



May 8, 1995

Brian Oliva
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway
Suite 250
Alameda, CA 94502

ENVIRONMENTAL
HEALTH
DEPARTMENT
MAY 15 2 11:10

Re: **First Quarter 1995**
Shell Service Station
WIC #204-2495-0101
1800 Powell Street
Emeryville, California
WA Job #81-0794-205

Dear Mr. Oliva:

This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 2652.d.

First Quarter 1995 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) calculated ground water elevations, compiled the analytic data (Table 1) and prepared a ground water elevation contour and a benzene concentration in ground water map (Figure 2).

Anticipated Second Quarter 1995 Activities:

- WA will submit a report presenting the results of the second quarter 1995 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevations and a ground water elevation contour map.

Brian Oliva
May 8, 1995

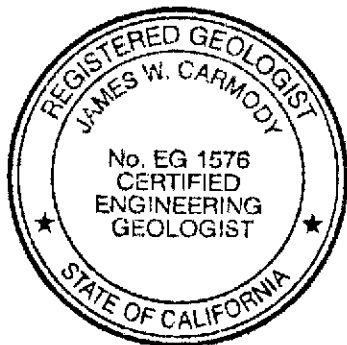
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Please call if you have any questions.

Sincerely,
Weiss Associates

Patricia Anne Kresse for

Grady S. Glasser
Technical Assistant



James W. Carmody
James W. Carmody, C.E.G.
Senior Project Hydrogeologist

Attachments: A - Blaine Tech's Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 4023, Concord, California 94524
Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region,
2101 Webster Street, Suite 500, Oakland, California 94612

GSG/JWC:all
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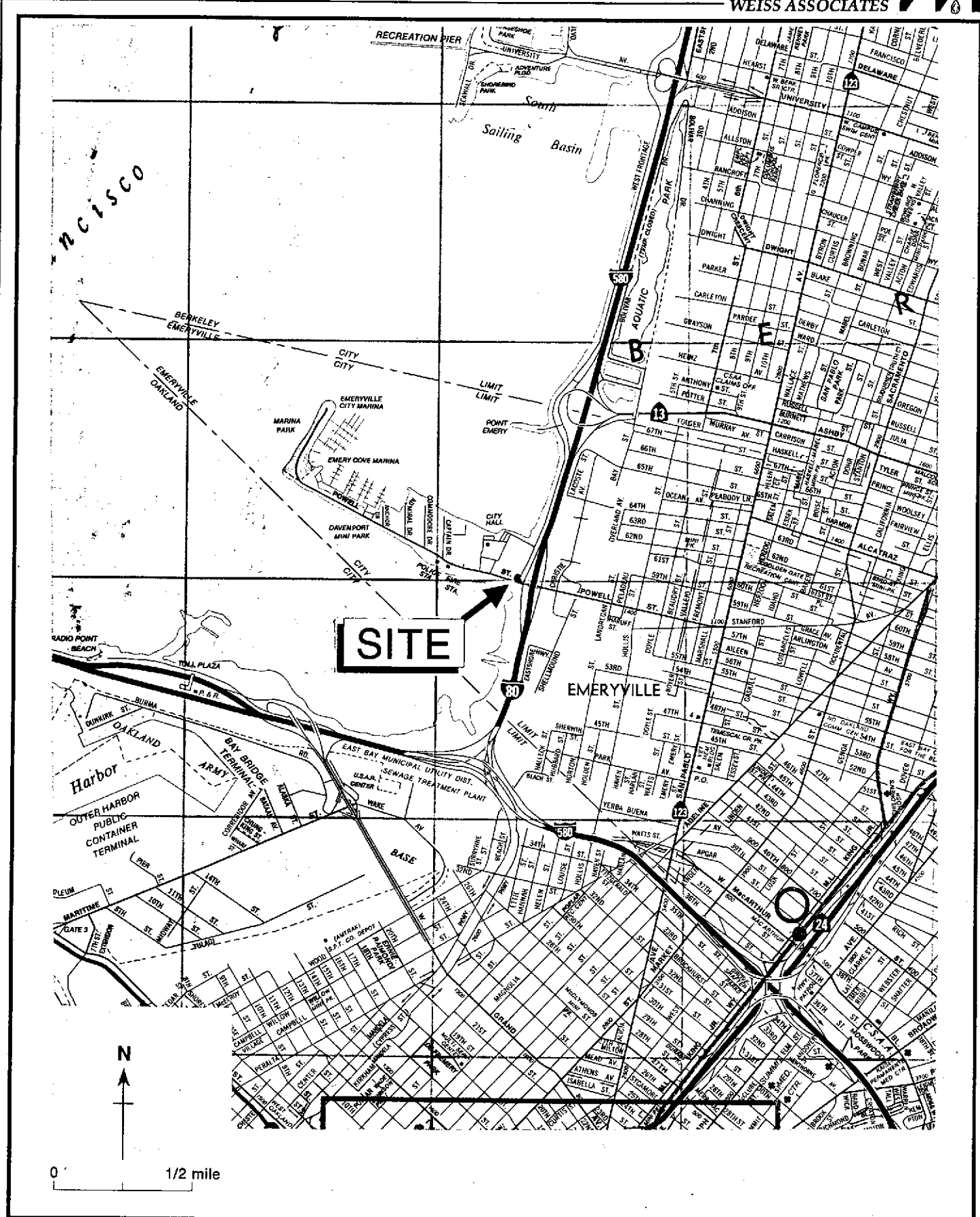


Figure 1. Site Location Map - Shell Service Station WIC# 204-2495-01, 1800 Powell Street, Emeryville, California

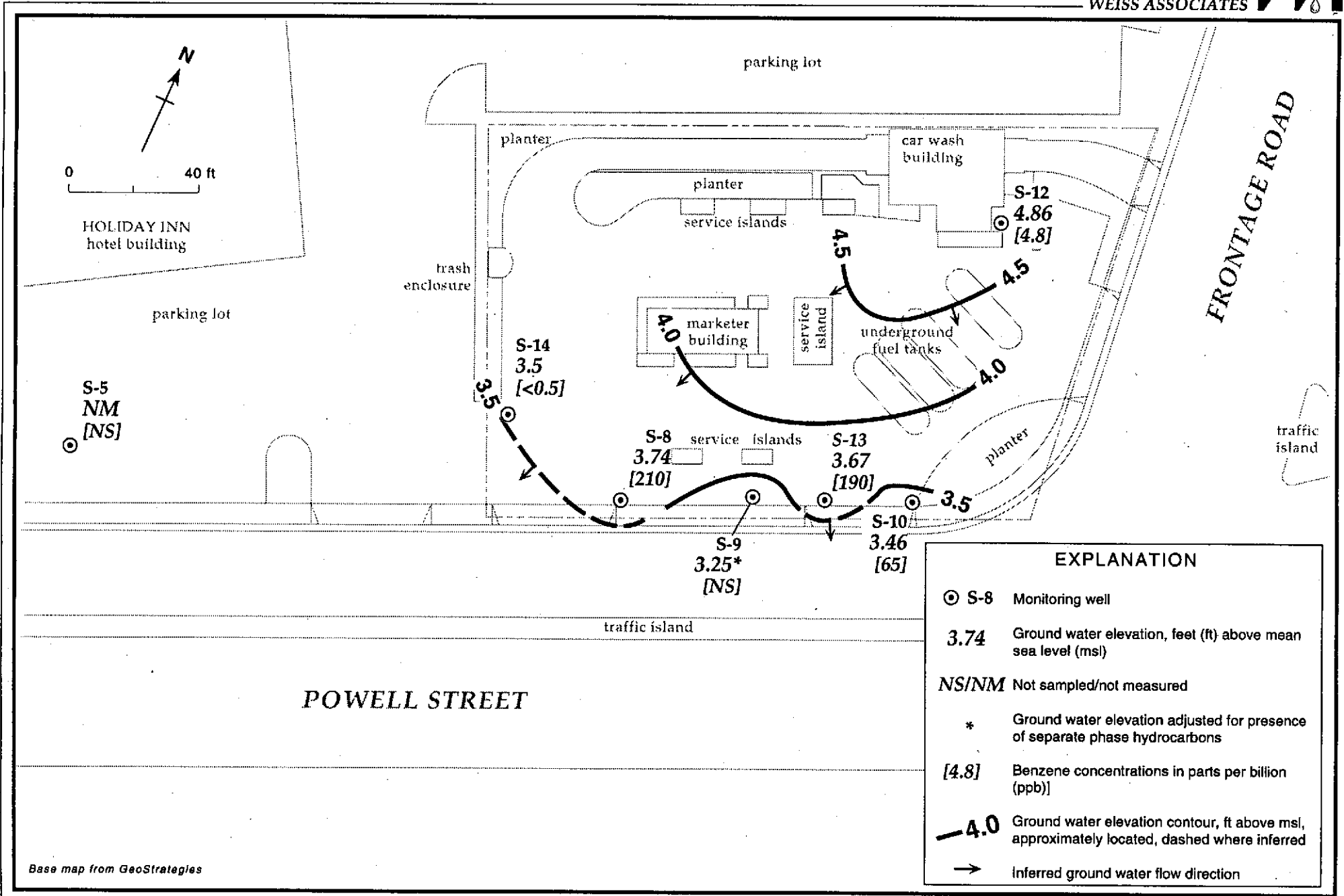


Figure 2. Monitoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - February 22, 1995 - Shell Service Station - WIC# 204-2495-0107, 1800 Powell Street, Emeryville, California

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	←————— parts per billion (mg/L) —————→							
						TDS	TPH-G	TPH-D	B	T	E	X	
S-5	10/26/84	11.72	---	---	---	---	3,000	---	660	20	20	70	
	02/09/85		---	---	---	---	2,800	---	740	20	20	140	
	04/27/85		---	---	---	---	4,300	---	750	10	20	<30	
	07/06/85		---	---	---	---	1,500	---	300	8.0	7.0	9.0	
	10/24/85		---	---	---	---	2,100	---	760	10	40	50	
	01/03/86		---	---	---	---	1,300	---	520	9.0	8.0	10	
	07/05/86		8.36	---	3.36	---	1,400	---	500	10	4.0	<10	
	10/18/86		---	---	---	---	4,200	---	1,100	9.0	14	7.0	
	01/13/87		---	---	---	---	4,500	6,100	1,100	15	30	25	
	07/07/87		9.15	---	2.57	---	3,200	---	1,000	16	9.0	12	
	10/10/87		9.67	---	2.05	---	1,700	---	16	5.7	5.2	8.9	
	02/11/88		9.00	---	2.72	---	1,300	---	300	5.0	<5	<5	
	05/10/88		8.61	---	3.11	---	1,900	---	490	<0.5	<5	<5	
	08/31/88		9.61	---	2.11	---	6,700	---	760	26	<25	<25	
	12/03/88		9.47	---	2.25	---	2,900	---	890	5.3	7.3	13	
	02/16/89		8.29	---	3.43	---	1,300	---	280	3.0	3.4	9.4	
	08/10/89		9.30	---	2.42	---	1,700	---	530	5.5	<5	5.8	
	11/11/89		9.42	---	2.30	---	---	---	---	---	---	---	
	02/21/94		7.95	---	3.77	---	---	1,000	---	250	<5	<5	<5
	02/21/94 ^{dup}		7.95	---	3.77	---	---	1,300	---	220	<5	<5	11
	05/16/94		8.00	---	3.72	---	---	1,200	---	230	<5	<5	<5
	08/09/94 ^a		---	---	---	---	---	---	---	---	---	---	---
	11/9/94		8.32	---	3.40	---	---	1,600	---	220	3.2	1.8	5.0
11/9/94 ^{dup}		8.32	---	---	---	---	1,600	---	250	3.3	1.9	5.9	
02/22/95 ^a		---	---	---	---	---	---	---	---	---	---	---	

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Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
S-6 ^b	04/27/85		---	---	---	---	6,500	---	2,400	30	50	210
	07/06/85		---	---	---	---	3,700	---	1,700	34	55	200
	10/24/85		---	---	---	---	<50	---	23	<0.5	<5	10
	11/09/85 ^b		---	---	---	---	---	---	---	---	---	---
S-7 ^b	10/26/84		---	---	---	---	50	---	1.1	<1	<1	4
	02/09/85		---	---	---	---	---	---	0.90	<1	<1	<3
	04/27/85		---	---	---	---	<50	---	<1	<1	<1	<3
	07/06/85		---	---	---	---	70	---	2.2	<1	<1	<3
	10/24/85		---	---	---	---	6,200	---	2,200	130	190	660
	11/09/85 ^b		---	---	---	---	---	---	---	---	---	---
S-8	10/26/84	12.76	---	---	---	---	1,000	---	610	9.0	1.0	42
	02/09/85		---	---	---	---	500	---	160	5.0	<2	17
	04/27/85		---	---	---	---	2,700	---	1500	20	10	40
	07/06/85		---	---	---	---	440	---	180	5.0	2.0	12
	10/24/85		---	---	---	---	2,000	---	1,100	17	5.0	70
	01/03/86		---	---	---	---	1,900	---	1,300	20	<10	70
	07/05/86		9.50	---	3.26	---	1,600	---	920	30	<10	60
	10/18/86		---	---	---	---	1,400	---	640	<10	<10	30
	01/13/87		---	---	---	---	670	760	190	5.8	<0.5	19
	04/22/87		---	---	---	---	2,400	---	740	54	5.7	59
	07/07/87		10.45	---	2.31	---	1,100	---	450	15	<2.5	42
	10/10/87		10.83	---	1.93	---	340	---	4.0	0.60	<0.5	17
	02/11/88		10.44	---	2.32	---	<1,000	---	260	<10	<10	11
	05/10/88		10.17	---	2.59	---	1,800	---	700	14	<5	46
08/31/88 ^{SPH}		10.81	---	1.95	---	---	---	---	---	---	---	

—Table 1 continues on next page—



Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	← parts per billion (mg/L) →						
						TDS	TPH-G	TPH-D	B	T	E	X
	12/03/88		10.81	---	1.95	---	960	---	250	4.3	<2.5	14
	02/16/89		9.65	---	3.11	---	2,700	---	800	35	10	83
	05/28/89		10.46	---	2.3	---	960	---	710	25	84	80
	08/10/89		10.59	---	2.17	---	1,300	---	630	17	<5	46
	11/11/89		10.29	---	2.47	---	910	---	180	8	<2.5	15
	02/21/94		9.52	---	3.24	2,910,000	3,200	---	480	52	<5	130
	05/16/94		9.49	---	3.27	---	1,000	---	220	7.3	<5	28
	05/16/94 ^{dup}		9.49	---	3.27	---	1,000	---	280	10	<5	29
	08/09/94		10.37	---	2.39	4,500,000	400	---	27	6.6	<0.5	18
	11/09/94		9.58	---	3.18	4,600,000	650	---	170	5.3	<0.5	17
	02/22/95		9.02	---	3.74	---	650	---	210	10	1.2	22
S-9	10/26/84 ^{SPI}	12.75	---	---	---	---	---	---	---	---	---	---
	02/09/85 ^{SPI}		---	1.30	---	---	---	---	---	---	---	---
	04/27/85 ^{SPI}		---	1.25	---	---	---	---	---	---	---	---
	07/06/85 ^{SPI}		---	1.20	---	---	---	---	---	---	---	---
	10/24/85 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	01/03/86 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	04/11/86 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	07/05/86 ^{SPI}		9.67	---	3.08	---	---	---	---	---	---	---
	10/18/86 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	01/13/87 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	04/22/87 ^{SPI}		---	---	---	---	---	---	---	---	---	---
	07/07/87 ^{SPI}		---	---	---	---	---	---	---	---	---	---

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Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	parts per billion (mg/L)						
						TDS	TPH-G	TPH-D	B	T	E	X
	10/10/87 ^{SPH}		22.30	---	-9.55	---	---	---	---	---	---	---
	02/24/94 ^{SPH}		---	---	---	---	---	---	---	---	---	---
	05/16/94 ^{SPH}		---	1.5	---	---	---	---	---	---	---	---
	08/09/94 ^{SPH}		11.80	2.0	0.95	---	---	---	---	---	---	---
	11/09/94 ^{SPH}		---	---	---	---	---	---	---	---	---	---
	02/22/95 ^{SPH}		11.40	2.38	3.25	---	---	---	---	---	---	---
S-10	10/26/84	12.58	---	---	---	---	700,000	---	37,000	100,000	20,000	110000
	02/09/85		---	---	---	---	6,500	---	480	700	100	1800
	04/27/85		---	---	---	---	13,000	---	1,300	500	600	3700
	07/06/85		---	---	---	---	14,000	---	1,300	310	270	2400
	10/24/85		---	---	---	---	4,200	---	580	34	4	440
	01/03/86		---	---	---	---	1,700	---	360	10	7.8	170
	04/11/86 ^{SPH}		---	0.01	---	---	---	---	---	---	---	---
	07/05/86 ^{SPH}		9.16	0.01	3.42	---	---	---	---	---	---	---
	10/18/86 ^{SPH}		---	0.03	---	---	---	---	---	---	---	---
	01/13/87 ^{SPH}		---	0.03	---	---	---	---	---	---	---	---
	04/22/87 ^{SPH}		---	0.01	---	---	---	---	---	---	---	---
	07/07/87 ^{SPH}		9.41	0.03	3.17	---	---	---	---	---	---	---
	10/10/87 ^{SPH}		7.77	---	4.81	---	---	---	---	---	---	---
	02/11/88		6.41	---	6.17	---	1,200	---	470	16	<5	14
	05/10/88		9.04	---	3.54	---	1,100	---	100	6	4	19
	08/31/88 ^{SPH}		9.38	0.01	3.20	---	---	---	---	---	---	---
	12/03/88 ^{SPH}		6.89	---	5.69	---	---	---	---	---	---	---
	02/16/89		7.34	---	5.24	---	530	---	89	8.5	1.6	4.5
	05/28/89		6.60	---	5.98	---	240	---	65	3.8	2.2	8.6
	08/10/89		9.09	---	3.49	---	250	---	23	4.1	<1	6.4

—Table 1 continues on next page—



Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	parts per billion (mg/L)						
						TDS	TPH-G	TPH-D	B	T	E	X
	11/11/89 ^c		6.58	---	6	---	320	---	1.6	1.3	1.4	6.2
	02/21/94		8.32	---	4.26	---	1,400	---	190	9.9	<2.5	19
	05/16/94		8.35	---	4.23	---	300	---	45	8.6	6.2	19
	08/08/94		8.66	---	3.92	---	700	---	57	14	<0.5	9.3
	11/09/94		6.68	---	5.90	---	640	---	130	2.0	1.6	4.1
	02/22/95		9.12	---	3.46	---	500	---	65	5.9	1.0	8.2
S-12	07/06/85	12.84	8.22	---	---	---	<250	2,200	0.71	<0.5	<0.5	<3.6
	11/16/85		---	---	---	---	<250	1,400	18	<2	<2	<5
	01/03/86		---	---	---	---	<250	---	24	2	<2	<5
	07/05/86		8.27	---	4.57	---	80	---	15	0.7	<0.5	2
	10/18/86		---	---	---	---	150	---	12	9	<0.5	3.6
	01/13/87		---	---	---	---	120	1,000	3.6	0.8	<0.5	2.9
	04/22/87		---	---	---	---	100	820	3.7	3.8	0.8	11
	07/07/87		9.5	---	3.34	---	70	---	2.5	0.8	<0.5	2.4
	10/10/87		9.9	---	2.94	---	220	2,500	2.1	0.7	<0.5	1.2
	02/11/88		9.43	---	3.41	---	110	2,500	0.8	<0.5	<0.5	1.3
	05/10/88		8.65	---	4.19	---	140	3,800 ^d	0.8	0.8	<0.5	2.5
	08/31/88		9.86	---	2.98	---	190	2,600 ^d	3	15	0.5	4.5
	12/03/88		9.93	---	2.91	---	180	3,900 ^d	1.2	1	1	7.7
	02/16/89		8.08	---	4.76	---	350 ^e	2,100 ^d	0.6	<0.5	0.5	5.5
	05/28/89		9.08	---	3.76	---	290	2,200	2	1.6	4.4	6
	08/10/89		9.35	---	3.49	---	240	720	0.7	<0.5	<0.5	1.1
	11/11/89		9.28	---	3.56	---	210 ^c	4,100	0.7	0.5	<0.5	3.4
	02/21/94		8.22	---	4.62	---	240 ^f	2,200 ^g	0.7	<0.5	<0.5	3.6
	05/16/94		8.92	---	3.92	---	96	2,200	1.5	<0.5	<0.5	2.0
	08/08/94		---	---	---	---	110 ^h	3,500 ⁱ	<0.5	<0.5	<0.5	<0.5

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Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
	11/09/94		7.56	---	5.28	---	80	5,400 ⁱ	80	<0.5	<0.5	0.6
	02/22/95		7.98	---	4.86	---	110	2,900 ^{ij}	0.7	<0.5	<0.5	3.7
	02/22/95 ^{dup}		7.98	---	4.86	---	110	3,400 ^{ij}	4.8	7.1	<0.5	2.1
S-13	07/06/85	12.59	9.26	---	---	---	700	3,600	200	<5	<5	45
	11/16/85		---	---	---	---	1,900	2,000	700	160	70	340
	01/03/86		---	---	---	---	2,800	---	1,400	130	10	500
	07/05/86		9.47	---	3.12	---	3,100	---	1,800	60	40	270
	10/23/86		---	---	---	---	3,400	---	1,500	28	28	250
	01/13/87		---	---	---	---	1,900	900	830	15	<10	99
	04/22/87		---	---	---	---	2,900 ^c	770 ^j	1,100	20	30	140
	07/07/87		10.38	---	2.21	---	1,500	---	880	10	6	160
	10/10/87		10.78	---	1.81	---	480	2,400	830	15	<0.5	120
	02/11/88		10.48	---	2.11	---	1,300	1,300	510	<10	<10	86
	05/10/88		9.48	---	3.11	---	1,000	1,300 ^d	470	<0.5	<5	50
	08/31/88 ^{SPH}		10.74	---	1.85	---	---	---	---	---	---	---
	12/03/88		10.3	---	2.29	---	900	2,400 ^d	290	4.6	<2.5	20
	02/16/89		7.6	---	4.99	---	840 ^e	1,200 ^d	310	3.5	<2.5	27
	05/28/89 ^c		10.6	---	1.99	---	2,100	4,600	1,100	19	50	350
	08/10/89 ^c		10.58	---	2.01	---	900	2,300	230	16	6.9	65
	11/11/89		9.84	---	2.75	---	2,800	2,800	200	15	8.6	58
	02/21/94		9.26	---	3.33	---	700	1,800 ^f	200	<5	<5	45
	05/16/94		9.62	---	2.97	---	650	1,700	180	2.5	<2.5	21
	08/08/94		10.32	---	2.27	---	470	2,600 ⁱ	12	1.5	0.5	14
	11/09/94 ^a		---	---	---	---	---	---	---	---	---	---
	02/22/95		8.92	---	3.67	---	550	2,400 ^{ij}	190	4.0	<0.5	17

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Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	← parts per billion (mg/L) →						
						TDS	TPH-G	TPH-D	B	T	E	X
S-14	11/16/85	12.69	---	---	---	---	<250	400	3	<2	<2	<5
	01/03/86		---	---	---	---	<250	---	3	2	<2	<5
	04/22/87		---	---	---	---	1,200	18,000	7.4	2.7	15	110
	07/07/87		10.32	---	2.37	---	190	---	6.5	0.6	1.9	26
	10/10/87		10.77	---	1.92	---	4,900	21,000	7	1.2	<0.5	25
	02/11/88		10.4	---	2.29	---	370	12,000 ^e	4.6	<2.5	<2.5	26
	05/10/88		9.66	---	3.03	---	660	2,200 ^d	2.9	<2.5	<2.5	24
	08/31/88		10.74	---	1.95	---	700	7,900	3.2	<2.5	<2.5	15
	12/03/88		10.69	---	2.00	---	210	11,000 ^d	<0.5	<0.5	0.8	6.8
	02/16/89		9.69	---	3.00	---	130 ^e	5,700 ^d	<0.5	<0.5	<0.5	4.4
	05/28/89		10.42	---	2.27	---	770	5,200	<0.5	<0.5	<0.5	4.5
	08/10/89		10.54	---	2.15	---	920	8,800	<1	<1	1.6	17
	11/11/89		9.91	---	2.78	---	710	28,000	20	57	25	69
	02/21/94		9.3	---	3.09	---	2,800	3,600	<5	<5	<5	14
	02/21/94		9.30	---	3.39	---	2,300 ^f	3,600 ^g	<5.0	<5	<5	14
	05/16/94		9.54	---	3.15	---	310	6,700	<2.5	<2.5	<2.5	3.1
	08/08/94		10.29	---	2.4	---	480 ^k	2,900 ^l	<0.5	0.6	<0.5	0.8
	08/08/94 ^{dup}		10.29	---	2.4	---	590 ^k	2,900 ^l	<0.5	0.6	<0.5	1.5
	11/09/94		9.52	---	3.07	---	170 ^k	6,400 ⁱ	0.7	<0.5	<0.5	2.7
	02/22/95		9.18	---	3.51	---	550	7,000 ^j	<0.5	<0.5	<0.5	1.6

—Table 1 continues on next page—

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	←————— parts per billion (mg/L) —————→						
						TDS	TPH-G	TPH-D	B	T	E	X
Trip	02/21/94		---	---	---	---	<50		<0.5	<0.5	<0.5	<0.5
Blank	02/24/94		---	---	---	---	<50		<0.5	<0.5	<0.5	<0.5
	05/16/94		---	---	---	---	<50		<0.5	<0.5	<0.5	<0.5
	08/08/94		---	---	---	---	<50		<0.5	<0.5	<0.5	<0.5
	11/09/94		---	---	---	---	<50		<0.5	<0.5	<0.5	<0.5
	02/22/95		---	---	---	---	<50		<0.5	0.9	<0.5	<0.5
DTSC MCLs				---		---	NE	NE	1	100 ^e	680	1,750

— Table 1 continues on next page —

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Abbreviations:

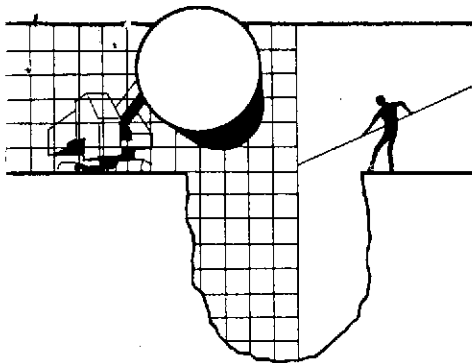
- ft msl = Feet above mean sea level
- TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
- TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
- B = Benzene by EPA Method 8020
- T = Toluene by EPA Method 8020
- E = Ethylbenzene by EPA Method 8020
- X = Xylenes by EPA Method 8020
- NE = Not established
- DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
- < n = Not detected at detection limits of n ppb
- dup = Duplicate sample
- SPH = Separate-phase hydrocarbons present, often unable to measure thickness accurately
- = Not analyzed/not measured

Notes:

- a = Well inaccessible
 - b = Well abandoned on 11/09/85
 - c = DTSC recommended action level; MCL not established
 - d = Compounds detected within the chromatographic range appear to be weathered diesel
 - e = Compounds detected within the chromatographic range of gasoline but not characteristic of the standard gasoline pattern.
 - f = The concentrations reported as gasoline for samples S-12 and S-14 are primarily due to the presence of a discrete peak
 - g = The concentrations reported as diesel for samples S-12, S-13 and S-14 are due to the presence of a combination of diesel and a heavier petroleum product of hydrocarbon range C18 - C36, possibly motor oil
 - h = The result for gasoline is an unknown hydrocarbon which consists of several peaks
 - i = The positive result appears to be a heavier hydrocarbon than diesel
 - j = Compounds detected within the chromatographic range of diesel appears to include gasoline compounds.
 - k = The positive result appears to be a heavier hydrocarbon than gasoline
 - l = Maximum concentration suitable for domestic water supply as defined by Regional Water Quality Control Board Resolution #89-39
-

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

March 13, 1995

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-2495-0101
1800 Powell Street
Emeryville, California

QUARTER:
1st quarter of 1995

QUARTERLY GROUNDWATER SAMPLING REPORT 950222-S-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a **TABLE OF WELL GAUGING DATA**. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be obtained in cases where the well dewateres and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

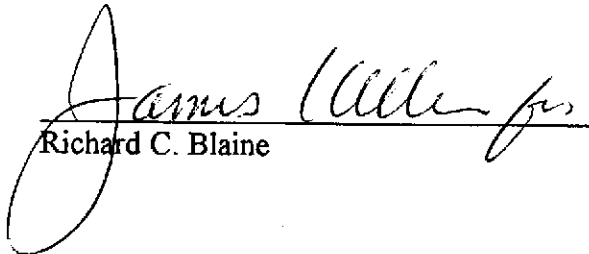
Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation 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. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.


Richard C. Blaine

RCB/p

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Grady Glasser

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-5	2/22/95	INACCESSIBLE						
S-8	2/22/95	TOB	ODOR	NONE	-	-	9.02	19.02
S-9	2/22/95	TOB	FREE PRODUCT	9.02	2.38	-	11.40	-
S-10	2/22/95	TOB	-	NONE	-	-	9.12	19.94
S-12 *	2/22/95	TOB	ODOR	NONE	-	-	7.98	24.44
S-13	2/22/95	TOB	ODOR	NONE	-	-	8.92	20.58
S-14	2/22/95	TOB	ODOR	NONE	-	-	9.18	24.06

* Sample DUP was a duplicate sample taken from well S-12.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

5688

Serial No: 450222-5

Date: _____
Page 1 of 1

Silo Address: 1800 Powell Street, Emeryville

WIC#: 204-2495-0101

Shell Engineer: Dan Kirk
Phone No.: (510) 675-6168
Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc.
985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller
Phone No.: (408) 995-5535
Fax #: 293-8773

Comments:

Sampled by: *Alan Lunde*

Printed Name: *SHAWN HOWE*

Analysis Required

LAB: NBT

TPH (EPA 8015 Mod. Gcs)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6462	
Water Rem. or Sys. O & M <input type="checkbox"/>	6463	
Other <input type="checkbox"/>		

NOTE: Hasty Lab as soon as Possible of 24/48 hrs. TAT.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	Analysis Required										MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
							TPH (EPA 8015 Mod. Gcs)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N		
5-8	2/22			W		3												
5-10						3												
5-12						5		X										
5-13						5		X										
5-14						5		X										
DUP						5		X										
BTB						3												
TB						2												

(2/23/5)
[Signature]
Seal intact
J-L

Relinquished By (signature): <i>[Signature]</i>	Printed Name: _____	Date: <u>2/23</u>	Received (signature): <i>[Signature]</i>	Printed Name: <u>GT LUMARE</u>	Date: <u>2/23</u>
Relinquished By (signature): <i>[Signature]</i>	Printed Name: <u>GT LUMARE</u>	Time: <u>10:20</u>	Received (signature): <i>[Signature]</i>	Printed Name: _____	Time: <u>10:20</u>
Relinquished By (signature): <i>[Signature]</i>	Printed Name: _____	Date: <u>2/23</u>	Received (signature): <i>[Signature]</i>	Printed Name: <u>J. LeBaudour</u>	Date: <u>2/24/05</u>
Relinquished By (signature): _____	Printed Name: _____	Time: <u>16:00</u>	Received (signature): <i>[Signature]</i>	Printed Name: _____	Time: <u>2:00</u>
Relinquished By (signature): _____	Printed Name: _____	Date: _____	Received (signature): _____	Printed Name: _____	Date: _____
Relinquished By (signature): _____	Printed Name: _____	Time: _____	Received (signature): _____	Printed Name: _____	Time: _____

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



NATIONAL
ENVIRONMENTAL
TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

March 1, 1995

Dear Project Manager:

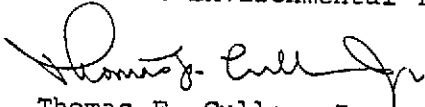
NET has recently noted persistent low level positive occurrences of toluene and xylenes in laboratory supplied trip blanks and rinse water. Since the levels of these compounds are occurring below 2 PPB, and there is a lack of any gasoline type pattern present, we are very confident of their presence being due to laboratory contamination. It appears that the water we used became contaminated from an unidentified source.

We believe this same source may be affecting samples. We have noted the presence of toluene and xylene at or below the reporting limits in our method blanks, which are from a different water sources. This low level response may be contributing to positive results in actual samples.

NET is taking steps to correct this problem and hope to eliminate it by the 8th of March. We will keep you informed if the problem continues beyond this date.

Thank you for patience.

Respectfully,
National Environmental Testing



Thomas F. Cullen, Jr.
Division Manager





NATIONAL
ENVIRONMENTAL
TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

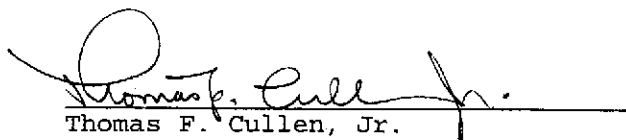
Date: 03/06/1995
NET Client Acct. No: 1821
NET Pacific Job No: 95.00863
Received: 02/24/1995

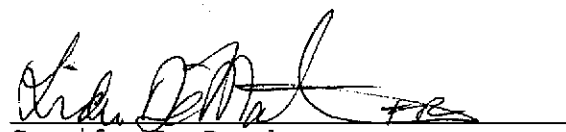
Client Reference Information

Shell 1800 Powell St., Emeryville, CA/950222-S1

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:


Thomas F. Cullen, Jr.
Division Manager


Jennifer L. Roseberry
Project Manager

Enclosure(s)





Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 95.00863

Date: 03/06/1995
ELAP Cert: 1386
Page: 2

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: S-8

Date Taken: 02/22/1995

Time Taken:

NET Sample No: 236652

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						03/02/1995	2633
DILUTION FACTOR*	1						03/03/1995	2634
as Gasoline	650	FB	50	ug/L	5030		03/02/1995	2633
Carbon Range:	C6-C12						03/02/1995	2633
METHOD 8020 (GC,Liquid)	--						03/02/1995	2633
Benzene	210	FB	0.5	ug/L	8020		03/02/1995	2633
Toluene	10	FB	0.5	ug/L	8020		03/02/1995	2633
Ethylbenzene	1.2		0.5	ug/L	8020		03/03/1995	2634
Xylenes (Total)	22	FB	0.5	ug/L	8020		03/02/1995	2633
SURROGATE RESULTS	--						03/02/1995	2633
Bromofluorobenzene (SURR)	93			% Rec.	5030		03/02/1995	2633

FB : Compound quantitated at a 5X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 95.00863

Date: 03/06/1995
ELAP Cert: 1386
Page: 3

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: S-10
Date Taken: 02/22/1995
Time Taken:
NET Sample No: 236653

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						03/02/1995	2633
DILUTION FACTOR*	1						03/03/1995	2634
as Gasoline	500	FB	50	ug/L	5030		03/02/1995	2633
Carbon Range:	C6-C12						03/02/1995	2633
METHOD 8020 (GC,Liquid)	--						03/02/1995	2633
Benzene	65	FB	0.5	ug/L	8020		03/02/1995	2633
Toluene	5.9	FB	0.5	ug/L	8020		03/02/1995	2633
Ethylbenzene	1.0		0.5	ug/L	8020		03/03/1995	2634
Xylenes (Total)	8.2	FB	0.5	ug/L	8020		03/02/1995	2633
SURROGATE RESULTS	--						03/02/1995	2633
Bromofluorobenzene (SURR)	96			% Rec.	5030		03/02/1995	2633

FB : Compound quantitated at a 5X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Elaine Tech Services
Client Acct: 1821
NET Job No: 95.00863

Date: 03/06/1995
ELAP Cert: 1386
Page: 4

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: S-12

Date Taken: 02/22/1995

Time Taken:

NET Sample No: 236654

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						03/04/1995	2637
DILUTION FACTOR*	1						03/04/1995	2637
as Gasoline	110		50	ug/L	5030		03/04/1995	2637
Carbon Range:	C5-C12						03/04/1995	2637
METHOD 8020 (GC, Liquid)	--						03/04/1995	2637
Benzene	0.7		0.5	ug/L	8020		03/04/1995	2637
Toluene	ND		0.5	ug/L	8020		03/04/1995	2637
Ethylbenzene	ND		0.5	ug/L	8020		03/04/1995	2637
Xylenes (Total)	3.7		0.5	ug/L	8020		03/04/1995	2637
SURROGATE RESULTS	--						03/04/1995	2637
Bromofluorobenzene (SURR)	112			% Rec.	5030		03/04/1995	2637
METHOD M8015 (EXT., Liquid)						02/24/1995		
DILUTION FACTOR*	1						02/25/1995	936
as Diesel	2,900	DH, DL	50	ug/L	3510		02/25/1995	936
Carbon Range:	<C10-C28+						02/25/1995	936

DH : The positive result appears to be a heavier hydrocarbon than Diesel.

DL : The positive result appears to be a lighter hydrocarbon than Diesel.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
 Client Acct: 1821
 NET Job No: 95.00863

Date: 03/06/1995
 ELAP Cert: 1386
 Page: 5

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: S-13

Date Taken: 02/22/1995

Time Taken:

NET Sample No: 236655

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						02/27/1995	2619
DILUTION FACTOR*	1						02/27/1995	2619
as Gasoline	550		50	ug/L	5030		02/27/1995	2619
Carbon Range:	C5-C12						02/27/1995	2619
METHOD 8020 (GC, Liquid)								
Benzene	190	FC	0.5	ug/L	8020		03/01/1995	2629
Toluene	4.0		0.5	ug/L	8020		02/27/1995	2619
Ethylbenzene	ND		0.5	ug/L	8020		02/27/1995	2619
Xylenes (Total)	17		0.5	ug/L	8020		02/27/1995	2619
SURROGATE RESULTS								
Bromofluorobenzene (SURR)	95			% Rec.	5030		02/27/1995	2619
METHOD M8015 (EXT., Liquid)								
DILUTION FACTOR*	1					02/24/1995		
as Diesel	2,400	DH, DL	50	ug/L	3510		02/25/1995	936
Carbon Range:	<C10-C28+						02/25/1995	936

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
 DL : The positive result appears to be a lighter hydrocarbon than Diesel.
 FC : Compound quantitated at a 10X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
 Client Acct: 1821
 NET Job No: 95.00863

Date: 03/06/1995
 ELAP Cert: 1386
 Page: 6

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: S-14
 Date Taken: 02/22/1995
 Time Taken:
 NET Sample No: 236656

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						03/02/1995	2633
DILUTION FACTOR*	1						03/02/1995	2633
as Gasoline	550		50	ug/L	5030		03/02/1995	2633
Carbon Range:	C9-C14						03/02/1995	2633
METHOD 8020 (GC,Liquid)	--						03/02/1995	2633
Benzene	ND		0.5	ug/L	8020		03/02/1995	2633
Toluene	ND		0.5	ug/L	8020		03/02/1995	2633
Ethylbenzene	ND		0.5	ug/L	8020		03/02/1995	2633
Xylenes (Total)	1.6		0.5	ug/L	8020		03/02/1995	2633
SURROGATE RESULTS	--						03/02/1995	2633
Bromofluorobenzene (SURR)	89			% Rec.	5030		03/02/1995	2633
METHOD M8015 (EXT., Liquid)						02/24/1995		
DILUTION FACTOR*	2						02/27/1995	935
as Diesel	7,000	DH,DL	100	ug/L	3510		02/27/1995	935
Carbon Range:	C10-C28						02/27/1995	935

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
 DL : The positive result appears to be a lighter hydrocarbon than Diesel.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
 Client Acct: 1821
 NET Job No: 95.00863

Date: 03/06/1995
 ELAP Cert: 1386
 Page: 7

Ref: Shell 1800 Powell St., Emeryville, CA/950222-S1

SAMPLE DESCRIPTION: DUP

Date Taken: 02/22/1995

Time Taken:

NET Sample No: 236657

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTEXE,Liquid)								
METHOD 5030/M8015	--						02/27/1995	2619
DILUTION FACTOR*	1						02/27/1995	2619
as Gasoline	110		50	ug/L	5030		02/27/1995	2619
Carbon Range:	C5-C12						02/27/1995	2619
METHOD 8020 (GC,Liquid)	--						02/27/1995	2619
Benzene	4.8		0.5	ug/L	8020		02/27/1995	2619
Toluene	7.1		0.5	ug/L	8020		02/27/1995	2619
Ethylbenzene	ND		0.5	ug/L	8020		02/27/1995	2619
Xylenes (Total)	3.1		0.5	ug/L	8020		02/27/1995	2619
SURROGATE RESULTS	--						02/27/1995	2619
Bromofluorobenzene (SURR)	82			% Rec.	5030		02/27/1995	2619
METHOD M8015 (EXT., Liquid)						02/24/1995		
DILUTION FACTOR*	1						02/25/1995	936
as Diesel	3,400	DH,DL	50	ug/L	3510		02/25/1995	936
Carbon Range:	<C10-C28+						02/25/1995	936

DH : The positive result appears to be a heavier hydrocarbon than Diesel.

DL : The positive result appears to be a lighter hydrocarbon than Diesel.

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SAMPLE DESCRIPTION: EB

Date Taken: 02/22/1995

Time Taken:

NET Sample No: 236658

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTEX, Liquid)								
METHOD 5030/M8015	--						02/27/1995	2619
DILUTION FACTOR*	1						02/27/1995	2619
as Gasoline	ND		50	ug/L	5030		02/27/1995	2619
Carbon Range:	--						02/27/1995	2619
METHOD 8020 (GC, Liquid)	--						02/27/1995	2619
Benzene	ND		0.5	ug/L	8020		02/27/1995	2619
Toluene	1.4	C	0.5	ug/L	8020		02/27/1995	2619
Ethylbenzene	ND		0.5	ug/L	8020		02/27/1995	2619
Xylenes (Total)	ND		0.5	ug/L	8020		02/27/1995	2619
SURROGATE RESULTS	--						02/27/1995	2619
Bromofluorobenzene (Surr)	88			% Rec.	5030		02/27/1995	2619

C : Positive result confirmed by secondary column or GC/MS analysis.

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SAMPLE DESCRIPTION: TB
Date Taken: 02/22/1995
Time Taken:
NET Sample No: 236659

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						02/27/1995	2619
DILUTION FACTOR*	1						02/27/1995	2619
as Gasoline	ND		50	ug/L	5030		02/27/1995	2619
Carbon Range:	--						02/27/1995	2619
METHOD 8020 (GC,Liquid)	--						02/27/1995	2619
Benzene	ND		0.5	ug/L	8020		02/27/1995	2619
Toluene	0.9	C	0.5	ug/L	8020		02/27/1995	2619
Ethylbenzene	ND		0.5	ug/L	8020		02/27/1995	2619
Xylenes (Total)	ND		0.5	ug/L	8020		02/27/1995	2619
SURROGATE RESULTS	--						02/27/1995	2619
Bromofluorobenzene (SURR)	87			% Rec.	5030		02/27/1995	2619

C : Positive result confirmed by secondary column or GC/MS analysis.

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Units	Date Analyzed	Analyst Initials	Run Batch Number
	Standard % Recovery	Standard Amount Found	Standard Amount Expected				
TPH (Gas/BTXE,Liquid)							
as Gasoline	85.0	0.85	1.00	mg/L	02/28/1995	aal	2624
Benzene	89.8	4.49	5.00	ug/L	02/28/1995	aal	2624
Toluene	97.4	4.87	5.00	ug/L	02/28/1995	aal	2624
Ethylbenzene	85.0	4.25	5.00	ug/L	02/28/1995	aal	2624
Xylenes (Total)	101.3	15.2	15.0	ug/L	02/28/1995	aal	2624
Bromofluorobenzene (SURR)	94.0	94	100	% Rec.	02/28/1995	aal	2624
TPH (Gas/BTXE,Liquid)							
as Gasoline	102.0	1.02	1.00	mg/L	02/28/1995	aal	2626
Benzene	94.0	4.70	5.00	ug/L	02/28/1995	aal	2626
Toluene	98.6	4.93	5.00	ug/L	02/28/1995	aal	2626
Ethylbenzene	89.0	4.45	5.00	ug/L	02/28/1995	aal	2626
Xylenes (Total)	102.0	15.3	15.0	ug/L	02/28/1995	aal	2626
Bromofluorobenzene (SURR)	98.0	98	100	% Rec.	02/28/1995	aal	2626
TPH (Gas/BTXE,Liquid)							
as Gasoline	99.0	0.99	1.00	mg/L	03/01/1995	aal	2629
Benzene	89.4	4.47	5.00	ug/L	03/01/1995	aal	2629
Toluene	94.2	4.71	5.00	ug/L	03/01/1995	aal	2629
Ethylbenzene	85.4	4.27	5.00	ug/L	03/01/1995	aal	2629
Xylenes (Total)	90.7	13.6	15.0	ug/L	03/01/1995	aal	2629
Bromofluorobenzene (SURR)	101.0	101	100	% Rec.	03/01/1995	aal	2629
TPH (Gas/BTXE,Liquid)							
as Gasoline	99.0	0.99	1.00	mg/L	03/03/1995	lss	2634
Benzene	95.6	4.78	5.00	ug/L	03/03/1995	lss	2634
Toluene	86.6	4.33	5.00	ug/L	03/03/1995	lss	2634
Ethylbenzene	90.2	4.51	5.00	ug/L	03/03/1995	lss	2634
Xylenes (Total)	92.0	13.8	15.0	ug/L	03/03/1995	lss	2634
Bromofluorobenzene (SURR)	107.0	107	100	% Rec.	03/03/1995	lss	2634
TPH (Gas/BTXE,Liquid)							
as Gasoline	105.0	1.05	1.00	mg/L	03/04/1995	lss	2637
Benzene	100.8	5.04	5.00	ug/L	03/04/1995	lss	2637
Toluene	94.4	4.72	5.00	ug/L	03/04/1995	lss	2637
Ethylbenzene	96.4	4.82	5.00	ug/L	03/04/1995	lss	2637
Xylenes (Total)	97.3	14.6	15.0	ug/L	03/04/1995	lss	2637
Bromofluorobenzene (SURR)	102.0	102	100	% Rec.	03/04/1995	lss	2637
METHOD M8015 (EXT., Liquid)							
as Diesel	102.8	1028	1000	mg/L	02/27/1995	tdn	935
METHOD M8015 (EXT., Liquid)							
as Diesel	98.7	987	1000	mg/L	02/25/1995	tdn	936

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METHOD BLANK REPORT

Parameter	Method			Date Analyzed	Analyst Initials	Run Batch Number
	Blank Amount Found	Reporting Limit	Units			
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	02/28/1995	aal	2624
Benzene	ND	0.5	ug/L	02/28/1995	aal	2624
Toluene	ND	0.5	ug/L	02/28/1995	aal	2624
Ethylbenzene	ND	0.5	ug/L	02/28/1995	aal	2624
Xylenes (Total)	ND	0.5	ug/L	02/28/1995	aal	2624
Bromofluorobenzene (SURR)	85		% Rec.	02/28/1995	aal	2624
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	02/28/1995	aal	2626
Benzene	ND	0.5	ug/L	02/28/1995	aal	2626
Toluene	ND	0.5	ug/L	02/28/1995	aal	2626
Ethylbenzene	ND	0.5	ug/L	02/28/1995	aal	2626
Xylenes (Total)	ND	0.5	ug/L	02/28/1995	aal	2626
Bromofluorobenzene (SURR)	82		% Rec.	02/28/1995	aal	2626
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	03/01/1995	aal	2629
Benzene	ND	0.5	ug/L	03/01/1995	aal	2629
Toluene	ND	0.5	ug/L	03/01/1995	aal	2629
Ethylbenzene	ND	0.5	ug/L	03/01/1995	aal	2629
Xylenes (Total)	ND	0.5	ug/L	03/01/1995	aal	2629
Bromofluorobenzene (SURR)	80		% Rec.	03/01/1995	aal	2629
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	03/02/1995	aal	2633
Benzene	ND	0.5	ug/L	03/02/1995	aal	2633
Toluene	0.46	0.5	ug/L	03/02/1995	aal	2633
Ethylbenzene	ND	0.5	ug/L	03/02/1995	aal	2633
Xylenes (Total)	0.6	0.5	ug/L	03/02/1995	aal	2633
Bromofluorobenzene (SURR)	87		% Rec.	03/02/1995	aal	2633
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	03/03/1995	lss	2634
Benzene	ND	0.5	ug/L	03/03/1995	lss	2634
Toluene	ND	0.5	ug/L	03/03/1995	lss	2634
Ethylbenzene	ND	0.5	ug/L	03/03/1995	lss	2634
Xylenes (Total)	ND	0.5	ug/L	03/03/1995	lss	2634
Bromofluorobenzene (SURR)	80		% Rec.	03/03/1995	lss	2634
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	03/04/1995	lss	2637
Benzene	ND	0.5	ug/L	03/04/1995	lss	2637
Toluene	ND	0.5	ug/L	03/04/1995	lss	2637
Ethylbenzene	ND	0.5	ug/L	03/04/1995	lss	2637
Xylenes (Total)	ND	0.5	ug/L	03/04/1995	lss	2637
Bromofluorobenzene (SURR)	95		% Rec.	03/04/1995	lss	2637
METHOD M8015 (EXT., Liquid)						
as Diesel	ND	0.05	mg/L	02/25/1995	tdn	936
METHOD M8015 (EXT., Liquid)						
as Diesel	ND	0.05	mg/L	02/25/1995	tdn	936

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike				Sample Conc.	Matrix Spike			Date Analyzed	Run Batch	Sample Spiked
	Matrix Spike % Rec.	Spike Dup % Rec.	RPD	Spike Amount		Matrix Spike Conc.	Dup. Conc.	Units			
TPH (Gas/BTXE,Liquid)											236720
as Gasoline	104.0	102.0	1.9	1.00	ND	1.04	1.02	mg/L	03/01/1995	2629	236720
Benzene	110.3	111.4	1.0	26.3	ND	29.0	29.3	ug/L	03/01/1995	2629	236720
Toluene	103.8	103.4	0.4	78.8	ND	81.8	81.5	ug/L	03/01/1995	2629	236720
TPH (Gas/BTXE,Liquid)											236768
as Gasoline	90.0	80.0	11.8	1.00	ND	0.90	0.80	mg/L	03/02/1995	2633	236768
Benzene	78.1	76.3	2.3	27.9	ND	21.8	21.3	ug/L	03/02/1995	2633	236768
Toluene	84.8	78.2	8.1	80.3	ND	68.1	62.8	ug/L	03/02/1995	2633	236768
TPH (Gas/BTXE,Liquid)											236819
as Gasoline	106.0	105.0	0.9	1.00	ND	1.06	1.05	mg/L	03/03/1995	2634	236819
Benzene	108.3	105.4	2.7	24.2	ND	26.2	25.5	ug/L	03/03/1995	2634	236819
Toluene	110.4	109.6	0.7	73.8	ND	81.5	80.9	ug/L	03/03/1995	2634	236819
TPH (Gas/BTXE,Liquid)											236839
as Gasoline	98.0	98.0	0.0	1.00	ND	0.98	0.98	mg/L	03/04/1995	2637	236839
Benzene	86.3	90.3	4.5	32.0	ND	27.6	28.9	ug/L	03/04/1995	2637	236839
Toluene	93.6	92.5	1.2	95.8	ND	89.7	88.6	ug/L	03/04/1995	2637	236839
METHOD M8015 (EXT., Liquid)											236649
as Diesel	87.0	84.5	2.9	2.00	ND	1.74	1.69	mg/L	02/25/1995	936	236649

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LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	Duplicate		LCS Amount Found	Duplicate		Units	Date Analyzed	Analyst Initials	Run Batch
		LCS % Recovery	RPD		LCS Amount Found	LCS Amount Expected				
METHOD M8015 (EXT., Liquid) as Diesel	82.7			0.827		1.00	mg/L	02/25/1995	tdn	936
METHOD M8015 (EXT., Liquid) as Diesel	84.4			0.844		1.00	mg/L	02/25/1995	tdn	936
METHOD M8015 (EXT., Liquid) as Diesel	82.7			0.827		1.00	mg/L	02/25/1995	tdn	936
METHOD M8015 (EXT., Liquid) as Diesel	84.4			0.844		1.00	mg/L	02/25/1995	tdn	936

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KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- * : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \text{ [Value 1 - Value 2] / mean value}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

COOLER RECEIPT FORM

Project: 950222-51 Log No: 5688
Cooler received on: 2/24/95 and checked on 2/24/95 by Pam Greene
(signature) Pam Greene

- Were custody papers present?..... YES NO
- Were custody papers properly filled out?..... YES NO
- Were the custody papers signed?..... YES NO
- Was sufficient ice used?..... YES NO 0.0°C ± 0.5°C
- Did all bottles arrive in good condition (unbroken)?..... YES NO
- Did bottle labels match COC?..... YES NO *
- Were proper bottles used for analysis indicated?..... YES NO
- Correct preservatives used?..... YES NO
- VOA vials checked for headspace bubbles?..... YES NO

Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:
<u>T.B.</u>	<u>1072</u>

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

*S-10 on COC says MW-10
on VOA's - PA
Use sample No. S-10 as
stated on COC per Fran
Thru to Pam Greene 2/24/95
PA

(coolerrec)