	200	1,451	02/12/01	9,010	0.01504	0.05203	1,430	0.00239	0.00964	17,000	0.02837	0.22616
06/13/01	S-2	200	1,651	02/12/01	9,010	0.01504	0.06707	1,430	0.00239	0.01202	17,000	0.02837	0.25453
04/21/00	Horizontal	700	700	NA	NA	0.00000	0.00000	NA	0.00000	0.00000	NA	0.00000	0.00000
05/23/00	Horizontal	2,155	2,855	05/23/00	750	0.01349	0.01349	72.8	0.00131	0.00131	406	0.00730	0.00730
07/12/00	Horizontal	44	2,899	05/23/00	750	0.00028	0.01376	72.8	0.00003	0.00134	406	0.00015	0.00745
08/12/00*	Horizontal	2,000	4,899	05/23/00	750	0.01252	0.02628	72.8	0.00121	0.00255	406	0.00678	0.01423
09/14/00	Horizontal	1,044	5,943	05/23/00	750	0.00653	0.03281	72.8	0.00063	0.00318	406	0.00354	0.01776
10/11/00	Horizontal	800	6,743	05/23/00	750	0.00501	0.03782	72.8	0.00049	0.00367	406	0.00271	0.02047
05/31/01	Horizontal	1,500	8,243	05/23/00	750	0.00939	0.04721	72.8	0.00091	0.00458	406	0.00508	0.02555
06/13/01	Horizontal	1,104	9,347	05/23/00	750	0.00691	0.05412	72.8	0.00067	0.00525	406	0.00374	0.02929
02/07/01	T-2	2,890	2,890	07/25/00	815	0.01965	0.01965	17.6	0.00042	0.00042	133	0.00321	0.00321
<b>Total Gallons Extracted:</b>		<b>13,888</b>		<b>Total Pounds Removed:</b>		<b>0.14083</b>		<b>0.01770</b>		<b>0.28703</b>		<b>0.04630</b>	
				<b>Total Gallons Removed:</b>		<b>0.02309</b>		<b>0.00242</b>		<b>0.04630</b>		<b>0.04630</b>	

**Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995756, 5755 Broadway, Oakland, California**

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)

**Abbreviations & Notes:**

TPPH = Total purgeable hydrocarbons as gasoline

MtBE = Methyl tert-butyl ether

µg/L = Micrograms per liter

ppb = Parts per billion, equivalent to µg/L

L = Liter

gal = Gallon

g = Gram

\* = Purge volume estimated

Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10<sup>6</sup>µg) x (pound/453.6g) x (3.785 L/gal)

Volume removal data based on the formula: density (in gms/cc) x 9.339 (ccxlbs/gmsxgals)

TPPH, benzene analyzed by EPA Method 8015/8020

MTBE analyzed by EPA Method 8260 in bold font, all other MTBE analyzed by EPA Method 8020

Concentrations based on most recent groundwater monitoring results

Groundwater extracted by vacuum trucks provided by ACTI. Water disposed of at a Martinez Refinery.

**Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995756, 5755 Broadway, Oakland, CA**

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (CFM)	Hydrocarbon Concentrations			TPHg		Benzene		MTBE	
				TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	Cumulative MTBE Removed (#)
02/07/01	S-2	8.00	4.3	136	2.82	8.56	0.008	0.063	0.000	0.001	0.001	0.004
05/31/01	S-2	6.00	1.0	73	7.7	56	0.001	0.068	0.000	0.002	0.001	0.009
06/13/01	S-2	6.00	7.4	360	7.2	9.0	0.036	0.282	0.001	0.006	0.001	0.014
05/31/01	H-1	1.80	1.2	420	1.4	5.3	0.007	0.012	0.000	0.000	0.000	0.000
06/13/01	H-1	2.00	1.8	170	0.31	10	0.004	0.020	0.000	0.000	0.000	0.001
<b>Total Pounds Removed:</b>							<b>TPHg =</b>	<b>0.302</b>	<b>Benzene =</b>	<b>0.006</b>	<b>MTBE =</b>	<b>0.015</b>

**Abbreviations and Notes:**

CFM = Cubic feet per minute

TPHg = Total petroleum hydrocarbons as gasoline (C6-C12) by modified EPA Method 8015 in 1 liter tedlar bag samples

ppmv = Parts per million by volume

# = Pounds

TPHG, Benzene, and MTBE analyzed by EPA Method 8015/8020 in 1 liter tedlar bag samples

TPHg / Benzene / MTBE removal rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.

(Rate = Concentration (ppmv) x system flow rate (cfm) x (1lb-mole/386ft<sup>3</sup>) x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene, 88 lb/lb-mole for MTBE) x 60 min/hour x 1/1,000,000)

Cumulative TPHg / Benzene / MTBE removal = Previous removal rate multiplied by the hour-interval of operation plus the previous total

**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

July 7, 2001

Karen Petryna  
Equiva Services LLC  
P.O. Box 7869  
Burbank, CA 91510-7869

Second Quarter 2001 Groundwater Monitoring at  
Shell-branded Service Station  
5755 Broadway  
Oakland, CA

Monitoring performed on June 7, 2001

---

Groundwater Monitoring Report 010607-M-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, appropriate 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. In order to avoid compromising the objectivity necessary for the proper



Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read "Nick Sudano".

Nick Sudano  
Project Coordinator

NS/mb

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**  
**Wic #204-5510-0303**

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

S-1	01/25/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	100.00	3.88	96.12	NA
S-1	06/03/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	100.00	3.51	96.49	NA
S-1	08/30/1991	<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	03/13/1992	<30	<0.52	<0.3	<0.3	<0.3	NA	NA	100.00	2.87	97.13	NA
S-1	05/28/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.79	96.21	NA
S-1	08/19/1992	<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	02/10/1993	51	1.4	<0.5	<0.5	<0.5	NA	NA	100.00	4.20	95.80	NA
S-1 (D)	02/10/1993	<50	1.2	<0.5	<0.5	<0.5	NA	NA	100.00	4.20	95.80	NA
S-1	06/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.39	96.61	NA
S-1	08/03/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.69	96.31	NA
S-1	11/02/1993	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	02/01/1994	60a	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.38	96.62	NA
S-1	05/04/1994	<50	1.1	<0.5	<0.5	<0.5	NA	NA	100.00	3.00	97.00	NA
S-1	08/18/1994	<50	0.6	<0.5	<0.5	<0.5	NA	NA	100.00	3.70	96.30	NA
S-1 (D)	08/18/1994	60a	0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.70	96.30	NA
S-1	11/09/1994	<50	4	<0.5	<0.5	<0.5	NA	NA	100.00	2.52	97.48	NA
S-1	02/22/1995	50	0.8	0.7	<0.5	1.3	NA	NA	100.00	4.08	95.92	NA
S-1	05/02/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	2.58	97.42	NA
S-1	08/30/1995	<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	02/02/1996	<50	11	<0.5	0.9	<0.5	NA	NA	100.00	2.00	98.00	NA
S-1	03/09/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	100.00	3.38	99.62	NA
S-1	08/22/1996	<50	1.5	<0.5	<0.5	<0.5	130	NA	100.00	3.43	96.57	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

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

S-1	11/07/1996	<50	<0.5	<0.5	<0.5	<0.5	57	NA	100.00	3.70	96.30	4.33
S-1	02/20/1997	<50	0.64	<0.50	<0.50	1.6	6.5	NA	100.00	3.60	96.40	2
S-1	05/30/1997	<50	<0.50	<0.50	<0.50	<0.50	46	NA	100.00	3.47	96.53	7
S-1 (D)	05/30/1997	<50	<0.50	<0.50	<0.50	<0.50	47	NA	100.00	3.47	96.53	7
S-1	08/21/1997	<50	<0.50	<0.50	<0.50	0.84	26	NA	100.00	3.01	96.99	3.1
S-1	11/03/1997	<50	<0.50	1.1	<0.50	1.3	190	NA	100.00	3.66	96.34	2
S-1	01/20/1998	110	7.9	2.8	4.4	13	53	NA	100.00	1.84	98.16	4.6
S-1 (D)	01/20/1998	130	9.2	6.9	5.2	15	93	NA	100.00	1.84	98.16	4.6
S-1	02/16/1999	<50	<0.50	<0.50	<0.50	<0.50	8.6	NA	100.00	2.43	97.57	2.2
S-1	09/07/1999	NA	NA	NA	NA	NA	NA	NA	100.00	2.84	97.16	NA
S-1	02/02/2000	<50.0	<0.500	<0.500	<0.500	<0.500	202	NA	100.00	3.10	96.90	2.1
S-1	04/26/2000	NA	NA	NA	NA	NA	NA	NA	100.00	2.91	97.09	NA
S-1	07/25/2000	<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	02/12/2001	<50.0	<0.500	<0.500	<0.500	<0.500	209	NA	100.00	1.34	98.66	2.2
S-1	06/07/2001	NA	NA	NA	NA	NA	NA	NA	100.00	1.27	98.73	NA

S-2	01/25/1991	450	140	1.8	6.2	15	NA	NA	98.92	4.52	94.40	NA
S-2	06/03/1991	490	150	2.7	8.2	7	NA	NA	98.92	4.02	94.90	NA
S-2	08/30/1991	70	0.37	<0.3	<0.3	<0.3	NA	NA	98.92	4.70	94.22	NA
S-2	11/22/1991	1,600	110	9.3	29	150	NA	NA	98.92	4.72	94.20	NA
S-2	03/13/1992	1,300	210	5.7	34	79	NA	NA	98.92	3.47	95.45	NA
S-2	05/28/1992	100	28	<0.5	<0.5	<0.5	NA	NA	98.92	4.45	94.45	NA
S-2	08/19/1992	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	02/10/1993	19,000	710	760	80	370	NA	NA	98.92	4.83	94.09	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2	06/11/1993	33,000	3,100	1,600	370	1,100	NA	NA	98.92	3.74	95.18	NA
S-2	08/03/1993	18,000	1,400	130	81	130	NA	NA	98.92	4.23	94.69	NA
S-2 (D)	08/03/1993	19,000	1,400	140	86	150	NA	NA	98.92	4.23	94.69	NA
S-2	11/02/1993	12,000a	470	47	31	92	NA	NA	98.92	4.72	94.20	NA
S-2 (D)	11/02/1993	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	02/01/1994	31,000a	430	46	50	130	NA	NA	98.92	3.48	95.44	NA
S-2 (D)	02/01/1994	31,000a	300	33	30	100	NA	NA	98.92	3.48	95.44	NA
S-2	05/04/1994	3,900	1,200	31	53	71	NA	NA	98.92	3.26	95.66	NA
S-2 (D)	05/04/1994	4,500	1,200	37	57	110	NA	NA	98.92	3.26	95.66	NA
S-2	08/18/1994	24,000	600	8.3	15	27	NA	NA	98.92	3.98	94.94	NA
S-2	11/09/1994	1,400a	240	9.3	13	20	NA	NA	98.92	3.10	95.82	NA
S-2 (D)	11/09/1994	1,800	260	8.5	13	21	NA	NA	98.92	3.10	95.82	NA
S-2	02/22/1995	29,000	550	18	12	63	NA	NA	98.92	4.02	94.90	NA
S-2 (D)	02/22/1995	28,000	530	17	10	60	NA	NA	98.92	4.02	94.90	NA
S-2	05/02/1995	4,400	1,000	25	38	77	NA	NA	98.92	2.86	96.06	NA
S-2 (D)	05/02/1995	4,400	1,000	26	41	83	NA	NA	98.92	2.86	96.06	NA
S-2	08/30/1995	800	350	20	6.7	16	NA	NA	98.92	4.06	94.86	NA
S-2 (D)	08/30/1995	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
S-2 (D)	11/28/1995	2,100	240	230	51	230	NA	NA	98.92	4.48	94.44	NA
S-2	02/02/1996	18,000	540	18	12	22	NA	NA	98.92	1.99	96.93	NA
S-2 (D)	02/02/1996	11,000	600	18	13	28	NA	NA	98.92	1.99	96.93	NA
S-2	03/09/1996	3,800	1,500	27	30	58	NA	NA	98.92	3.27	95.65	NA
S-2 (D)	03/09/1996	3,500	1,300	24	21	53	NA	NA	98.92	3.27	95.65	NA
S-2	08/22/1996	<20,000	490	<200	<200	<200	43,000	NA	98.92	3.85	95.07	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

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

S-2 (D)	08/22/1996	<20,000	570	<200	<200	<200	59,000	51,000	98.92	3.85	95.07	NA
S-2	11/07/1996	<5,000	290	<50	<50	<50	32,000	NA	98.92	4.00	94.92	3.51
S-2 (D)	11/07/1996	<5,000	290	<50	<50	<50	32,000	NA	98.92	4.00	94.92	3.51
S-2	02/20/1997	<10,000	520	<100	<100	<100	28,000	NA	98.92	3.20	95.72	1
S-2 (D)	02/20/1997	<10,000	520	<100	<100	<100	35,000	NA	98.92	3.20	95.72	1
S-2	05/30/1997	150	15	11	3.5	15	11	NA	98.92	3.87	95.05	6
S-2	08/21/1997	1,600	220	<10	20	<10	18,000	NA	98.92	3.29	95.63	3.3
S-2 (D)	08/21/1997	1,500	180	<10	16	<10	21,000	NA	98.92	3.29	95.63	3.3
S-2	11/03/1997	1,000	94	<10	<10	<10	<50	NA	98.92	4.02	94.90	1.8
S-2	01/20/1998	590	110	8.3	18	23	7,800	NA	98.92	1.54	97.38	3.2
S-2	07/23/1998	2,600	840	<10	44	22	15,000	NA	98.92	2.89	96.03	NA
S-2	02/16/1999	680	140	6.1	10	18	19,000	NA	98.92	1.86	97.06	2.0
S-2	09/07/1999	<2,000	248	<20.0	<20.0	<20.0	22,800	NA	98.92	3.66	95.26	1.8
S-2	02/02/2000	103	0.825	<0.500	<0.500	<0.500	11,700	10,500	98.92	4.02	94.90	2.0
S-2	04/26/2000	4,040	799	<20.0	40.9	255	19,000	17,100b	98.92	2.63	96.29	2.3
S-2	07/25/2000	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	02/12/2001	9,010	1,430	<20.0	219	848	28,300	17,000	98.92	1.47	97.45	2.0
S-2	06/07/2001	31,000	1,000	<25	630	3200	NA	17,000	98.92	3.43	95.49	10.4

S-3	01/25/1991	<30	<0.3	<0.3	<0.3	<0.3	NA	NA	101.67	3.84	97.83	NA
S-3	06/03/1991	<30	<0.3	0.3	0.3	0.3	NA	NA	101.67	3.25	98.42	NA
S-3	08/03/1991	<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	03/13/1992	<30	<0.3	0.3	0.3	0.3	NA	NA	101.67	2.29	99.38	NA
S-3	05/28/1992	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.62	98.05	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-3	08/19/1992	<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	02/10/1993	30	1.9	3.2	2.4	5.6	NA	NA	101.67	4.36	97.31	NA
S-3	06/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.91	98.76	NA
S-3 (D)	06/11/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.91	98.76	NA
S-3	08/03/1993	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.70	97.97	NA
S-3	11/02/1993	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	02/01/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.90	98.77	NA
S-3	05/04/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.54	99.13	NA
S-3	08/18/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.51	98.16	NA
S-3	11/09/1994	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.44	99.23	NA
S-3	02/22/1995	80	<0.5	0.5	<0.5	0.5	NA	NA	101.67	4.12	97.55	NA
S-3	05/02/1995	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.83	98.84	NA
S-3	08/30/1995	<50	0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.16	98.51	NA
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	02/02/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	2.24	99.43	NA
S-3	03/09/1996	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	101.67	3.05	98.62	NA
S-3	08/22/1996	<50	0.8	<0.5	<0.5	<0.5	<2.5	NA	101.67	2.85	98.82	4.6
S-3	11/07/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	101.67	3.35	98.32	4.6
S-3	02/20/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.00	98.67	1
S-3	05/30/1997	140	14	10	3.3	14	8.6	NA	101.67	3.00	98.67	8
S-3	08/21/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	2.94	98.73	3.3
S-3	11/03/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.36	98.31	2.4
S-3 (D)	11/03/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	101.67	3.36	98.31	2.4
S-3	01/20/1998	Well inaccessible		NA	NA	NA	NA	NA	101.67	NA	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

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

S-3	07/23/1998	NA	NA	NA	NA	NA	NA	NA	101.67	2.69	98.98	NA
S-3	02/16/1999	<50	<0.50	0.92	0.59	3.9	3.7	NA	101.67	2.20	99.47	2.8
S-3	09/07/1999	NA	NA	NA	NA	NA	NA	NA	101.67	2.81	98.86	NA
S-3	02/02/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	101.67	3.97	97.70	2.7
S-3	04/26/2000	NA	NA	NA	NA	NA	NA	NA	101.67	2.96	98.71	NA
S-3	07/25/2000	<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	02/12/2001	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	101.67	2.47	99.20	2.3
S-3	06/07/2001	NA	NA	NA	NA	NA	NA	NA	101.67	2.78	98.89	NA

T-1	05/30/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.65	NA	NA
T-1	08/21/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.69	NA	NA
T-1	11/03/1997	NA	NA	NA	NA	NA	NA	NA	NA	3.09	NA	NA
T-1	01/20/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.61	NA	NA
T-1	07/23/1998	NA	NA	NA	NA	NA	NA	NA	NA	2.32	NA	NA
T-1	02/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	1.95	NA	NA
T-1	09/07/1999	NA	NA	NA	NA	NA	NA	NA	NA	2.48	NA	NA
T-1	02/02/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	NA	2.66	NA	2.5
T-1	04/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.56	NA	NA
T-1	07/25/2000	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	02/12/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.20	NA	NA
T-1	06/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	2.36	NA	NA

T-2	05/30/1997	NA	NA	NA	NA	NA	NA	NA	NA	1.81	NA	NA
T-2	08/21/1997	NA	NA	NA	NA	NA	NA	NA	NA	1.89	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

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

T-2	11/03/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.25	NA	NA
T-2	01/20/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.55	NA	NA
T-2	07/23/1998	NA	NA	NA	NA	NA	NA	NA	NA	1.21	NA	NA
T-2	02/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	1.08	NA	NA
T-2	09/07/1999	NA	NA	NA	NA	NA	NA	NA	NA	0.72	NA	NA
T-2	02/02/2000	1,540	53.4	20.8	11.4	21.8	1,330	NA	NA	0.98	NA	3.0
T-2	04/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	1.02	NA	NA
T-2	07/25/2000	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	02/12/2001	310	7.48	7.76	0.693	2.28	301	NA	NA	1.45	NA	1.6
T-2	06/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.57	NA	NA

T-3	05/30/1997	NA	NA	NA	NA	NA	NA	NA	NA	2.31	NA	NA
T-3	08/21/1997	NA	NA	NA	NA	NA	NA	NA	NA	1.57	NA	NA
T-3	11/03/1997	NA	NA	NA	NA	NA	NA	NA	NA	3.50	NA	NA
T-3	01/20/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.76	NA	NA
T-3	07/23/1998	NA	NA	NA	NA	NA	NA	NA	NA	0.82	NA	NA
T-3	02/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	0.55	NA	NA
T-3	09/07/1999	NA	NA	NA	NA	NA	NA	NA	NA	2.89	NA	NA
T-3	02/02/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	NA	3.02	NA	2.9
T-3	04/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	2.81	NA	NA
T-3	07/25/2000	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	02/12/2001	NA	NA	NA	NA	NA	NA	NA	NA	2.11	NA	NA
T-3	06/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	1.68	NA	NA



**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**5755 Broadway**  
**Oakland, CA**  
**Wic #204-5510-0303**

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

**Abbreviations:**

TPPH= Total petroleum hydrocarbons as gasoline by modified 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

ug/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.



Report Number : 20684

Date : 6/26/2001

Nick Sudano  
Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject : 1 Water Sample  
Project Name : 5755 Broadway, Oakland  
Project Number : 010607-M2  
P.O. Number : 98995756

Dear Mr. Sudano,

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

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

Sincerely,



Joel Kiff



Report Number : 20684

Date : 6/26/2001

Project Name : 5755 Broadway, Oakland

Project Number : 010607-M2

Sample : S-2

Matrix : Water

Lab Number : 20684-01

Sample Date :6/7/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>1000</b>	25	ug/L	EPA 8260B	6/20/2001
<b>Toluene</b>	<b>&lt; 25</b>	25	ug/L	EPA 8260B	6/20/2001
<b>Ethylbenzene</b>	<b>630</b>	25	ug/L	EPA 8260B	6/20/2001
<b>Total Xylenes</b>	<b>3200</b>	25	ug/L	EPA 8260B	6/20/2001
<b>Methyl-t-butyl ether (MTBE)</b>	<b>17000</b>	25	ug/L	EPA 8260B	6/20/2001
<b>TPH as Gasoline</b>	<b>31000</b>	5000	ug/L	EPA 8260B	6/20/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/20/2001
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/20/2001

Approved By:  Joel Kiff

Report Number : 20684

Date : 6/26/2001

Project Name : **5755 Broadway, Oakland**

Project Number : **010607-M2**

20684 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	6/14/2001
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	6/14/2001
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	6/14/2001
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	6/14/2001
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	6/14/2001
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	6/14/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/14/2001
4-Bromofluorobenzene (Surr)	87.7		% Recovery	EPA 8260B	6/14/2001

---


Approved By: Joel Kiff

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 5755 Broadway, Oakland

Project Number : 010607-M2

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
Spike Recovery Data														
Benzene	20675-05	<0.50	24.6	23.6	23.6	22.5	ug/L	EPA 8260B	6/14/2001	196.0	95.2	0.858	70-130	25
Toluene	20675-05	<0.50	24.6	23.6	21.1	20.1	ug/L	EPA 8260B	6/14/2001	185.8	85.0	1.03	70-130	25
Tert-Butanol	20675-05	<5.0	24.6	23.6	26.9	25.0	ug/L	EPA 8260B	6/14/2001	1109	106	3.31	70-130	25
Methyl-t-Butyl Ether	20675-05	<0.50	24.6	23.6	20.8	20.6	ug/L	EPA 8260B	6/14/2001	184.4	87.2	3.24	70-130	25

Approved By:  \_\_\_\_\_  
 Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 20684

Date : 6/26/2001

**QC Report : Laboratory Control Sample (LCS)**

Project Name : **5755 Broadway, Oakland**

Project Number : **010607-M2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	6/13/2001	93.8	70-130
Toluene	20.0	ug/L	EPA 8260B	6/13/2001	85.3	70-130
Tert-Butanol	100	ug/L	EPA 8260B	6/13/2001	110	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	6/13/2001	83.6	70-130

KIFF ANALYTICAL, LLC

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

Approved By:  Joel Kiff

LAB: KIEF

EQUIVA Services LLC Chain Of Custody Record 20684

Lab Identification (if necessary):

Address:

City, State, Zip:

EQUIVA Project Manager to be invoiced:

SCIENCE & ENGINEERING

TECHNICAL SERVICES

CRIME FORENSIC

Karen Petryna

INCIDENT NUMBER (SEE ONLY)

9	8	9	9	5	7	5	8
---	---	---	---	---	---	---	---

SAP or CRIME NUMBER (SEE CRIME)

6/7/01

PAGE: 1 of 1

CONSULTANT COMPANY:

**Blaine Tech Services**

ADDRESS:  
**1880 Rogers Avenue**

CITY:  
**San Jose, CA 95112**

TELEPHONE: **408-673-0555**      FAX: **408-673-7771**      E-MAIL: **msudano@blainetech.com**

SITE ADDRESS (Street and City):  
**5755 Broadway, Oakland**

PROJECT CONTACT (Reporter):  
**Nick Sudano**

CONSULTANT PROJECT NO.:  
**BTS # 010607-MZ**

SAMPLER NAME(S) (Print):  
**Matthew Miller**

TURNAROUND TIME (BUSINESS DAYS):  
 10 DAYS    5 DAYS    72 HOURS    48 HOURS    24 HOURS    LESS THAN 24 HOURS

REQUESTED ANALYSIS

IA - RWQCB REPORT FORMAT    LIST AGENCY:

GCMS MTBE CONFIRMATION: HIGHEST  HIGHEST per BORING   ALL

SPECIAL INSTRUCTIONS OR NOTES: TEMPERATURE ON RECEIPT C°

*Confirm highest MTBEC [ ] by 8260*

TPH - Gas, Purgeable (8015m)	BTX (8021B)	MTBE (8021B)	MTBE (8260B)	TPH - Diesel, Extractable (8015m)	Oxygenates (5) by 8260	Ethanol, Methanol (8015B)	MTBE (8008) Confirmation, See Note
X	X	X					X

FIELD NOTES:

Contained/Preservative  
or PID Readings  
or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH - Gas, Purgeable (8015m)	BTX (8021B)	MTBE (8021B)	MTBE (8260B)	TPH - Diesel, Extractable (8015m)	Oxygenates (5) by 8260	Ethanol, Methanol (8015B)	MTBE (8008) Confirmation, See Note	
		DATE	TIME											
	S-2	6/7	1338	W	3	X	X	X					X	-01

Relinquished by: (Signature) *Matthew Miller*      Received by: (Signature)

Relinquished by: (Signature)      Received by: (Signature)

Relinquished by: (Signature)      Received by: (Signature) *John Cutler / Kief Analytical*

Date:      Time:

Date:      Time:

Date: 060801      Time: 1117

## WELL GAUGING DATA

Project # 010607-mz Date 6/7/01 Client Equiva

Site 5755 Broadway Oakland CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
S-1	3					1.27	11.70	↓
S-2	4	stinger in well				3.43	9.45	
S-3	4					2.78	9.54	
T-1	12	no FP detected				2.36	13.37	
T-2	12	no FP detected				1.57	13.02	
T-3	4	no FP detected				1.68	8.75	



## EQUIVA WELL MONITORING DATA SHEET

BTS #: 010607-m2	Site: 98995756
Sampler: M+M	Date: 6/7/01
Well I.D.: S-2	Well Diameter: 2 3 (4) 6 8
Total Well Depth: 9.45	Depth to Water: 3.73
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: \_\_\_\_\_

4 (Gals.) X	3	= 12 Gals.
1 Case Volume	Specified Volumes	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.	Turbidity	Gals. Removed	Observations
1351	78.3	7.3	1186	137	4	odor
1352	74.5	7.0	1151	57	8	"
1353	74.3	7.0	1139	38	12	"

Did well dewater? Yes <u>No</u>	Gallons actually evacuated:
Sampling Time: 1358	Sampling Date: 6/7/01
Sample I.D.: S-2	Laboratory: Sequoia Columbia Other <u>KIEC</u>
Analyzed for: <u>TPH-G BTEX MTBE</u> 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: 10.4 ✓✓ mg/L
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV

**ATTACHMENT B**  
**Soil Boring Logs**

# LOG OF EXPLORATORY

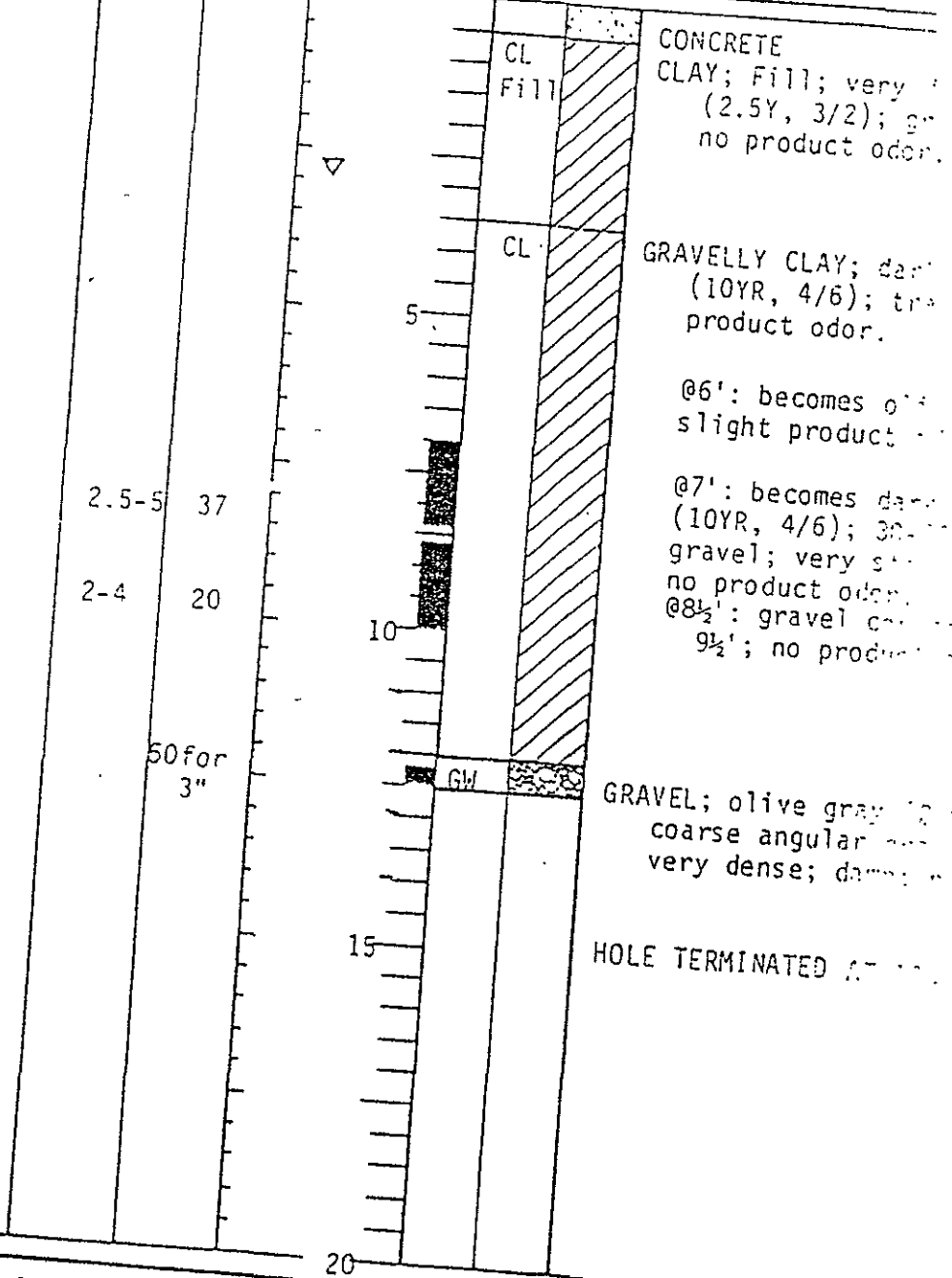
PROJECT NUMBER 738-04.01

PROJECT NAME Gettler-Pyan, Shell @ Broadway & Taft.

BY JOB DATE 6/11/85

5-1

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/FL)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN
---------------	---------------------------	------------------------	---------------------	--------------	---------	----------------------



CONCRETE CLAY; Fill; very (2.5Y, 3/2); no product odor.

GRAVELLY CLAY; dark (10YR, 4/6); trace product odor.

@6': becomes of slight product

@7': becomes dark (10YR, 4/6); 30% gravel; very slight no product odor.

@8½': gravel color @9½'; no product

GRAVEL; olive gray to coarse angular very dense; dark

HOLE TERMINATED AT 15'

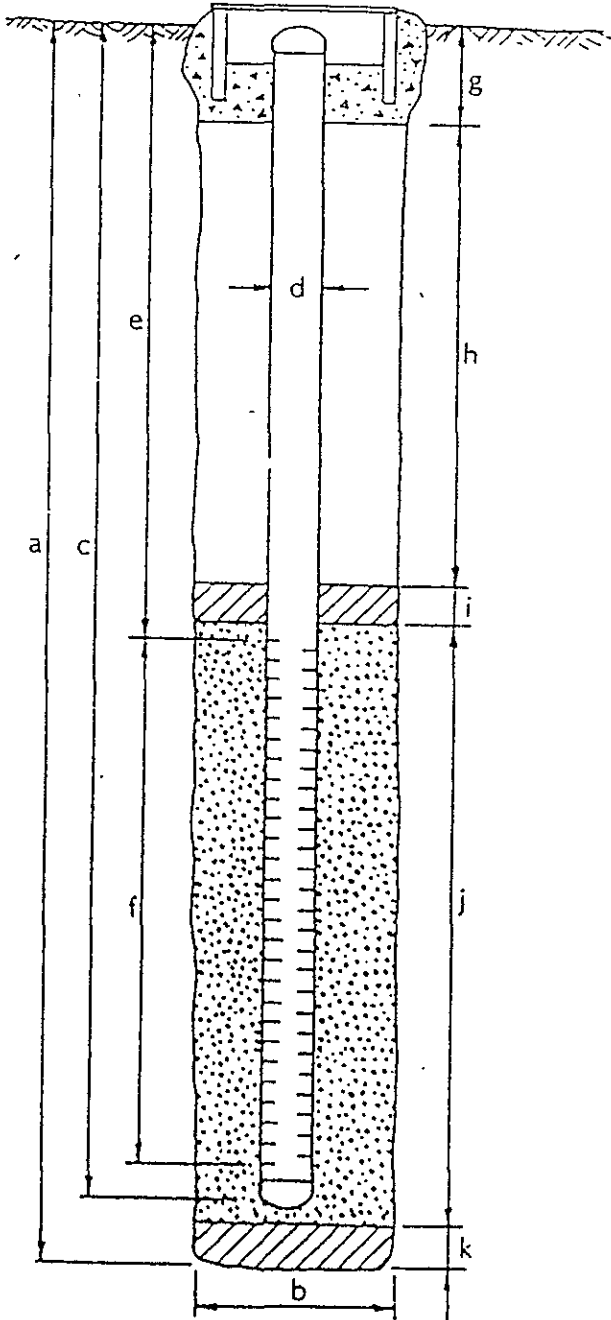
REMARKS Boring converted to ground water monitoring well on Plate C.

# WELL DETAILS



PROJECT NUMBER 738-04.01 BOREHOLE 5-1  
 PROJECT NAME Gettler-Pvan, Shell Broadway & Taft TOP OF GROUND  
 COUNTY Alameda GROUNDWATER  
 WELL PERMIT NO. \_\_\_\_\_ DATUM \_\_\_\_\_

G-5 vault box (Std.)



## EXPLORATORY

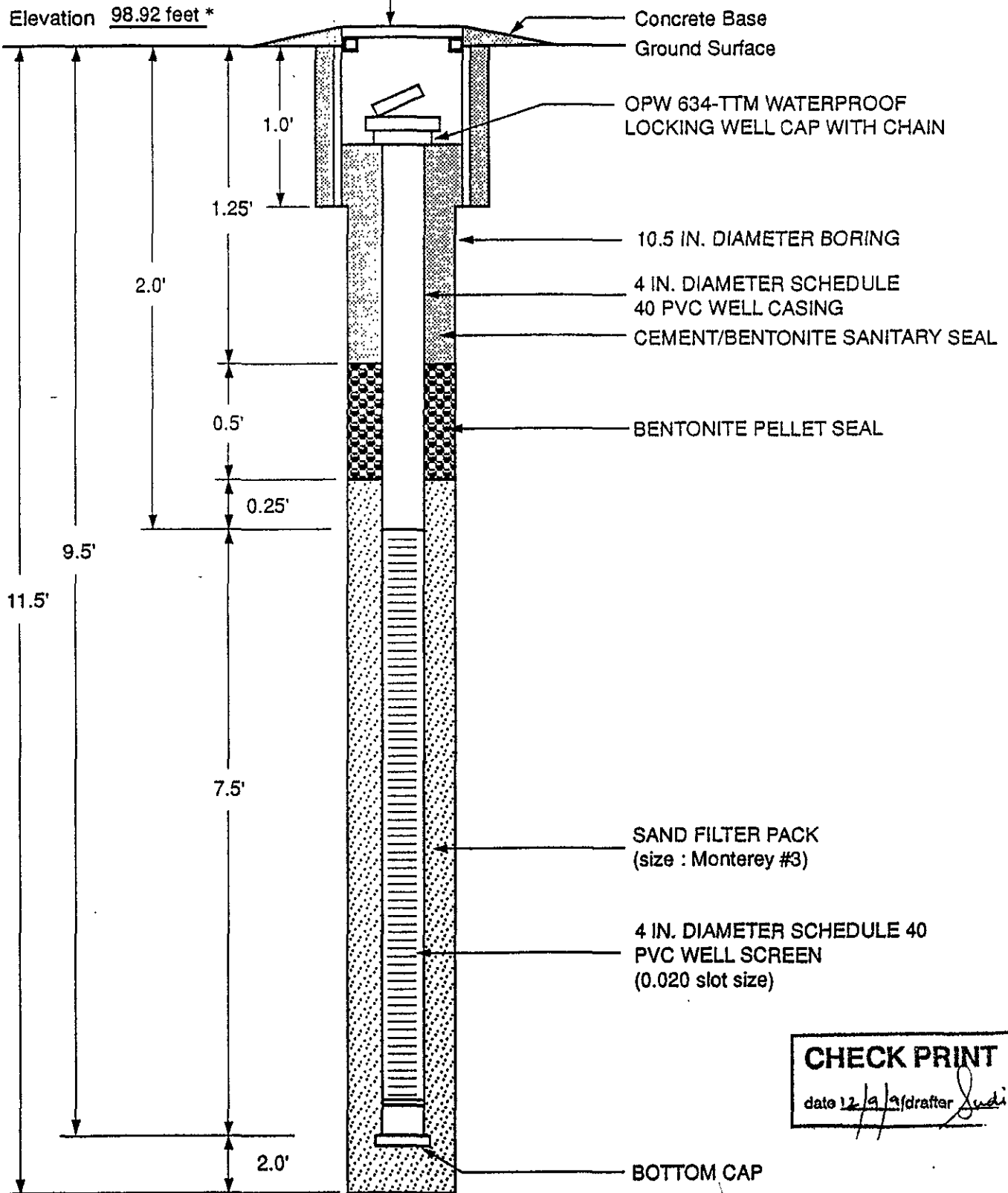
- a. Total depth
- b. Diameter
- Drilling method \_\_\_\_\_

## WELL CONSTRUCTION

- c. Casing length  
Material Sched 40
- d. Diameter
- e. Depth to top perforation
- f. Perforated length  
Perforated interval \_\_\_\_\_  
Perforation type \_\_\_\_\_  
Perforation size \_\_\_\_\_
- g. Surface seal  
Seal material Sand
- h. Backfill  
Backfill material \_\_\_\_\_
- i. Seal  
Seal material \_\_\_\_\_
- j. Gravel pack \_\_\_\_\_  
Pack material \_\_\_\_\_
- k. Bottom seal  
Seal material \_\_\_\_\_

Top of PVC Casing  
Elevation 98.92 feet \*

12 inch EMCO WHEATON A-721 MANHOLE WITH WATERPROOF COVER



NOT TO SCALE

\* Relative to assigned datum

**CHECK PRINT**

date 12/9/91 drafter *Judi*



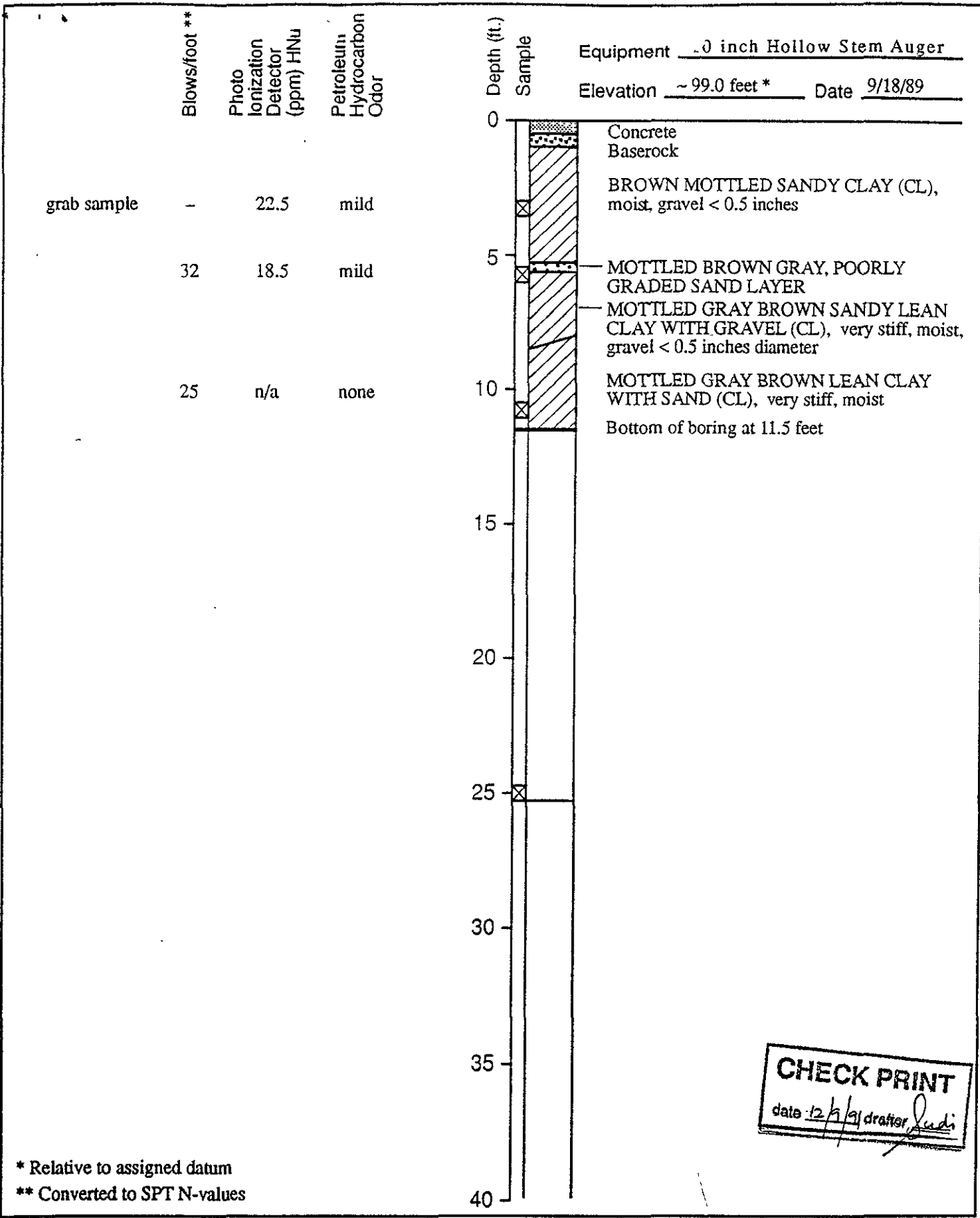
**Harding Lawson Associates**  
Engineering and  
Environmental Services

**Well Completion Diagram S-2**

PLATE

Shell Service Station  
5755 Broadway  
Oakland, California

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	4022,218.03		12/09/91	



**CHECK PRINT**  
 date 12/7/91 drafter *Judi*

\* Relative to assigned datum  
 \*\* Converted to SPT N-values

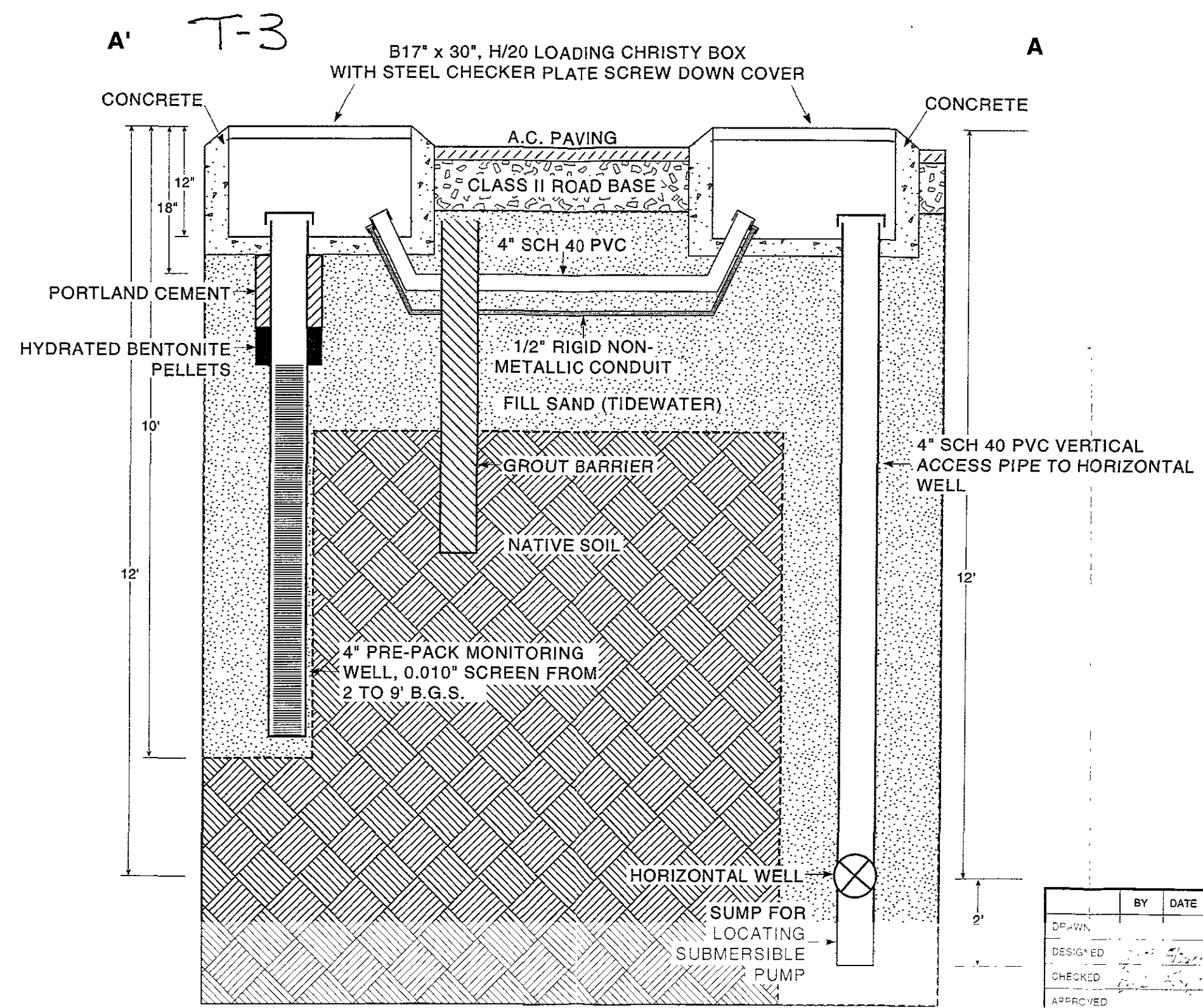


**Harding Lawson Associates**  
 Engineering and  
 Environmental Services

**Log of Boring S-2**  
 Shell Service Station  
 5755 Broadway  
 Oakland, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	4022,218.03		12/09/91	



NOT TO SCALE

	BY	DATE	REV.	DESCRIPTION	DATE	APP'D
DRAWN						
DESIGNED						
CHECKED						
APPROVED						

PROJ. NO. 8169

GROUND WATER REMEDIATION SYSTEM

SECTION A-A' HORIZONTAL WELL TO BACKFILL MONITORING WELL TRENCH DETAIL

EST. NO. **2**