

**ExxonMobil
Refining and Supply Company**

2300 Clayton Road, Suite 1250
P.O. Box 4032
Concord, CA 94524-4032
(925) 246-8747 Telephone
(925) 246-8798 Facsimile
gene.n.ortega@exxon.com

**Gene N. Ortega
Territory Manager
Global Remediation-US Retail**

**ExxonMobil
Refining & Supply**

May 23, 2001

MAY 24 2001

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

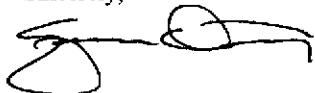
RE: Former Exxon RAS #7-3006/720 High Street, Oakland, California.

Dear Mr. Chan:

Attached for your review and comment is a letter report entitled *Quarterly Groundwater Monitoring and Remediation Status Report, First Quarter 2001*, dated May 17, 2001, for the above referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and presents the results of quarterly groundwater monitoring and sampling activities at the subject site.

If you have any questions or comments, please contact me at (925) 246-8747.

Sincerely,

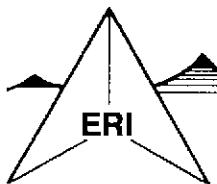


Gene N. Ortega
Territory Manager

Attachment: ERI's Quarterly Groundwater Monitoring and Remediation Status Report, First Quarter 2001, dated May 17, 2001.

cc: w/attachment
Mr. Stephen Hill, California Regional Water Quality Control Board, San Francisco Bay Region

w/o attachment
Mr. Scott D. Thompson, Environmental Resolutions, Inc.



ENVIRONMENTAL RESOLUTIONS, INC.

May 17, 2001
ERI 201013.R24

Mr. Gene N. Ortega
ExxonMobil Refining and Supply
P.O. Box 4032
Concord, California 94524-4032

Subject: Quarterly Groundwater Monitoring and Remediation Status Report, First Quarter 2001,
Former Exxon Service Station 7-3006, 720 High Street, Oakland, California.

Mr. Ortega:

At the request of ExxonMobil Refining and Supply (formerly Exxon Company, U.S.A.) (ExxonMobil), Environmental Resolutions, Inc. (ERI) performed the first quarter 2001 groundwater monitoring and sampling activities at the subject site. The location of the site is shown on the Site Vicinity Map (Plate 1). The purpose of quarterly monitoring and sampling is to evaluate concentrations of dissolved hydrocarbons in groundwater and the effectiveness of remedial actions. The locations of selected site features are shown on the Generalized Site Plan (Plate 2).

GROUNDWATER MONITORING AND SAMPLING

On March 30, 2001, ERI measured the depth to water (DTW) and collected groundwater samples from select wells for laboratory analysis. Groundwater monitoring and sampling were performed in accordance with ERI groundwater sampling protocol (Attachment A).

Calculated groundwater gradient and flow direction are presented on Plate 2. Historical and recent monitoring data are summarized in Table 1.

Laboratory Analyses and Results

Groundwater samples were submitted to Southern Petroleum Laboratories, Inc. (SPL), a state-certified laboratory, under Chain of Custody protocol. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and total petroleum hydrocarbons as diesel (TPHd). The specific methods of analysis are listed in the notes in Table 1. The results of analyses are presented in Table 1 and are shown on Plate 2. The laboratory analysis report and Chain of Custody record are attached (Attachment B).

SOIL AND GROUNDWATER REMEDIATION

Air Sparge/Soil Vapor Extraction

ERI initiated operation of the air sparge/soil vapor extraction (AS/SVE) system in August 1996, utilizing the thermal/catalytic oxidizer. The AS/SVE system was shut down July 28, 1999. Cumulative operational and performance data are presented in Table 2.

The AS/SVE system currently consists of six AS wells for air injection and six vadose wells for SVE within an on-site interceptor trench, a water knock-out tank, a Thermtech VAC-25 thermal/catalytic oxidizer, a Gast® air compressor, and a propane tank for supplemental fuel.

Groundwater Extraction and Treatment

The groundwater remediation system (GRS) is designed to treat separate-phase and dissolved hydrocarbons in groundwater extracted from the interceptor trench beneath the site. Pneumatic pumps are installed in extraction wells RW2 and RW5, in order to recover groundwater from the interceptor trench. Subsurface and above-ground collection piping were used to transfer extracted groundwater to a holding tank. A transfer pump and polyvinyl chloride (PVC) piping were used to direct the water stream from the holding tank through water filters, an air stripper, and subsequently through liquid-phase granular activated carbon (GAC) canisters connected in series. The treated groundwater was discharged to the sanitary sewer regulated by East Bay Municipal Utilities District (EBMUD).

The GRS system was shut down on December 23, 1998. Cumulative GRS flow rates, total volume extracted, and influent, intermediate, and effluent sample concentrations are presented in Table 3.

SUMMARY AND STATUS OF INVESTIGATION

ExxonMobil is pursuing site closure; quarterly groundwater monitoring and sampling will continue. The table below presents the estimated amounts of hydrocarbons removed by the AS/SVE system since startup.

Period	Pounds of Hydrocarbons Removed	Gallons of Hydrocarbons Removed
To Date:	5,144	845

Based on data collected to date, ERI estimates that the GRS has removed the following amounts of hydrocarbons at the subject site.

Period	Pounds of Hydrocarbons Removed	Gallons of Hydrocarbons Removed
To Date:	10	2

LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental practice in California at the time this investigation was performed. This report has been prepared for ExxonMobil, and any reliance on this report by third parties shall be at such party's sole risk.

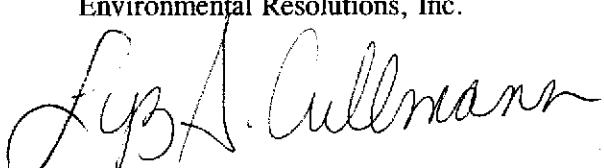
ERI recommends forwarding copies of this report to:

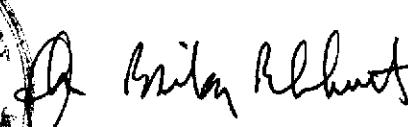
Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

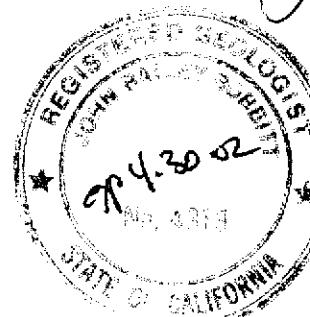
Mr. Stephen Hill
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Please call Mr. Scott D. Thompson at (415) 382-5987 with any questions regarding this project.

Sincerely,
Environmental Resolutions, Inc.


Lyz A. Cullmann
Staff Geologist


John B. Bobbitt
R.G. 4313



Attachments:

Table 1:	Cumulative Groundwater Monitoring and Sampling Data
Table 2:	Cumulative Hydrocarbon Removal and Emissions for Soil Vapor Extraction System
Table 3:	Operation and Performance Data for Groundwater Remediation System
Plate 1:	Site Vicinity Map
Plate 2:	Generalized Site Plan

Attachment A: Groundwater Sampling Protocol

Attachment B: Laboratory Analysis Report and Chain of Custody Record

Attachment C: ERI SOP-25 "Hydrocarbons Removed from a Vadose Well"

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 1 of 15)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG
			<.....feet.....>					ug/l.....						
MW1	1/20/94	NLPH	9.25	3.62	---	---	---	---	---	---	---	---	---	---
(12.87)	02/02-03/94	NLPH	8.60	4.27	70	<50	---	<0.5	<0.5	<0.5	0.7	---	---	---
	3/10/94	NLPH	8.31	4.56	---	---	---	---	---	---	---	---	---	---
	4/22/94	NLPH	7.95	4.92	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	NLPH	7.48	5.39	100	<50	---	<0.5	<0.5	<0.5	1.6	---	---	---
	6/27/94	NLPH	7.65	5.22	---	---	---	---	---	---	---	---	---	---
	8/31/94	NLPH	9.39	3.48	---	---	---	---	---	---	---	---	---	---
	9/29/94	NLPH	9.83	3.04	<50	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10/25/94	NLPH	10.19	2.68	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	11/30/94	NLPH	8.97	3.90	---	---	---	---	---	---	---	---	---	---
	12/27/94	NLPH	7.44	5.43	---	---	---	---	---	---	---	---	---	---
	2/6/95	NLPH	5.71	7.16	---	<50	100	0.52	<0.5	<0.5	<0.5	---	---	---
	6/7/95	NLPH	7.62	5.25	81	<50	3.5	<0.5	<0.5	<0.5	<0.5	---	---	---
	9/18/95	NLPH	10.02	2.85	82	<50	6	<0.5	<0.5	<0.5	<0.5	---	---	---
	11/1/95	NLPH	10.74	2.13	160	<50	8.9	<0.5	<0.5	<0.5	<0.5	---	---	---
	2/14/96	NLPH	7.81	5.06	100	<50	7.8	<0.5	<0.5	<0.5	<0.5	---	---	---
	6/19/96	NLPH	7.47	5.40	93	<50	7.1	<0.5	<0.5	<0.5	<0.5	---	<50	---
	9/24/96	NLPH	10.42	2.45	83	<50	9.5	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/11/96	NLPH	8.50	4.37	81	<50	7.2	<0.5	<0.5	<0.5	<0.5	---	---	---
	3/19/97	NLPH	9.14	3.73	78	<50	6.4	<0.5	<0.5	<0.5	<0.5	---	---	---
	6/4/97	NLPH	9.82	3.05	58	<50	6.0	<0.5	<0.5	<0.5	<0.5	---	---	---
	9/2/97	NLPH	10.26	2.61	150	<50	5.4	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/2/97	NLPH	9.32	3.55	88	<50	5.1	<0.5	<0.5	<0.5	<0.5	---	---	---
	3/24/98	NLPH	6.44	6.43	58	<50	5.6	<0.5	<0.5	<0.5	<0.5	---	---	---
	6/23/98	NLPH	9.23	3.64	84	<50	3.8	<0.5	<0.5	<0.5	<0.5	---	---	---
	9/29/98	NLPH	9.91	2.96	61	<50	2.6	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/30/98	NLPH	9.21	3.66	80	<50	4.1	<0.5	<0.5	<0.5	<0.5	---	---	---
	3/24/99	NLPH	5.53	7.34	64.3	<50	4.95	<0.5	<0.5	<0.5	<0.5	---	---	---
	6/22/99	NLPH	7.39	5.48	83.5	<50	3.70	<0.5	<0.5	<0.5	<0.5	---	---	---
	9/29/99	NLPH	8.90	3.97	52.9	<50	4.81	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/21/99	NLPH	8.94	3.93	60	<50	10	<0.5	<0.5	<0.5	<0.5	---	---	---
	3/21/00	NLPH	5.34	7.53	---	<50	4.5	<0.5	<0.5	<0.5	<0.5	---	---	---
	3/30/01	NLPH	5.29	7.58	79	<50	10k	<0.5	<0.5	<0.5	<0.5	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 2 of 15)

Well ID # (TOC)	Sampling Date	SUBJ	DTW <.....feet.....>	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG
MW1	1/20/94	NLPH	9.25	3.62	---	---	---	---	---	---	---	---	---	---
MW2	1/20/94	--- [NR]	---	---	---	---	---	---	---	---	---	---	---	---
(12.98)	02/02-03/94	--- [NR]	---	---	---	---	---	---	---	---	---	---	---	---
	3/10/94	[8 c.]	6.96	6.02	---	---	---	---	---	---	---	---	---	---
	4/22/94	[10 c.]	---	---	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	[5 c.]	---	---	---	---	---	---	---	---	---	---	---	---
	6/27/94	Sheen	7.10	5.88	---	---	---	---	---	---	---	---	---	---
	8/31/94	Sheen	8.58	4.40	---	---	---	---	---	---	---	---	---	---
	9/29/94	Sheen	9.11	3.87	---	---	---	---	---	---	---	---	---	---
	10/25/94	Sheen	7.76	5.22	---	---	---	---	---	---	---	---	---	---
	11/30/94	---	7.33	5.65	---	---	---	---	---	---	---	---	---	---
	12/27/94	Sheen	6.77	6.21	---	---	---	---	---	---	---	---	---	---
	2/6/95	Sheen	5.00	7.98	---	---	---	---	---	---	---	---	---	---
	6/7/95	Sheen	7.14	5.84	---	---	---	---	---	---	---	---	---	---
	9/18/95	Sheen	10.82	2.16	---	---	---	---	---	---	---	---	---	---
	11/1/95	Sheen	11.65	1.33	---	---	---	---	---	---	---	---	---	---
	2/14/96	Sheen	8.39	4.59	---	---	---	---	---	---	---	---	---	---
	6/19/96	Sheen	6.55	6.43	---	---	---	---	---	---	---	---	---	---
	9/24/96	Sheen	11.56	1.42	---	---	---	---	---	---	---	---	---	---
	12/11/96	Sheen	8.02	4.96	---	---	---	---	---	---	---	---	---	---
	3/19/97	Sheen	8.63	4.35	---	---	---	---	---	---	---	---	---	---
	6/4/97	Sheen	10.57	2.41	---	---	---	---	---	---	---	---	---	---
	9/2/97	Sheen	11.51	1.47	---	---	---	---	---	---	---	---	---	---
	12/2/97	NLPH	11.24	1.74	820	1,400	57	15	2.8	8.6	<2.5	---	---	---
	3/27/98	NLPH	6.06	6.92	2,000	7,400	<50	1,400	350	490	1,500	---	---	---
	6/23/98	Sheen	11.06	1.92	2,900	180	9.5	3.2	0.55	0.92	1.3	---	---	---
	9/29/98	NLPH	10.51	2.47	180	290	9.3	<0.50	0.65	1.5	1.5	---	---	---
	12/30/98	NLPH	9.83	3.15	700	520	16	17	0.96	2.6	3.5	---	---	---
	3/24/99	NLPH	4.47	8.51	1,440	14,000	<40	1,300	336	786	3,420	---	---	---
	6/22/99	NLPH	6.42	6.56	2,310	1,080	25.2	54.3	14.9	38.8	107	---	---	---
	9/29/99	NLPH	8.00	4.98	2,720f	517	15.4	37.5	7.48	12.9	15.2	---	---	---
	12/21/99	NLPH	8.10	4.88	6,300	3,200	<2	360	5.5	120	106	---	---	---
	3/21/00	j	---	---	---	---	---	---	---	---	---	---	---	---
	3/30/01	NLPH	3.09	9.89	510	200	110k	7.2	<0.5	2.4	2.1	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 3 of 15)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG
			<.....feet.....>					ug/l						
MW1	1/20/94	NLPH	9.25	3.62	---	---	---	---	---	---	---	---	---	---
MW3	1/20/94	Sheen	8.24	4.68	---	---	---	---	---	---	---	---	---	---
(12.92)	02/02-03/94	Sheen	7.68	5.24	---	---	---	---	---	---	---	---	---	---
	3/10/94	Sheen	7.24	5.68	---	---	---	---	---	---	---	---	---	---
	4/22/94	Sheen	6.79	6.13	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	Sheen	6.43	6.49	---	---	---	---	---	---	---	---	---	---
	6/27/94	0.01 [NR]	6.97	5.95	---	---	---	---	---	---	---	---	---	---
	8/31/94	Sheen	8.41	4.51	---	---	---	---	---	---	---	---	---	---
	9/29/94	Sheen	8.97	3.95	---	---	---	---	---	---	---	---	---	---
	10/25/94	Sheen	9.43	3.49	---	---	---	---	---	---	---	---	---	---
	11/28/94	---	7.19	5.73	---	---	---	---	---	---	---	---	---	---
	12/27/94	Sheen	6.64	6.28	---	---	---	---	---	---	---	---	---	---
	2/6/95	Sheen	4.87	8.05	---	---	---	---	---	---	---	---	---	---
	6/7/95	Sheen	7.05	5.87	---	---	---	---	---	---	---	---	---	---
	9/18/95	Sheen	10.61	2.31	---	---	---	---	---	---	---	---	---	---
	11/1/95	Sheen	11.58	1.34	---	---	---	---	---	---	---	---	---	---
	2/14/96	Sheen	8.34	4.58	---	---	---	---	---	---	---	---	---	---
	6/19/96	Sheen	6.35	6.57	---	---	---	---	---	---	---	---	---	---
	9/24/96	Sheen	11.45	1.47	---	---	---	---	---	---	---	---	---	---
	12/11/96	NLPH	7.89	5.03	17,000*	4,800	30	340	<5.0	8.2	20	---	---	---
	3/19/97	NLPH	9.83	3.09	3,000	1,900	80	160	11	5.6	10	---	---	---
	6/4/97	NLPH	10.43	2.49	8,000	920	11	15	2.8	2.4	<2.0	---	---	---
	9/2/97	Sheen	12.45	0.47	---	---	---	---	---	---	---	---	---	---
	12/2/97	NLPH	11.21	1.71	6,700	920	21	10	2.1	<1.0	2.7	---	---	---
	3/24/98	NLPH	5.93	6.99	4,600	1,500	25	5,500	<5.0	<5.0	<5.0	---	---	---
	6/23/98	NLPH	11.13	1.79	39,000	1,300	9.4	53	<1.0	<1.0	<1.0	---	---	---
	9/29/98	Sheen	10.46	2.46	2,600	540	<5.0	6.8	1.9	1.4	2.3	---	---	---
	12/30/98	NLPH	9.72	3.20	11,000	4,000	<50	74	<10	<10	<10	---	---	---
	3/24/99	Sheen	4.36	8.56	3,850	2,330	<20	<5.0	<5.0	<5.0	<5.0	---	---	---
	6/22/99	NLPH	6.22	6.70	6,860	1,470	<10	492	<2.5	<2.5	<2.5	---	---	---
	9/29/99	NLPH	8.10	4.82	2,290f	315	<5.0	11.5	3.07	<1.0	2.54	---	---	---
	12/21/99	NLPH	7.99	4.93	37,000	6,600	4	22	5	5.1	31.4	---	---	---
	1/26/00	NLPH	5.48	7.44	2,600h	---	---	---	---	---	---	---	---	---
	3/21/00	j	---	---	---	---	---	---	---	---	---	---	---	---
	3/30/01	NLPH	4.02	8.90	2,000	880	300k	130	<0.5	1.2	2.4	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 4 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 5 of 15)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG		
			<.....feet.....>						ug/l.....							
MW1	1/20/94	NLPH	9.25	3.62	---	---	---	---	---	---	---	---	---	---		
MW5	7/18/89				Well Destroyed											
MW6 (14.27)	1/20/94	--- [NR]	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02/02-03/94	--- [NR]	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/10/94	[¼ c.]	7.82	6.45	---	---	---	---	---	---	---	---	---	---	---	---
	4/22/94	[10 c.]	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	[3 c.]	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	6/27/94	Sheen	7.77	6.50	---	---	---	---	---	---	---	---	---	---	---	---
	8/31/94	Sheen	9.02	5.25	---	---	---	---	---	---	---	---	---	---	---	---
	9/29/94	Sheen	9.51	4.76	---	---	---	---	---	---	---	---	---	---	---	---
	10/25/94	Sheen	9.93	4.34	---	---	---	---	---	---	---	---	---	---	---	---
	11/30/94	---	8.05	6.22	---	---	---	---	---	---	---	---	---	---	---	---
	12/27/94	---	7.54	6.73	---	---	---	---	---	---	---	---	---	---	---	---
	2/6/95	Sheen	5.86	8.41	---	---	---	---	---	---	---	---	---	---	---	---
	6/7/95	Sheen	8.07	6.20	---	---	---	---	---	---	---	---	---	---	---	---
	9/18/95	Sheen	10.54	3.73	---	---	---	---	---	---	---	---	---	---	---	---
	11/1/95	Sheen	11.41	2.86	---	---	---	---	---	---	---	---	---	---	---	---
	2/14/96	Sheen	9.17	5.10	---	---	---	---	---	---	---	---	---	---	---	---
	6/19/96	Sheen	7.13	7.14	---	---	---	---	---	---	---	---	---	---	---	---
	9/24/96	Sheen	11.24	3.03	---	---	---	---	---	---	---	---	---	---	---	---
	12/11/96	NLPH	9.20	5.07	2,900	9,100	<100	2,100	22	160	260	---	---	---	---	---
	3/19/97	NLPH	10.14	4.13	3,800	24,000	250	5,800	91	1,300	1,900	---	---	---	---	---
	6/4/97	NLPH	10.58	3.69	3,300	20,000	270	4,400	<50	540	480	---	---	---	---	---
	9/2/97	NLPH	11.02	3.25	2,100	8,100	<25	1,800	<25	140	170	---	---	---	---	---
	12/2/97	NLPH	10.45	3.82	2,300	6,800	<100	1,100	<20	77	74	---	---	---	---	---
	3/24/98	NLPH	7.09	7.18	3,800	20,000	<250	4,300	<50	2,200	1,500	---	---	---	---	---
	6/23/98	Sheen	9.79	4.48	4,100	19,000	<500	3,400	<100	1,800	1,100	---	---	---	---	---
	9/29/98	NLPH	10.56	3.71	2,300	8,600	<100	2,100	25	300	260	---	---	---	---	---
	12/30/98	NLPH	9.97	4.30	2,700	6,800	<125	1,600	<25	84	200	---	---	---	---	---
	3/24/99	Sheen	5.02	9.25	2,670	12,600	<20	3,380	16.5	221	190	---	---	---	---	---
	6/22/99	NLPH	6.91	7.36	5,670	6,720	<40	2,400	<10	767	14.4	---	---	---	---	---
	9/29/99	NLPH	8.66	5.61	1,370g	6,310d	<250	<25	<25	133	<25	---	---	---	---	---
	12/21/99	NLPH	8.57	5.70	2,300	3,800	12	890	3.3	94	95	---	---	---	---	---
	3/21/00	j	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/30/01	NLPH	3.66	10.61	2,000	9,200	<5k	3100	9.1	130	31	---	---	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 6 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 7 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 8 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 9 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 10 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 11 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 12 of 15)

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 13 of 15)

Well ID # (TOC)	Sampling Date	SUBJ <.....feet.....>	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG
MW14	1/20/94	---	---	---	---	---	---	---	---	---	---	---	---	---
(15.18)	02/02-03/94	Not Accessible												
	3/10/94	NLPH	7.84	7.34	---	---	---	---	---	---	---	---	---	---
	4/22/94	NLPH	8.00	7.18	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	NLPH	7.93	7.25	11,002	300	---	2.7	7.9	2	27	---	---	---
	6/27/94	NLPH	8.19	6.99	---	---	---	---	---	---	---	---	---	---
	8/31/94	NLPH	9.44	5.74	---	---	---	---	---	---	---	---	---	---
	9/29/94	NLPH	9.82	5.36	NA	300	1,600	<0.5	<0.5	0.9	1.3	---	---	---
	10/25/94	NLPH	9.99	5.19	NA	200	210	<0.5	<0.5	0.8	<0.5	---	---	---
	11/30/94	---	8.16	7.02	---	---	---	---	---	---	---	---	---	---
	12/27/94	Sheen	8.15	7.03	---	---	---	---	---	---	---	---	---	---
	2/6/95	NLPH	7.18	8.00	1,200	360	---	<1.0	<1.0	<1.0	<1.0	---	---	400
	6/7/95	NLPH	7.70	7.48	1,100	670	<2.5	<0.5	<0.5	3.6	<0.5	---	450	---
	9/18/95	NLPH	9.88	5.30	1,900	1,300	<10	<2.0	<2.0	<2.0	3	---	1,200	---
	11/1/95	NLPH	10.56	4.62	2,700	1,100	<13	<2.5	<2.5	3.2	3.1	---	1,600	---
	2/14/96	NLPH	9.08	6.10	1,500	470	<2.5	<0.5	<0.5	1.3	<0.5	ND	680	---
	6/19/96	NLPH	8.50	6.68	2,000	610	<12	<2.5	<2.5	<2.5	<2.5	ND	670	---
	9/24/96	NLPH	10.23	4.95	5,100	1,000	<25	<5.0	<5.0	<5.0	<5.0	ND	4,500	---
	12/11/96	NLPH	9.09	6.09	2,100	1,100	<10	<2.0	<2.0	<2.0	3.3	ND	750	---
	3/19/97	NLPH	7.99	7.19	1,400	690	<2.5	0.65	1.7	2.5	8.3	ND	470	---
	6/4/97	NLPH	9.30	5.88	1,500	730	<2.5	<1.2	<1.2	3.5	5.3	ND	590	---
	9/2/97	NLPH	9.92	5.26	1,900	910	<5.0	<5.0	<5.0	<5.0	5.9	ND	1,300	---
	12/2/97	NLPH	9.13	6.05	1,200	570	<2.5	0.85	<0.5	<0.5	1.7	---	---	---
	3/24/98	NLPH	8.52	6.66	1,300	650	5.7	1.7	<1.0	<1.0	2.3	---	---	---
	6/23/98	NLPH	8.69	6.49	1,100	470	<2.5	<0.5	1.5	1.1	3.0	---	---	---
	9/29/98	NLPH	9.41	5.77	930	570	<2.5	<0.50	<0.50	2.5	3.5	---	---	---
	12/30/98	NLPH	9.31	5.87	2,000	420	<2.5	<0.5	<0.5	<0.5	2.8	---	---	---
	3/24/99	NLPH	4.23	10.95	936	456	<2.0	<0.5	<0.5	0.685	<0.5	---	---	---
	6/22/99	NLPH	7.24	7.94	1,720	403	<2.0	<0.5	<0.5	<0.5	<0.5	---	---	---
	9/29/99	NLPH	9.41	5.77	927g	388	<2.5	1.31	<0.5	0.864	2.07	---	---	---
	12/21/99	NLPH	8.93	6.25	1,400	420	<2	0.61	<0.5	<0.5	6.3	---	---	---
	3/21/00	NLPH	5.76	9.42	---	390	<2	1.4	<0.5	0.82	4.5	---	---	---
	3/30/01	NLPH	4.21	10.97	980	330	<5k	<0.5	<0.5	1.3	3.03	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 14 of 15)

Well ID # (TOC)	Sampling Date	SUBJ	DTW <.....feet.....>	Elev.	TPHd	TPHg	MTBE	B	T	E	X	VOCs	EHCss	TOG
MW1	1/20/94	NLPH	9.25	3.62	---	---	---	---	---	---	---	---	---	---
MW15	1/20/94	NLPH	7.48	6.25	---	---	---	---	---	---	---	---	---	---
(13.73)	02/02-03/94	NLPH	7.30	6.43	1,200	4,300	---	24	6.7	170	26	---	---	---
	3/10/94	NLPH	7.32	6.41	---	---	---	---	---	---	---	---	---	---
	4/22/94	NLPH	6.67	7.06	---	---	---	---	---	---	---	---	---	---
	05/10-11/94	NLPH	5.81	7.92	1,400	3,900	---	16	<0.5	150	13	---	---	---
	6/27/94	NLPH	6.14	7.59	---	---	---	---	---	---	---	---	---	---
	8/31/94	NLPH	7.20	6.53	---	---	---	---	---	---	---	---	---	---
	9/29/94	NLPH	7.76	5.97	420	2,500	---	51	15	48	3.6	---	---	---
	10/25/94	Sheen	8.19	5.54	---	---	---	---	---	---	---	---	---	---
	11/30/94	---	8.57	5.16	---	---	---	---	---	---	---	---	---	---
	12/27/94	NLPH	6.49	7.24	---	---	---	---	---	---	---	---	---	---
	2/6/95	Sheen	4.97	8.76	---	---	---	---	---	---	---	---	---	---
	6/7/95	Sheen	7.14	6.59	---	---	---	---	---	---	---	---	---	---
	9/18/95	Sheen	9.00	4.73	---	---	---	---	---	---	---	---	---	---
	11/1/95	Sheen	10.67	3.06	---	---	---	---	---	---	---	---	---	---
	2/14/96	Sheen	7.27	6.46	---	---	---	---	---	---	---	---	---	---
	6/19/96	Sheen	6.65	7.08	---	---	---	---	---	---	---	---	---	---
	9/24/96	Sheen	9.45	4.28	---	---	---	---	---	---	---	---	---	---
	12/11/96	Sheen	7.77	5.96	---	---	---	---	---	---	---	---	---	---
	3/19/97	Sheen	8.15	5.58	---	---	---	---	---	---	---	---	---	---
	6/4/97	Sheen	8.62	5.11	---	---	---	---	---	---	---	---	---	---
	9/2/97	NLPH	9.04	4.69	480	1,100	23	19	<2.0	11	4.9	---	---	---
	12/2/97	NLPH	8.43	5.30	600	1,700	58	20	<5.0	11	<5.0	---	---	---
	3/24/98	NLPH	6.35	7.38	450	2,100	<100	570	<20	<20	<20	---	---	---
	6/23/98	NLPH	7.79	5.94	570	2,300	<25	440	<5.0	30	<5.0	---	---	---
	9/29/98	Not Accessible	---	---	---	---	---	---	---	---	---	---	---	---
	12/30/98	NLPH	8.42	5.31	510	900	14	6.2	1.5	5.8	3.4	---	---	---
	3/24/99	NLPH	4.69	9.04	346	1,480	12.7	181	1.15	29.8	<1.0	---	---	---
	6/22/99	NLPH	5.42	8.31	558	864	6.49	12.7	<0.5	3.28	1.38	---	---	---
	9/29/99	NLPH	7.08	6.65	306g	316	<5.0	1.44	7.51	1.60	3.21	---	---	---
	12/21/99	NLPH	7.51	6.22	300	1,500	21	21	1.6	0.67	5.9	---	---	---
	3/21/00	NLPH	3.61	10.12	220	680	<2	10	<0.5	<0.5	4.5	---	---	---

Well destroyed

TABLE 1
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 15 of 15)

Notes:

SUBJ	=	Results of subjective evaluation, liquid-phase hydrocarbon thickness (HT) in feet.
NLPH	=	No liquid-phase hydrocarbons present in well.
TOC	=	Elevation of top of well casing; relative to mean sea level.
DTW	=	Depth to water.
Elev.	=	Elevation of groundwater. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.8)].
[]	=	amount recovered
gal.	=	gallons
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA method 3510/8015 (modified).
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA method 5030/8015 (modified).
MTBE	=	Methyl tertiary butyl ether analyzed using EPA method 8021B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA method 8021B.
VOCs	=	Volatile organic compounds/purgeable halocarbons analyzed using EPA method 601.
TOG	=	Total oil and grease analyzed using Standard Method 5520.
EHCss	=	Extractable Hydrocarbons as Stoddard Solvent analyzed using EPA method 8015.
--	=	Not measured/not analyzed.
<	=	Less than the indicated detection limit shown by the laboratory.
a	=	A peak eluting earlier than benzene and suspected to be methyl tertiary butyl ether was present.
b	=	Sample containers for TPPHg, BTEX, and MTBE were broken in transit.
c	=	Chromatogram pattern: unidentified hydrocarbons C6 - C12.
d	=	Chromatogram pattern: weathered gasoline C6 - C12.
e	=	Chromatogram pattern: weathered gasoline C6 - C12 and unidentified hydrocarbons C6 - C12.
f	=	Chromatogram pattern: weathered diesel C9 - C24 and unidentified hydrocarbons C9 - C36.
g	=	Chromatogram pattern: unidentified hydrocarbons C9 - C24.
h	=	Total extractable petroleum hydrocarbons as diesel analyzed using EPA method 3510/8015 (modified), with silica gel cleanup.
j	=	Well inaccessible.
l	=	TPHd note: Analyst notes samples resemble paint thinner more than Stoddard Soivent.
k	=	MTBE analyzed using EPA Method 8260B.

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 1 of 8)

DATE	SAMPLE	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene		
		ID	TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	EFF	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emitted per Day pounds
01/09/95	A-INF	70			160			210	39					
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					
01/10/95	A-INF	70			160			110	22	2.30	2.3	0.438	0.44	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/11/95	A-INF	70			160			70	12	1.29	3.6	0.244	0.68	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/12/95	A-INF	70			160			< 10	< 0.1	< 0.57	4.2	< 0.087	< 0.77	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/13/95	A-INF	70			160			< 10	< 0.1	< 0.14	4.3	< 0.001	< 0.77	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/14/95	A-INF	70			160			< 10	< 0.1	< 0.14	4.5	< 0.001	< 0.77	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/15/95	A-INF	70			158			< 10	< 0.1	< 0.14	4.6	< 0.001	< 0.77	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/16/95	A-INF	70			151			< 10	< 0.1	< 0.14	4.7	< 0.001	< 0.77	
	A-INT							10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/17/95	A-INF	70			155			< 10	0.13	< 0.14	4.9	0.002	< 0.78	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/18/95	A-INF	70			155			100	12	0.77	5.6	0.084	< 0.86	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0014
01/19/95		70			155	15	0	68		1.17	6.8			
01/20/95		70			155	14.4	0	66		0.93	7.7			
02/01/95	A-INF	70			147			39	3.5	13.19	20.9	1.471	< 2.33	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0013
02/14/95		70			147									
02/17/95		70			155	9	0	41		8.67	29.6			
02/27/95		70			151									
03/13/95	A-INF	70			176			< 10	0.42	< 14.21	43.8	1.137	< 3.47	
	A-INT							< 10	< 0.1					
	A-EFF							< 10	< 0.1					< 0.0016
03/31/95		70			116	2.3	0	10		2.01	45.8			
04/04/95		70			84	129	0.8	587		76.68	122.5			
04/12/95	A-INF	70			176			95	6.4	24.88	147.4	1.616	< 5.08	
	A-INT							< 10	0.38					

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 3 of 8)

DATE	SAMPLE	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene	
		ID	TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emitted per Day pounds
09/18/95	Replaced 2 ea x 500 lb canisters = 1000 lbs of carbon												
09/18/95	A-INF	70			164		980	13	196.08	631.5	3.577	< 14.00	
	A-INT						< 10	< 0.1					
	A-EFF						< 10	< 0.1					< 0.0015
09/20/95	System Down - hydrocarbon vapor detector shut down												
09/25/95	Restarted system												
09/25/95	A-INF	70			164		NA						
	A-INT						NA	< 0.1					
	A-EFF						NA	< 0.1					
10/13/95	Replaced 2 ea x 500 lb canisters = 1000 lbs of carbon												
10/13/95	A-INF	70			168		2000	100	444.04	1,075.5	16.838	< 30.84	
	A-INT						< 10	< 0.05					
	A-EFF						< 10	< 0.05					< 0.0008
10/26/95	Replaced 2 ea x 500 lb canisters = 1000 lbs of carbon												
10/26/95		70			168	165	0	751		269.69	1,345.2		
11/06/95													
11/20/95	Replaced 2 ea x 500 lb canisters = 1000 lbs of carbon												
11/20/95	A-INF1	70			170		180	3.6	176.60	1,521.8	1.038	< 31.88	
	A-INF2						82	2					
	A-INT						< 10	< 0.1					
	A-EFF						< 10	< 0.1					< 0.0015
11/26/95	System down												
12/04/95	Restart system	70			168	18.5	0.5	84		12.03	1,533.8		
12/18/95	A-INF	70			151			4600	50	469.45	2,003.3	10.105	< 41.98
	A-INT							< 10	< 0.1				
	A-EFF							< 10	< 0.1				< 0.0014
01/02/96		70			147	51.7	8.2	235		485.04	2,488.3		
01/03/96	Shut system down, pending carbon change out												
01/08/96	changed out three carbon beds, #1, #2, #3 carbon beds in-line												
01/08/96		70			151.2	105.4	0	480		28.72	2,517.0		
01/16/96	A-INF	70			142.8	62.3	0	180	< 0.1	7.50	2,524.5	< 0.000	< 41.98
	A-EFF								< 0.1				< 0.0013
01/30/96		70			147	50.4	0	230		37.28	2,561.8		
02/14/96	A-INF	72			147	39.7	0	< 10	0.16	< 0.49	2,562.3	0.049	< 42.03
	A-EFF							< 10	< 0.1				< 0.0013
02/27/96		70			136.5	1	0	5		1.20	2,563.5		
03/12/96	A-INF	70			136.5	2.2	0	< 10	< 0.1	< 1.25	2,564.8	< 0.045	< 42.07
	A-EFF							< 10	< 0.1				< 0.0012
03/25/96	A-INF	70			147	2.4	0	< 10	< 0.1	< 1.65	2,566.4	< 0.017	< 42.09
	A-EFF							< 10	< 0.1				< 0.0013
03/25/96	System shutdown to install Thermtech VAC-25 thermal/catalytic oxidizer												
08/05/96	Start-up system utilizing Thermtech VAC-25 thermal/catalytic oxidizer												
08/15/96	A-INF				110			410	4.7				
	A-EFF							< 10	< 0.05				< 0.0005
08/29/96					176	45.8	1.1	194		54.26	2,620.7		

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 4 of 8)

DATE	SAMPLE	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene		
		ID	TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	EFF	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emitted per Day pounds
09/06/96	A-INF				176			150	< 0.1	21.73	2,642.4	< 0.678	< 42.77	
	A-EFF							< 10	< 0.1					< 0.0016
09/09/96					176	96	4.4	406		13.18	2,655.6			
09/24/96					184.8	141	5.1	597			121.82	2,777.4		
10/03/96	A-INF				176			1300	< 1	138.22	2,915.6	< 0.235	< 43.00	
	A-EFF							< 10	< 0.1					< 0.0016
10/09/96					176	173	4.5	732		96.31	3,011.9			
10/14/96					184.8	105	4.4	444		47.63	3,059.6			
10/21/96					176	89.2	4.5	378		46.58	3,106.1			
10/30/96					176	58.3	0.7	247		44.38	3,150.5			
11/06/96	System down, unable to restart due to reset failure													
01/17/97	Replaced Thermalcouple, restarted unit													
01/31/97	A-INF				44			< 10	0.14	0.55	3,151.1	0.008	< 43.01	
	A-EFF							< 10	< 0.05					< 0.0002
02/06/97	A-INF				176			86	2.2	2.84	3,153.9	0.069	< 43.08	
	A-EFF							< 10	< 0.10					< 0.0016
02/14/97					176	25	2	106		12.12	3,166.0			
02/18/97					176	95	0.8	402		16.05	3,182.1			
02/28/97					176	53	0	224		49.48	3,231.6			
03/05/97	A-INF				176			210	< 0.10	17.15	3,248.7	< 0.491	< 43.57	
	A-EFF							< 10	< 0.10					< 0.0016
03/12/97					211.2	62	0.7	262						
03/19/97					220	33	1	140						
03/26/97					211.2	35	1	148						
04/02/97	A-INF				220			170	4.0	94.55	3,343.3	< 1.020	< 44.59	
	A-EFF							< 10	< 0.10					< 0.0020
04/09/97					220	40	1	169						
04/16/97					220	58	3	245						
04/23/97					220	30	1	127						
04/30/97					220	30	2	127						
05/08/97	A-INF				193.6			340	4.8	170.41	3,513.7	2.940	< 47.53	
	A-EFF							< 10	< 0.10					< 0.0017
05/14/97					193.6	80	1	339						
05/21/97					193.6	20	1	85						
05/28/97					176	42	0	178						
06/04/97	A-INF				176			360	2.9	156.76	3,670.4	1.724	< 49.26	
	A-EFF							< 10	< 0.10					< 0.0016
06/11/97					176	40	0	169						
06/18/97					158.4	38	0	161						
06/25/97					167.2	36	0	152						
07/02/97	A-INF				167.2			350	5.4	153.11	3,823.5	1.790	< 51.04	
	A-EFF							< 10	< 0.10					< 0.0015
07/09/97					202.4	29.4	0	124						
07/18/97					246.4	14.7	0	62						
07/22/97					246.4	54.2	0	229						

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 5 of 8)

DATE	SAMPLE ID	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene pounds
		TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	
07/30/97				220	36.1	0	153					
08/07/97	A-INF			220			160	< 0.50				
	A-EFF						13	< 0.10				< 0.0020
08/11/97				220	19.1	0	81					
8/20/97				167.2	13.1	0	55					
8/27/97				158.4	20.0	0	85					
09/03/97	A-INF			158.4			400	< 1.0				
	A-EFF						< 10	< 0.10				< 0.0014
9/10/97				123.2	800	4.0	3386					
9/17/97				158.4	131	1.1	554					
9/24/97				176	40	0	169					
10/08/97	A-INF			176			200	3.1				
	A-EFF						< 10	< 0.10				< 0.0016
10/15/97				193.6	50	0.9	212					
10/22/97				176	50	1.5	212					
10/30/97				158.4	30	0	127					
11/5/97				167.2	65	7.6	275					
11/12/97	A-INF			176			880	< 0.10				
	A-EFF						< 10	< 0.10				< 0.0016
11/20/97				158.4	33	3.2	138					
11/25/97				123.2	56	3.0	237					
12/03/97	A-INF			220			NA	NA				
	A-EFF						< 10	< 0.10				< 0.0020
12/10/97				176	19	0.5	80					
12/17/97				193.6	16	0.6	68					
12/23/97				193.6	13	0.0	55					
12/29/97	A-INF			176			51	< 0.10				
	A-EFF						< 10	< 0.10				< 0.0016
01/06/98	A-INF			176			70	2.1				
	A-EFF						< 10	< 0.1				< 0.0016
1/13/98				211.2	6	1.0	25					
1/20/98				184.8	4	1.3	17					
02/03/98	System down due to chart recorder problem											
02/10/98	Restart system											
02/10/98	A-INF			132			< 10	1.1				
	A-EFF						< 10	< 0.1				< 0.0012
2/18/98				132.15	0.5	0.0						
2/23/98				158.4	0.6	0.1						
03/11/98	A-INF			193.6			< 10	1.5				
	A-EFF						< 10	< 0.1				< 0.0017
3/17/98				167.2	1.6	3.4						
03/20/98	System down due to control fault											
03/23/98	Restart system											
03/23/98				176	6.2	1.9						
03/30/98				167.2	0.4	0.8						

TABLE 2
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
 SOIL VAPOR EXTRACTION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 6 of 8)

DATE	SAMPLE	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene		
		ID	TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	EFF	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emitted per Day pounds
04/07/98					176	1.4	1.1							
04/17/98					123.2	1.4	1.7							
04/21/98	A-INF				88			10	0.26	< 5.18	< 4,945.8	0.456	< 57.04	
	A-EFF							< 10	< 0.1					< 0.0008
04/28/98					88	2.3	1.6							
05/12/98	A-INF				88			< 10	< 0.1	< 1.66	< 4,947.5	< 0.032	< 57.07	
	A-EFF							< 10	< 0.1					< 0.0008
05/19/98					88	1.8	1.2							
05/28/98					88	1.7	1.2							
06/02/98	A-INF				88	4.3	2.1	18	< 0.1	< 2.32	< 4,949.8	< 0.017	< 57.08	
	A-EFF							< 10	< 0.1					< 0.0008
06/09/98					88	1.9	1.1							
06/17/98					96.8	1.7	0.9							
06/24/98					96.8	2.1	0.8							
07/08/98	A-INF				96.8	3.4	0.8	< 10	< 0.1	< 4.18	< 4,954.0	< 0.030	< 57.11	
	A-EFF							< 10	< 0.1					< 0.0009
07/14/98	A-INF				132	3.1	0.0	39	0.91	< 1.51	< 4,955.5	< 0.031	< 57.15	
	A-EFF							< 10	< 0.1					< 0.0012
07/14/98	Shut down vapor extraction system upon departure. One process blower not operating													
07/16/98	System Inspection, vapor extraction system still down.													
07/21/98	System down on arrival due to blown process blower fuse. Restarted system													
07/21/98					46.2	2.5	1.1							
07/27/98	System operated for 11 hours prior to samples being collected.													
07/27/98	A-INF				176	0.3	0.1	13	< 0.10	< 0.16	< 4,955.7	< 0.003	< 57.15	
	A-EFF							< 10	< 0.10					< 0.0016
08/05/98	System down on arrival due to combustion blower problems. System ran for one hour. Restarted system													
08/05/98	A-INF				184.8	4.1	0.0	90	2.50	0.02	< 4,955.7	< 0.001	< 57.15	
	A-EFF							< 10	< 0.1					< 0.0017
08/11/98	A-INF				193.6	2.7	0.3							
08/18/98	A-INF				202.4	3.1	0.3							
08/25/98					193.6	1.8	0.3							
09/03/98	System down upon arrival due to propane tank running empty. System operated for 16 days. Restarted system.													
09/03/98	A-INF				184.8	4.4	0.2	68	1.00	20.97	< 4,976.6	0.464	< 57.61	
	A-EFF							< 10	< 0.10					< 0.0017
09/08/98					202.4	1.8	0.2							
09/22/98	System down upon arrival due to low gas pressure control faildown 14 days													
09/22/98								2.7	0.3					
09/29/98					176	20.4	1.8							
10/06/98	A-INF				202.4	13.0	1.3	56	1.70	20.38	< 4,997.0	0.444	< 58.06	
	A-EFF							< 10	< 0.10					0.0018
10/13/98	System down upon arrival due to propane tank running empty. System down for 115.5 hours.													
10/20/98					191.84	1.1	0.2							
					193.6	78.6	0.3							

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 7 of 8)

DATE	SAMPLE ID	Field Measurements			Laboratory Analytical Results			TPHg Removal		Benzene Removal		Benzene	
		TEMP F	PRESS in H ₂ O	FLOW cfm	INF ppmv	EFF	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emitted per Day pounds
10/27/98				193.6	219.0	6.2							
11/04/98	A-INF			193.6	42.1	3.3	150	5.00	44.30	< 5,041.3	1.727	< 59.78	
	A-EFF						< 10	< 0.10					0.0017
11/12/98				184.8	32.4	3.7							
11/17/98				180.4	97.4	7.5							
11/17/98	System down upon arrival due to propane tank running empty. System down for 82 hours.												
12/02/98	System down upon arrival due to propane tank running empty. System down on departure.												
12/09/98	Restarted system												
12/09/98	A-INF			184.8	10.0	0.6	Bag flat						
	A-EFF						< 10	< 0.10					
12/16/98				184.8	8.5	0.0							
12/23/98	System down upon arrival due to propane tank running empty. System remained down												
01/06/99	Restarted system												
01/06/99	A-INF			281.6	61.6	2.8	63	0.15	< 47.70	< 5,089.0	< 1.153	< 60.94	
	A-EFF						< 10	< 0.1					< 0.0025
01/12/99	A-INF			264	2.8	0.0							
	A-EFF												
01/18/99	A-INF			220	100.8	6.4							
	A-EFF												
01/26/99	A-INF			184.8	32.0	5.6							
	A-EFF												
02/04/99	A-INF			176	12.5	6.7	< 50	< 0.5	< 33.65	< 5,122.7	< 0.076	< 61.01	
	A-EFF						< 50	< 0.5					< 0.0079
02/12/99	A-INF			132	15.2	0.8							
	A-EFF												
02/12/99	System down on departure, compound full with rain water.												
03/18/99	Pumped containment rain water into storage tank, restarted system.												
03/18/99	A-INF			246.4	16.2	0	< 10	< 0.5	< 4.55	< 5,127.2	< 0.076	< 61.09	
	A-EFF						< 10	< 0.5					< 0.0111
03/30/99	A-INF			132	11.5	0							
	A-EFF												
04/09/99	A-INF			154	2.4	0							
	A-EFF												
04/16/99	A-INF			140.8	0	0.9	< 10	< 0.1	< 5.04	< 5,132.3	< 0.151	< 61.24	
	A-EFF						< 10	< 0.1					< 0.0013
04/21/99	A-INF			123.2	5.5	0							
	A-EFF												
04/28/99	A-INF			123.2	10.1	0							
	A-EFF												
05/04/99	A-INF			132	0	0							
	A-EFF												
05/13/99	A-INF			176	1.3	0	< 10	< 0.1	< 3.84	5,136.1	< 0.038	< 61.28	
	A-EFF						< 10	< 0.1					< 0.0016
05/18/99	A-INF			176	1.3	0							

TABLE 2
CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR
SOIL VAPOR EXTRACTION SYSTEM
Former Exxon Service Station 7-3006
720 High Street
Oakland, California
(Page 8 of 8)

DATE	SAMPLE	Field Measurements				Laboratory Analytical Results		TPHg Removal		Benzene Removal		Benzene	
		ID	F	PRESS in H ₂ O	FLOW cfm	INF ppmv	EFF	TPHg mg/m ³	Benzene mg/m ³	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds
	A-EFF												
05/25/99	A-INF				167.2	0	0						
	A-EFF												
06/11/99	System down upon arrival, emergency stop button was activated.												
06/11/99	A-INF				167.2	4.9	4.5						
	A-EFF												
06/17/99	System operated for 24.3 day for removal calculations.												
06/17/99	A-INF				167.2	1.3	1	< 10	< 0.1	< 3.74	5,139.9	< 0.037	< 61.32
	A-EFF							< 10	< 0.1				< 0.0015
06/17/99	System shut down for pulsing												
06/25/99	System restarted												
06/25/99	A-INF				176	3.3	0						
	A-EFF												
06/29/99	A-INF				176	2.9	0						
	A-EFF												
07/06/99	A-INF				123.2	0	0	< 10	< 0.1	< 1.43	5,141.3	< 0.014	< 61.33
	A-EFF							< 10	< 0.1				< 0.0011
07/16/99	A-INF				158.4	1.6	0.3						
	A-EFF												
07/16/99	System shut down for pulsing												
07/22/99	System restarted												
07/22/99	A-INF				176	0	0.7						
	A-EFF												
07/28/99	A-INF				167.2	5.4	0	15.5	< 0.1	< 2.66	5,143.9	< 0.018	< 61.35
	A-EFF							< 10	< 0.1				< 0.0015
07/28/99	System shut down for pulsing												

Notes:

A-INF = Air Influent
 A-INT = Air Intermediate
 A-EFF = Air Effluent
 NA = Not Analyzed
 cu. ft/min = cubic feet per minute
 ppmv = parts per million by volume

HC = Hydrocarbons measured as total purgeable petroleum hydrocarbons as gasoline analyzed using EPA method 8015 (modified)
 ug/l = micrograms per liter
 mg/cuM = milligrams per cubic meter
 lb = pounds
 acfm = actual cubic feet per minute
 < = less than the laboratory method detection limit

*If value is below laboratory detection limit, detection limit value is used.

*Values calculated using ERI SOP-25 "Hydrocarbons Removed from a Vadose Well" (Attachment C)

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

Date	Total	Average		Laboratory Analytical Results						TPHg Removal		Benzene Removal		
	Flow gal	Flowrate gpd	Sample ID	TPHg ug/l	B ug/l	T ug/l	E ug/l	X ug/l	Arsenic mg/l	Per Period lbs	Cumulative lbs	Per Period lbs	Cumulative lbs	
05/26/95	97,840	829	W-INF	680	210	16	5.8	28	NA	0.1366	0.6362	0.0231	0.1063	
			W-INT	<50	0.94	<0.5	<0.5	<0.5	NA					
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA					
06/06/95	Added two 55-gallon liquid phase carbon canisters in series													
06/06/95	Replaced one 55-gallon liquid phase carbon canister (leak)													
06/08/95	125,010	849	W-INF	2800	660	300	54	340	NA					
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-INT2	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-EFF1	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-EFF2	<50	<0.5	<0.5	<0.5	<0.5	NA					
06/27/95	131,370	489	W-INF1	4500	1700	99	35	220	NA	0.5871	1.2233	0.2165	0.3228	
			W-INF2	810	420	20	7.9	58	NA					
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-INT2	<50	0.53	<0.5	<0.5	<0.5	NA					
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-EFF2	<50	<0.5	<0.5	<0.5	<0.5	NA					
07/10/95	131,370	489	Replaced two 55-gallon liquid phase carbon canisters											
07/11/95	131,690	320	W-INF1	1600	530	15	<10	59	NA	0.1700	1.3933	0.0621	0.3850	
			W-INF2	630	270	7.0	<5.0	25	NA					
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-INT2	<50	<0.5	<0.5	<0.5	<0.5	NA					
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA					

Additional Analyses: ND Purgeable Volatile Organics, ND Priority Pollutant Metals,
except for 12 ppb nickel and 8.0 ppb zinc

07/25/95 141,550 704 System down pending results of air samples

7/28/95 System Down - Could not Restart

7/31/95 Restart System

08/15/95 System Down - Remove hydrocarbon vapor detector and send to manufacturer for calibration

09/11/95 Replaced hydrocarbon vapor detector - Restarted System

09/13/95 System Down - hydrocarbon vapor detector shut down

9/18/95 Restart Systems

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 5 of 10)

Date	Total Flow gal	Average Flowrate gpd	Sample ID	Laboratory Analytical Results						TPHg Removal		Benzene Removal	
				TPHg ug/l	B ug/l	T ug/l	E ug/l	X ug/l	Arsenic mg/l	Per Period lbs	Cumulative lbs	Per Period lbs	Cumulative lbs
10/14/96	263,232	7											
01/02/97	263,232												
01/31/97	290,045	925	W-INF	5,500	1,700	580	120	740	NA	0.6208	4.1095	0.1902	0.9475
			W-INT1	190	39	12	2.1	13	NA				
			W-INT2	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
02/06/97	313,800	3,959	W-INF1	5,100	910	160	45	910	NA	1.0504	5.1600	0.2586	1.2061
			W-INT2	570	62	12	2.9	86	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
2/14/97	323,820	1,253											
2/18/97	327,856	1,009											
2/28/97	335,480	762											
03/05/97	340,178	940	W-INF1	980	100	5.0	2.1	54	NA	0.6690	5.8290	0.1111	1.3172
			W-INF2	<50	0.81	<0.5	<0.5	<0.5	NA				
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
3/12/97	344,977	686											
3/19/97	346,176	171											
3/26/97	346,927	107											
04/02/97	351,729	686	W-INF	430	120	1.8	5.3	19	NA	0.0679	5.8969	0.0106	1.3278
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
4/9/97	356,009	611											
4/16/97	358,700	384											
04/23/97	System down on arrival												
4/30/97	361,241	182											
5/8/97	365,440	525											
5/14/97	368,270	472	System down, bad float on air stripper										
05/21/97	370,444	311	W-INF	1,300	360	<5.0	16	21	NA	0.1351	6.0320	0.0375	1.3653
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
System down, bad float on air stripper													
5/28/97	372,219	254	System down, bad float on air stripper										

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 8 of 10)

Date	Total	Average	Laboratory Analytical Results						TPHg Removal		Benzene Removal		
	Flow gal	Flowrate gpd	Sample ID	TPHg ug/l	B ug/l	T ug/l	E ug/l	X ug/l	Arsenic mg/l	Per Period lbs	Cumulative lbs	Per Period lbs	Cumulative lbs
04/07/98	Replaced solinoid and restarted system												
04/07/98	547,022	160	W-INF1	2,100	380	65	76	350	NA	0.0738	8.1031	0.0756	2.1886
			W-INF2	130	2.6	0.65	<0.5	4.3	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
04/17/98	583,780	3,676											
04/21/98	585,720	485											
04/28/98	598,920	1,886											
05/05/98	606,610	1,099	W-INF1	2,300	380	27	26	390	NA	1.0938	9.1968	0.1889	2.3775
			W-INF2	130	2.6	0.65	<0.5	4.3	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
05/12/98	613,920	1,044											
05/19/98	621,120	1,029											
05/28/98	628,580	829											
06/02/98	634,760	1,236	Samples were collected but inadvertently not analyzed by the laboratory.										
06/09/98	635,740	140											
06/17/98	642,810	884											
06/24/98	645,760	421											
07/08/98	645,800	3											
07/14/98	649,980	697	W-INF1	2700	480	<25	92	270	NA	0.9046	10.1015	0.1556	2.5331
			W-INF2	NS	NS	NS	NS	NS	NS				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
07/14/98	649,980	System down on departure											
07/16/98	System run manually for the East Bay Municipal Utility District Inspection, effluent split samples taken. System still down.												
07/16/98			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
07/21/98	650,180	29											
07/27/98	655,260	847											
07/27/98	System shutdown until propane can be refilled to restart the Thermtech Vac 25.												
08/05/98	Restarted system												
08/05/98	655,260	0	W-INF1	510	240	4.7	3.5	27	NA	0.0707	10.1722	0.0159	2.5490
			W-INF2	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM

TABLE 3
OPERATION AND PERFORMANCE DATA FOR
GROUNDWATER REMEDIATION SYSTEM
 Former Exxon Service Station 7-3006
 720 High Street
 Oakland, California
 (Page 10 of 10)

Date	Total Flow gal	Average Flowrate gpd	Sample ID	Laboratory Analytical Results						TPHg Removal		Benzene Removal	
				TPHg ug/l	B ug/l	T ug/l	E ug/l	X ug/l	Arsenic mg/l	Per Period lbs	Cumulative lbs	Per Period lbs	Cumulative lbs
12/09/98	695,800		W-INF1	1500	480	19	49	120	NA	0.0626	10.4380	0.0189	2.6332
			W-INF2	310	95	3.1	3.9	32	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
12/16/98	695,800		System down upon arrival. System restarted on departure.										
12/23/98	702,994		System down on departure, pending a permit renewal from EBMUD.										
01/06/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
01/12/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
01/18/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
01/26/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
02/04/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
02/12/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
03/18/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
03/30/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
04/09/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
04/16/99	702,994		System down on departure, pending a permit renewal from EBMUD.										
05/04/99	702,994		System down for the month of May. No Permit renewal from EBMUD.										
06/11/99	702,994		System down for the month of June. No Permit renewal from EBMUD.										
07/28/99	702,994		System shutdown pending closure.										

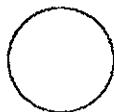
W-INF1	= water influent before stripper or before tank	B	= Benzene	NA	= Not applicable
W-INF2	= water influent after stripper or after filters	T	= Toluene	NS	= Not sampled
W-INT	= water intermediate samples	E	= Ethylbenzene		
W-EFF	= water effluent samples	X	= Total Xylenes		
TPHg	= Total petroleum hydrocarbons as gasoline	<	= less than the laboratory method detection limit as indicated		
gpd	= gallons per day	ug/L	= micrograms per liter		
gal	= gallons	mg/L	= milligrams per liter		



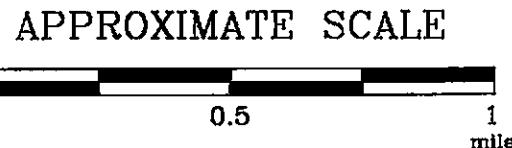
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Date: USGS | Scale: 1 : 19,200 Detail: 1:10 Datum: WGS84

FN 2010

EXPLANATION



1/2-mile radius circle



SOURCE:
Modified from a map
provided by
DeLorme 3-D TopoQuads



SITE VICINITY MAP

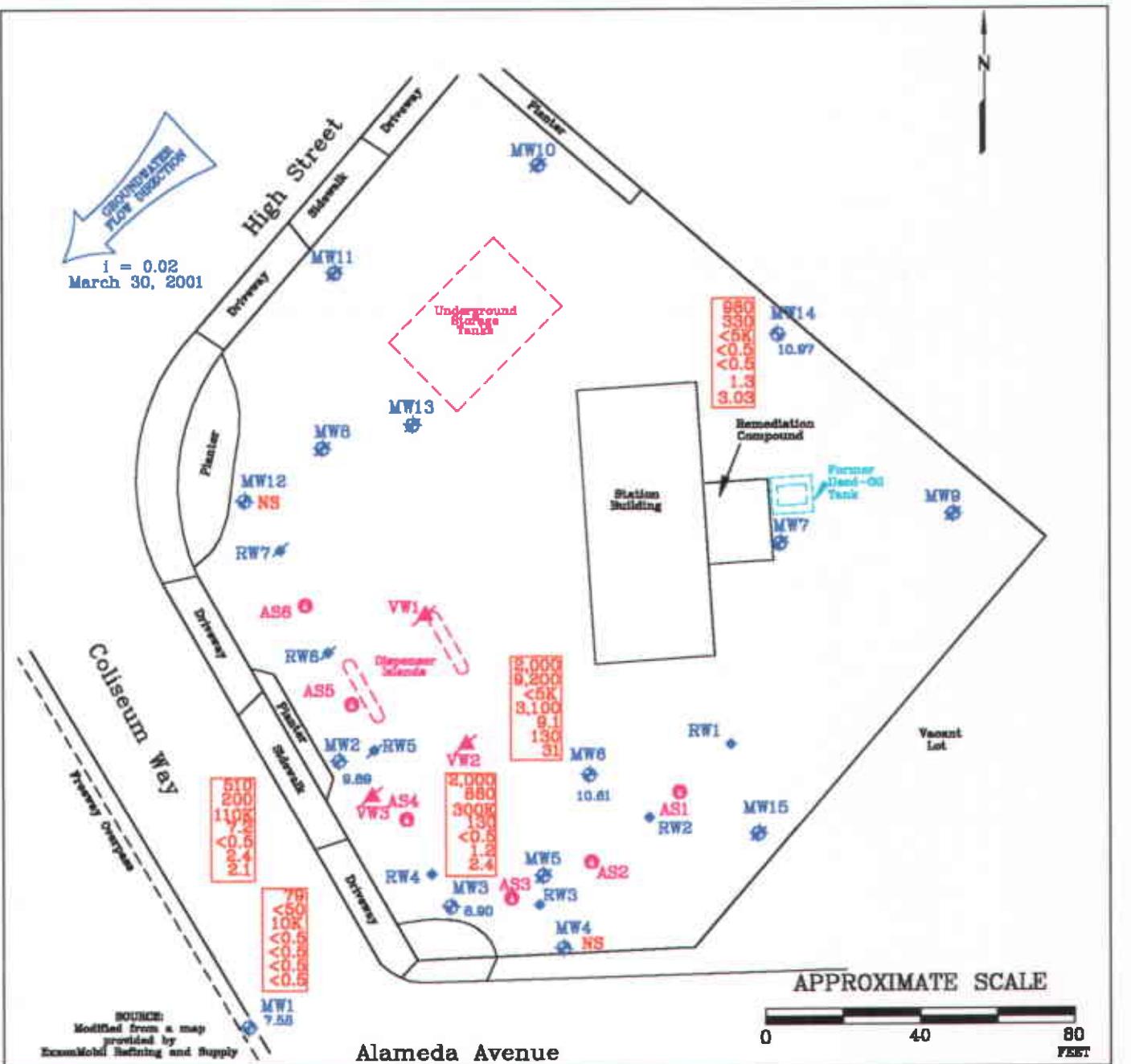
FORMER EXXON SERVICE STATION 7-3006
720 High Street
Oakland, California

PROJECT NO.

2010

PLATE

1



GENERALIZED SITE PLAN
Former Exxon Service Station 7-3006
720 High Street
Oakland, California

PROJECT NO.
2010
PLATE
2

ATTACHMENT A

GROUNDWATER SAMPLING PROTOCOL

ENVIRONMENTAL RESOLUTIONS, INC. GROUNDWATER SAMPLING PROTOCOL

The static water level and separate-phase product level, if present, in each well that contained water and/or separate-phase product are measured with a MMC Interface Probe, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater flow direction and gradient, depth to water (DTW) levels are subtracted from wellhead elevations.

Water samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon® bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable separate-phase hydrocarbon product or sheen. Any separate-phase product is removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until stabilization of the temperature, pH, and conductivity are obtained, or until a minimum of three well casing volumes are purged. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples". The quantity of water purged from each well is calculated as follows:

One well casing volume in gallons = $\pi r^2 h(7.48)$ where:

r = radius of the well casing in feet.
 h = column of water in the well in feet (depth to bottom - depth to water)
7.48 = conversion constant from cubic feet to gallons
 π = ratio of the circumference of a circle to its diameter

gallons of water purged/gallons in one well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover to at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples". Water samples were collected with a new, disposable Teflon® bailer, and were carefully poured into 40-milliliter (ml) glass vials, which are filled so as to produce a positive meniscus. Each vial is preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace, which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

ATTACHMENT B

**LABORATORY ANALYSIS REPORTS
AND CHAIN OF CUSTODY RECORDS**

ATTACHMENT C

**ERI SOP-25 "HYDROCARBONS REMOVED
FROM A VADOSE WELL"**

**HYDROCARBONS REMOVED
FROM A VADOSE WELL**
SOP-2S

Rev. 10/96

Rev. 4/29/97

**POUNDS OF HYDROCARBON IN AN VAPOR
STREAM**

INPUT DATA:

- 1) Vapor flow rate acfm (usually by Pitot tube)
- 2) Vapor pressure at the flow measuring device (in inches of H₂O) (use {-} for vacuum)
- 3) Vapor temperature at the flow measuring device
- 4) Hydrocarbon content of vapor (usually in mg/M³) for ppmv you need molecular weight.
- 5) Length of time (usually hours) over which flow rate occurred

From periodic measurements, a calculation of total pounds of hydrocarbons removed from a well or from a system are calculated. The input data listed above are measured at a point in time. To calculate quantities removed, some assumptions must be made about what was happening between measurements.

The following assumptions will be used for the sake of consistency:

ASSUMPTIONS:

- 1) Vapor flow for the period equals the average of the initial and final reading for the period.
- 2) Pressure and temperature for the entire period will be the final reading.
- 3) Hydrocarbon concentration for the period equals the average of the initial and final reading.
- 4) The hours of operation can be taken from an hour meter, an electric meter or will be assumed to be equal to the time between measurements.
- 5) If the unit is found down - try to determine how many hours it did operate and use the data taken for the previous period to make the calculations. Restart the unit and then take data to start the next period.

SAMPLE DATA AND CALCULATIONS

Date	Time	Temp deg F	Press in H ₂ O	HC conc mg/M ³ acfm	Vapor flow lb. rem.	Calc.
1/6/95	11:00	70	-46	2000	120	
1/7/95	13:00	55	-50	1350	90	
1/8/95	10:00	80	-13	750	100	7.4

Calculate the pounds of hydrocarbon removed from the system during the basis period from 13:00 (1:00 pm) on the 7th to 10 am on the 8th. Pressure and temperature of the measurements (at the flow meter) must be corrected to the P and T used to report the HC concentration (which are P = 1 atm and T = 70 deg F). 1 atm = 14.7 psia, 760 mm Hg, or 407 in H₂O. T_{abs} = 460 + T deg F

Hours of operation = 21, T = 80, P = -13, HC = (1350+750)/2 = 1050 mg/M³. Flow = 95

$$21 \times 60 \times 95 \times \frac{(460+70)}{(460+80)} \times \frac{(407-13)}{407} \times \frac{28.3}{1000} \times \frac{1050}{1000} \times \frac{1}{454} = 7.4 \text{ lb}$$

$$\begin{array}{ccccccccc} \text{hr} & \text{min} & \text{cu ft} & & \text{M}^3 & \text{g} & \text{lb} & \text{lb} \\ \hline \text{---} & \text{x} \text{---} & \text{x} \text{---} & \text{x} & \text{x} & \text{x} & \text{x} & \text{---} \\ \text{basis} & \text{hr} & \text{min} & \text{T}_{\text{corr}} & \text{P}_{\text{corr}} & \text{cu ft} & \text{M}^3 & \text{g} \\ \end{array} = \frac{\text{---}}{\text{basis}}$$

21 x 60 x 95 x 0.98 x 0.97 x 0.0283 x 1.050 x 1/454 = 7.4 lb.
cumulative lbs. (the running total) = the sum of all the previous periods.

Note: If results are given in ppm, an assumption about the molecular weight of the hydrocarbon must be made to get mg/M³. ppmv x molecular wt. /24.1 = mg/M³. (Use 102 for gasoline)



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

卷之三

Certificate of Analysis Number:
01040063

<u>Report To:</u>	<u>Project Name:</u>	201013X
Environmental Resolution, Inc.	<u>Site:</u>	7-3006
Scott Thompson •	<u>Site Address:</u>	720 High Street
73 Digital Drive Suite 100		Oakland CA
Novato California 94949-	<u>PO Number:</u>	EWR#21040349
ph: (415) 382-9105 fax: (415) 382-1856	<u>State:</u>	California
	<u>State Cert. No.:</u>	1903
	<u>Date Reported:</u>	4/19/01

This Report Contains A Total Of 19 Pages

Excluding This Page

And

Chain Of Custody



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

**Case Narrative for:
EXXON Company U.S.A.**

Certificate of Analysis Number:

01040063

<u>Report To:</u>	<u>Project Name:</u>	201013X
Environmental Resolution, Inc.	<u>Site:</u>	7-3006
Scott Thompson •	<u>Site Address:</u>	720 High Street
73 Digital Drive Suite 100		Oakland CA
Novato	<u>PO Number:</u>	EWR#21040349
California	<u>State:</u>	California
94949-	<u>State Cert. No.:</u>	1903
ph: (415) 382-9105 fax: (415) 382-1856	<u>Date Reported:</u>	4/19/01

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

01040063 Page 1

4/24/01

Date


Sonia West
Senior Project Manager



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

01040063

Report To: Environmental Resolution, Inc.

Scott Thompson
73 Digital Drive Suite 100

Novato
California
94949-
ph: (415) 382-9105 **fax: (415) 382-1856**

Fax To: Environmental Resolution, Inc.
Scott Thompson fax : (415) 382-1856

Project Name: 201013X

Site: 7-3006

Site Address: 720 High Street

Oakland CA

PO Number: EWR#21040349

State: California

State Cert. No.: 1903

Date Reported: 4/19/01

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
B	01040063-01	Water	3/30/01	4/3/01 10:00:00 AM		<input type="checkbox"/>
W-BB-MW14	01040063-02	Water	3/30/01 2:10:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>
W-7-MW14	01040063-03	Water	3/30/01 2:20:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>
-6-MW1	01040063-04	Water	3/30/01 2:32:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>
-3-MW2	01040063-05	Water	3/30/01 2:45:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>
W-18-MW6	01040063-06	Water	3/30/01 2:54:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>
W-4-MW3	01040063-07	Water	3/30/01 3:03:00 PM	4/3/01 10:00:00 AM		<input type="checkbox"/>

Sonia West

4/24/01

onia West
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

01040063 Page 2

4/24/01 1:49:19 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID TB		Collected: 3/30/01		SPL Sample ID: 01040063-01			
		Site: 7-3006					
Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	CA_GRO	Units: ug/L		
Gasoline Range Organics	ND	50	1		04/05/01 1:05	DL	627441
Surr: 1,4-Difluorobenzene	103	% 62-144	1		04/05/01 1:05	DL	627441
Surr: 4-Bromofluorobenzene	97.0	% 44-153	1		04/05/01 1:05	DL	627441
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	0.5	1		04/05/01 1:05	DL	627392
Ethylbenzene	ND	0.5	1		04/05/01 1:05	DL	627392
Toluene	ND	0.5	1		04/05/01 1:05	DL	627392
m,p-Xylene	ND	0.5	1		04/05/01 1:05	DL	627392
o-Xylene	ND	0.5	1		04/05/01 1:05	DL	627392
Xylenes, Total	ND	0.5	1		04/05/01 1:05	DL	627392
Surr: 1,4-Difluorobenzene	95.2	% 72-137	1		04/05/01 1:05	DL	627392
Surr: 4-Bromofluorobenzene	83.7	% 48-156	1		04/05/01 1:05	DL	627392
VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Methyl tert-butyl ether	ND	5	1		04/09/01 17:11	LT	632826
Surr: 1,2-Dichloroethane-d4	96.0	% 62-119	1		04/09/01 17:11	LT	632826
Surr: 4-Bromofluorobenzene	100	% 78-123	1		04/09/01 17:11	LT	632826
Surr: Toluene-d8	104	% 74-122	1		04/09/01 17:11	LT	632826

Sonia West

Sonia West
Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID W-BB-MW14 Collected: 3/30/01 2:10:00 SPL Sample ID: 01040063-02

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS							
Diesel Range Organics	ND	50		1	04/12/01 15:02 AM		638491
Surr: n-Pentacosane	95.2	% 20-150		1	04/12/01 15:02 AM		638491
Prep Method	Prep Date	Prep Initials					
SW3510B	04/06/2001 14:14	G_T					
GASOLINE RANGE ORGANICS							
Gasoline Range Organics	ND	50		1	04/05/01 1:29 DL		627442
Surr: 1,4-Difluorobenzene	105	% 62-144		1	04/05/01 1:29 DL		627442
Surr: 4-Bromofluorobenzene	97.3	% 44-153		1	04/05/01 1:29 DL		627442
PURGEABLE AROMATICS							
Benzene	ND	0.5		1	04/05/01 1:29 DL		627394
Ethylbenzene	ND	0.5		1	04/05/01 1:29 DL		627394
Toluene	ND	0.5		1	04/05/01 1:29 DL		627394
m,p-Xylene	ND	0.5		1	04/05/01 1:29 DL		627394
o-Xylene	ND	0.5		1	04/05/01 1:29 DL		627394
Xylenes, Total	ND	0.5		1	04/05/01 1:29 DL		627394
Surr: 1,4-Difluorobenzene	94.6	% 72-137		1	04/05/01 1:29 DL		627394
Surr: 4-Bromofluorobenzene	84.6	% 48-156		1	04/05/01 1:29 DL		627394
VOLATILE ORGANICS BY METHOD 8260B							
Methyl tert-butyl ether	ND	5		1	04/09/01 17:38 LT		632829
Surr: 1,2-Dichloroethane-d4	100	% 62-119		1	04/09/01 17:38 LT		632829
Surr: 4-Bromofluorobenzene	96.0	% 78-123		1	04/09/01 17:38 LT		632829
Surr: Toluene-d8	104	% 74-122		1	04/09/01 17:38 LT		632829

Sonia West

Sonia West
Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID W-7-MW14 Collected: 3/30/01 2:20:00 SPL Sample ID: 01040063-03

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
-----------------	--------	-----------	-------------	------	---------------	---------	--------

DIESEL RANGE ORGANICS			MCL	CA_DRO	Units: ug/L		
Diesel Range Organics	980	50	1		04/12/01 15:41 AM		638492
Surrogate: n-Pentacosane	81.8	% 20-150	1		04/12/01 15:41 AM		638492

Prep Method	Prep Date	Prep Initials
SW3510B	04/06/2001 14:14	G_T

GASOLINE RANGE ORGANICS			MCL	CA_GRO	Units: ug/L		
Gasoline Range Organics	330	50	1		04/05/01 1:53 DL		627443
Surrogate: 1,4-Difluorobenzene	107	% 62-144	1		04/05/01 1:53 DL		627443
Surrogate: 4-Bromofluorobenzene	129	% 44-153	1		04/05/01 1:53 DL		627443

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	0.5	1		04/05/01 1:53 DL		627395
Ethylbenzene	1.3	0.5	1		04/05/01 1:53 DL		627395
Toluene	ND	0.5	1		04/05/01 1:53 DL		627395
m,p-Xylene	0.83	0.5	1		04/05/01 1:53 DL		627395
o-Xylene	2.2	0.5	1		04/05/01 1:53 DL		627395
Xylenes, Total	3.03	0.5	1		04/05/01 1:53 DL		627395
Surrogate: 1,4-Difluorobenzene	102	% 72-137	1		04/05/01 1:53 DL		627395
Surrogate: 4-Bromofluorobenzene	87.3	% 48-156	1		04/05/01 1:53 DL		627395

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Methyl tert-butyl ether	ND	5	1		04/09/01 18:05 LT		632831
Surrogate: 1,2-Dichloroethane-d4	94.0	% 62-119	1		04/09/01 18:05 LT		632831
Surrogate: 4-Bromofluorobenzene	104	% 78-123	1		04/09/01 18:05 LT		632831
Surrogate: Toluene-d8	106	% 74-122	1		04/09/01 18:05 LT		632831

Sonia West

Sonia West

Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0981

Client Sample ID W-6-MW1 Collected: 3/30/01 2:32:00 SPL Sample ID: 01040063-04

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS							
Diesel Range Organics	79	50		1	04/12/01 16:19 AM		638493
Surr: n-Pentacosane	104	% 20-150		1	04/12/01 16:19 AM		638493
Prep Method	Prep Date	Prep Initials					
SW3510B	04/06/2001 14:14	G_T					
GASOLINE RANGE ORGANICS							
Gasoline Range Organics	ND	50		1	04/05/01 2:17	DL	627444
Surr: 1,4-Difluorobenzene	106	% 62-144		1	04/05/01 2:17	DL	627444
Surr: 4-Bromofluorobenzene	98.7	% 44-153		1	04/05/01 2:17	DL	627444
PURGEABLE AROMATICS							
Benzene	ND	0.5		1	04/05/01 2:17	DL	627397
Ethylbenzene	ND	0.5		1	04/05/01 2:17	DL	627397
Toluene	ND	0.5		1	04/05/01 2:17	DL	627397
m,p-Xylene	ND	0.5		1	04/05/01 2:17	DL	627397
o-Xylene	ND	0.5		1	04/05/01 2:17	DL	627397
Xylenes, Total	ND	0.5		1	04/05/01 2:17	DL	627397
Surr: 1,4-Difluorobenzene	95.4	% 72-137		1	04/05/01 2:17	DL	627397
Surr: 4-Bromofluorobenzene	88.0	% 48-156		1	04/05/01 2:17	DL	627397
VOLATILE ORGANICS BY METHOD 8260B							
Methyl tert-butyl ether	10	5		1	04/09/01 18:33	LT	632833
Surr: 1,2-Dichloroethane-d4	92.0	% 62-119		1	04/09/01 18:33	LT	632833
Surr: 4-Bromofluorobenzene	102	% 78-123		1	04/09/01 18:33	LT	632833
Surr: Toluene-d8	110	% 74-122		1	04/09/01 18:33	LT	632833

Sonia West

Sonia West
Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID W-3-MW2

Collected: 3/30/01 2:45:00 SPL Sample ID: 01040063-05

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS							
Diesel Range Organics	510	50		1	04/12/01 16:58 AM		638494
Surr: n-Pentacosane	88.4	% 20-150		1	04/12/01 16:58 AM		638494
Prep Method	Prep Date	Prep Initials					
SW3510B	04/06/2001 14:14	G_T					
GASOLINE RANGE ORGANICS							
Gasoline Range Organics	200	50		1	04/05/01 2:42 DL		627445
Surr: 1,4-Difluorobenzene	105	% 62-144		1	04/05/01 2:42 DL		627445
Surr: 4-Bromofluorobenzene	97.7	% 44-153		1	04/05/01 2:42 DL		627445
PURGEABLE AROMATICS							
Benzene	7.2	0.5		1	04/05/01 2:42 DL		627398
Ethylbenzene	2.4	0.5		1	04/05/01 2:42 DL		627398
Toluene	ND	0.5		1	04/05/01 2:42 DL		627398
m,p-Xylene	2.1	0.5		1	04/05/01 2:42 DL		627398
o-Xylene	ND	0.5		1	04/05/01 2:42 DL		627398
Xylenes, Total	2.1	0.5		1	04/05/01 2:42 DL		627398
Surr: 1,4-Difluorobenzene	98.3	% 72-137		1	04/05/01 2:42 DL		627398
Surr: 4-Bromofluorobenzene	90.3	% 48-156		1	04/05/01 2:42 DL		627398
VOLATILE ORGANICS BY METHOD 8260B							
Methyl tert-butyl ether	110	5		1	04/09/01 19:00 LT		632835
Surr: 1,2-Dichloroethane-d4	94.0	% 52-119		1	04/09/01 19:00 LT		632835
Surr: 4-Bromofluorobenzene	104	% 78-123		1	04/09/01 19:00 LT		632835
Surr: Toluene-d8	112	% 74-122		1	04/09/01 19:00 LT		632835

Sonia West

Sonia West

Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID W-18-MW6 Collected: 3/30/01 2:54:00 SPL Sample ID: 01040063-06

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS							
Diesel Range Organics	2000	50	1		04/12/01 17:36 AM		638495
Surrogate: n-Pentacosane	109	% 20-150	1		04/12/01 17:36 AM		638495

Prep Method	Prep Date	Prep Initials
SW3510B	04/06/2001 14:14	G_T

GASOLINE RANGE ORGANICS			MCL	CA_GRO	Units: ug/L
Gasoline Range Organics	9200	250	5		04/05/01 3:30 DL
Surrogate: 1,4-Difluorobenzene	113	% 62-144	5		04/05/01 3:30 DL
Surrogate: 4-Bromofluorobenzene	108	% 44-153	5		04/05/01 3:30 DL

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L
Benzene	3100	12	25		04/06/01 4:10 DL
Ethylbenzene	130	2.5	5		04/05/01 3:30 DL
Toluene	9.1	2.5	5		04/05/01 3:30 DL
m,p-Xylene	31	2.5	5		04/05/01 3:30 DL
o-Xylene	ND	2.5	5		04/05/01 3:30 DL
Xylenes, Total	31	2.5	5		04/05/01 3:30 DL
Surrogate: 1,4-Difluorobenzene	113	% 72-137	5		04/05/01 3:30 DL
Surrogate: 1,4-Difluorobenzene	102	% 72-137	25		04/06/01 4:10 DL
Surrogate: 4-Bromofluorobenzene	90.1	% 48-156	25		04/06/01 4:10 DL
Surrogate: 4-Bromofluorobenzene	81.8	% 48-156	5		04/05/01 3:30 DL

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L
Methyl tert-butyl ether	ND	5	1		04/10/01 23:23 LT
Surrogate: 1,2-Dichloroethane-d4	102	% 62-119	1		04/10/01 23:23 LT
Surrogate: 4-Bromofluorobenzene	102	% 78-123	1		04/10/01 23:23 LT
Surrogate: Toluene-d8	106	% 74-122	1		04/10/01 23:23 LT

Sonia West

Sonia West
Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit >MCL - Result Over Maximum Contamination Limit(MCL)
B - Analyte detected in the associated Method Blank D - Surrogate Recovery Unreportable due to Dilution
* - Surrogate Recovery Outside Advisable QC Limits MI - Matrix Interference
J - Estimated Value between MDL and PQL



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID W-4-MW3

Collected: 3/30/01 3:03:00 SPL Sample ID: 01040063-07

Site: 7-3006

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS							
Diesel Range Organics	2000	50		1	04/12/01 18:15 AM		638496
Surr: n-Pentacosane	94.4	% 20-150		1	04/12/01 18:15 AM		638496
Prep Method	Prep Date	Prep Initials					
SW3510B	04/06/2001 14:14	G_T					
GASOLINE RANGE ORGANICS							
Gasoline Range Organics	880	50		1	04/05/01 3:06	DL	627446
Surr: 1,4-Difluorobenzene	110	% 62-144		1	04/05/01 3:06	DL	627446
Surr: 4-Bromofluorobenzene	117	% 44-153		1	04/05/01 3:06	DL	627446
PURGEABLE AROMATICS							
Benzene	130	0.5		1	04/05/01 3:06	DL	627400
Ethylbenzene	1.2	0.5		1	04/05/01 3:06	DL	627400
Toluene	ND	0.5		1	04/05/01 3:06	DL	627400
m,p-Xylene	0.8	0.5		1	04/05/01 3:06	DL	627400
o-Xylene	1.6	0.5		1	04/05/01 3:06	DL	627400
Xylenes, Total	2.4	0.5		1	04/05/01 3:06	DL	627400
Surr: 1,4-Difluorobenzene	96.7	% 72-137		1	04/05/01 3:06	DL	627400
Surr: 4-Bromofluorobenzene	78.6	% 48-156		1	04/05/01 3:06	DL	627400
VOLATILE ORGANICS BY METHOD 8260B							
Methyl tert-butyl ether	300	25		5	04/10/01 22:01	LT	634559
Surr: 1,2-Dichloroethane-d4	96.0	% 62-119		5	04/10/01 22:01	LT	634559
Surr: 4-Bromofluorobenzene	104	% 78-123		5	04/10/01 22:01	LT	634559
Surr: Toluene-d8	108	% 74-122		5	04/10/01 22:01	LT	634559

Sonia West

Sonia West

Project Manager

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

Quality Control Documentation



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Diesel Range Organics
Method: CA_DRO

WorkOrder: 01040063
Lab Batch ID: 11415A

Method Blank

Samples in Analytical Batch:

RunID: HP_V_010412B-638510 Units: mg/L
Analysis Date: 04/12/2001 13:45 Analyst: AM
Preparation Date: 04/06/2001 14:14 Prep By: G_T Method SW3510B

Lab Sample ID	Client Sample ID
01040063-02C	W-BB-MW14
01040063-03C	W-7-MW14
01040063-04C	W-6-MW1
01040063-05C	W-3-MW2
01040063-06C	W-18-MW6
01040063-07C	W-4-MW3

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.050
Surrogate: n-Pentacosane	119.0	20-150

Laboratory Control Sample (LCS)

RunID: HP_V_010412B-638511 Units: mg/L
Analysis Date: 04/12/2001 14:24 Analyst: AM
Preparation Date: 04/06/2001 14:14 Prep By: G_T Method SW3510B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	2.5	2.8	110	21	175

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01040096-05
RunID: HP_V_010412B-638502 Units: mg/L
Analysis Date: 04/12/2001 22:46 Analyst: AM
Preparation Date: 04/06/2001 14:14 Prep By: G_T Method SW3510B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	ND	2.5	2	78.5	2.5	2.3	89.5	13.1	20	21	175

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference

B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 11

4/24/01 1:49:28 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01040063
Lab Batch ID: R32864

Method Blank

RunID: VARE_010404B-627335 Units: ug/L

Analysis Date: 04/04/2001 17:00 Analyst: DL

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
01040063-01A	TB
01040063-02A	W-BB-MW14
01040063-03A	W-7-MW14
01040063-04A	W-6-MW1
01040063-05A	W-3-MW2
01040063-06A	W-18-MW6
01040063-07A	W-4-MW3

Analyte	Result	Rep Limit
Benzene	ND	0.50
Ethylbenzene	ND	0.50
Toluene	ND	0.50
m,p-Xylene	ND	0.50
o-Xylene	ND	0.50
Xylenes, Total	ND	0.50
Sum: 1,4-Difluorobenzene	95.2	72-137
Sum: 4-Bromofluorobenzene	87.3	48-156

Laboratory Control Sample (LCS)

RunID: VARE_010404B-627330 Units: ug/L

Analysis Date: 04/04/2001 15:40 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	53	106	70	130
Ethylbenzene	50	54	108	70	130
Toluene	50	54	108	70	130
m,p-Xylene	100	110	106	70	130
o-Xylene	50	54	107	70	130
Xylenes, Total	150	164	109	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01031042-13

RunID: VARE_010404B-627341 Units: ug/L

Analysis Date: 04/04/2001 17:25 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	20	100	20	20	98.4	1.61	21	32	164
Ethylbenzene	ND	20	19	95.8	20	19	96.0	0.176	19	52	142
Toluene	ND	20	19	94.6	20	19	96.3	1.71	20	38	159
m,p-Xylene	ND	40	39	97.2	40	39	96.6	0.591	17	53	144
o-Xylene	ND	20	19	96.4	20	20	97.7	1.37	18	53	143

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 12

4/24/01 1:49:29 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-6901

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01040063
Lab Batch ID: R32864

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01031042-13
RunID: VARE_010404B-627341 Units: ug/L
Analysis Date: 04/04/2001 17:25 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Xylenes, Total	ND	60	58	96.7	60	59	98.3	1.71	18	53	144

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 13
4/24/01 1:49:29 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Gasoline Range Organics WorkOrder: 01040063
Method: CA_GRO Lab Batch ID: R32866

Method Blank

Samples in Analytical Batch:

RunID: VARE_010404C-627432 Units: mg/L

Lab Sample ID

Client Sample ID

Analysis Date: 04/04/2001 17:00 Analyst: DL

01040063-01A

TB

01040063-02A

W-BB-MW14

01040063-03A

W-7-MW14

01040063-04A

W-6-MW1

01040063-05A

W-3-MW2

01040063-06A

W-18-MW6

01040063-07A

W-4-MW3

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.050
Surr: 1,4-Difluorobenzene	105.7	62-144
Surr: 4-Bromofluorobenzene	107.3	44-153

Laboratory Control Sample (LCS)

RunID: VARE_010404C-627426 Units: mg/L

Analysis Date: 04/04/2001 16:36 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.9	90	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01031042-12

RunID: VARE_010404C-627434 Units: mg/L

Analysis Date: 04/04/2001 18:13 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	0.9	0.85	94.4	0.9	0.85	94.1	0.271	36	36	160

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 14

4/24/01 1:49:29 PM



Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01040063
Lab Batch ID: R32954

Method Blank

Samples in Analytical Batch:

RunID: VARE_010405B-629219 Units: ug/L

Lab Sample ID

Client Sample ID

Analysis Date: 04/05/2001 18:53 Analyst: DL

01040063-06A

W-18-MW6

Analyte	Result	Rep Limit
Benzene	ND	0.50
Surrogate: 1,4-Difluorobenzene	94.7	72-137
Surrogate: 4-Bromofluorobenzene	89.2	48-156

Laboratory Control Sample (LCS)

RunID: VARE_010405B-629217 Units: ug/L

Analysis Date: 04/05/2001 18:04 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	54	109	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01040064-03

RunID: VARE_010405B-629221 Units: ug/L

Analysis Date: 04/05/2001 19:17 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21	104	20	21	105	0.962	21	32	164

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference

B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 01040063
Lab Batch ID: R33127

Method Blank

Samples in Analytical Batch:

RunID: L_010409C-632815 Units: ug/L

Lab Sample ID

Client Sample ID

Analysis Date: 04/09/2001 12:45 Analyst: LT

01040063-01B

TB

01040063-02B

W-BB-MW14

01040063-03B

W-7-MW14

01040063-04B

W-6-MW1

01040063-05B

W-3-MW2

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	5.0
Sur: 1,2-Dichloroethane-d4	94.0	62-119
Sur: 4-Bromofluorobenzene	96.0	78-123
Sur: Toluene-d8	100.0	74-122

Laboratory Control Sample (LCS)

RunID: L_010409C-632814 Units: ug/L
Analysis Date: 04/09/2001 11:53 Analyst: LT

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	50	100	61	145
Benzene	50	50	100	76	127
Chlorobenzene	50	44	88	75	130
Toluene	50	44	88	76	125
Trichloroethene	50	46	92	71	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01031040-02
RunID: L_010409C-632819 Units: ug/L
Analysis Date: 04/09/2001 14:31 Analyst: LT

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	50	40	80	50	37	74	8	14	38	172
Benzene	ND	50	44	88	50	42	84	5	11	66	134
Chlorobenzene	ND	50	41	82	50	39	78	5	13	67	115
Toluene	ND	50	41	82	50	38	76	8	13	59	125
Trichloroethene	ND	50	39	78	50	37	74	5	14	61	134

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 16

4/24/01 1:49:30 PM

Quality Control Report

EXXON Company U.S.A.

201013X

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 01040063
Lab Batch ID: R33234

Method Blank

Samples in Analytical Batch:

RunID: L_010410A-634556 Units: ug/L

Lab Sample ID

Client Sample ID

Analysis Date: 04/10/2001 20:39 Analyst: LT

01040063-06B

W-18-MW6

01040063-07B

W-4-MW3

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	5.0
Surr: 1,2-Dichloroethane-d4	100.0	62-119
Surr: 4-Bromofluorobenzene	96.0	78-123
Surr: Toluene-d8	112.0	74-122

Laboratory Control Sample (LCS)

RunID: L_010410A-634555 Units: ug/L
Analysis Date: 04/10/2001 19:17 Analyst: LT

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	54	108	61	145
Benzene	50	51	102	76	127
Chlorobenzene	50	46	92	75	130
Toluene	50	51	102	76	125
Trichloroethene	50	48	96	71	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01040063-07
RunID: L_010410A-634560 Units: ug/L
Analysis Date: 04/10/2001 22:28 Analyst: LT

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	250	230	92	250	280	112	20 *	14	38	172
Benzene	96	250	330	94	250	360	106	12 *	11	66	134
Chlorobenzene	ND	250	220	88	250	220	88	0	13	67	115
Toluene	ND	250	220	88	250	230	92	4	13	59	125
Trichloroethene	ND	250	210	84	250	240	96	13	14	61	134

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

01040063 Page 17

4/24/01 1:49:30 PM

Sample Receipt Checklist
And
Chain of Custody



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	01040063	Received By:	NB
Date and Time Received:	4/3/01 10:00:00 AM	Carrier name:	FedEx
Temperature:	3	Chilled by:	Water Ice

- | | | | |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| 13. Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues: <input type="text"/>
Client Instructions: <input type="text"/>

EXXON COMPANY, USA.

(West Coast)

CHAIN OF CUSTODY RECORD NO. 01040063Page 1 of 1

Exxon Engineer: GENE ORTEGA Phone: (925) 246-8747
 Consultant Co. Name ERI Contact: SCOTT THOMPSON
 Address: 13 DIGITAL DRIVE Fax: (415) 382-1856
SITE 100 NOVATO CA 94949
 RAS #: 7-3006 Facility/State ID # (TN Only):
 AFE # (Terminal Only): 2010138 Consultant Project #:
 Location: 720 HIGH ST (City) OAKLAND (State) CA
 EE C&M SDT

Consultant Work Release #: 20101090Sampled By: M. HANONEY

SAMPLE I.D.	DATE	TIME	COMP	GRAB	MATRIX H ₂ O SOIL AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE	ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)	OTHER
TB	3/1	—		X			HCl	2	40 ml	TPH/GC 8015 GRO <input checked="" type="checkbox"/> 8015 DRO <input checked="" type="checkbox"/>	
W-DB-MW14	3/30	1410		1			HCl/ice	2/1	40 ml	BTEX 8020 <input checked="" type="checkbox"/>	602 <input type="checkbox"/>
W-7-MW14		1420								MTBE 8020 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/>	
W-6-MW1		1432								OXYGENATES (7) 8260 <input type="checkbox"/>	
W-3-MW2		1445								O&G IR 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	
W-18-MW6		1454								VOL 8260 <input type="checkbox"/> 8270 <input type="checkbox"/>	624 <input type="checkbox"/>
W-4-MW3		1503								PAH/PAH 8100 <input type="checkbox"/> 8210 <input type="checkbox"/>	8270 <input type="checkbox"/>
										SEMI-VOL 8270 <input type="checkbox"/> 8250 <input type="checkbox"/>	PCB ONLY <input type="checkbox"/>
										TOP FULL VOL SEMI-COND PESTO HERB <input type="checkbox"/>	
										METALS, TOTAL <input type="checkbox"/> METALS, TCLP <input type="checkbox"/>	
										LEAD, TOTAL 238.1 <input type="checkbox"/> 7421 <input type="checkbox"/> LEAD, TCLP <input type="checkbox"/>	
										LEAD, DISSOLVED <input type="checkbox"/> LEAD TOTAL <input type="checkbox"/>	
										REACTIVITY <input type="checkbox"/> CORROSIVITY <input type="checkbox"/> FLASH POINT <input type="checkbox"/>	
										PURGEABLE HYDROCARBON 8010 <input type="checkbox"/> 8011 <input type="checkbox"/>	
										TPH/IR 418.1 <input type="checkbox"/>	
										TOX/TOH <input type="checkbox"/>	

TAT	24 HR. <input type="checkbox"/> 72 HR. <input type="checkbox"/>	48 HR. <input type="checkbox"/> 96 HR. <input type="checkbox"/>	SPECIAL DETECTION LIMITS (Specify)			REMARKS:		
8 Business <input checked="" type="checkbox"/>	*Contact US Prior to Sending Sample		EXXON UST CONTRACT NO. C41483					
Other <input type="checkbox"/>	SPECIAL REPORTING REQUIREMENTS (Specify)			LAB USE ONLY Lot #			Storage Location	
Standard <input checked="" type="checkbox"/> CLP <input type="checkbox"/> Other <input type="checkbox"/> QA/QC Level	PDF <input type="checkbox"/> EDD <input type="checkbox"/>			FAX <input type="checkbox"/> FAX C-O-C W/REPORT <input type="checkbox"/>			WORK ORDER #: <u>01040063</u> LAB WORK RELEASE #:	

CUSTODY RECORD	Relinquished By Sampler: <u>John W. Hanoney</u>	Date <u>4/2/01</u>	Time <u>1420</u>	Received By:
	Relinquished: <u></u>	Date <u></u>	Time <u></u>	Received By: <u></u>
	Relinquished: <u></u>	Date <u></u>	Time <u></u>	Received By: <u>Harry Bobbitt</u> Way Bill #: <u>4/3/01</u> Cooler Temp.: <u>3</u>