ExxonMobil
Refining and Supply Company
Downstream - Safety, Health & Environment
Environmental Remediation
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

September 12, 2001

SEP 14 2001

Ms. Eva Chu
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

RE: Former Exxon RAS #7-0104/1725 Park Street, Alameda, California.

Dear Ms. Chu:

Attached for your review and comment is a letter report entitled ***Risk-Based Corrective Action Tier II Analysis***, dated September 12, 2001, for the above referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and details the results of risk-based corrective action 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 Risk-Based Corrective Action Tier II Analysis, dated September 12, 2001

cc: w/ attachment
Mr. Stephen Hill, California Regional Water Quality Control Board, San Francisco Bay Region
Mr. Winson B. Low, Environmental Safety and Affairs Department

w/o attachment
Mr. Scott R. Graham, Environmental Resolutions, Inc.

GW from last 1.0 yrs - What GW & soil data used to calc. Representative COC.
- are off-site residential use an exposure pathway.
- forecast risk for potential on-site residential scenario
- include evaluation of risk due to TPH.
- should log BTEX/MTBE vs. time be used instead? best fit line

ENVIRONMENTAL RESOLUTIONS, INC.

September 12, 2001
ERI 250603.R01

SEP 14 2001

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

Subject: Risk-Based Corrective Action Tier II Analysis for Former Exxon Service Station 7-0104, 1725 Park Street, Alameda, California.

Mr. Ortega:

At the request of ExxonMobil Refining and Supply (formerly Exxon Company, U.S.A.) (ExxonMobil), Environmental Resolutions, Inc. (ERI) conducted a Risk-Based Corrective Action (RBCA) analysis pursuant to the American Society for Testing and Materials (ASTM) E-1739 "Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites". The purpose of the analysis was to establish site-specific remediation target levels for gasoline constituents previously detected in soil and groundwater. This report summarizes the RBCA analysis.

BACKGROUND

The site is located on the western corner of Park Street and Eagle Avenue as shown on the Site Vicinity Map (Plate 1). The locations of underground storage tanks (USTs), dispenser islands, and other selected site features are shown on the Generalized Site Plan (Plate 2). There is an active Shell-branded Service Station located at 1701 Park Street (upgradient of the site), as well as an active Chevron Service Station and two inactive former gasoline (unknown brand) service stations down and cross gradient of the site.

The site has eleven groundwater monitoring wells (MW1 through MW9, MW11, and MW12), two soil vapor extraction (SVE) wells (VW1 and VW2), three air sparge (AS) wells (SM1, SW1, and AS1), and five groundwater extraction wells (EW1 through EW5) as shown on Plate 2. Based on quarterly groundwater monitoring data, historical depths to water (DTW) measurements have ranged from approximately 3 to 23 feet below ground surface (bgs).

The air sparge/soil vapor extraction (AS/SVE) system began operation on February 16, 1998 and has operated continuously since that date.

SITE CONDITIONS

Site Stratigraphy

Based on the results of previous investigation, there appears to be one upper water-bearing zone at the site. There is a sandy unit underlying the site that extends from the ground surface to approximately 40 feet bgs (the depth of investigation). This sand layer contains sand, silty sand, and clayey sand.

Constituent Distribution in Groundwater

Total petroleum hydrocarbons as gasoline (TPHg) has been detected in groundwater samples at up to 59,400 micrograms per liter (ug/L), methyl tertiary butyl ether (MTBE) at up to 140,000 ug/L, and benzene has been detected at up to 10,000 ug/L. During the most recent quarterly groundwater monitoring and sampling event concentrations of TPHg were detected at up to 39,000 ug/L, MTBE at up to 3,100 ug/L, and benzene at up to 2,600 ug/L. Historical and recent monitoring data are summarized in Table 1.

The concentrations of TPHg, MTBE, and BTEX appear to be decreasing or present in stable concentrations. Graphs showing the concentrations of TPHg, MTBE, and benzene over time are included in Attachment A.

ERI has sampled for total petroleum hydrocarbons as diesel (TPHd) in monitoring wells MW3, MW6, MW8, and MW11 since the first quarter 2001. TPHd has been detected in groundwater at up to 2,000 ug/L. To ERI's knowledge, there is no record of TPHd being stored or dispensed at this site.

ERI calculated the average hydraulic gradient and groundwater flow direction using data collected from monitoring wells MW2, MW6, MW8, MW9, and MW11. These wells are located a sufficient distance from the vapor extraction wells so that the effects of the remediation on the groundwater elevations should be minimal. Utilizing elevation data gathered since the second quarter 2000, ERI calculated an average hydraulic gradient of 0.016, with groundwater flowing in an easterly direction. A groundwater flow direction rose diagram is included as Plate 3.

Constituent Distribution in Soil

Gasoline hydrocarbons as TPHg have been detected in soil samples at concentrations up to 2,600 milligrams per kilogram (mg/Kg), and benzene has been detected at concentrations up to 7.6 mg/Kg. MTBE was not detected in the three samples that were analyzed for MTBE. Cumulative analytical laboratory results of soil samples are presented in Table 2.

RBCA TIER II EVALUATION

ERI performed a RBCA analysis for benzene, toluene, ethylbenzene and total xylenes (BTEX), and a separate RBCA analysis for MTBE. The RBCA analyses were performed to evaluate the potential risk posed by existing site conditions and to establish site-specific remediation target levels for BTEX and MTBE. These RBCA output files are presented in Attachment B.

Is there a water supply well likely to be impacted to used GW ingestion as a potential exposure pathway

Were all GW conc from all wells use? Should use GW from wells w/in source area from last 4 quarters. For off site, use wells off-site, For potential future use - eg. residential use outside GW data w/in source area.

ERI evaluated the following exposure pathways in the Tier II assessment:

Input Parameters

- 1,384 feet was used as the distance to the nearest groundwater receptor (the tidal canal) based on the distance measured on the United States Geological Survey Map (Plate 1).
- 20 feet was used as the distance to the nearest off-site air receptor based on a site visit.
- A 110-foot by 110-foot box was used to define the contaminated soil area.
- A vadose-zone thickness of 5.5 feet was calculated using the average yearly fluctuations in groundwater elevation measurements.
- The thickness of the affected subsurface soil (10 feet thick) was determined using soil analytical data as well as the average depth to water (DTW) measurements.
- 0.003 centimeters per second (cm/s) was entered as the saturated hydraulic conductivity based on the sediment type.
- As recommended by the State of California, a slope factor of 0.1 was used for toxicity calculations.
- A maximum contaminant level (MCL) concentration of 13 parts per billion (ppb) was used for MTBE in groundwater.
- Bio-attenuation was not considered in transport modeling for MTBE.

Exposure Pathways

- Surface soil, direct ingestion and dermal contact (commercial receptor) use soil < 3 feet bgs data
- Surface soil, volatilization to outdoor air (inhalation: residential and commercial receptor)
- Subsurface soil, volatilization to indoor air (inhalation: commercial receptor)
- Subsurface soil, volatilization to outdoor air (inhalation: residential and commercial receptor)
- Groundwater, volatilization to outdoor air (inhalation: commercial receptor)
- Groundwater, volatilization to indoor air (inhalation: commercial receptor)
- Groundwater, ingestion (residential receptor)
- Soils leaching to groundwater (residential receptor)

RESULTS

Using the 90% upper confidence limit (UCL) for soil and groundwater concentrations, the regulatory site-specific target levels (SSTLs) are not exceeded for BTEX. Using the 90% UCL for soil and groundwater concentrations, the regulatory SSTLs are exceeded by current on-site MTBE representative concentrations. The representative MTBE concentration for the site is currently 650 µg/L, and the calculated SSTL for MTBE in groundwater is 120 µg/L.

RECOMMENDATIONS

Based on the results of the Tier II RBCA analysis, ERI recommends that ExxonMobil conduct active groundwater remediation at the site to reduce dissolved MTBE concentrations to less than 120 µg/L, the calculated SSTL for the site. ERI also recommends that a file search for adjacent properties be conducted to help evaluate plume size, migration, and the appropriate method of remediation. After the historical groundwater and plume migration patterns are known for the site and potential off-site

sources, impacts by off-site sources, the need for additional monitoring wells for plume definition, and potential remedial alternatives that will minimize plume migration onto or off of the subject site can be better evaluated.

DOCUMENT DISTRIBUTION

ERI recommends forwarding copies of this report to:

Ms. Eva Chu
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

Mr. Winson B. Low
Environmental and Safety Affairs Department
One Valero Place, MS-06E
San Antonio, Texas 78212

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.

Please call Mr. Scott R. Graham at (415) 382-5989 with any questions regarding this report.

Sincerely,
Environmental Resolutions, Inc.

Scott R. Graham
Assistant Program Manager

John B. Bobbitt
R.G. 4313

sgraham@eri-us.com

http://www.state.ma.us/dep/bwsc/vhp_eph.htm

(2) waste site cleanup types

(3) VPH/EPH

(4) publication by programs

Attachments:

Table 1:	Cumulative Groundwater Monitoring and Sampling Data
Table 2:	Cumulative Analytical Laboratory Results of Soil Samples
Plate 1:	Site Vicinity Map
Plate 2:	Generalized Site Plan
Plate 3:	Groundwater Flow Direction Rose Diagram
Attachment A:	Concentration vs. Time Charts
Attachment B:	RBCA Output Files
Attachment B:	RBCA Output Files Alternate Receptor

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW1	09/12/94	NLPH	7.11	10.24	---	1,600a	---	200	1.9	210	6.6	---
(17.35)	10/01/94	NLPH	7.44	9.91	---	1,400a	---	200	<0.5	160	6.6	---
	01/13/95	NLPH	5.13	12.22	---	2,100a	---	410b	17	280b	89	---
	04/27/95	NLPH	6.57	10.78	---	4,700	---	460	41	340	270	---
	08/03/95	NLPH	7.46	9.89	---	1,900	30	140	<5.0	160	9.9	---
	10/17/95	NLPH	7.67	9.68	---	280	5.5	6.2	<0.5	13	0.75	---
	01/24/96	NLPH	6.52	10.83	---	740	440	21	1.4	38	3.1	---
	04/24/96	NLPH	5.95	11.40	---	7,800	250	200	110	1,000	740	---
	07/26/96	NLPH	7.60	9.75	---	620	23	8.0	0.99	26	1.0	---
	10/30/96	NLPH	8.06	9.29	---	700	33	14	2.9	85	3.5	---
	01/31/97	NLPH	5.12	12.23	---	7,600	<200	420	33	1,400	480	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.54	9.81	---	580	12	10	<0.5	<0.5	<0.5	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	4.48	12.87	---	820	<2.5c	110	2.8	170	14	---
	04/14/98	---	4.69	12.66	---	---	---	---	---	---	---	---
	07/30/98	NLPH	6.19	11.16	---	2,700	41	210	<5.0	550	<5.0	---
	10/19/98	NLPH	6.72	10.63	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.52	10.83	---	491	9.78	8.0	<0.5	<0.5	<0.5	---
	04/28/99	---	5.37	11.98	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.39	10.96	---	1,030	10.6	114	8.07	184	0.644	---
	10/25/99	NLPH	6.68	10.67	---	---	---	---	---	---	---	---
	01/21/00	NLPH	6.20	11.15	---	<50	5.1	<1.0	<1.0	<1.0	<1.0	---
	04/14/00	NLPH	5.18	12.17	---	---	---	---	---	---	---	---
	07/05/00	NLPH	5.93	11.42	---	88	200	4.3	<0.5	0.61	<0.5	---
	10/03/00	NLPH	6.51	10.84	---	<50	240	0.72	<0.5	<0.5	<0.5	---
	01/02/01	NLPH	6.17	11.18	---	<50	68	0.75	<0.5	<0.5	<0.5	---
	04/02/01	**NLPH**	**7.42**	**9.93**	**---**	**140**	**4.3**	**<0.5**	**<0.5**	**4.1**	**1.1**	**---**

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW2	09/12/94	NLPH	6.71	9.96	---	31,000a	---	4,400	120	1,700	2,100	---
(16.67)	10/01/94	NLPH	7.22	9.45	---	45,000a	---	4,500	250	1,800	2,400	---
	01/13/95	NLPH	4.46	12.21	---	---	---	---	---	---	---	---
	04/27/95	NLPH	6.92	9.75	---	44,000	---	7,000	840	2,400	3,400	---
	08/03/95	NLPH	6.96	9.71	---	30,000	37,000	4,600	170	1,600	1,100	---
	10/17/95	NLPH	7.83	8.84	---	45,000	14,000	5,400	190	2,000	1,500	---
	01/24/96	NLPH	6.45	10.22	---	30,000	4,100	5,000	810	2,200	2,200	---
	04/24/96	NLPH	6.00	10.67	---	34,000	22,000	8,700	410	2,200	2,000	---
	07/26/96	NLPH	7.14	9.53	---	40,000	18,000	10,000	<200	1,800	760	---
	10/30/96	NLPH	6.95	9.72	---	43,000	18,000	9,100	<250	2,400	730	---
	01/31/97	NLPH	5.07	11.60	---	28,000	8,000c	2,400	630	1,500	3,300	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.34	9.33	---	18,000	2,600	2,900	82	1,500	530	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	4.46	12.21	---	29,000	28,000c	5,600	410	1,500	720	---
	04/14/98	---	4.48	12.19	---	---	---	---	---	---	---	---
	07/30/98	NLPH	6.01	10.66	---	24,000	6,300	7,500	<200	1,300	280	---
	10/19/98	NLPH	6.35	10.32	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.54	10.13	---	18,400	2,200	4,750	211	1,760	45.3	---
	04/28/99	---	5.54	11.13	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.45	10.22	---	14,100	3,410	4,270	80.1	1,300	339	---
	10/25/99	---	---	---	---	---	---	---	---	---	---	---
	01/21/00	---	---	---	---	---	---	---	---	---	---	---
	02/11/00	NLPH	---	---	---	<50	15	<1.0	<1.0	<1.0	<1.0	---
	04/14/00	NLPH	4.69	11.98	---	---	---	---	---	---	---	---
	07/05/00	NLPH	5.44	11.23	---	150	86	15	<0.5	6.2	2.8	---
	10/03/00	NLPH	6.31	10.36	---	200	2,500	35	0.51	5.1	12	---
	01/02/01	---	---	---	---	---	---	---	---	---	---	---
	04/02/01	**NLPH**	**5.00**	**11.67**	---	**<50**	**680**	**3.6**	**<0.5**	**<0.5**	**<0.5**	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW3	09/12/94	NLPH	6.58	10.53	---	3,100a	---	580	8	340	100	---
(17.11)	10/01/94	NLPH	6.85	10.26	---	3,800a	---	640	11	230	130	---
	01/13/95	NLPH	5.27	11.84	---	3,800a	---	690	24	210	130	---
	04/27/95	NLPH	6.05	11.06	---	7,500	---	940	35	810	530	---
	08/03/95	NLPH	6.71	10.40	---	1,900	24	380	<5.0	140	45	---
	10/17/95	NLPH	7.46	9.65	---	6,100	<5.0	950	29	230	190	---
	01/24/96	NLPH	5.83	11.28	---	3,000	<100	730	15	190	110	---
	04/24/96	NLPH	5.38	11.73	---	11,000	<100	1,200	130	1,000	1,400	---
	07/26/96	NLPH	6.80	10.31	---	2,500	250	800	16	24	56	---
	10/30/96	NLPH	7.20	9.91	---	5,200	2,900	1,300	28	170	180	---
	01/31/97	NLPH	4.31	12.80	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	4.03	13.08	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.80	13.31	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.84	11.27	---	---	---	---	---	---	---	---
	10/19/98	NLPH	6.25	10.86	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.14	10.97	---	---	---	---	---	---	---	---
	04/28/99	---	4.95	12.16	---	---	---	---	---	---	---	---
	07/09/99	---	---	---	---	---	---	---	---	---	---	---
	10/25/99	---	---	---	---	---	---	---	---	---	---	---
	01/21/00	---	---	---	---	---	---	---	---	---	---	---
	04/14/00	---	---	---	---	---	---	---	---	---	---	---
	07/05/00	---	---	---	---	---	---	---	---	---	---	---
	10/03/00	---	---	---	---	---	---	---	---	---	---	---
	01/02/01	NLPH	5.78	11.33	560d	2,700	3,100	1300	8.8	11	21.3	---
	04/02/01	**NLPH**	**4.71**	**12.40**	**620**	**3,700**	**1,400**	**1,400**	**11**	**36**	**21**	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<.....feet.....>			<.....ug/L.....>							
MW4	09/12/94	NLPH	6.80	10.54	---	5,200a	---	900	57	310	490	---
(17.34)	10/01/94	NLPH	7.09	10.25	---	9,100a	---	1,200	66	360	380	---
	01/13/95	NLPH	4.66	12.68	---	25,000a	---	1,300	200	550	1,000	---
	04/27/95	NLPH	5.54	11.80	---	5,900	---	650	130	350	590	---
	08/03/95	NLPH	6.92	10.42	---	4,200	5,700	1,000	<12	170	140	---
	10/17/95	NLPH	7.50	9.84	---	6,900	1,700	1,300	30	360	380	---
	01/24/96	NLPH	5.81	11.53	---	6,300	830	1,900	46	290	330	---
	04/24/96	NLPH	5.44	11.90	---	5,000	1,600	1,800	<20	190	130	---
	07/26/96	NLPH	7.03	10.31	---	9,100	1,200	1,700	<25	340	280	---
	10/30/96	NLPH	7.57	9.77	---	5,300	1,500	1,100	35	420	300	---
	01/31/97	NLPH	4.22	13.12	---	6,500	40,000	1,200	28	490	130	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.56	9.78	---	10,000	11,000	1,100	120	470	720	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.70	13.64	---	1,700	4,900c	450	6.8	220	73	---
	04/14/98	---	3.81	13.53	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.96	11.38	---	2,900	2,800	680	<10	220	56	---
	10/19/98	NLPH	6.51	10.83	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.24	11.10	---	2,140	1,800	146	<10	60.9	16.2	---
	04/28/99	---	4.80	12.54	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.04	11.30	---	1,300	1,310	322	<2.5	76.1	<2.5	---
	10/25/99	NLPH	6.51	10.83	---	---	---	---	---	---	---	---
	01/21/00	NLPH	5.75	11.59	---	2,200	1,000	410	3.70	40	14.4	---
	04/14/00	NLPH	4.39	12.95	---	---	---	---	---	---	---	---
	07/05/00	NLPH	5.48	11.86	---	1,600	260	400	3.9	100	84	---
	10/03/00	NLPH	6.22	11.12	---	1,600	190	280	2	64	34.10	---
	01/02/01	NLPH	5.93	11.41	---	840	1,000	210	2.5	45	28.10	---
	04/02/01	**NLPH**	**4.89**	**12.45**	---	**1,900**	**320**	**340**	**8.5**	**110**	**116**	**---**

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	< feet >			< ug/L >							
MW5	09/12/94	NLPH	7.12	9.59	---	10,000a	---	2,300	17	320	230	---
(16.71)	10/01/94	Sheen	7.06	9.65	---	11,000a	---	2,300	19	220	200	---
	01/13/95	thickness of	4.85	11.86	---	---	---	---	---	---	---	---
	04/27/95	NLPH	6.51	10.20	---	14,000	---	2,200	72	540	350	---
	08/03/95	NLPH	7.24	9.47	---	< 10,000	39,000	2,100	< 100	210	< 100	---
	10/17/95	NLPH	7.80	8.91	---	13,000	38,000	1,800	14	240	170	---
	01/24/96	NLPH	6.66	10.05	---	10,000	20,000	2,400	79	340	190	---
	04/24/96	NLPH	5.80	10.91	---	13,000	33,000	3,700	120	520	170	---
	07/26/96	NLPH	7.67	9.04	---	15,000	140,000	3,400	53	280	76	---
	10/30/96	NLPH	7.77	8.94	---	10,000	110,000a	2,600	76	260	150	---
	01/31/97	NLPH	4.90	11.81	---	10,000	34,000c	2,400	66	430	140	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.65	9.06	---	9,800	36,000/52,000c	1,400	120	190	120	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.95	12.76	---	6,500	15,000c	1,500	34	73	57	---
	04/14/98	---	4.30	12.41	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.86	10.85	---	8,300	4,300	1,700	26	110	66	---
	10/19/98	NLPH	6.20	10.51	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.37	10.34	---	4,780	3,650	1,240	11.1	< 10	< 10	---
	04/28/99	---	5.25	11.46	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.08	10.63	---	4,360	2,360	1,780	18.6	45	< 5.0	---
	10/25/99	NLPH	6.46	10.25	---	---	---	---	---	---	---	---
	01/21/00	NLPH	5.79	10.92	---	2,600	3,100	720	4.7	25	11.3	---
	04/14/00	NLPH	4.57	12.14	---	---	---	---	---	---	---	---
	07/05/00	NLPH	5.37	11.34	---	5,100	380	1,800	14	52	34	---
	10/03/00	NLPH	5.93	10.78	---	5,800	630	2,000	8.9	59	21	---
	01/02/01	NLPH	5.68	11.03	---	4,800	1,100	1,600	9.6	38	15	---
	04/02/01	**NLPH**	**4.87**	**11.84**	---	**6,800**	**1,500**	**2,000**	**40**	**150**	**49**	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW6	09/12/94	NLPH	6.88	10.68	---	1,500a	---	150	4.4	170	85	---
(17.56)	10/01/94	NLPH	7.15	10.41	---	87a	---	120	<0.5	99	38	---
	01/13/95	NLPH	4.80	12.76	---	9,900a	---	710	220	780	1,100	---
	04/27/95	NLPH	6.14	11.42	---	3,900	---	340	40	460	320	---
	08/03/95	NLPH	6.83	10.73	---	1,100	65	89	<2.5	110	63	---
	10/17/95	NLPH	7.66	9.90	---	8,500	<5.0	410	74	850	110	---
	01/24/96	NLPH	5.86	11.70	---	31,000	<5.0	560	1,500	2,200	7,500	---
	04/24/96	NLPH	5.39	12.17	---	15,000	280	460	570	1,400	3,300	---
	07/26/96	NLPH	6.97	10.59	---	27,000	1,300	270	660	1,600	5,500	---
	10/30/96	NLPH	7.45	10.11	---	28,000	900	490	440	1,800	6,200	---
	01/31/97	NLPH	4.30	13.26	---	7,000	770	190	1,000	380	1,400	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.57	9.99	---	6,800	1,100	200	<50	300	860	---
	10/08/97	NLPH	7.48	10.08	---	51,000	580	870	7,300	2,600	12,000	700c
	01/28/98	NLPH	3.74	13.82	---	15,000	2,400c	650	2,300	900	2,700	---
	04/14/98	NLPH	3.92	13.64	---	25,000	2,100c	850	3,300	1,200	4,300	---
	07/30/98	NLPH	6.09	11.47	---	5,900	910	270	65	500	630	---
	10/19/98	NLPH	6.56	11.00	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.35	11.21	---	3,150	422	204	107	297	304	---
	04/28/99	NLPH	4.89	12.67	---	15,300	436c	1,270	980	1,100	3,320	436c
	07/09/99	NLPH	6.07	11.49	---	1,140	439	121	9.95	160	4.69	---
	10/25/99	NLPH	6.11	11.45	---	2,200	3,400	590	<10	22	12.1	---
	01/21/00	NLPH	5.86	11.70	---	1,300	1,000	95	15	94	74	---
	04/14/00	NLPH	4.29	13.27	---	13,000	420	440	630	840	3,000	---
	07/05/00	NLPH	5.39	12.17	---	5,800	830	1,000	13	550	798	---
	10/03/00	NLPH	6.14	11.42	---	490	3,800	61	<0.5	74	12	---
	01/02/01	---	---	---	---	---	---	---	---	---	---	---
	04/02/01	**NLPH**	**4.70**	**12.86**	**400**	**16,000**	**450**	**370**	**690**	**870**	**3,200**	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW7	09/12/94	NLPH	6.43	10.69	---	6,000a	---	490	50	280	70	---
(17.12)	10/01/94	NLPH	6.71	10.41	---	8,900a	---	940	670	310	160	---
	01/13/95	NLPH	4.29	12.83	---	20,000a	---	590	780	970	4,200	---
	04/27/95	NLPH	5.00	12.12	---	8,800	---	410	32	410	230	---
	08/03/95	NLPH	6.53	10.59	---	4,900	17,000	390	<50	290	<50	---
	10/17/95	NLPH	7.23	9.89	---	6,700	17,000	530	26	240	25	---
	01/24/96	NLPH	5.26	11.86	---	9,300	60,000	2,000	390	350	230	---
	04/24/96	NLPH	5.06	12.06	---	9,000	360,000	2,400	850	150	130	---
	07/26/96	NLPH	6.62	10.50	---	4,800	86,000	530	25	60	46	---
	10/30/96	NLPH	7.09	10.03	---	3,400	28,000	180	9.8	58	38	---
	01/31/97	NLPH	3.65	13.47	---	3,800	45,000	300	18	48	37	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.44	9.68	---	3,500	18,000	70	<25	<25	<25	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.06	14.06	---	100	250c	1.0	<0.5	<0.5	0.67	---
	04/14/98	---	3.10	14.02	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.78	11.34	---	100	670	1.4	<0.5	<0.5	<0.5	---
	10/19/98	NLPH	6.25	10.87	---	---	---	---	---	---	---	---
	01/13/99	NLPH	5.98	11.14	---	273	530	<2.5	<2.5	<2.5	<2.5	---
	04/28/99	---	4.32	12.80	---	---	---	---	---	---	---	---
	07/09/99	NLPH	5.67	11.45	---	139	860	3.79	7.10	1.19	8.65	---
	10/25/99	NLPH	6.23	10.89	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---
	01/21/00	NLPH	5.41	11.71	---	410	500	10	2.5	<1.0	2.5	---
	04/14/00	NLPH	3.84	13.28	---	---	---	---	---	---	---	---
	07/05/00	NLPH	5.05	12.07	---	140	480	<0.5	<0.5	<0.5	0.56	---
	10/03/00	NLPH	5.88	11.24	---	370	1,900	<0.5	0.62	<0.5	3.20	---
	01/02/01	NLPH	5.52	11.60	---	120	1,500	2.2	<0.5	<0.5	<0.5	---
	04/02/01	**NLPH**	**4.26**	**12.86**	---	**120**	**1,500**	**0.91**	**<0.5**	**<0.5**	**<0.5**	**---**

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW8	09/12/94	NLPH	6.42	9.91	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
(16.33)	10/01/94	NLPH	6.62	9.71	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
	01/13/95	NLPH	5.25	11.08	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
	04/27/95	NLPH	6.00	10.33	---	<50	---	<0.5	<0.5	<0.5	<0.5	---
	08/03/95	NLPH	6.28	10.05	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/95	NLPH	6.93	9.40	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	5.71	10.62	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	04/24/96	NLPH	5.52	10.81	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	07/26/96	NLPH	6.27	10.06	---	<50	230	<0.5	<0.5	<0.5	<0.5	---
	10/30/96	NLPH	6.69	9.64	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	5.18	11.15	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	5.11	11.22	---	---	---	---	---	---	---	---
	04/14/98	NLPH	5.02	11.31	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	07/30/98	NLPH	5.84	10.49	---	<50	6.6	<0.5	<0.5	<0.5	<0.5	---
	10/19/98	NLPH	6.07	10.26	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	01/13/99	NLPH	5.59	10.74	---	<50	<2.0	<0.5	<0.5	<0.5	<0.5	---
	04/28/99	NLPH	5.38	10.95	---	<50	<0.5c	<0.5	<0.5	<0.5	<0.5	ND
	07/09/99	NLPH	5.71	10.62	---	<50	3.01	<0.5	<0.5	<0.5	<0.5	---
	10/25/99	NLPH	6.15	10.18	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---
	01/21/00	NLPH	6.51	9.82	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---
	04/14/00	Brown	5.54	10.79	---	<50	<1	<1	<1	<1	<1	---
	07/05/00	NLPH	5.67	10.66	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	10/03/00	NLPH	6.02	10.31	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	01/02/01	NLPH	5.95	10.38	140d	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	04/02/01	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<....feet....>			<....ug/L....>							
MW9	09/12/94	NLPH	6.84	8.78	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
(15.62)	10/01/94	NLPH	6.97	8.65	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
	01/13/95	NLPH	6.18	9.44	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---
	04/27/95	NLPH	6.58	9.04	---	<50	---	<0.5	<0.5	<0.5	<0.5	---
	08/03/95	NLPH	6.72	8.90	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/95	NLPH	7.09	8.53	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	6.46	9.16	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	04/24/96	NLPH	6.43	9.19	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	07/26/96	NLPH	6.80	8.82	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	10/30/96	NLPH	6.94	8.68	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	6.10	9.52	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	5.66	9.96	---	---	---	---	---	---	---	---
	04/14/98	---	---	---	---	---	---	---	---	---	---	---
	07/30/98	NLPH	6.17	9.45	---	---	---	---	---	---	---	---
	10/19/98	NLPH	6.40	9.22	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.28	9.34	---	---	---	---	---	---	---	---
	04/28/99	NLPH	5.87	9.75	---	<50	<0.5c	<0.5	<0.5	<0.5	<0.5	ND
	07/09/99	NLPH	6.24	9.38	---	<50	<2.0	<0.5	<0.5	<0.5	<0.5	---
	10/25/99	NLPH	6.67	8.95	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---
	01/21/00	NLPH	6.93	8.69	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---
	04/14/00	Turbid	6.05	9.57	---	<50	<1	<1	<1	<1	<1	<1
	07/05/00	NLPH	6.34	9.28	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	10/03/00	NLPH	6.52	9.10	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	01/02/01	NLPH	6.53	9.09	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---
	04/02/01	**NLPH**	**6.21**	**9.41**	**---**	**<50**	**<2**	**<0.5**	**<0.5**	**0.57**	**0.73**	**---**

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
MW10	09/12/94	NLPH	7.04	9.75	---	71a	---	<0.5	<0.5	1.6	<0.5	---
(16.79)	10/01/94	NLPH	7.30	9.49	---	330a	---	1.1	<0.5	2.8	0.73	---
	01/13/95	NLPH	6.04	10.75	---	90a	---	<0.5	<0.5	<0.5	<0.5	---
	04/27/95	NLPH	6.66	10.13	---	140	---	<0.5	<0.5	5.4	1.3	---
	08/03/95	NLPH	7.23	9.56	---	150	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/95	NLPH	7.93	8.86	---	<50	95	<0.5	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	6.43	10.36	---	760	24	1.6	0.52	62	28	---
	04/24/96	NLPH	6.42	10.37	---	110	6.8	<0.5	<0.5	7.1	<0.5	---
	07/26/96	NLPH	7.47	9.32	---	140	<5.0	<0.5	<0.5	12	0.86	---
	10/30/96	NLPH	7.88	8.91	---	<50	5.6	<0.5	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	5.88	10.91	---	<50	10	<0.5	<0.5	<0.5	<0.5	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.32	9.47	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	12/12/97	Well destroyed.			---							
MW11	10/17/95	NLPH	7.72	10.32	---	34,000	890	3,800	150	950	4,500	---
(18.04)	01/24/96	NLPH	5.97	12.07	---	44,000	<500	3,800	1,200	2,100	9,800	---
	04/24/96	NLPH	5.84	12.20	---	34,000	720	2,900	1,400	1,700	8,300	---
	07/26/96	NLPH	6.98	11.06	---	39,000	800	4,600	4,200	950	9,500	---
	10/30/96	NLPH	7.54	10.50	---	53,000	990	4,200	3,600	2,100	9,600	---
	01/31/97	NLPH	5.00	13.04	---	23,000	310c	170	2,500	940	4,300	---
	04/10/97	NLPH	---	---	---	29,000	200	1,200	440	970	6,400	---
	07/10/97	NLPH	7.30	10.74	---	42,000	690	1,700	870	1,900	12,000	---
	10/08/97	NLPH	7.62	10.42	---	42,000	1,100	1,700	2,500	1,400	9,900	1,300c
	01/28/98	NLPH	4.77	13.27	---	35,000	6,800c	2,400	3,500	1,700	7,900	---
	04/14/98	NLPH	4.68	13.36	---	15,000	1,200c	1,700	250	500	2,000	---
	07/30/98	NLPH	6.33	11.71	---	24,000	1,700	1,600	560	1,000	4,300	---
	10/19/98	NLPH	6.65	11.39	---	29,000	1,700	1,200	2,500	920	4,900	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	< feet >			< ug/L >							
MW11 (cont)	01/13/99	NLPH	6.42	11.62	---	50,900	1,920	2,210	6,440	2,030	10,600	---
(18.04)	04/28/99	NLPH	5.30	12.74	---	59,400	2,390c	3,790	4,260	1,790	2,970	2,390c
	07/09/99	NLPH	6.22	11.82	---	51,500	4,630	5,890	5,340	2,370	12,700	---
	10/25/99	NLPH	6.77	11.27	---	51,000	1,700	3,900	5,800	2,300	12,300	---
	01/21/00	NLPH	6.47	11.57	---	56,000	1,100	2,300	4,600	2,100	11,600	---
	04/14/00	NLPH	5.09	12.95	---	42,000	2,100	3,000	2,600	1,600	8,000	---
	07/05/00	NLPH	5.93	12.11	---	32,000	3,900	3,000	2,700	1,300	6,200	---
	10/03/00	NLPH	6.57	11.47	---	46,000	4,300	2,900	3,600	1,600	7,900	---
	01/02/01	NLPH	6.46	11.58	1,600d	44,000	4,200	3,900	3,600	1,300	6,500	---
	04/02/01	**NLPH**	**5.44**	**12.60**	**2,000**	**39,000**	**3,100**	**2,600**	**3,600**	**1,500**	**7,500**	—
MW12	10/17/95	NLPH	6.38	9.92	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
(16.30)	01/24/96	NLPH	4.86	11.44	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	04/24/96	NLPH	4.46	11.84	---	<50	<5.0	<0.5	0.68	<0.5	0.72	---
	07/26/96	NLPH	5.90	10.40	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	10/30/96	NLPH	6.56	9.74	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	4.57	11.73	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.90	12.40	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.67	12.63	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.00	11.30	---	---	---	---	---	---	---	---
	10/19/98	NLPH	---	---	---	---	---	---	---	---	---	---
	01/13/99	NLPH	5.19	11.11	---	---	---	---	---	---	---	---
	04/28/99	---	4.53	11.77	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through 4/2/01.					---	---	---	---	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<	feet	>	<			ug/L				>
EW-1	09/12/94	NLPH	6.13	10.09	---	400a	---	40	<0.5	10	5.4	---
(16.22)	10/01/94	NLPH	7.63	8.59	---	3,400a	---	<0.5	4.4	30	11	---
	01/13/95	NLPH	11.46	4.76	---	680a	---	40	<0.5	12	16	---
	04/27/95	NLPH	15.47	0.75	---	---	---	---	---	---	---	---
	08/03/95	NLPH	13.85	2.37	---	<125	590	2.7	<1.2	<1.2	<1.2	---
	10/17/95	NLPH	8.05	8.17	---	3,600	400	220	<0.5	160	36	---
	01/24/96	NLPH	11.07	5.15	---	64	260	4.3	<0.5	1.3	0.53	---
	04/24/96	NLPH	6.20	10.02	---	740	3,000	130	2.3	35	2.1	---
	07/26/96	NLPH	13.93	2.29	---	<50	960	<0.5	<0.5	<0.5	<0.5	---
	10/30/96	NLPH	13.74	2.48	---	<50	5,300	0.52	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	8.40	7.82	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.35	12.87	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.52	12.70	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.48	10.74	---	---	---	---	---	---	---	---
	10/19/98	NLPH	5.77	10.45	---	---	---	---	---	---	---	---
	01/13/99	NLPH	5.49	10.73	---	---	---	---	---	---	---	---
	04/28/99	NLPH	4.31	11.91	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through present.					---	---	---	---	---	---	---
EW-2	09/12/94	NLPH	6.09	9.96	---	8,800a	---	2,000	79	180	290	---
(16.05)	10/01/94	NLPH	7.32	8.73	---	9,500a	---	1,400	6.7	700	310	---
	01/13/95	NLPH	14.38	1.67	---	5,700a	---	930	270	21	280	---
	04/27/95	NLPH	15.23	0.82	---	---	---	---	---	---	---	---
	08/03/95	NLPH	7.19	8.86	---	830	1,600	170	27	36	64	---
	10/17/95	NLPH	18.97	-2.92	---	180	3,600	<0.5	<0.5	<0.5	5.1	---
	01/24/96	NLPH	20.32	-4.27	---	1,700	6,400	290	82	14	170	---
	04/24/96	NLPH	9.46	6.59	---	3,500	7,300	670	200	110	490	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<.....feet.....>			<.....ug/L.....>							
EW-2 (cont)	07/26/96	NLPH	16.50	-0.45	---	1,400	14,000	250	56	10	220	---
(16.05)	10/30/96	NLPH	20.30	-4.25	---	1,500	13,000	200	44	8.8	190	---
	01/31/97	NLPH	19.21	-3.16	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.35	12.70	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.45	12.60	---	---	---	---	---	---	---	---
	07/30/98	NLPH	11.50	4.55	---	---	---	---	---	---	---	---
	10/19/98	NLPH	5.67	10.38	---	---	---	---	---	---	---	---
	01/13/99	NLPH	9.57	6.48	---	---	---	---	---	---	---	---
	04/28/99	NLPH	10.15	5.90	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through present.					---	---	---	---	---	---	---
EW-3	09/12/94	NLPH	6.12	9.90	---	300a	---	44	5.9	12	31	---
(16.02)	10/01/94	NLPH	10.52	5.50	---	140a	---	12	0.42	1.7	3.7	---
	01/13/95	NLPH	18.13	-2.11	---	230a	---	4.6	7.6	1.2	6.6	---
	04/27/95	NLPH	23.07	-7.05	---	---	---	---	---	---	---	---
	08/03/95	NLPH	22.90	-6.88	---	<200	1,400	<2.0	<2.0	<2.0	<2.0	---
	10/17/95	NLPH	22.87	-6.85	---	74	2,400	4.4	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	20.97	-4.95	---	120	2,300	16	<0.5	<0.5	<0.5	---
	04/24/96	NLPH	18.10	-2.08	---	180	3,800	34	3.7	8.9	11	---
	07/26/96	NLPH	13.14	2.88	---	180	2,000	45	0.7	<0.5	2.1	---
	10/30/96	NLPH	9.24	6.78	---	660	2,800	60	8.2	<0.5	100	---
	01/31/97	NLPH	11.10	4.92	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.42	12.60	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.50	12.52	---	---	---	---	---	---	---	---
	07/30/98	NLPH	18.57	-2.55	---	---	---	---	---	---	---	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<.....feet.....>			<.....ug/L.....>							
EW-3(cont.)	10/19/98	NLPH	5.65	10.37	---	---	---	---	---	---	---	---
(16.02)	01/13/99	NLPH	13.85	2.17	---	---	---	---	---	---	---	---
	04/28/99	NLPH	4.52	11.50	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through present.					---	---	---	---	---	---	---
EW-4	09/12/94	NLPH	5.69	10.92	---	4,000a	---	1,700	12	210	77	---
(16.61)	10/01/94	NLPH	7.90	8.71	---	460a	---	100	1.5	15	11	---
	01/13/95	NLPH	11.36	5.25	---	520a	---	89	8.8	1.6	82	---
	04/27/95	NLPH	16.30	0.31	---	---	---	---	---	---	---	---
	08/03/95	NLPH	6.45	10.16	---	42,000	17,000	3,100	1,100	2,000	8,200	---
	10/17/95	NLPH	15.89	0.72	---	92	2,500	6.3	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	6.03	10.58	---	220	9,200	79	2.5	2.9	10	---
	04/24/96	NLPH	4.97	11.64	---	4,600	860	49	36	69	1,100	---
	07/26/96	NLPH	6.54	10.07	---	2,900	15,000	610	6.2	200	300	---
	10/30/96	NLPH	6.53	10.08	---	550	3,400	68	11	<2.5	71	---
	01/31/97	NLPH	3.98	12.63	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.22	13.39	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.20	13.41	---	---	---	---	---	---	---	---
	07/30/98	NLPH	4.89	11.72	---	---	---	---	---	---	---	---
	10/19/98	NLPH	5.16	11.45	---	---	---	---	---	---	---	---
	01/13/99	NLPH	5.57	11.04	---	---	---	---	---	---	---	---
	04/28/99	NLPH	4.27	12.34	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through present.					---	---	---	---	---	---	---
EW-5	09/12/94	NLPH	6.30	10.21	---	180a	---	26	1.7	11	12	---
(16.51)	10/01/94	NLPH	11.83	4.68	---	130a	---	16	0.92	5.7	8.5	---
	01/13/95	NLPH	12.54	3.97	---	130a	---	0.6	0.8	0.6	2.9	---
	04/27/95	NLPH	13.11	3.40	---	---	---	---	---	---	---	---
	08/03/95	NLPH	11.99	4.52	---	70	210	<0.5	<0.5	<0.5	<0.5	---
	10/17/95	NLPH	13.43	3.08	---	78	50	1.5	<0.5	<0.5	3.0	---

TABLE 1
CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Oxygenated Compounds
(TOC)	Date	<.....feet.....>			<.....ug/L.....>							
EW-5(cont.)	01/24/96	NLPH	9.72	6.79	---	2,500	350	280	66	22	370	---
(16.51)	04/24/96	NLPH	8.13	8.38	---	6,400	400	690	240	380	1,300	---
	07/26/96	NLPH	10.00	6.51	---	850	84	82	2.5	2.4	100	---
	10/30/96	NLPH	9.82	6.69	---	1,200	68	110	5.1	2.2	120	---
	01/31/97	NLPH	9.00	7.51	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.54	12.97	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.65	12.86	---	---	---	---	---	---	---	---
	07/30/98	NLPH	7.63	8.88	---	---	---	---	---	---	---	---
	10/19/98	NLPH	5.75	10.76	---	---	---	---	---	---	---	---
	01/13/99	NLPH	7.03	9.48	---	---	---	---	---	---	---	---
	04/28/99	NLPH	8.80	7.71	---	---	---	---	---	---	---	---
	Not monitored or sampled 07/09/99 through present.					---	---	---	---	---	---	---

Notes:

SUBJ	=	Results of subjective evaluation, liquid-phase hydrocarbon thickness in feet.
TOC	=	Elevation of top of well casing; in feet above mean sea level.
DTW	=	Depth to water.
Elev.	=	Elevation of groundwater in feet above mean sea level.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 5030/8015 (modified).
TPHd	=	Total petroleum hydrocarbons as diesel 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.
Oxygenated Compounds	=	Oxygenates compounds analyzed using EPA Method 8260.
NLPH	=	No liquid-phase hydrocarbons.
---	=	Not Sampled.
ug/L	=	Micrograms per liter.
<	=	Less than the stated laboratory method detection limit.
a	=	Total volatile hydrocarbons by DHS /LUFT Manual Method.
b	=	Results obtained from a 1:10 dilution analyzed on January 17, 1995.
c	=	Methyl tertiary butyl ether by EPA Method 8260 (GC/MS).
d	=	Diesel-range hydrocarbons reportedly detected in bailer blank; result is suspect

Data prior to second Quarter 2000 provided by Delta Environmental Consultants, Inc.

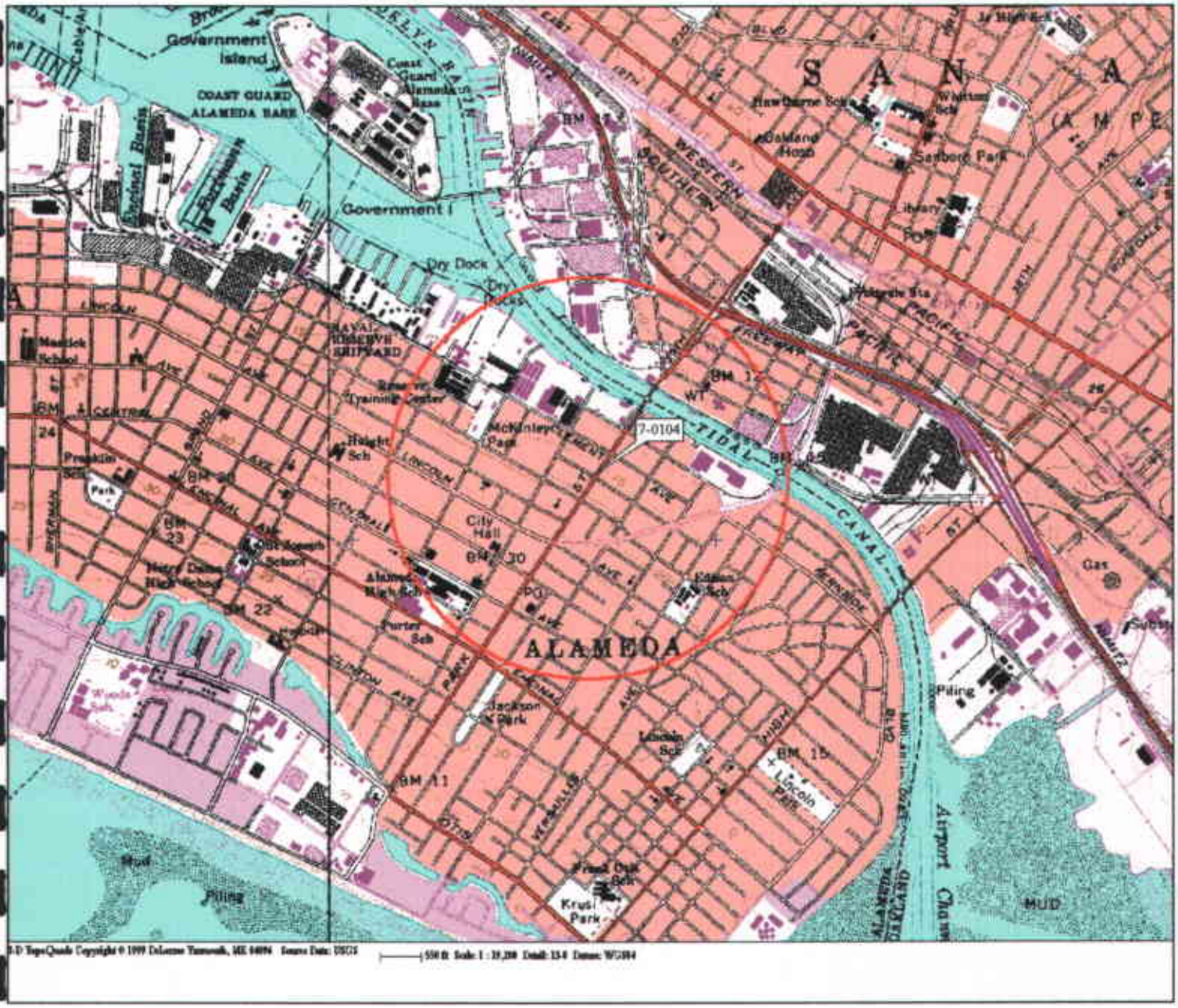
TABLE 2
CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Sample ID	Sampling Date	Sample Depth (feet)	TPHd	TPHg	MTBE	B	T	E	X
			<.....mg/kg.....>						
MW1	6/2/88	10	---	11.0	---	0.0670	<0.025	0.150	0.370
MW2	6/2/88	5	---	1,400	---	<2.0	32.0	25.0	150.0
MW3	6/2/88	5	---	74	---	<0.500	<0.500	<0.500	2.4
MW4	1/9/89	5	---	0.6	---	0.017	0.002	0.007	0.012
MW5	1/9/89	4.5	---	2.0	---	0.055	0.007	0.066	0.240
MW6	1/9/89	5	---	490	---	3.7	0.970	23.0	94.0
MW7	1/4/89	5.5	---	600	---	1.7	3.2	10.0	29.0
SB-1	3/19/90	2.2	---	1.8	---	0.0062	<0.0025	0.016	0.0092
	3/19/90	4.5	---	260	---	1.3	1.3	1.4	4.9
	3/19/90	5	---	2,600	---	6.9	23.0	32.0	14.0
SB-2	3/19/90	2.5	---	1.3	---	0.013	0.018	0.10	0.54
	3/19/90	4	---	230	---	1.2	3.7	2.1	1.3
SB-3	3/19/90	3	---	1.8	---	0.0068	0.047	0.011	0.230
	3/19/90	5	---	540	---	4.6	12.0	3.2	44.0
SB-4	3/19/90	4	---	<1.0	---	<0.0025	<0.0025	0.0053	0.018
	3/19/90	5	---	<1.0	---	<0.0025	<0.0025	<0.0025	<0.0025
SB-5	3/19/90	2.5	---	<1.0	---	0.028	0.006	0.0065	0.016
	3/19/90	4.5	---	<1.0	---	0.150	0.080	0.016	0.069
	3/19/90	5.5	---	260	---	1.3	6.5	4.0	24.0
SB-6	3/19/90	2.5	---	140	---	1.1	1.2	1.7	6.7
	3/19/90	5	---	1.6	---	0.065	0.020	0.019	0.060
SB-7	3/19/90	3	---	240	---	0.260	1.4	1.2	4.7
	3/19/90	6	---	<1.0	---	0.055	0.0041	0.012	0.011
MW8/SB-8	5/5/93	5.5	<5.0	<1.0	---	<0.005	<0.005	<0.005	<0.005
MW9/SB-9	5/5/93	6	<5.0	<1.0	---	<0.005	<0.005	<0.005	<0.005
MW10/SB-10	5/5/93	6	<5.0	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-5-B11/SW-1	11/01/93	5	---	<1.0	---	0.061	<0.005	0.018	<0.005
S-9-B11/SW-1	11/01/93	9	---	<1.0	---	0.054	0.0075	0.020	0.029
S-11-B11/SW-1	11/01/93	11	---	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-4.5-B11/SW-1	11/01/93	14.5	---	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-19.5-B11/SW-1	11/01/93	19.5	---	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-5-B13/SM-1	11/01/93	5	---	1,400	---	0.170	<0.005	0.060	0.0073
S-9-B13/SM-1	11/01/93	7	---	1,800	---	7.6	10.0	37.0	98.0
S-10-B11/SM-1	11/01/93	10	---	290	---	0.077	0.031	0.085	0.270
S-12.5-B11/SM-1	11/01/93	12.5	---	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-15.5-B11/SM-1	11/01/93	15.5	---	<1.0	---	<0.005	<0.005	<0.005	<0.005
S-20-B13/SM-1	11/01/93	20	---	<1.0	---	<0.005	<0.005	<0.005	0.0079
MW-11-6.5	8/23/95	6.5	---	<1.0	<0.025	<0.005	<0.005	<0.005	0.024
MW-11-11.5	8/23/95	11.5	---	2.0	<0.025	0.26	<0.005	0.021	0.16
MW-12-6.5	8/23/95	6.5	---	<1.0	<0.025	<0.005	<0.005	<0.005	<0.005
DI-1-3.5	6/25/97	3.5	---	21	---	0.023	0.050	0.076	0.45
DI-2-3.5	6/25/97	3.5	---	30	---	<0.05	0.051	0.083	0.52
DI-3-3.5	6/25/97	3.5	---	<1.0	---	<0.005	<0.005	<0.005	0.012
DI-4-3.5	6/25/97	3.5	---	160	---	0.30	<0.12	2.1	0.81
PL-1-3.5	6/25/97	3.5	---	15	---	0.22	0.042	0.19	0.32
PL-2-3.5	6/25/97	3.5	---	1,200	---	3.2	2.2	7.7	66
PL-3-3.5	6/25/97	3.5	---	96	---	1.1	0.22	0.37	0.82

TABLE 2
CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Notes:

SB-1	=	Soil boring-sample number.
S-5-B11	=	Soil sample-depth-sample number.
DI-1-3.5	=	Dispenser Island-sample number-depth.
PL-1-3.5	=	Product Line-sample number-depth.
Sample Depth	=	Sample depth in feet below ground surface.
TPHd	=	Total petroleum hydrocarbons as diesel using EPA Method 8015 (modified).
TPHg	=	Total petroleum hydrocarbons as gas analyzed using EPA Method 8015 (modified).
BTEX	=	Benzene, toluene, ethylbenzene and total xylenes using EPA Method 8020.
MTBE	=	Methyl tertiary butyl ether analyzed using EPA method 8020.
<	=	Less than the stated laboratory detection limit.
---	=	Not Analyzed.



EXPLANATION

1/2–mile radius circle

N

APPROXIMATE SCALE

0 0.5 1 mile

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

ENVIRONMENTAL RESOLUTIONS, INC.

SITE VICINITY MAP

FORMER EXXON SERVICE STATION 7–0104
1725 Park Street
Alameda, California

PROJECT NO.
2506
PLATE
1

FN 25060002

ENVIRONMENTAL RESOLUTIONS, INC.

GENERALIZED SITE PLAN

FORMER
EXXON SERVICE STATION 7-0104
1725 Park Street
Alameda, California

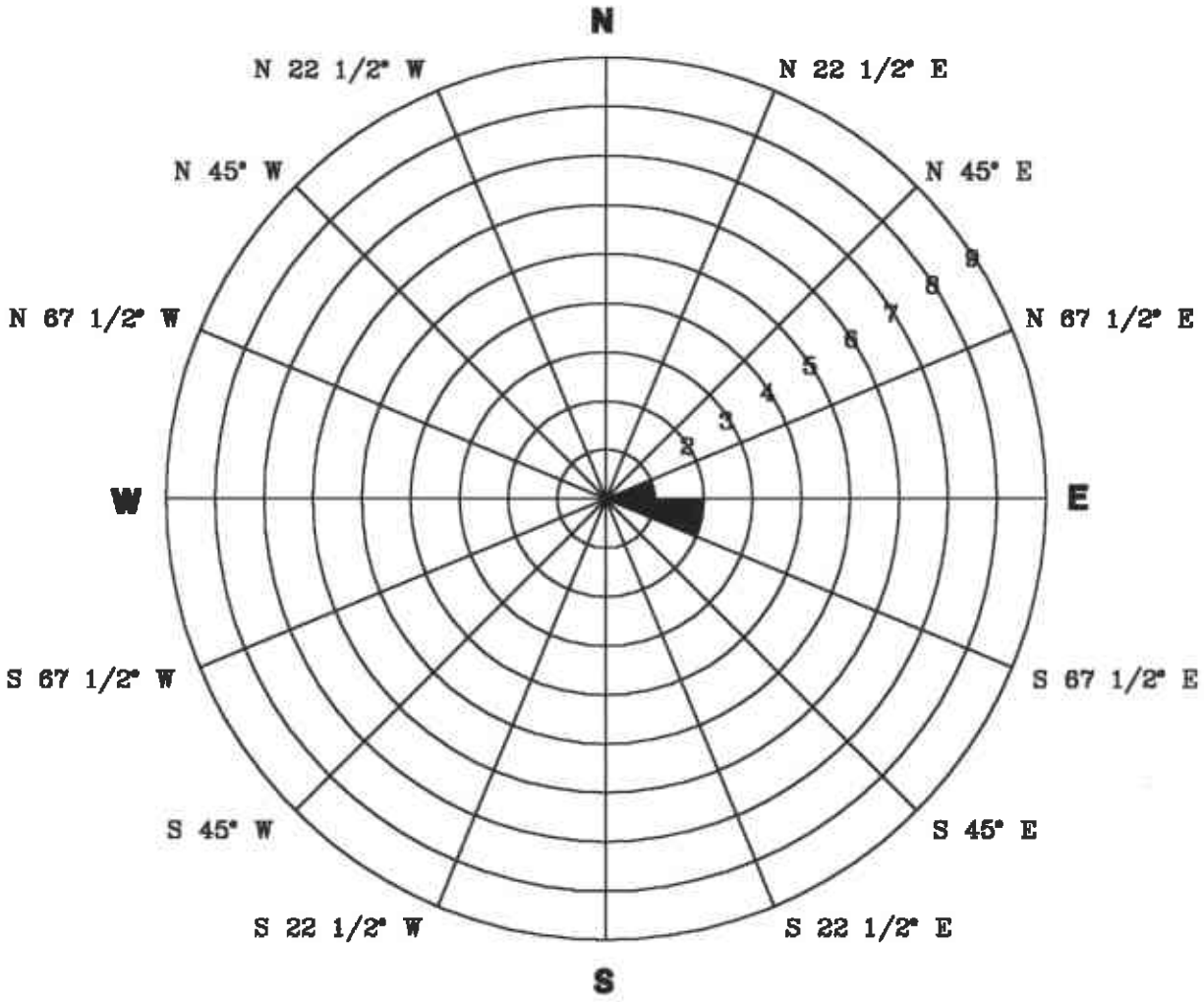
EXPLANATION

- MW9 — Groundwater Monitoring Well
- MW10 — Destroyed Groundwater Monitoring Well
- VW2 — Vapor Extraction Well
- EW5 — Recovery Well
- AS1 — Air Sparge/Soil Vapor Well
- SB-7 — Soil Boring Location

PROJECT NO. 2506

PLATE 2

May 7, 2001



FN 2506rose

EXPLANATION

N Compass Direction

3 Data Points Shown

Rose diagram developed by evaluating the groundwater gradient direction from the quarterly monitoring data. Each circle on the rose diagram represents the number of monitoring events that the gradient plotted in that 22 1/2 degree sector.

ENVIRONMENTAL RESOLUTIONS, INC.

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM

FORMER EXXON SERVICE STATION 7-0104
1725 Park Street
Alameda, California

PROJECT NO. 2506

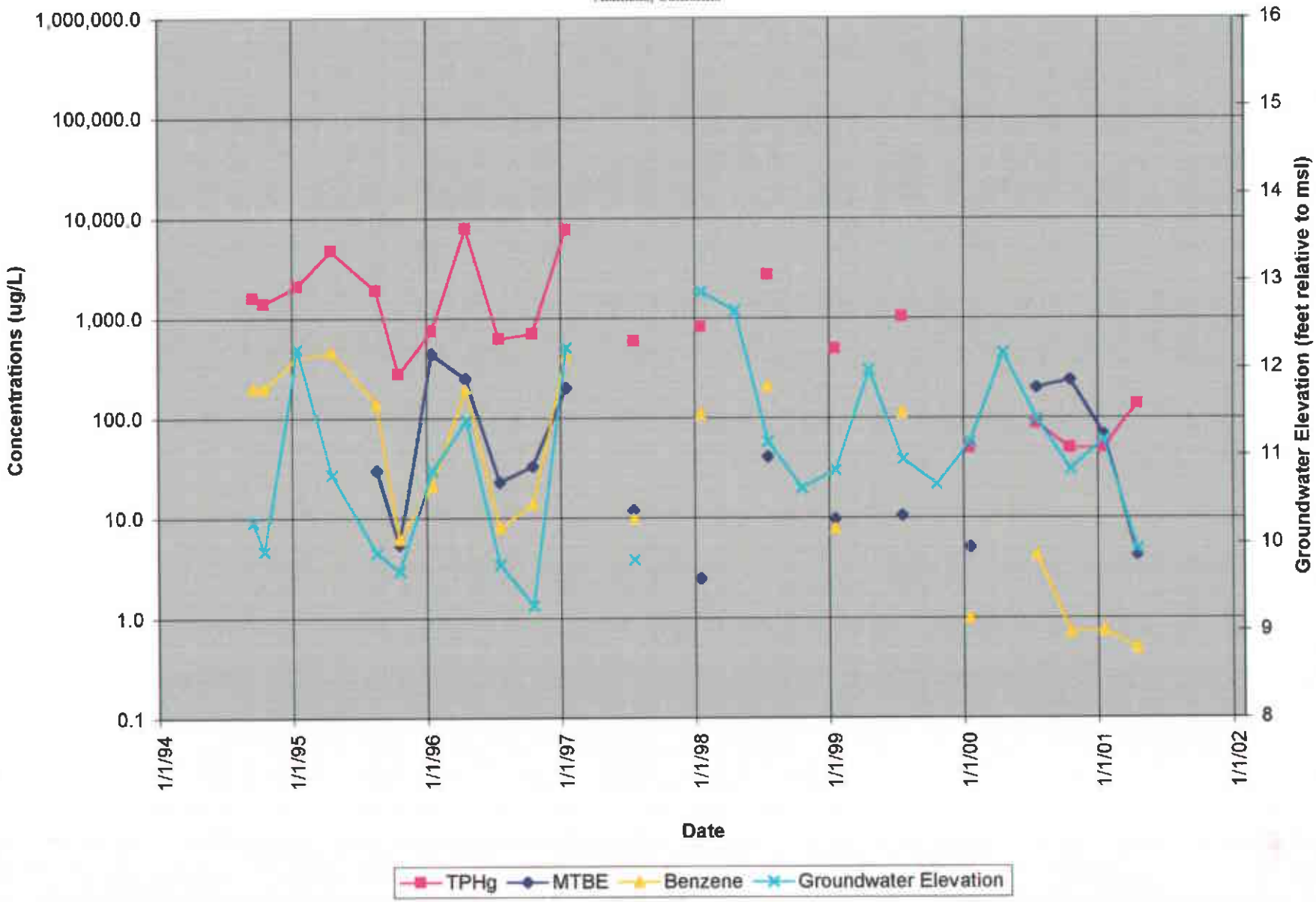
PLATE 3

June 29, 2001

ATTACHMENT A

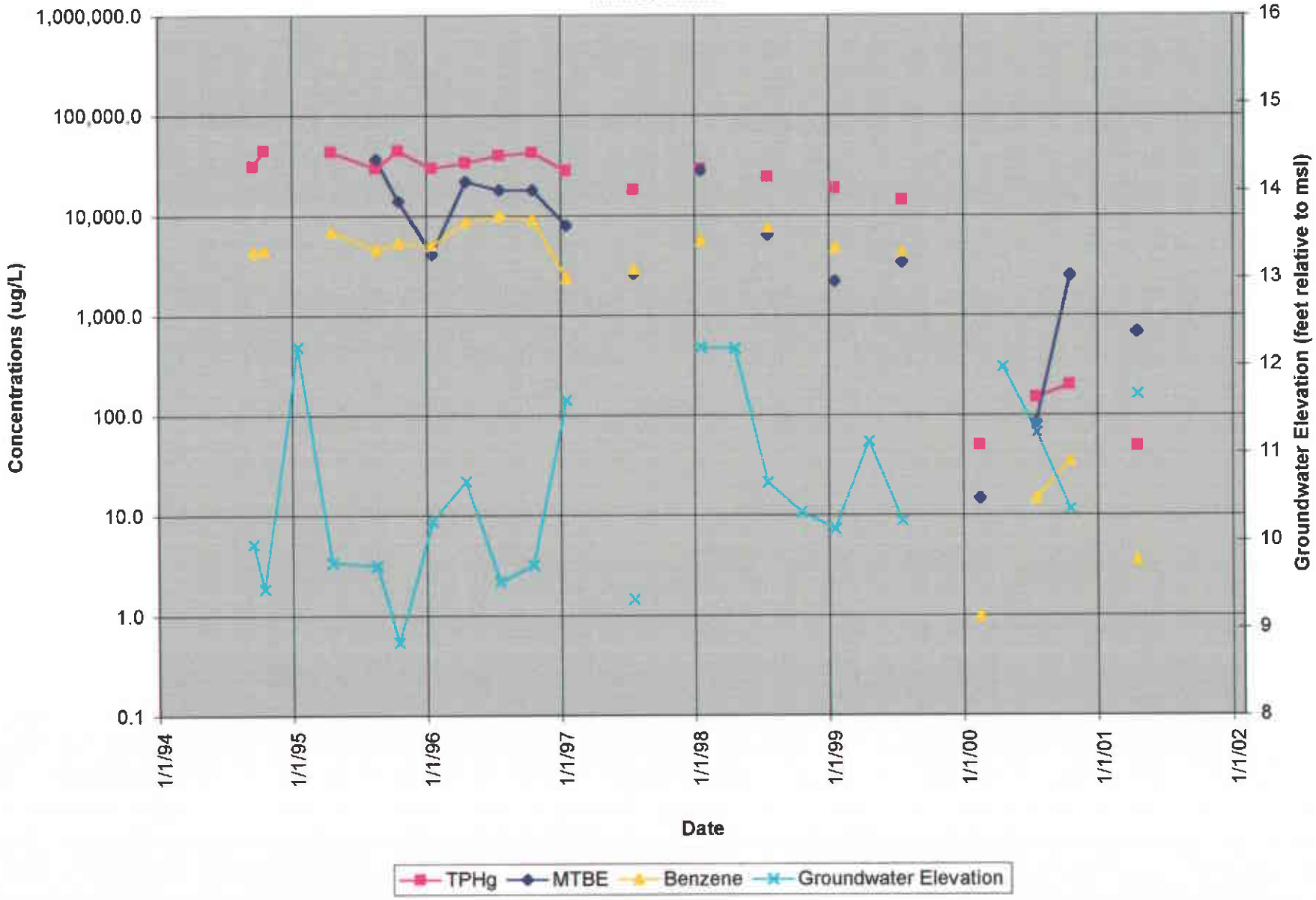
CONCENTRATION VS. TIME CHARTS

MW1
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



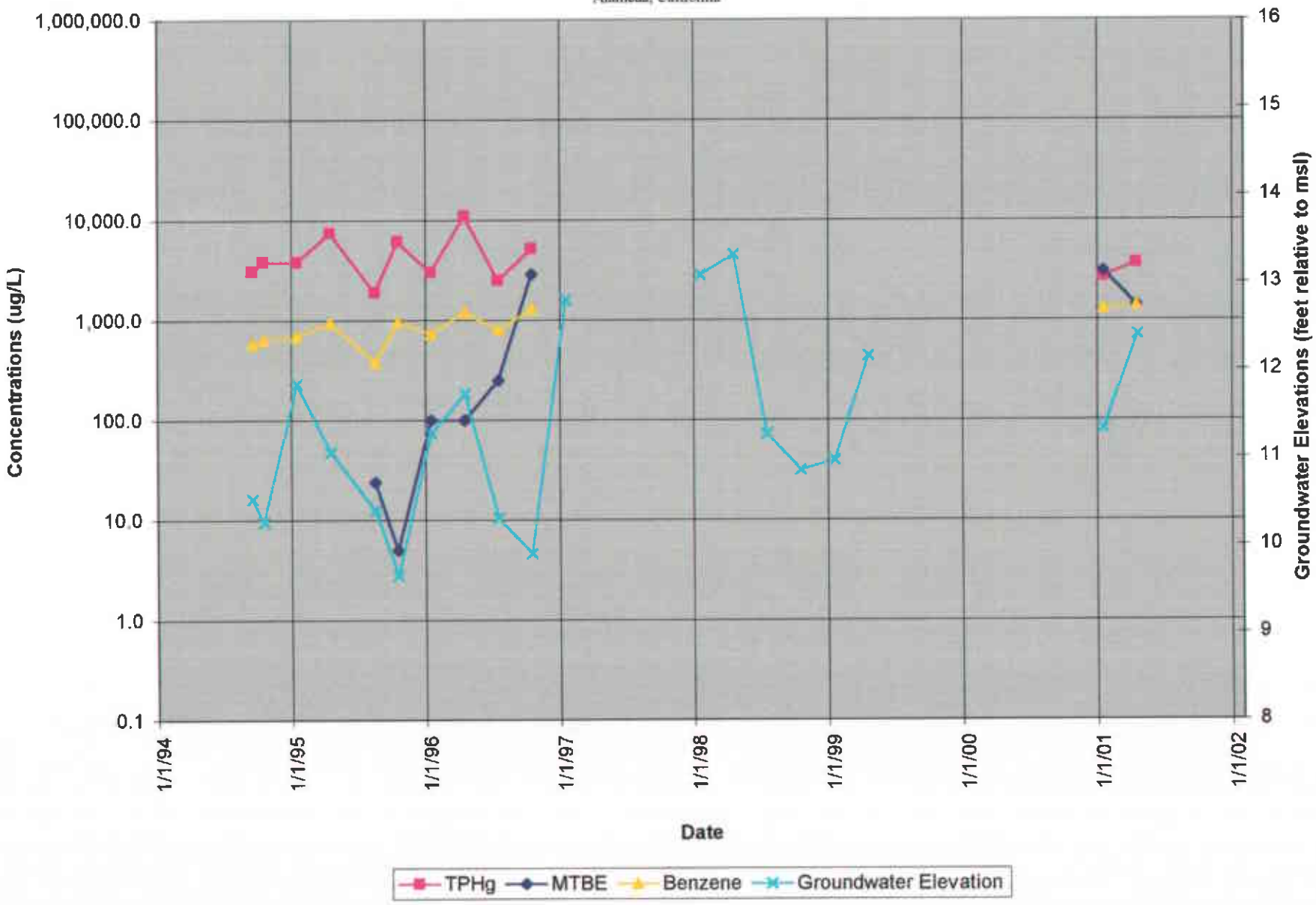
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW2
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



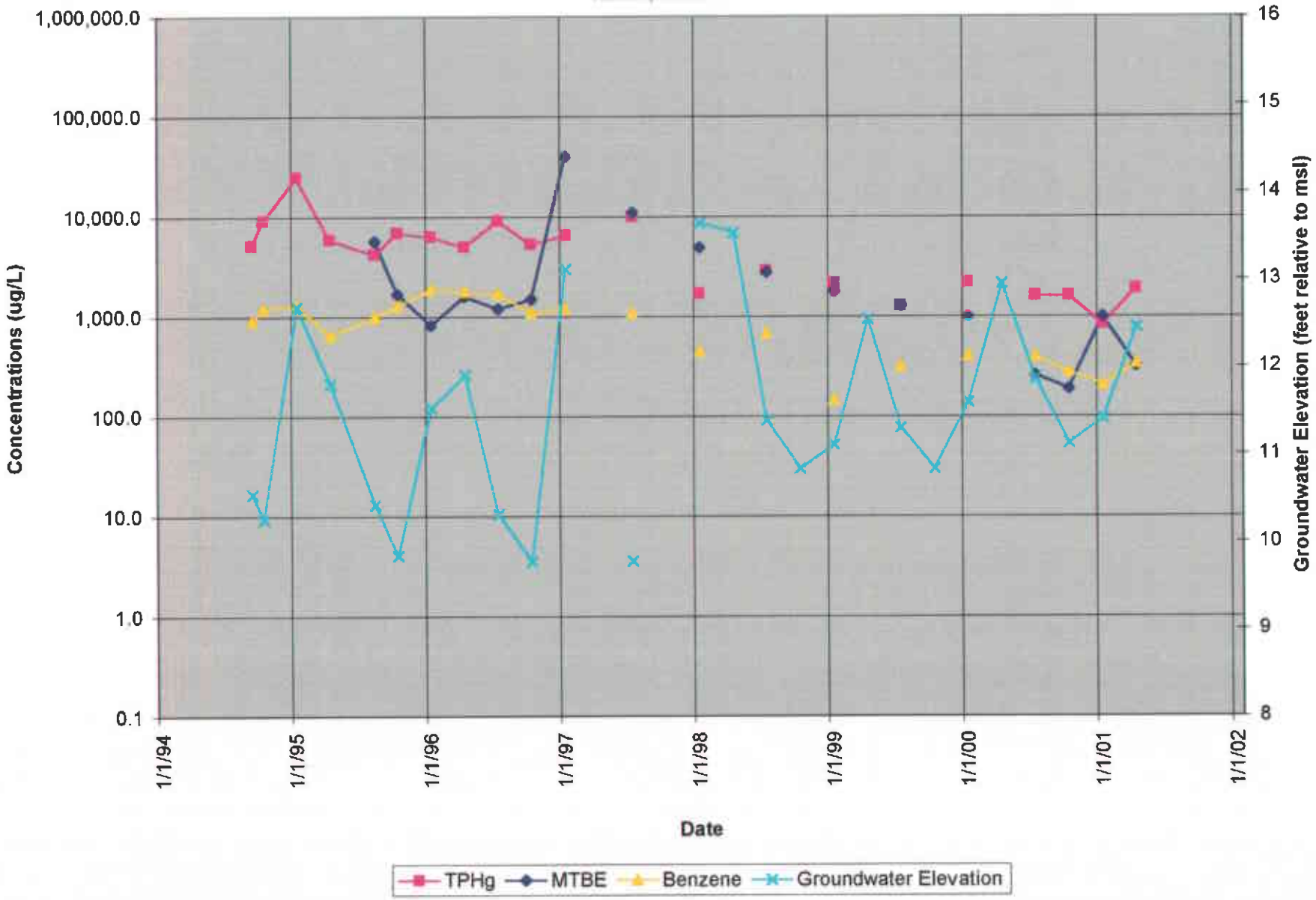
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW3
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



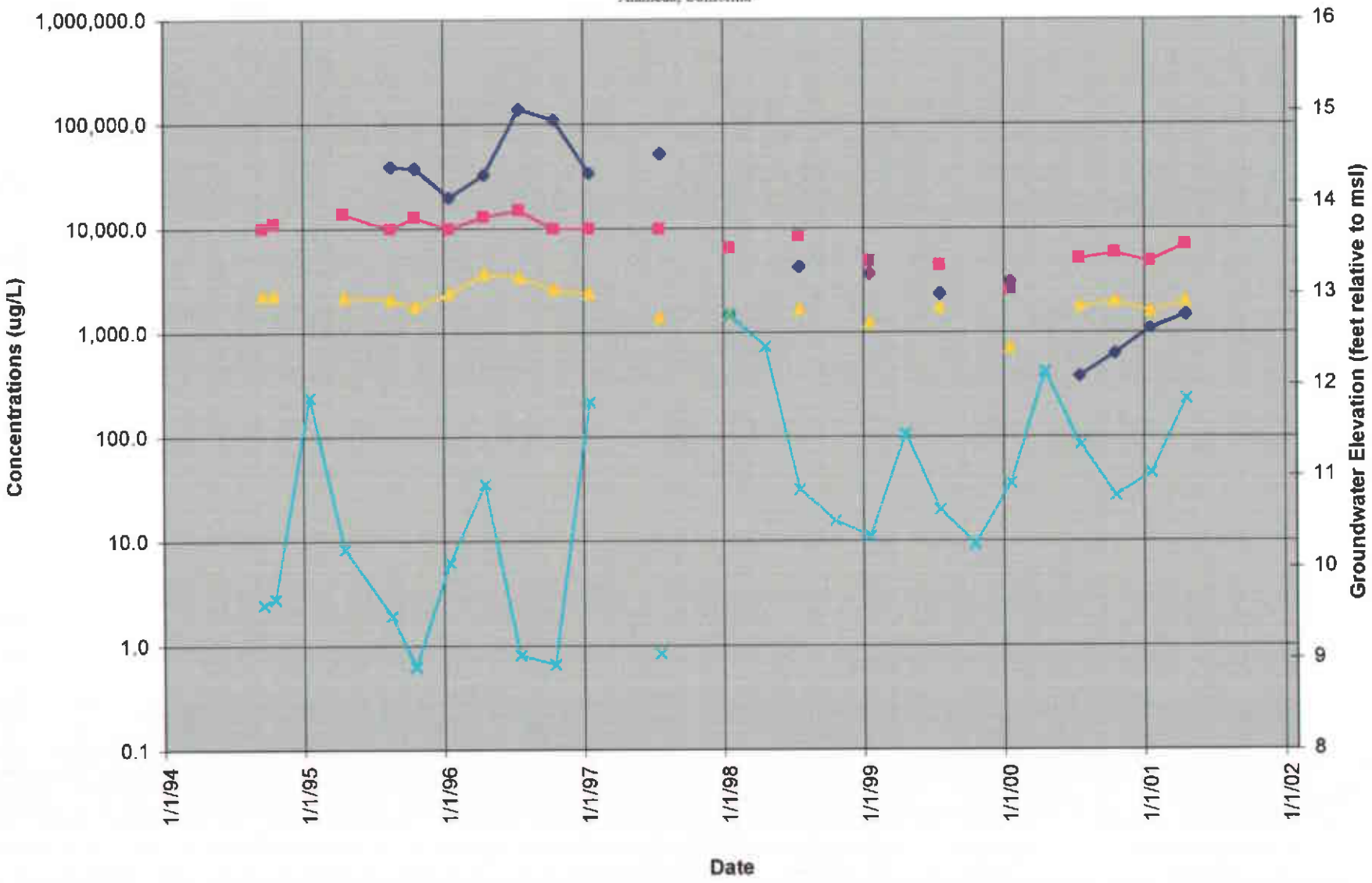
Note: Analytes reported as less that the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW4
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



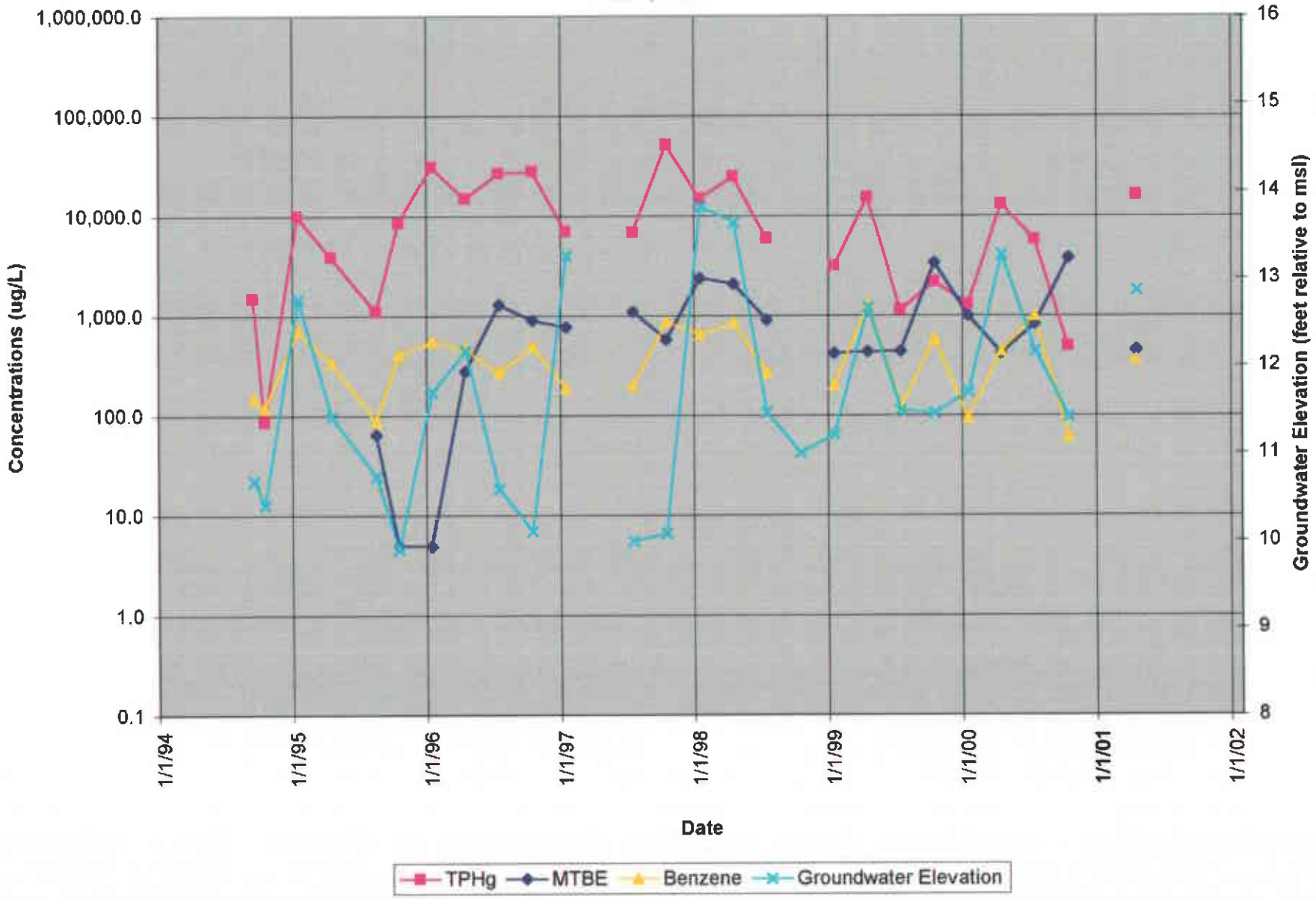
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW5
Concentration vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



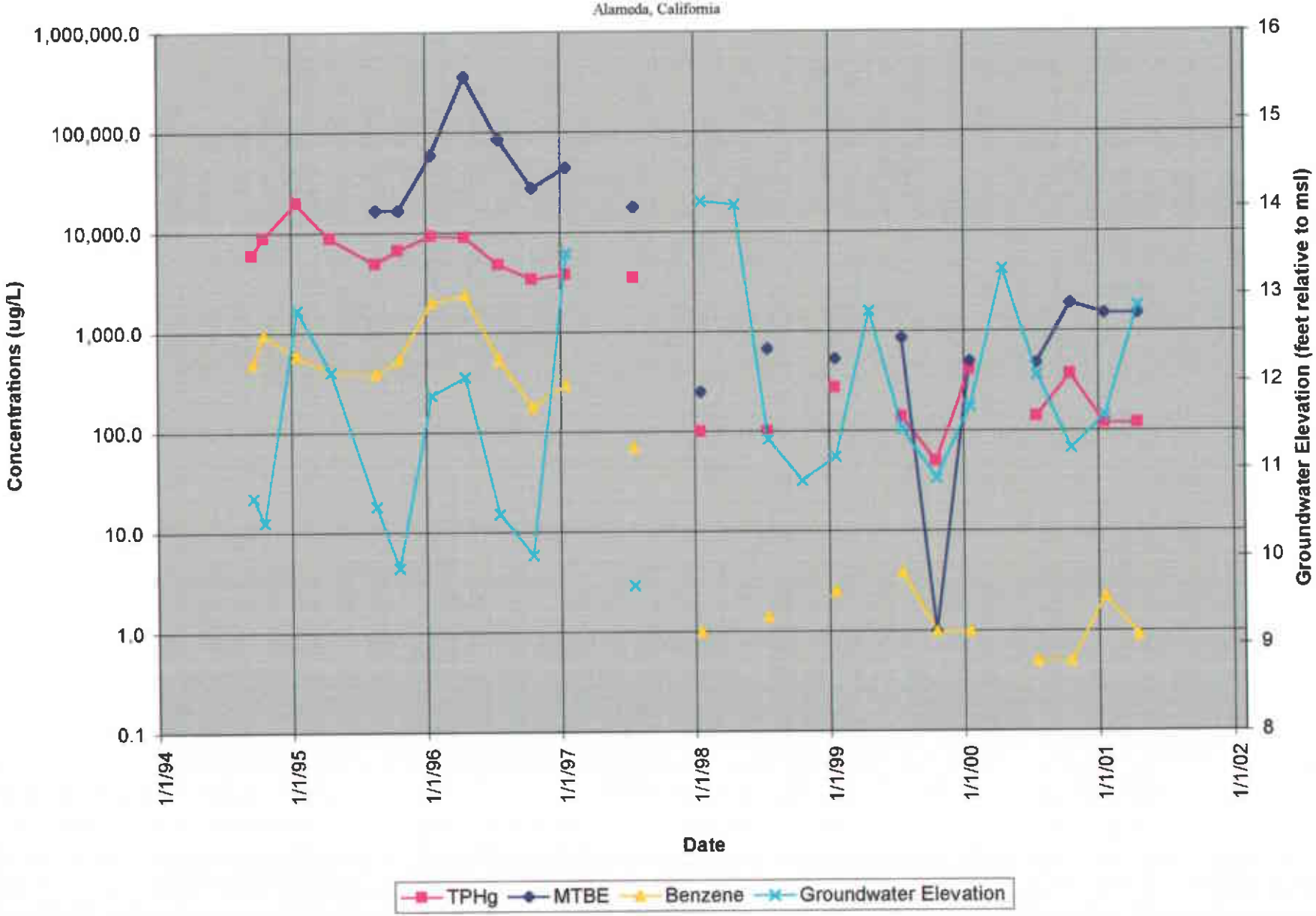
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW6
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



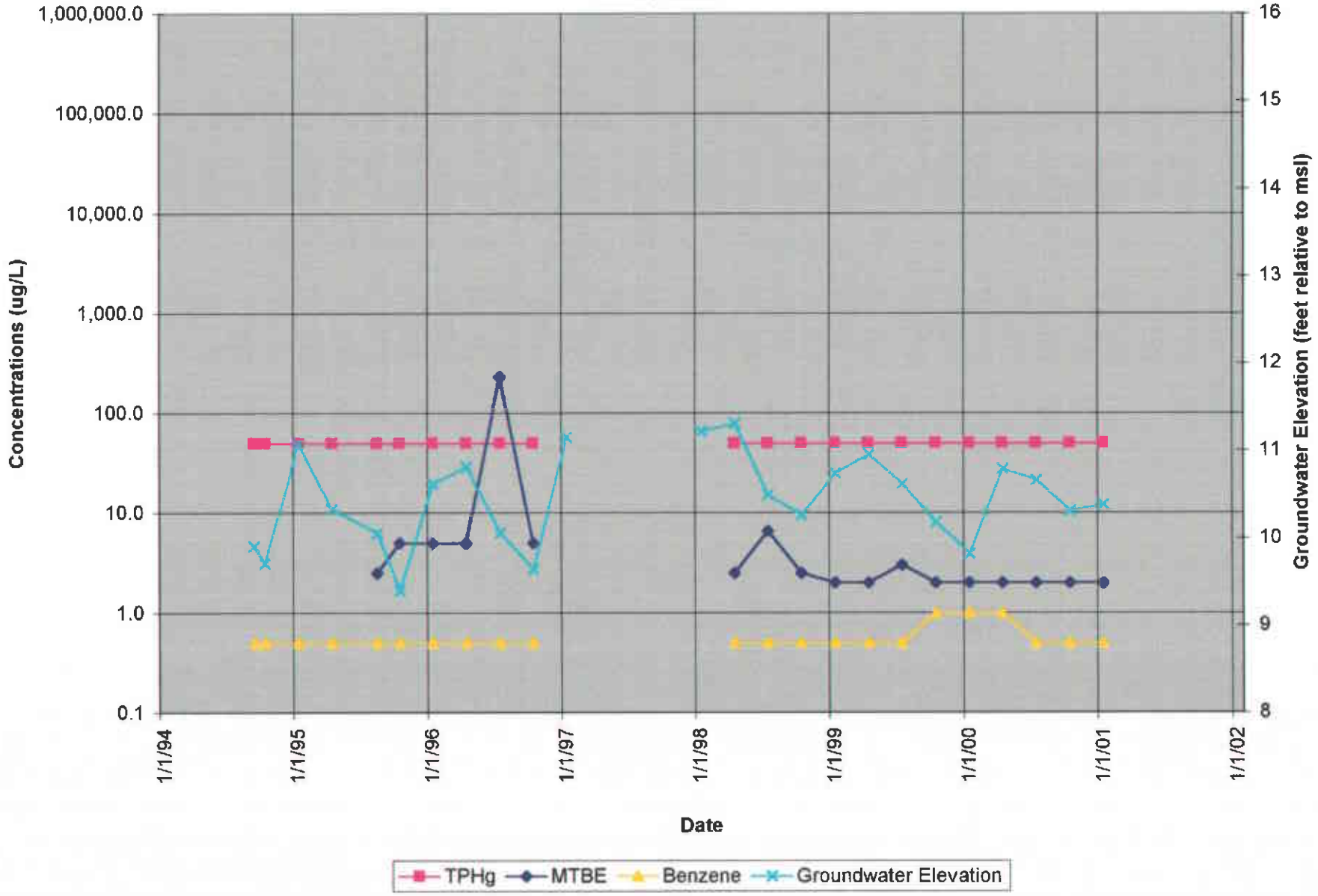
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW7
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



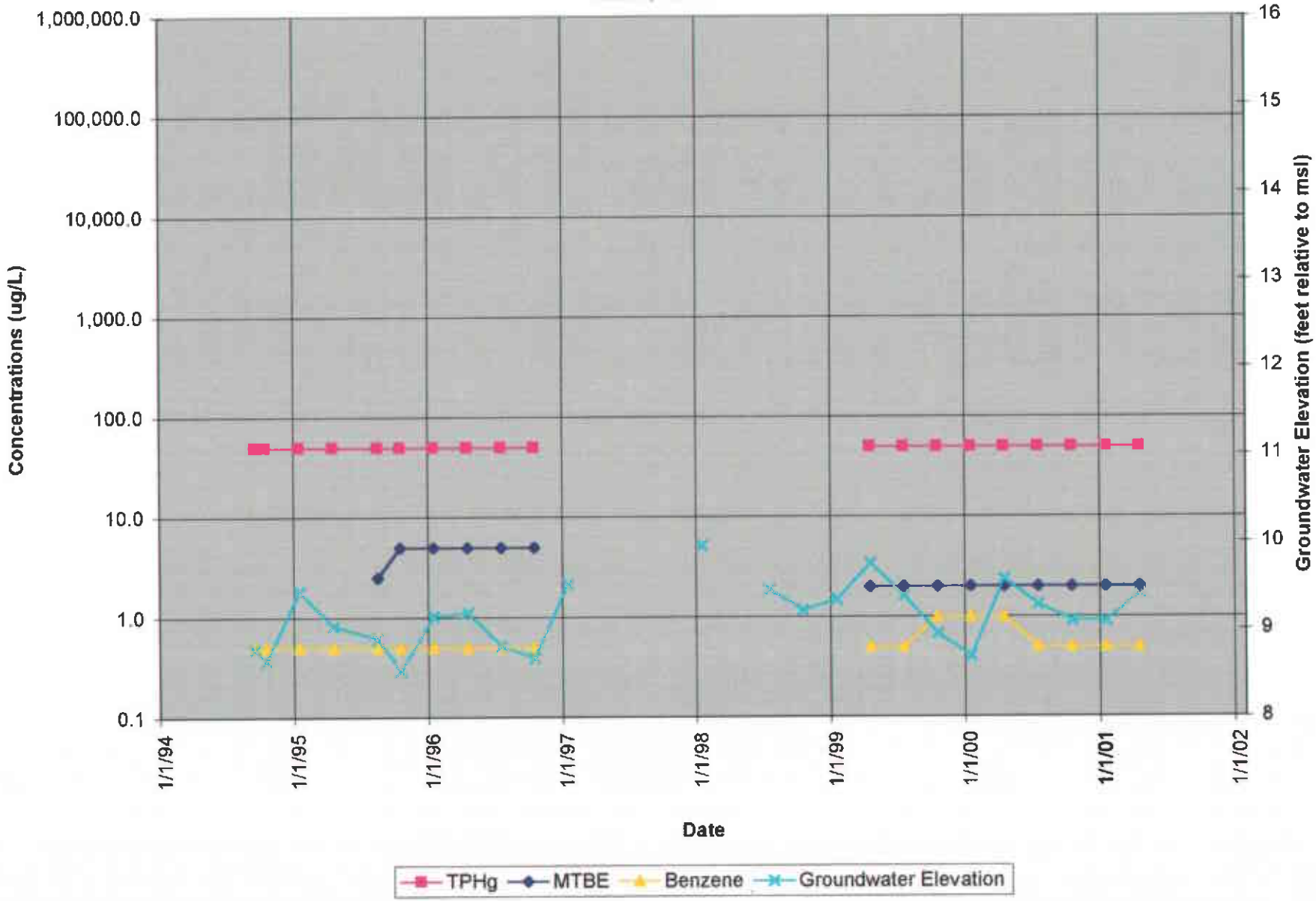
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW8
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



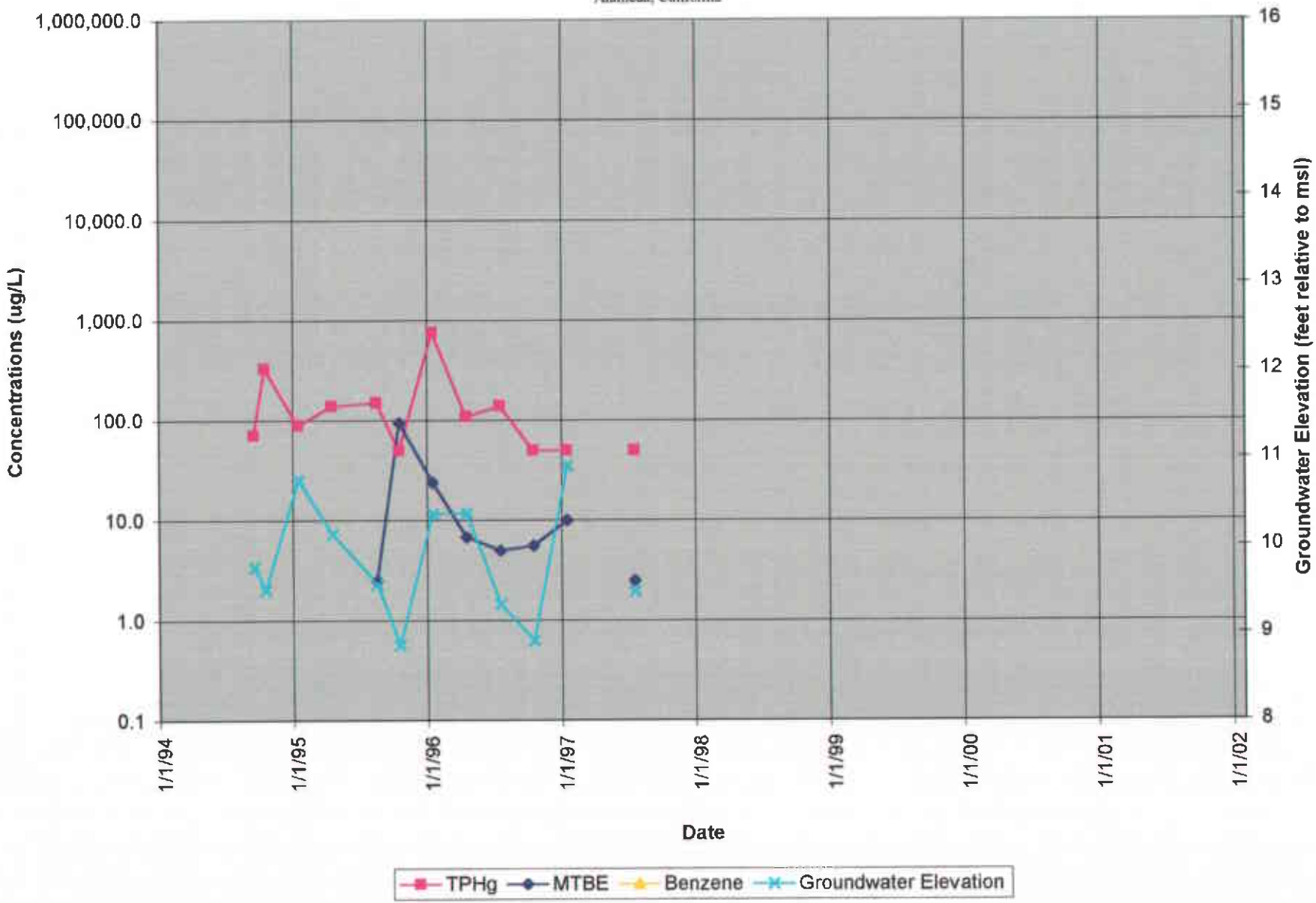
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW9
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



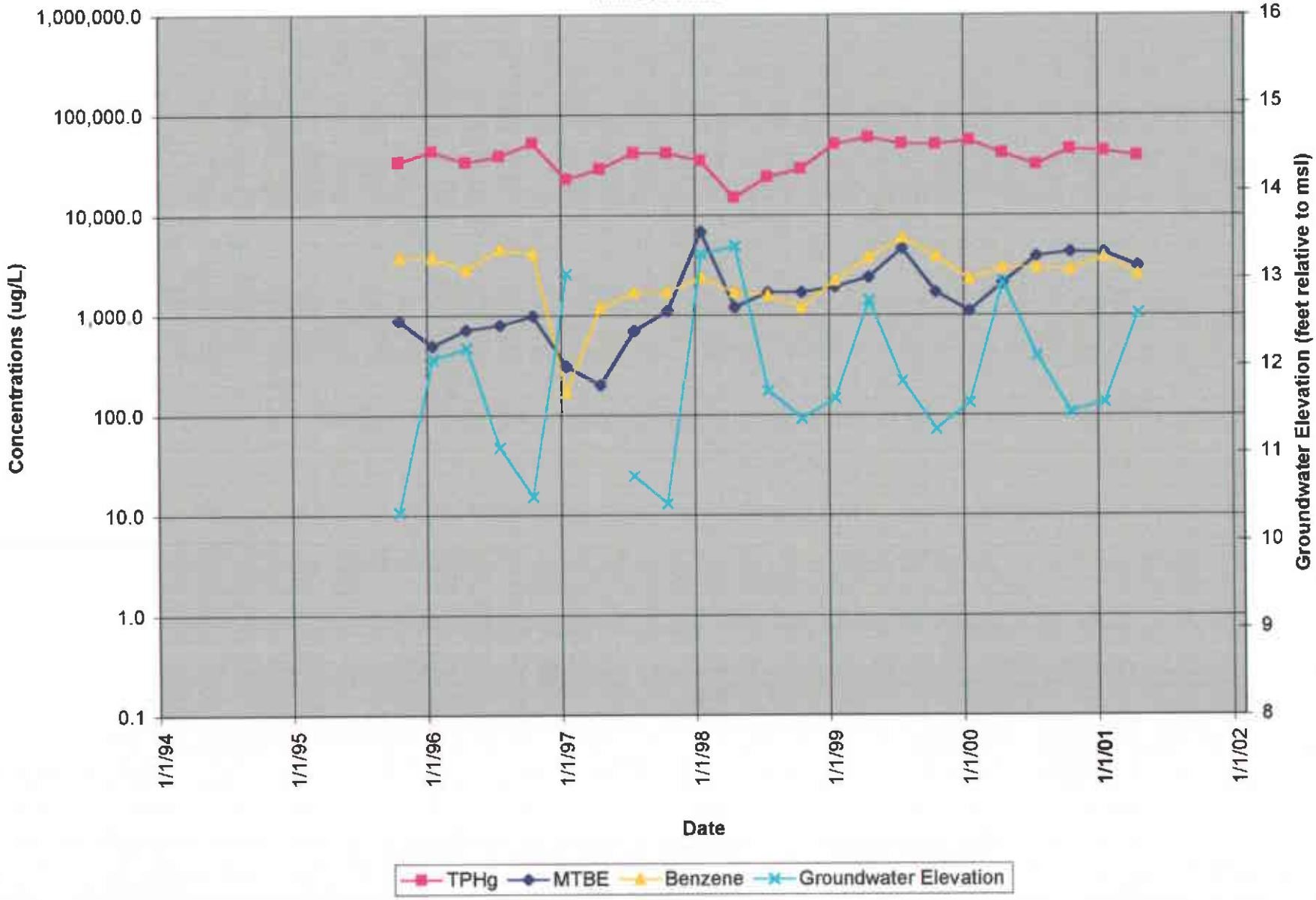
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW10
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



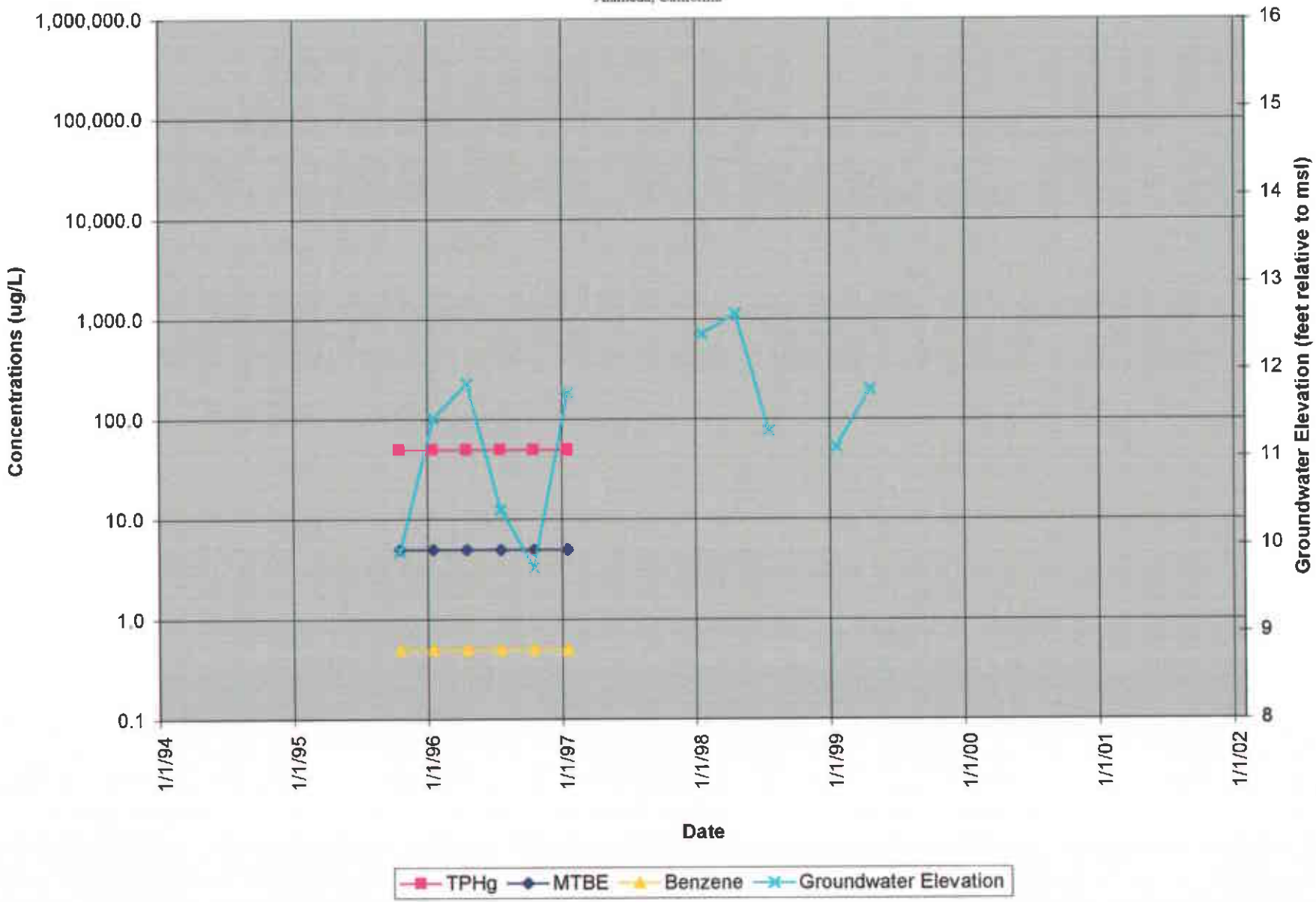
Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW11
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

MW12
Concentrations vs. Time
Former Exxon Service Station 7-0104
1725 Park Street
Alameda, California



Note: Analytes reported as less than the laboratory reporting limit are plotted at the reporting limit.
Reporting Limit:
TPHg = <50 ug/L
MTBE = <2 ug/L
Benzene = <0.5 ug/L

ATTACHMENT B

RBCA OUTPUT FILES

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Exxon Station No. 7-0104 Job Identification: 2506RBCM
Site Location: 1725 Park Street, Alameda, CA Date Completed: 9/1/00
Completed By: Steve M. Zigan

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	TRUE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	FALSE	FALSE	TRUE
S.v	Volatilization from Subsurface Soils	TRUE	TRUE	
GW.v	Volatilization from Groundwater	FALSE	TRUE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	TRUE	
GW.b	Vapors from Groundwater	FALSE	TRUE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW.i	Groundwater Ingestion	TRUE	FALSE	
S.l	Leaching to Groundwater from all Soils	TRUE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)	4.1E+04	FALSE	4.1E+04	FALSE
S	Inhalation receptor (cm)	6.1E+02	FALSE		TRUE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	1.0E-06	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***1.1E+07***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***4.7E+03***	1.0E+03
W.gw	Length of affect. soil parallel to groundwater (cm	***4.7E+03***	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	***6.1E+01***	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	***6.3E+02***
Ugw.tr	Groundwater seepage velocity (cm/yr)	***1.7E+03***
Ks	Saturated hydraulic conductivity(cm/s)	1.0E-03
grad	Groundwater gradient (cm/cm)	2.0E-02
Sw	Width of groundwater source zone (cm)	4.7E+03
Sd	Depth of groundwater source zone (cm)	1.8E+02
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	FALSE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value		
hc	Capillary zone thickness (cm)	***7.6E+00***		
hv	Vadose zone thickness (cm)	***1.7E+02***		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	***0.001***		
phi	Soil porosity in vadose zone	0.38		
Lgw	Depth to groundwater (cm)	***1.8E+02***		
Ls	Depth to top of affected subsurface soil (cm)	***6.1E+01***		
Lsubs	Thickness of affected subsurface soils (cm)	***3.0E+02***		
pH	Soil/groundwater pH	6.5		
		capillary	vadose	foundation
phi.w	Volumetric water content	0.342	0.12	0.12
phi.a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	***0.0001***	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)	8.4E+02	
ay	Transverse dispersivity (cm)	8.4E+01	
az	Vertical dispersivity (cm)	8.4E+00	
Vapor			
dcy	Transverse dispersion coefficient (cm)	7.5E+01	
dcz	Vertical dispersion coefficient (cm)	5.2E+01	

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RBCA SITE ASSESSMENT | Input Screen 7

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration in Groundwater value (mg/L)	note	in Surface Soil value (mg/kg)	note	in Subsurface Soil value (mg/kg)	note
Methyl t-Butyl Ether	6.5E-1	UCL		max	1.3E-2	UCL

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

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RBCA SITE ASSESSMENT | Input Screen 9.4

GROUNDWATER DAF VALUES

(Enter DAF values in the grey area of the following table)

CONSTITUENT	Dilution Attenuation Factor (DAF) in Groundwater: Residential Receptor	Comm./Ind. Receptor
Methyl t-Butyl Ether	9.1E+0	1.0E+0

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

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RBCA SITE ASSESSMENT

EXPOSURE LIMITS IN GROUNDWATER AND AIR

CONSTITUENT	Exposure Limits Applied to Receptors	
	Groundwater (MCL) (mg/L)	Air (Comm. only) (PEL/TLV) (mg/m^3)
Methyl t-Butyl Ether	1.3E-2	

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS — (CHECK TO ACTIVATE PATHWAY)

SURFACE SOILS: VAPOR AND DUST INHALATION Constituents of Concern	Exposure Concentration 1) Source Medium Surface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Methyl t-Butyl Ether	0.0E+0								

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAY

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	1) Source Medium: Exposure Concentration — Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial	2) NAF Value (m^3/kg) Receptor: Off-Site Residential	3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2): Off-Site Residential	4) Exposure Multiplier ((IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	4) Exposure Multiplier ((IRxEFxED)/(BWxAT) (m^3/kg-day): Off-Site Residential	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): Off-Site Residential
Methyl t-Butyl Ether	1.3E-2	1.4E+4	1.7E+4	8.6E-7	7.2E-7	2.0E-1	2.7E-1	1.7E-7	2.0E-7

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposue area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 3 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS — (CHECKED IF PATHWAY NOT ACTIVE)

GROUNDWATER: VAPOR INHALATION Constituents of Concern	Exposure Concentration 1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor On-Site Commercial	3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2) On-Site Commercial	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day) On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day) (3) X (4) On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from surface, subsurface & groundwater routes.)* On-Site Commercial	Off-Site Residential
Methyl t-Butyl Ether	6.5E-1	1.5E+4	4.4E-5	2.0E-1	8.6E-6	8.8E-6	2.0E-7

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS — CHECKED IF PATHWAYS ACTIVE

SUBSURFACE SOILS: VAPOR INTRUSION TO BUILDINGS Constituents of Concern	Exposure Concentration 1) Source Medium Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor On-Site Commercial	3) Exposure Medium Indoor Air: POE Conc. (mg/m^3) (1) / (2) On-Site Commercial	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day) On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day) (3) X (4) On-Site Commercial
Methyl t-Butyl Ether	1.3E-2	6.0E+3	2.1E-6	2.0E-1	4.1E-7

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 5 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS — CHECKED TO PATHWAY (S Only)

GROUNDWATER: VAPOR INTRUSION TO BUILDINGS	Exposure Concentration	1) Source Medium	2) NAF Value (m^3/L)	3) Exposure Medium	4) Exposure Multiplier	5) Average Daily Intake Rate	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from subsurface & groundwater routes.)
		Groundwater Conc.	Receptor	Indoor Air: PDE Conc. (mg/m^3) (1) / (2)	(IRxEFxED)/(BWxAT) (m^3/kg-day)	(mg/kg-day) (3) X (4)	
Constituents of Concern		(mg/L)	On-Site Commercial	On-Site Commercial	On-Site Commercial	On-Site Commercial	On-Site Commercial
Methyl t-Butyl Ether		6.5E-1	7.0E+4	9.3E-6	2.0E-1	1.8E-6	2.2E-6

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7- Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Z Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS | GROUNDWATER EXPOSURE PATHWAYS | SURFACE WATER EXPOSURE PATHWAYS

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

	Exposure Concentration	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) x (2)	
	1) Source Medium				
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Methyl t-Butyl Ether	0.0E+0		2.8E-5		0.0E+0

NOTE: ABS = Dermal absorption factor (dim) BW = Body weight (kg) EF = Exposure frequencey (days/ POE = Point of exposure
AF = Adherance factor (mg/cm^2) CF = Units conversion factor ET = Exposure time (hrs/day) SA = Skin exposure area (cm^2/day)
AT = Averaging time (days) ED = Exposure duration (yrs) IR = Intake rate (mg/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS — GROUNDWATER PATHWAYS ARE ON PAGE 8

SURFACE SOILS OR SEDIMENTS: INGESTION	Exposure Concentration 1) Source Medium	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) x (2)		TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Methyl t-Butyl Ether	0.0E+0		4.9E-7		0.0E+0		0.0E+0

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (mg/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS (CALCULATE PATHWAYS BELOW)

SOIL: LEACHING TO GROUNDWATER/ GROUNDWATER INGESTION	Exposure Concentration								
	1) Source Medium		2) NAF Value (L/kg)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate
			Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(IRxEFxED)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) x (4)
Constituents of Concern	Soil Concentration (mg/kg)		Off-Site Residential		Off-Site Residential		Off-Site Residential		Off-Site Residential
Methyl t-Butyl Ether	1.3E-2		1.5E+0		8.4E-3		2.7E-2		2.3E-4

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body Weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS — ☑ CHECKED IF PATHWAY IS ACTIVE

GROUNDWATER: INGESTION	Exposure Concentration								MAX. PATHWAY INTAKE (mg/kg-day) (Maximum intake of active pathways soil leaching & groundwater routes.)	
	1) Source Medium	2) NAF Value (dim)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate		
	Groundwater Conc.	Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(IRxEFxED)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) x (4)		
Constituents of Concern	(mg/L)		Off-Site Residential		Off-Site Residential		Off-Site Residential		Off-Site Residential	Off-Site Residential
Methyl t-Butyl Ether	6.5E-1		9.1E+0		7.1E-2		2.7E-2		1.9E-3	1.9E-3

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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RBCA SITE ASSESSMENT	Tier 2 Worksheet 8.2

Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 |

TIER 2 PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS — (CHECKED PATHWAYS ARE ACTIVE)

	CARCINOGENIC RISK					TOXIC EFFECTS				
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site Residential	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Commercial	(4) Individual COC Risk (2) x (3) Off-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Residential	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial	(7) Individual COC Hazard Quotient (5) / (6) Off-Site Residential
Constituents of Concern											
Methyl t-Butyl Ether							8.8E-6	2.0E-7	8.6E-1	1.0E-5	2.3E-7
Total Pathway Carcinogenic Risk =					0.0E+0	0.0E+0	***Total Pathway Hazard Index =***			1.0E-5	2.3E-7

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 2 OF 4

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAY — (CHECKED PATHWAYS ARE ACTIVE)

Constituents of Concern	CARCINOGENIC RISK: (1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site	(2) Total Carcinogenic Intake Rate (mg/kg/day) Commercial	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site	(4) Individual COC Risk (2) x (3) Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site	(5) Total Toxicant Intake Rate (mg/kg/day) Commercial	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site	(7) Individual COC Hazard Quotient (5) / (6) Commercial
Methyl t-Butyl Ether								2.2E-6	8.6E-1		2.6E-6

Total Pathway Carcinogenic Risk = 0.0E+0 | 0.0E+0

Total Pathway Hazard Index = 0.0E+0 | 2.6E-6

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 3 OF 4

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

	CARCINOGENIC RISK					TOXIC EFFECTS			
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential	(4) Individual COC Risk (2) x (3) On-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial
Constituents of Concern											
Methyl t-Butyl Ether								0.0E+0	5.0E-3		0.0E+0

Total Pathway Carcinogenic Risk = **0.0E+0** **0.0E+0**

Total Pathway Hazard Index = **0.0E+0** **0.0E+0**

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 4 OF 4

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS [redacted]

	CARCINOGENIC RISK					TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site	(2) Total Carcinogenic Intake Rate (mg/kg/day) Residential	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) Off-Site	(4) Individual COC Risk (2) x (3) Residential	(5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Residential	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) Off-Site	(7) Individual COC Hazard Quotient (5) / (6) Residential
Methyl t-Butyl Ether							1.9E-3	5.0E-3		3.9E-1
Total Pathway Carcinogenic Risk =					**0.0E+0**	**0.0E+0**	***Total Pathway Hazard Index =***		**0.0E+0**	**3.9E-1**

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RBCA SITE ASSESSMENT	Tier 2 Worksheet 8.3

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

TIER 2 BASELINE RISK SUMMARY TABLE

	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
EXPOSURE PATHWAY	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	NC	1.0E-6	NC	N/A	■	1.0E-5	1.0E+0	1.0E-5	N/A	☐
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	NC	1.0E-6	NC	N/A	■	2.6E-6	1.0E+0	2.6E-6	N/A	☐
SOIL EXPOSURE PATHWAYS										
Complete:	NC	1.0E-6	NC	N/A	■	NC	1.0E+0	NC	N/A	■
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	NC	1.0E-6	NC	N/A	■	3.9E-1	1.0E+0	3.9E-1	N/A	☐
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	0.0E+0	1.0E-6	0.0E+0	N/A	☐	3.9E-1	1.0E+0	3.9E-1	N/A	☐

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RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

SUBSURFACE SOIL SSTL VALUES (> 2 FT BGS)

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

■ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - No Decay (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X	Soil Leaching to Groundwater			X	Soil Volatilization to Indoor Air		X	Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)		Residential: 1344 feet	Commercial: (on-site)	Regulatory(MCL): 1344 feet		Residential: (on-site)	Commercial: (on-site)		Residential: 20 feet	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
1634-04-4	Methyl t-Butyl Ether	1.3E-2		2.7E-1	NA	1.9E-2		NA	>Res		>Res	>Res	1.9E-2	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

Software: GSI RBCA Spreadsheet Serial: G-311-YSX-926
Version: 1.0.1

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RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

■ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - No Decay (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X	Groundwater Ingestion			X	Groundwater Volatilization to Indoor Air		X	Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)		Residential: 1344 feet	Commercial: (on-site)	Regulatory(MCL): 1344 feet		Residential: (on-site)	Commercial: (on-site)		Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
1634-04-4	Methyl t-Butyl Ether	6.5E-1		1.7E+0	NA	1.2E-1		NA	>Sol		NA	>Sol	1.2E-1	■	5.0E+00

>Sol indicates risk-based target concentration greater than constituent solubility

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-311-YSX-926

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Exxon Station No. 7-0104 Job Identification: 2506RBCA
Site Location: 1725 Park Street, Alameda, CA Date Completed: 9/1/00
Completed By: Steve M. Zigan

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	TRUE	TRUE	TRUE
S.v	Volatilization from Subsurface Soils	TRUE	TRUE	
GW.v	Volatilization from Groundwater	FALSE	TRUE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	TRUE	
GW.b	Vapors from Groundwater	FALSE	TRUE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW.i	Groundwater Ingestion	TRUE	FALSE	
S.l	Leaching to Groundwater from all Soils	TRUE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)	4.1E+04	FALSE	4.1E+04	FALSE
S	Inhalation receptor (cm)	6.1E+02	FALSE		TRUE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	1.0E-06	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***1.1E+07***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***4.7E+03***	1.0E+03
W.gw	Length of affect. soil parallel to groundwater (cm	***4.7E+03***	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	***6.1E+01***	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	***6.3E+02***
Ugw.tr	Groundwater seepage velocity (cm/yr)	***1.7E+03***
Ks	Saturated hydraulic conductivity(cm/s)	1.0E-03
grad	Groundwater gradient (cm/cm)	2.0E-02
Sw	Width of groundwater source zone (cm)	4.7E+03
Sd	Depth of groundwater source zone (cm)	1.8E+02
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	TRUE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value		
hc	Capillary zone thickness (cm)	***7.6E+00***		
hv	Vadose zone thickness (cm)	***1.7E+02***		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	***0.001***		
phi	Soil porosity in vadose zone	0.38		
Lgw	Depth to groundwater (cm)	***1.8E+02***		
Ls	Depth to top of affected subsurface soil (cm)	***6.1E+01***		
Lsubs	Thickness of affected subsurface soils (cm)	***2.0E+02***		
pH	Soil/groundwater pH	6.5		
		capillary	vadose	foundation
phi.w	Volumetric water content	0.342	0.12	0.12
phi.a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	***0.0001***	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)	8.4E+02	
ay	Transverse dispersivity (cm)	8.4E+01	
az	Vertical dispersivity (cm)	8.4E+00	
Vapor			
dcy	Transverse dispersion coefficient (cm)	7.5E+01	
dcz	Vertical dispersion coefficient (cm)	5.2E+01	

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REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	1.6E-1	UCL	1.5E-1	UCL	2.7E-1	UCL
Ethylbenzene	3.4E-2	UCL	3.4E-1	UCL	4.9E-1	UCL
Toluene	6.6E-3	UCL	2.6E-1	UCL	1.8E-1	UCL
Xylene (mixed isomers)	1.2E-2	UCL	1.5E+0	UCL	1.5E+0	UCL

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

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RBCA SITE ASSESSMENT | Input Screen 9.4

GROUNDWATER DAF VALUES

(Enter DAF values in the grey area of the following table)

CONSTITUENT	Dilution Attenuation Factor (DAF) in Groundwater: Residential Receptor	Comm./Ind. Receptor
Benzene	5.0E+4	1.0E+0
Ethylbenzene	1.2E+12	1.0E+0
Toluene	4.0E+48	1.0E+0
Xylene (mixed isomers)	2.5E+11	1.0E+0

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

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RBCA SITE ASSESSMENT | Input Screen 9.1

CONSTITUENT HALF-LIFE VALUES

(Complete the following table)

CONSTITUENT	Half-Life of Constituent (day)
Benzene	720
Ethylbenzene	228
Toluene	28
Xylene (mixed isomers)	360

Site Name: Exxon Station No. 7-0104 Completed By: Steve M. Zigan
Site Location: 1725 Park Street, Alamed Date Completed: 9/1/2000

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS (CHECK IF PATHWAY IS ACTIVE)

SURFACE SOILS: VAPOR AND DUST INHALATION	Exposure Concentration									
	1) Source Medium	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier ((IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential	On-Site Commercial	Off-Site Residential
Benzene	1.5E-1	7.2E+4	8.7E+4	2.0E-6	1.7E-6	7.0E-2	1.2E-1	1.4E-7	2.0E-7
Ethylbenzene	3.4E-1	7.2E+4	8.7E+4	4.7E-6	3.9E-6	2.0E-1	2.7E-1	9.2E-7	1.1E-6
Toluene	2.6E-1	7.2E+4	8.7E+4	3.6E-6	3.0E-6	2.0E-1	2.7E-1	7.0E-7	8.2E-7
Xylene (mixed isomers)	1.5E+0	7.2E+4	8.7E+4	2.1E-5	1.8E-5	2.0E-1	2.7E-1	4.1E-6	4.8E-6

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 2 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAY — CHECK IF PATHWAY IS ACTIVE

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial	2) NAF Value (m^3/kg) Receptor: Off-Site Residential	3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2): Off-Site Residential	4) Exposure Multiplier ((IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	4) Exposure Multiplier ((IRxEFxED)/(BWxAT) (m^3/kg-day): Off-Site Residential	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): Off-Site Residential
Benzene	2.7E-1	1.4E+4	1.7E+4	1.9E-5	1.6E-5	7.0E-2	1.2E-1	1.3E-6	1.8E-6
Ethylbenzene	4.9E-1	1.4E+4	1.7E+4	3.4E-5	2.8E-5	2.0E-1	2.7E-1	6.6E-6	7.7E-6
Toluene	1.8E-1	1.4E+4	1.7E+4	1.3E-5	1.1E-5	2.0E-1	2.7E-1	2.5E-6	2.9E-6
Xylene (mixed isomers)	1.5E+0	1.4E+4	1.7E+4	1.0E-4	8.5E-5	2.0E-1	2.7E-1	2.0E-5	2.3E-5

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposue area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 3 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor: On-Site Commercial		3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial		5) Average Daily Intake Rate (mg/kg-day) (3) X (4): On-Site Commercial		TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from surface, subsurface & groundwater routes.): On-Site Commercial	Off-Site Residential
Benzene	1.6E-1	1.6E+4		9.7E-6		7.0E-2		6.8E-7		2.1E-6	2.0E-6
Ethylbenzene	3.4E-2	1.6E+4		2.1E-6		2.0E-1		4.1E-7		7.9E-6	8.8E-6
Toluene	6.6E-3	1.6E+4		4.0E-7		2.0E-1		7.9E-8		3.2E-6	3.7E-6
Xylene (mixed isomers)	1.2E-2	1.8E+4		6.7E-7		2.0E-1		1.3E-7		2.4E-5	2.8E-5

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS [redacted] [CHECKED IF PATHWAY IS ACTIVE] [redacted]

SUBSURFACE SOILS:
VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2) — On-Site Commercial	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day) — On-Site Commercial	5) Average Daily Intake Rate: (mg/kg-day) (3) X (4) — On-Site Commercial
Benzene	2.7E-1	9.2E+2	3.0E-4	7.0E-2	2.1E-5
Ethylbenzene	4.9E-1	1.2E+3	4.2E-4	2.0E-1	8.1E-5
Toluene	1.8E-1	1.5E+3	1.2E-4	2.0E-1	2.4E-5
Xylene (mixed isomers)	1.5E+0	2.3E+3	6.6E-4	2.0E-1	1.3E-4

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 5 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER:
VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration 1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2) — On-Site Commercial	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day) — On-Site Commercial	5) Average Daily Intake Rate: (mg/kg-day) (3) X (4) — On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from subsurface & groundwater routes.) — On-Site Commercial
Benzene	1.6E-1	6.6E+3	2.4E-5	7.0E-2	1.7E-6	2.2E-5
Ethylbenzene	3.4E-2	5.6E+3	6.1E-6	2.0E-1	1.2E-6	8.3E-5
Toluene	6.6E-3	6.1E+3	1.1E-6	2.0E-1	2.1E-7	2.5E-5
Xylene (mixed Isomers)	1.2E-2	6.5E+3	1.8E-6	2.0E-1	3.6E-7	1.3E-4

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7- Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Z Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS | CHECKED EXPOSURE PATHWAYS ACTIVE

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

Constituents of Concern	Exposure Concentration 1) Source Medium: Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day): On-Site Residential	2) Exposure Multiplier: On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2): On-Site Residential	3) Average Daily Intake Rate: On-Site Commercial
Benzene	1.5E-1		1.0E-5		1.5E-6
Ethylbenzene	3.4E-1		2.8E-5		9.6E-6
Toluene	2.6E-1		2.8E-5		7.4E-6
Xylene (mixed isomers)	1.5E+0		2.8E-5		4.3E-5

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/); ET = Exposure time (hrs/day); IR = Intake rate (mg/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS — COMPLETED PATHWAYS (Tier V)

SURFACE SOILS OR SEDIMENTS: INGESTION	Exposure Concentration	1) Source Medium	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) x (2)		TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.)	
Constituents of Concern		Surface Soil Conc. (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Benzene		1.5E-1		1.7E-7		2.5E-8		1.5E-6
Ethylbenzene		3.4E-1		4.9E-7		1.7E-7		9.8E-6
Toluene		2.6E-1		4.9E-7		1.3E-7		7.5E-6
Xylene (mixed isomers)		1.5E+0		4.9E-7		7.5E-7		4.4E-5

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (mg/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS | OTHER EXPOSURE PATHWAYS NOT ACTIVE

SOIL: LEACHING TO GROUNDWATER/ GROUNDWATER INGESTION

Constituents of Concern	Exposure Concentration 1) Source Medium: Soil Concentration (mg/kg)	2) NAF Value (L/kg) Receptor: Off-Site Residential	3) Exposure Medium: Groundwater: POE Conc. (mg/L) (1)/(2) Off-Site Residential	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (L/kg-day) Off-Site Residential	5) Average Daily Intake Rate: (mg/kg-day) (3) x (4) Off-Site Residential
Benzene	2.7E-1	1.3E+4	2.0E-5	1.2E-2	2.4E-7
Ethylbenzene	4.9E-1	4.8E+11	1.0E-12	2.7E-2	2.8E-14
Toluene	2.6E-1	1.8E+48	1.4E-49	2.7E-2	3.9E-51
Xylene (mixed isomers)	1.5E+0	1.7E+11	9.1E-12	2.7E-2	2.5E-13

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body Weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Intake rate (L/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-01 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration 1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (dim) Receptor: Off-Site Residential	3) Exposure Medium — Groundwater: POE Conc. (mg/L) (1)/(2): Off-Site Residential	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day): Off-Site Residential	5) Average Daily Intake Rate (mg/kg-day) (3) x (4): Off-Site Residential	MAX. PATHWAY INTAKE (mg/kg-day) (Maximum intake of active pathways soil leaching & groundwater routes.): Off-Site Residential
Benzene	1.6E-1	5.0E+4	3.1E-6	1.2E-2	3.7E-8	2.4E-7
Ethylbenzene	3.4E-2	1.2E+12	2.9E-14	2.7E-2	7.9E-16	2.8E-14
Toluene	6.6E-3	4.0E+48	1.7E-51	2.7E-2	4.5E-53	3.9E-51
Xylene (mixed isomers)	1.2E-2	2.5E+11	4.7E-14	2.7E-2	1.3E-15	2.5E-13

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 |

TIER 2 PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS — CHECKED (✓) PATHWAY FOR SITE

		CARCINOGENIC RISK					TOXIC EFFECTS				
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site Residential	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Commercial	(4) Individual COC Risk (2) x (3) Off-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Residential	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial	(7) Individual COC Hazard Quotient (5) / (6) Off-Site Residential
Constituents of Concern											
Benzene	A	2.1E-6	2.0E-6	2.9E-2	6.2E-8	5.9E-8	6.0E-6	4.8E-6	1.7E-3	3.5E-3	2.8E-3
Ethylbenzene	D						7.9E-6	8.8E-6	2.9E-1	2.8E-5	3.1E-5
Toluene	D						3.2E-6	3.7E-6	1.1E-1	2.8E-5	3.2E-5
Xylene (mixed isomers)	D						2.4E-5	2.8E-5	2.0E+0	1.2E-5	1.4E-5
Total Pathway Carcinogenic Risk =					**6.2E-8**	**5.9E-8**	***Total Pathway Hazard Index =***			**3.6E-3**	**2.9E-3**

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Site Name: Exxon Station No. 7-0104 Site Location: 1725 Park Street, Alameda, CA Completed By: Steve M. Zigan Date Completed: 9/1/2000

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAY (Checked if pathway is active)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site	(2) Commercial	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site	(4) Commercial	TOXIC EFFECTS (5) Total Toxicant Intake Rate (mg/kg/day) On-Site	(5) Commercial	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site	(7) Commercial
Benzene	A		2.2E-5	2.9E-2		6.5E-7		6.3E-5	1.7E-3		3.7E-2
Ethylbenzene	D							8.3E-5	2.9E-1		2.9E-4
Toluene	D							2.5E-5	1.1E-1		2.1E-4
Xylene (mixed isomers)	D							1.3E-4	2.0E+0		6.5E-5
Total Pathway Carcinogenic Risk =					0.0E+0	6.5E-7	***Total Pathway Hazard Index =***			0.0E+0	3.7E-2

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Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 3 OF 4

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS (CHECKED: PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential	On-Site Commercial	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential	On-Site Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential	On-Site Commercial	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	On-Site Commercial
Benzene	A		1.5E-6	1.0E-1		1.5E-7					
Ethylbenzene	D							9.8E-6	1.0E-1		9.8E-5
Toluene	D							7.5E-6	2.0E-1		3.7E-5
Xylene (mixed isomers)	D							4.4E-5	2.0E+0		2.2E-5
Total Pathway Carcinogenic Risk =					0.0E+0	1.5E-7	***Total Pathway Hazard Index =***			0.0E+0	1.6E-4

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-311-YSX-926

Site Name: Exxon Station No. 7-0104 | Site Location: 1725 Park Street, Alameda, CA | Completed By: Steve M. Zigan | Date Completed: 9/1/2000 | 4 OF 4

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS (CHECKED PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) Off-Site Residential	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) Off-Site Residential	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) Off-Site Residential	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) Off-Site Residential
Benzene	A	2.4E-7	1.0E-1	2.4E-8			
Ethylbenzene	D				2.8E-14	1.0E-1	2.8E-13
Toluene	D				3.9E-51	2.0E-1	1.9E-50
Xylene (mixed isomers)	D				2.5E-13	2.0E+0	1.2E-13
Total Pathway Carcinogenic Risk =				**0.0E+0**		***Total Pathway Hazard Index =***	**0.0E+0**
				2.4E-8			**4.0E-13**

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RBCA SITE ASSESSMENT	Tier 2 Worksheet 8.3

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

TIER 2 BASELINE RISK SUMMARY TABLE

	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
EXPOSURE PATHWAY	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	6.2E-8	1.0E-6	6.2E-8	N/A	☐	3.5E-3	1.0E+0	3.6E-3	N/A	☐
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	6.5E-7	1.0E-6	6.5E-7	N/A	☐	3.7E-2	1.0E+0	3.7E-2	N/A	☐
SOIL EXPOSURE PATHWAYS										
Complete:	1.5E-7	1.0E-6	1.5E-7	N/A	☐	9.8E-5	1.0E+0	1.6E-4	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	2.4E-8	1.0E-6	2.4E-8	N/A	☐	2.8E-13	1.0E+0	4.0E-13	N/A	☐
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	6.5E-7	1.0E-6	6.5E-7	N/A	☐	3.7E-2	1.0E+0	3.7E-2	N/A	☐

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RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.1

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

SURFACE SOIL SSTL VALUES (< 2 FT BGS)

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - First Order (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X	Soil Leaching to Groundwater			X	Ingestion, Inhalation and Dermal Contact		X	Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)		Residential: 1344 feet	Commercial: (on-site)	Regulatory(MCL): 1344 feet		Residential: 20 feet	Commercial: (on-site)		Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	1.5E-1		1.1E+1	NA	NA		2.6E+1	9.4E-1		3.1E+1	9.4E-1	☐	<1
100-41-4	Ethylbenzene	3.4E-1		>Res	NA	NA		>Res	>Res		>Res	>Res	☐	<1
108-88-3	Toluene	2.6E-1		>Res	NA	NA		>Res	>Res		>Res	>Res	☐	<1
1330-20-7	Xylene (mixed isomers)	1.5E+0		>Res	NA	NA		>Res	>Res		>Res	>Res	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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RBCA SITE ASSESSMENT | **Tier 2 Worksheet 9.2**

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

SUBSURFACE SOIL SSTL VALUES (> 2 FT BGS)

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - First Order (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X Soil Leaching to Groundwater			X Soil Volatilization to Indoor Air		X Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: 1344 feet	Commercial: (on-site)	Regulatory(MCL): 1344 feet	Residential: (on-site)	Commercial: (on-site)	Residential: 20 feet	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	2.7E-1	1.1E+1	NA	NA	NA	4.6E-1	5.1E+0	7.2E+0	4.6E-1	☐	<1
100-41-4	Ethylbenzene	4.9E-1	>Res	NA	NA	NA	>Res	>Res	>Res	>Res	☐	<1
108-88-3	Toluene	1.8E-1	>Res	NA	NA	NA	>Res	>Res	>Res	>Res	☐	<1
1330-20-7	Xylene (mixed Isomers)	1.5E+0	>Res	NA	NA	NA	>Res	>Res	>Res	>Res	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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Version: 1.0.1

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Exxon Station No. 7-0104
Site Location: 1725 Park Street, Alameda, CA

Completed By: Steve M. Zigan
Date Completed: 9/1/2000

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - First Order (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X Groundwater Ingestion			X Groundwater Volatilization to Indoor Air		X Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: 1344 feet	Commercial: (on-site)	Regulatory(MCL): 1344 feet	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
71-43-2	Benzene	1.6E-1	4.3E+1	NA	NA	NA	3.3E+0	NA	8.0E+0	3.3E+0	☐	<1
100-41-4	Ethylbenzene	3.4E-2	>Sol	NA	NA	NA	>Sol	NA	>Sol	>Sol	☐	<1
108-88-3	Toluene	6.6E-3	>Sol	NA	NA	NA	>Sol	NA	>Sol	>Sol	☐	<1
1330-20-7	Xylene (mixed isomers)	1.2E-2	>Sol	NA	NA	NA	>Sol	NA	>Sol	>Sol	☐	<1

>Sol Indicates risk-based target concentration greater than constituent solubility

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