



✓ No 289

Alameda County
APR 09 2003
Environmental Health

April 4, 2003

Mr. Amir Gholami
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Subject: SUMMARY OF REMEDIATION HISTORY AND GROUNDWATER IMPACT BY PETROLEUM HYDROCARBONS, OWENS-BROCKWAY GLASS CONTAINER FACILITY, 3600 ALAMEDA AVENUE, OAKLAND, CALIFORNIA.

Dear Mr. Gholami:

CKG Environmental, Inc. (CKG) has been working with Owens-Brockway Glass Container, Inc. to address ongoing concerns associated with petroleum hydrocarbon releases at the Oakland Plant. CKG and Owens-Brockway met with Mr. Barney Chan on September 27, 2002 to discuss the site status and present an approach to collect needed information and potentially request site closure based on the impact being "Low Risk". Since the time of our meeting we understand that the caseload at Alameda County Environmental Health has been reorganized and that you are now the new caseworker. We discussed this change with Mr. Chan and he stated that he would make every effort to bring you up to speed on this site and the proposed approach. He also suggested that we prepare a brief summary with pertinent data that you can review to assist in that process.

The following letter presents a brief summary of site history, remediation activities and their effectiveness, historical data and the proposed approach. Although much of this information can be found in the annual groundwater monitoring reports this letter is presented to collate the data and present it in a more concise form. We appreciate your time in reviewing this information. After your review we would like to schedule a meeting so that we can introduce ourselves and discuss the upcoming work and objectives.

HISTORIC/REMEDATION SUMMARY

Two underground fuel storage tank (UST) areas existed at the Oakland plant (Plate 1). The first UST area is located on the west side of the plant and included two fuel oil USTs. Impacts by fuel oil to the subsurface were observed when a new forklift ramp was being constructed and when the associated USTs were removed.

The second UST area is located near the central part of the plant adjacent to the compressor building. Originally there were four USTs in the area. When they were removed and replaced by two new USTs

a gasoline release to the subsurface was observed. The following table summarizes the dates of assessment and remediation activities associated with each UST area.

FUEL OIL TANKS		
DATE	ACTION	RESULT
July 1986	Construction for new forklift ramp exposed impacted soil.	Triggered investigation
July 1986	Subsurface investigation completed including 16 soil borings	Assessed location of source and distribution of impact
July – December 1986	18 monitoring wells installed.	Impacts to groundwater were documented
September 1986	16,000-gallon fuel oil UST removed and pipeline capped. 36-inch recovery well installed	148 cubic yards impacted soil removed.
1987	Product recovery device installed.	Effort to skim product was unsuccessful
1987-1988	Tri-annual groundwater monitoring was implemented	
1989	Recovery well was upgraded and a second recovery well installed.	Effort to skim product was unsuccessful
August and September 1997	Recoverable petroleum hydrocarbons product removed from all wells using bailer and absorbent pads.	Minor amounts of product were removed but with great effort for minimal result.
August 1997 - present	Annual groundwater monitoring resumed at site.	Levels of petroleum hydrocarbons have stabilized in both UST areas.
January 1999	Collected groundwater samples from five offsite borings in the downgradient direction.	Petroleum hydrocarbons were detected in three of the five borings.
June 1999	Petro-Trap™ passive oil skimmer was installed in MW-2.	The Petro-Trap™ recovery was not successful.
December 2000 to present	Soakease™ absorbent pads are installed in MW-2, MW-5, MW-6, MW-7, MW-8 and MW-9, which are replaced regularly.	Pads are replaced regardless of quantity of oil present. Most wells yield only traces of product. MW-2 and MW-6 routinely yield product.
February 2000	Two wells proposed (MW-19 and 20) MW-19 in downgradient direction offsite.	
December 2000	MW-20 was installed and included in the sampling program	MW-19 was not installed due to difficulty with offsite access.
July 2001	Recovery wells were destroyed	The recovery wells were deemed a liability due to potential surface water infiltration.
April 2003	Encroachment permit to install MW-19 granted.	Site summary letter prepared and submitted to Alameda County Health.

GASOLINE USTs		
DATE	ACTION	RESULT
1986	Removed existing USTs (one 350 gallon, two 8,000 gallon and one 12,000 gallon). Replaced with two double walled USTs (one for gasoline and one for diesel).	Visible releases from the tanks were observed during removal.
July 1986	Subsurface investigation completed including 16 soil borings	Assessed location of source and distribution of impact.
July – December 1986	Three of the 18 wells mentioned above were installed in the area of the gasoline USTs	Impacts to groundwater were documented but floating hydrocarbon product was observed.
1987-1988	Tri-annual groundwater monitoring was implemented	
August 1997 – present	Annual groundwater monitoring resumed at site.	Levels of petroleum hydrocarbons have stabilized in both UST areas.
October 1998	USTs installed in 1986 were removed	

The remediation activities at the site show that floating product occurs only at the UST area associated with the fuel oil release. This fuel oil has been very difficult to extract from the subsurface. The reason for this difficulty is that the fuel oil itself tends to be thick and does not flow well. In addition, heavy organic rich clays characterize the subsurface soils with very low permeability and hydraulic transmissivity. It is CKG and Owens-Brockway's belief that the fuel oil remaining is contained in subsurface conduits (such as the many utility lines in the area).

ANALYTICAL DATA SUMMARY

CKG has compiled the data collected over the years for the wells at the site. The data was presented in tables prepared by Kennedy/Jenks Consultants in their annual report dated January 21, 2003. To assess changes in concentrations of petroleum hydrocarbons over time CKG has charted the data for the following wells:

MW-1, MW-5, MW-6, MW-7, MW-8, MW-9, MW10, MW-13, MW-15, MW-16 and MW-17.

MW-2 and MW-6 were not plotted since floating product was observed in most of the monitoring events. MW-3, MW-4, MW-11, MW-12, MW-14, and MW-18 were not plotted because they were either destroyed or dropped from the monitoring program after 1988. MW-20 was not plotted because it has only been sampled since 2000.

Based on a review of the data compilations the following observations can be made:

FUEL OIL TANKS AREA (MW-1, MW-5, MW-6, MW-7, MW-8, MW-9 MW-10)

- A comparison of trend plots for total extractable hydrocarbons (TPHd) in all the wells shows that after the initial discovery, the relatively high concentrations dropped rapidly to much lower concentrations, and have remained stable for over 10 years. Wells MW-8 and MW-10 show much more variability in this trend but this can be expected because the total concentrations are very low (<5 mg/kg) and therefore subject to analytical instrument variability.
- The trend plots for total purgeable hydrocarbons (TPHg) show interesting variability that may not have anything really to do with releases at the site. Wells MW-5, MW-7, MW-9 and MW-10 all look like TPHg has increased in the last five years but in fact TPHg was not even analyzed in most of the earlier events. The plotting program artificially shows an increase because it plots ND or no data as 0. It should be noted that there is no known gasoline source in the area of the former fuel oil USTs.
- Benzene, toluene, ethylbenzene, and xylenes were detected at such low concentrations in the fuel oil area that they are not considered a concern. This is consistent with a fuel oil release.

GASOLINE TANKS AREA (MW-13, MW-15, MW-16, MW-17)

- A comparison of trend plots for total purgeable hydrocarbons (TPHg) in all the wells shows that after the initial discovery, the relatively high concentrations dropped rapidly to much lower concentrations, and have remained stable for over 10 years. This trend is consistent within all the wells.
- Similar strong decreases in concentration over time are observed for benzene, toluene, ethylbenzene, and xylenes.
- The trend plots for total extractable hydrocarbons (TPHd) show some variability at low concentrations possibly due to analytical instrument variability.

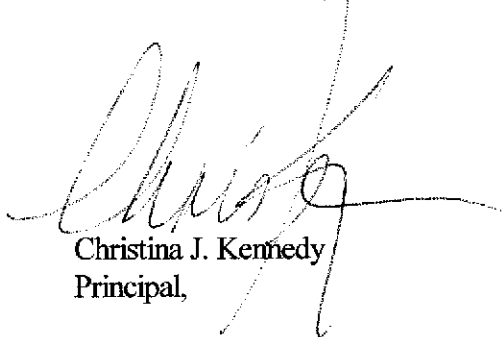
CURRENT STATUS

In the September 27, 2002 meeting with Mr. Chan we discussed the potential that the two fuel releases at the Owens-Brockway facility could be closed as low risk sites. We understand that this may be possible if we collect groundwater data from a downgradient offsite well and compare it to cleanup standards set by the Regional Water Quality Control Board for the San Francisco Airport. These standards are based on aquatic protection. We also discussed the difference in perceived risk between fuel impacts focused along subsurface utilities as opposed to widespread impacts through the subsurface. Since that meeting CKG has worked with the City of Oakland to obtain the required encroachment permit to install the offsite well. That permit has now been approved. We will prepare a

brief work plan with a more detailed scope of work once we have had the opportunity to speak with you about our proposed approach.

Thank you again for your time and attention to this matter. After you review this letter we would like to schedule a meeting with you. Please call Mr. Robert Neal of Owens-Brockway (510) 436-2174 or me at (707) 967-8080 to schedule a meeting or if you need further information.

Sincerely
CKG Environmental, Inc.,



Christina J. Kennedy
Principal,

cc Bob Neal – OB Oakland
Mark Tussing – OB Toledo

FUEL OIL AREA

**Historical Groundwater Water Sample
Results for Well MW-1
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

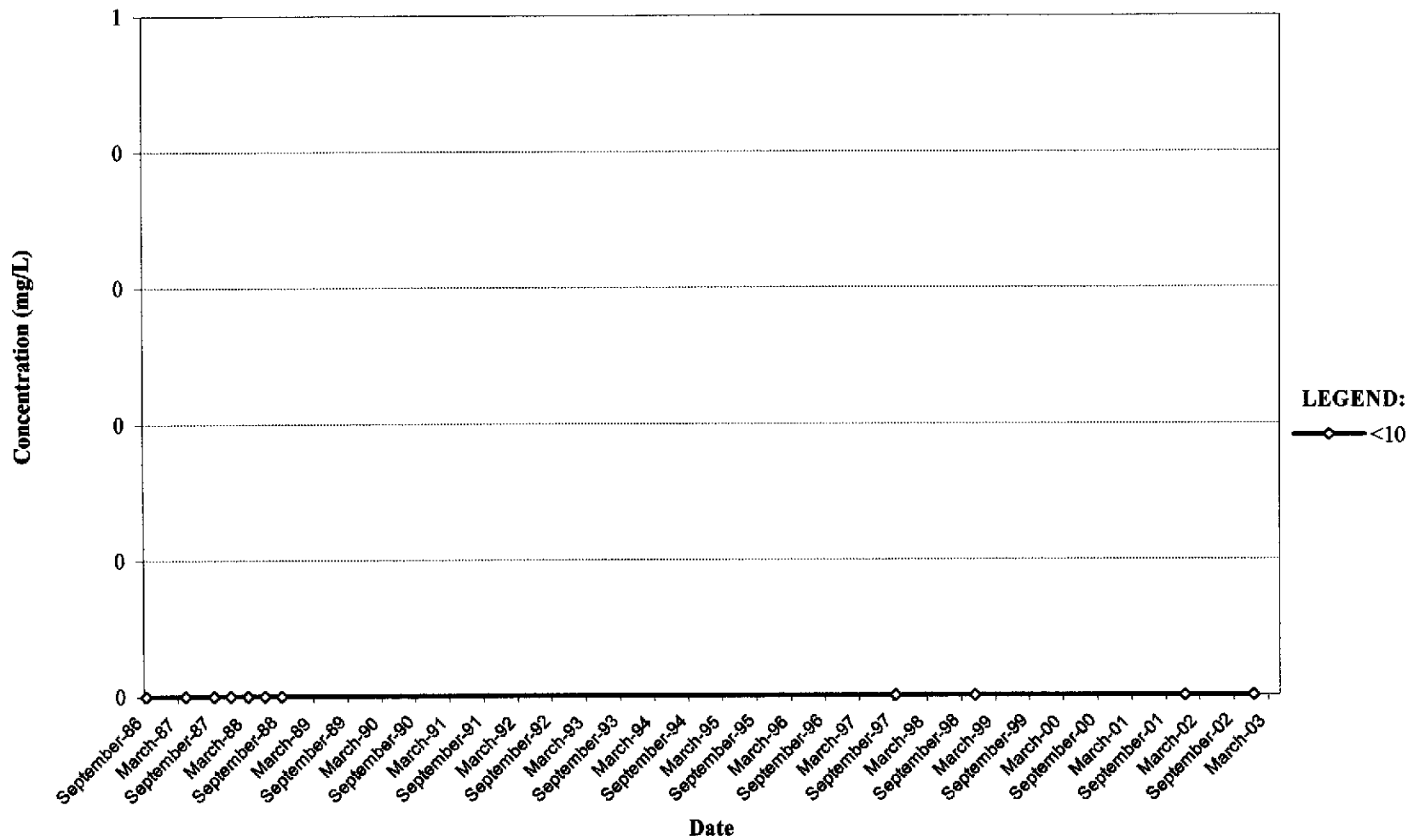
Date	B	T	E	X	TPHd	TPHg	TOG
9/23/1986	<10	<10	na	<10	<.01	<.01	25
4/9/1987	<10	<10	na	<10	<.01	na	na
9/16/1987	not accessible						
12/1/1987	not accessible						
3/7/1988	not accessible						
6/8/1988	not accessible						
9/14/1988	not accessible						
9/16/1997	<.5	<.5	<.5	<.5	0.19	<50	na
11/2/1998	<.5	<.5	<.5	<.5	0.16	<50	na
12/11/2001	not accessible						
12/6/2002	<.5	<.5	<.5	<.5	0.069	<50	na

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

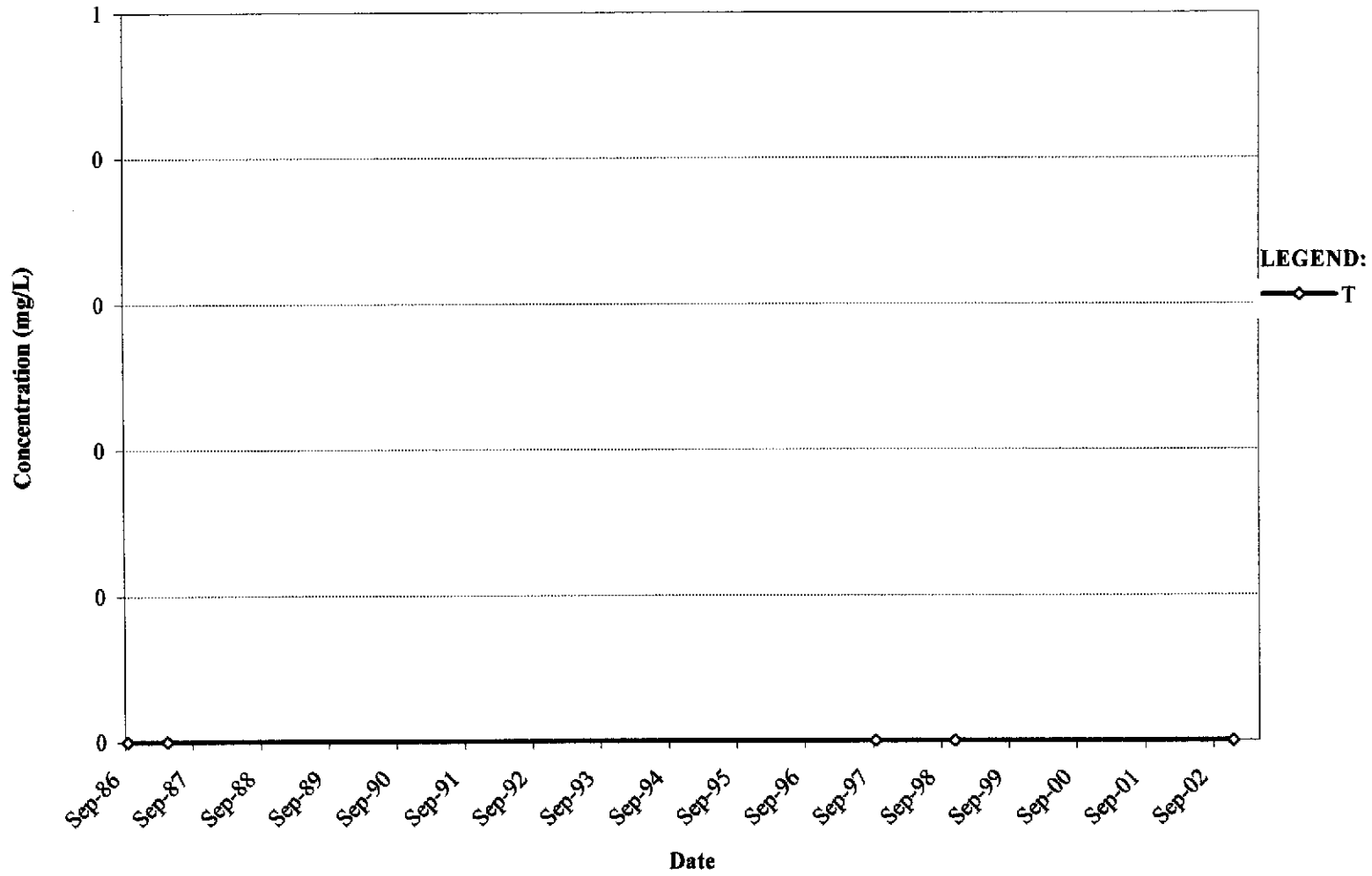
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

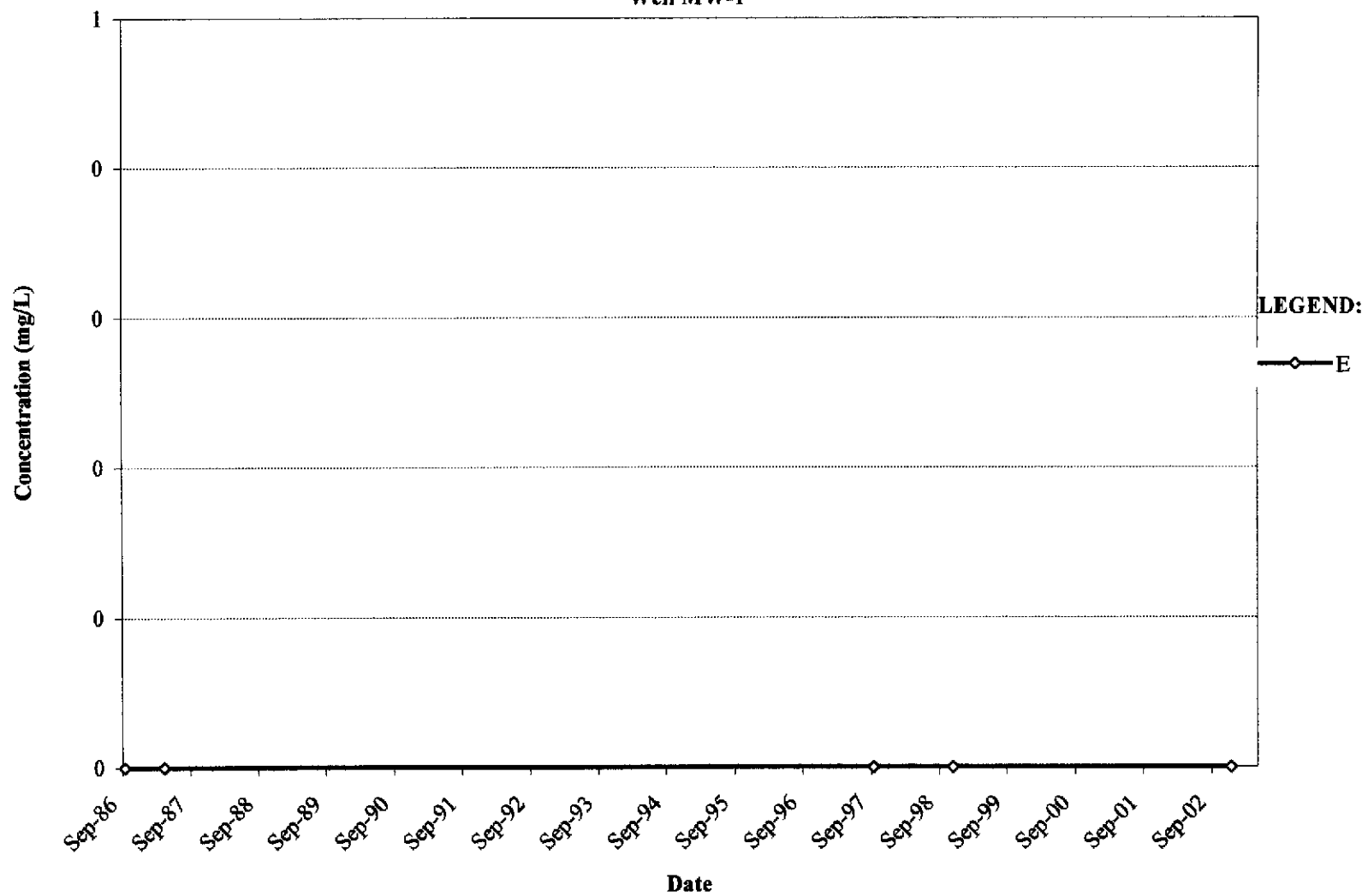
**Trend Plot for Benzene
Well MW-1**



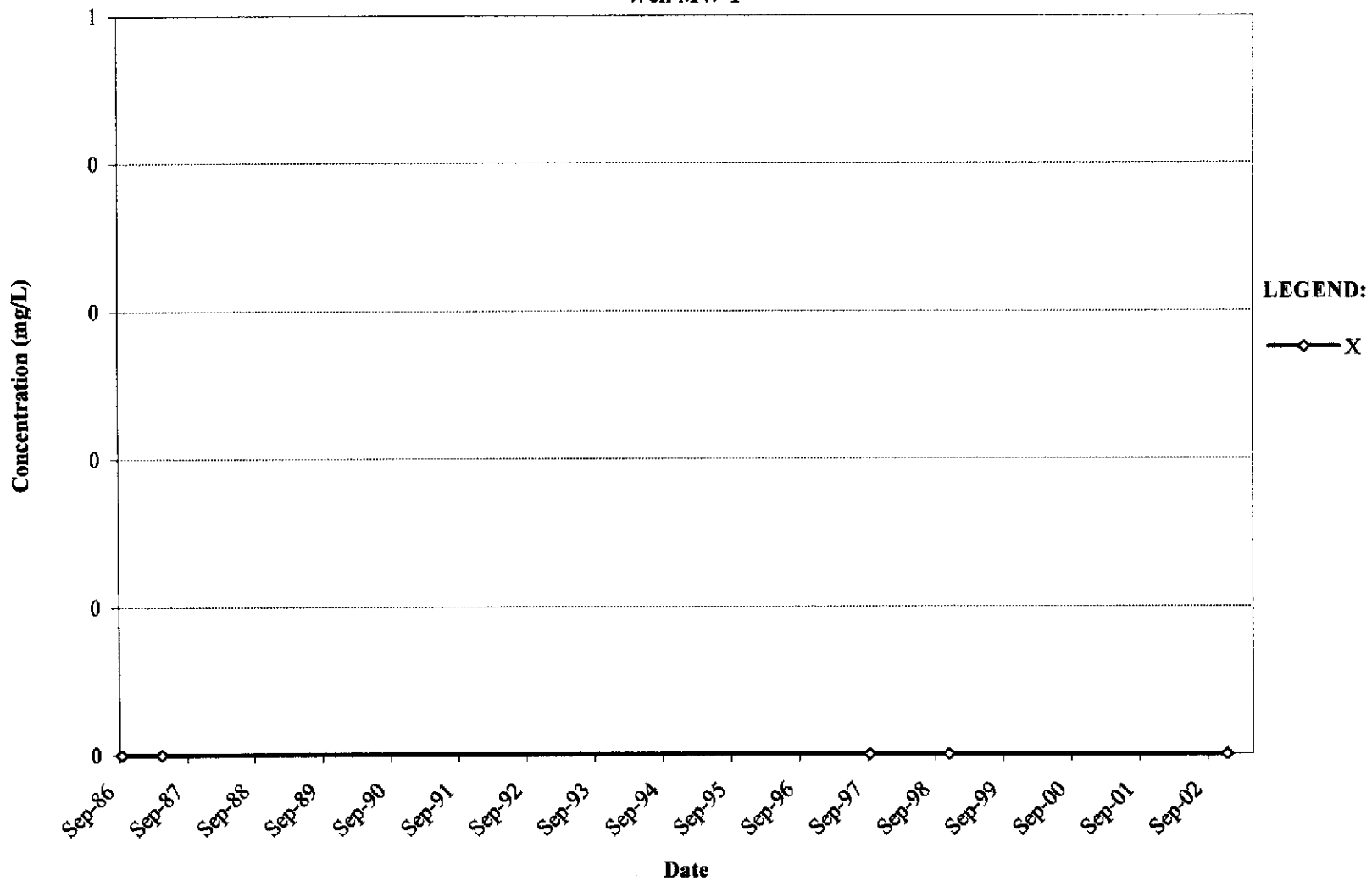
**Trend Plot for Toluene
Well MW-1**



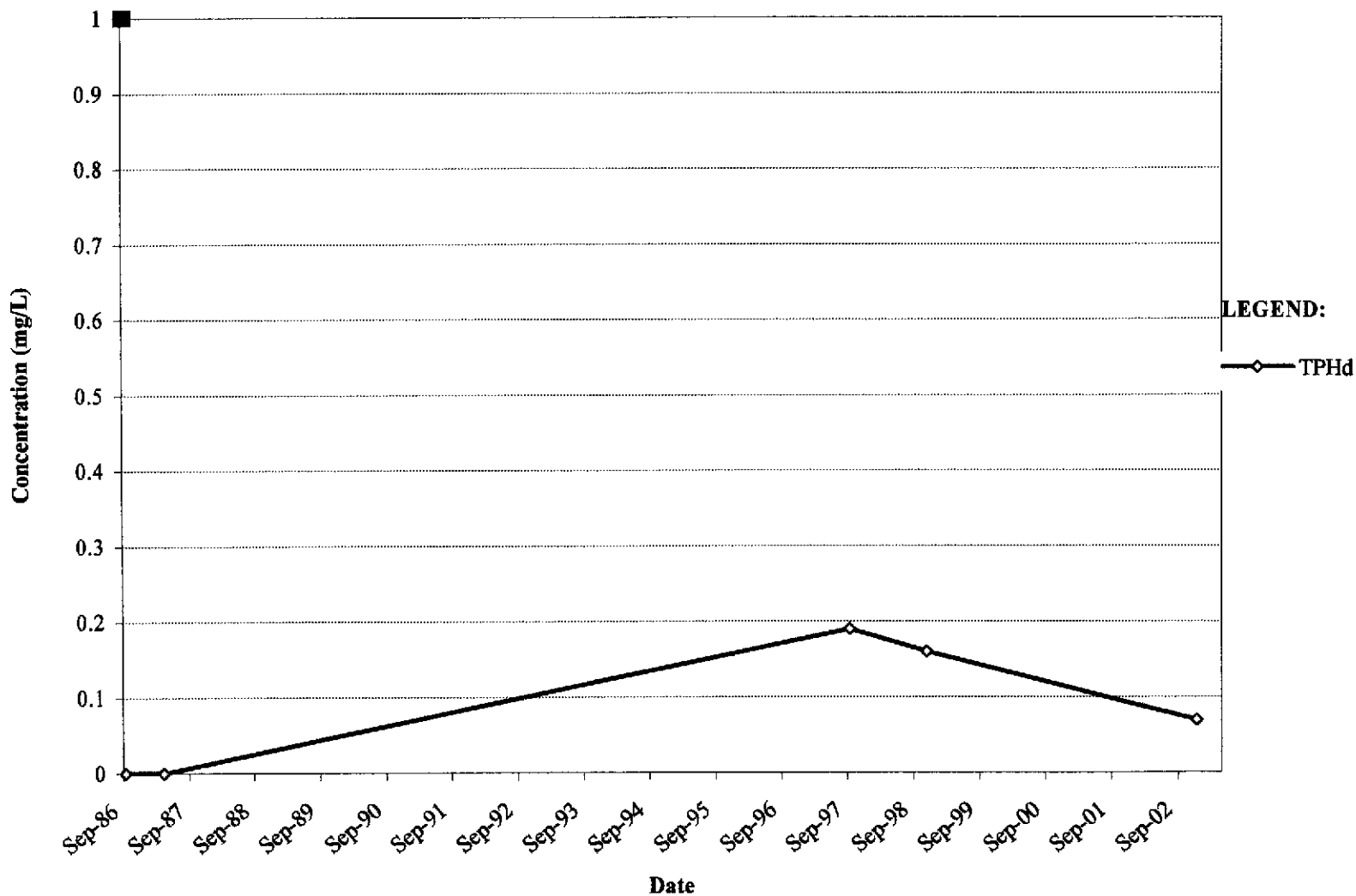
**Trend Plot for Ethylbenzene
Well MW-1**



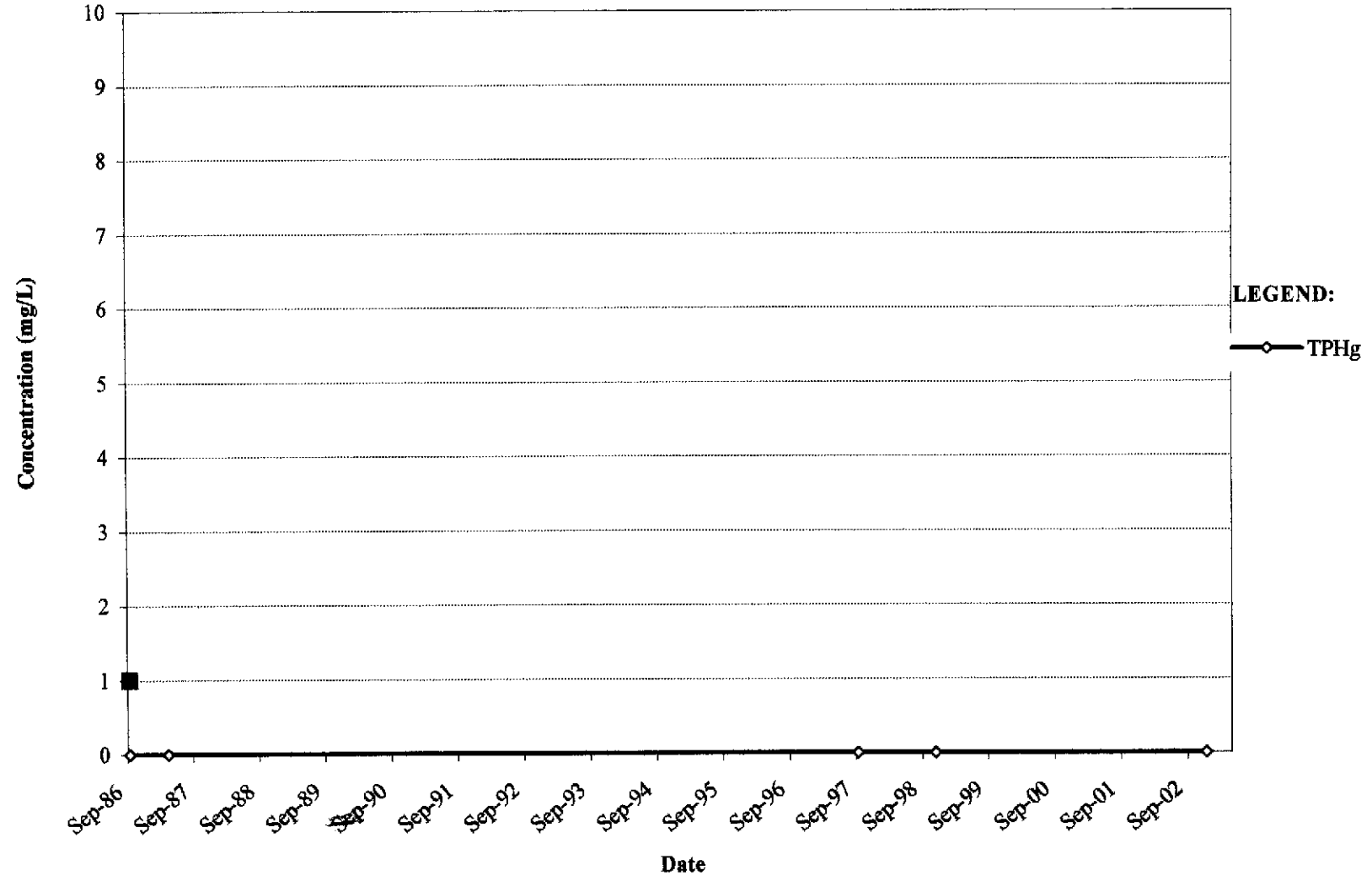
**Trend Plot for Xylenes
Well MW-1**



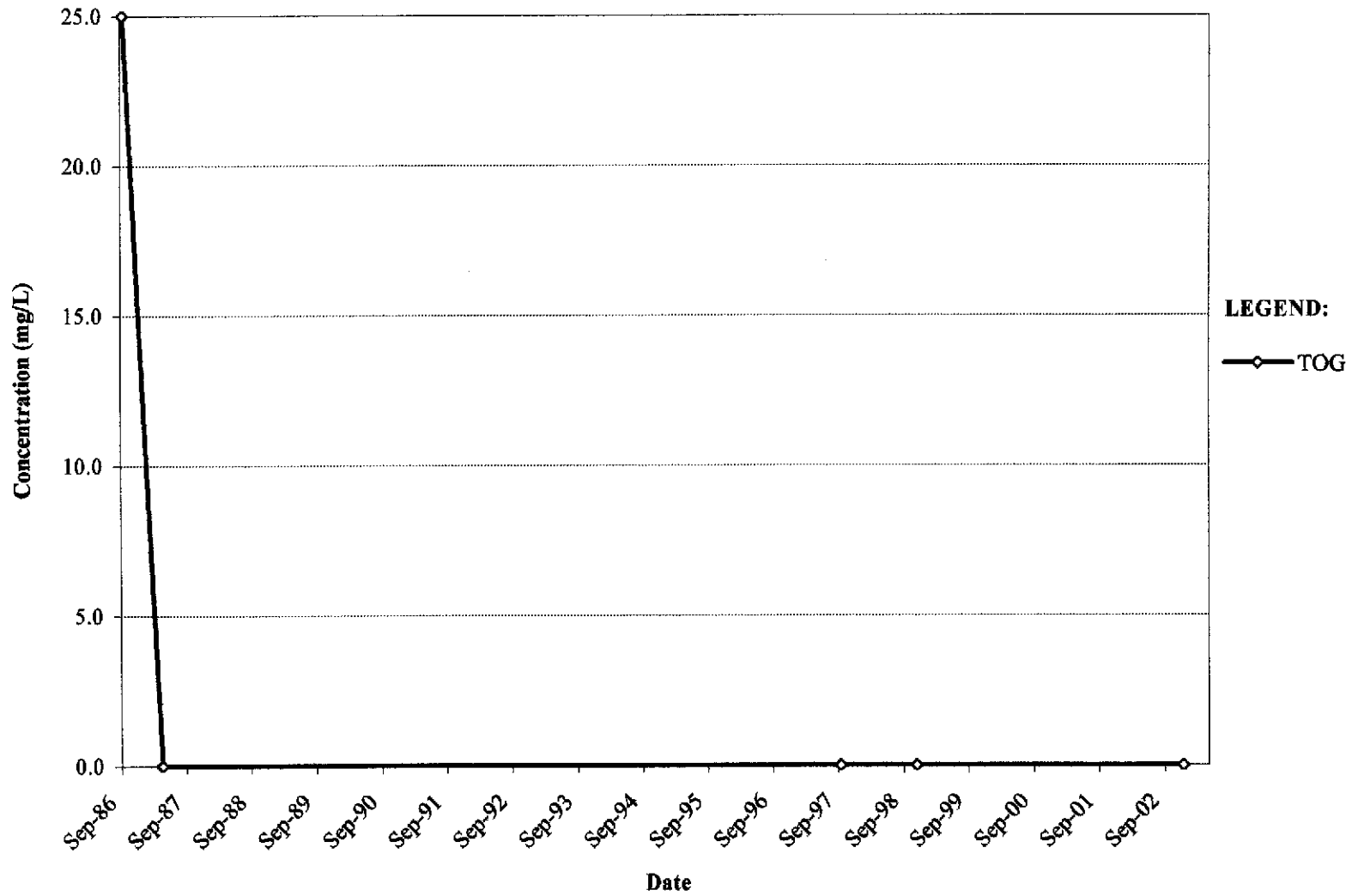
**Trend Plot for TPHd
Well MW-1/1A**



**Trend Plot for TPHg
Well MW-1**



**Trend Plot for TOG
Well MW-1**



**Historical Groundwater Water Sample
Results for Well MW-5
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

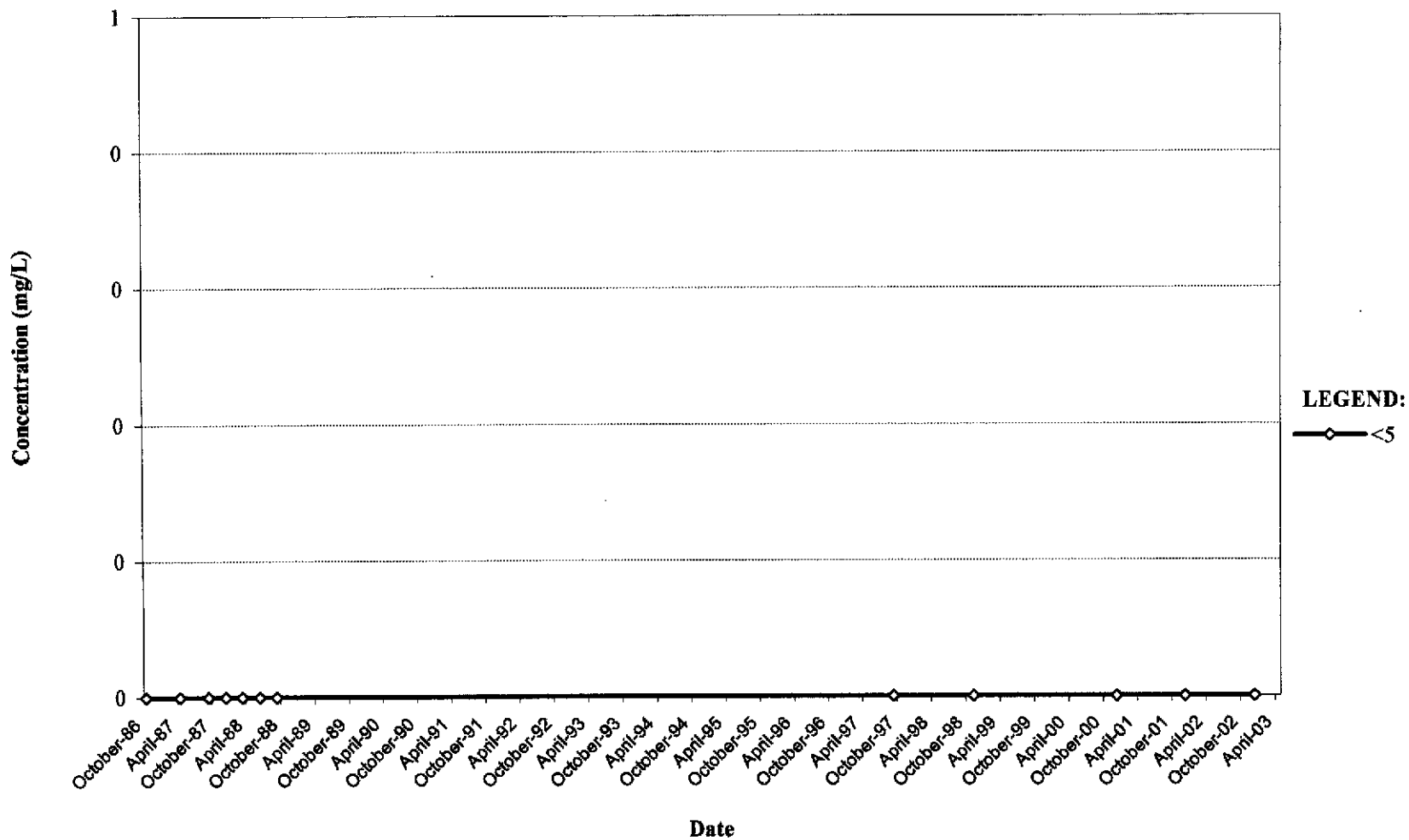
Date	B	T	E	X	TPHd	TPHg	TOG
10/3/1986	<5	<5	NA	6.6	NA	1400	24
4/9/1987	<5	<5	NA	<5	NA	54	NA
9/16/1987	NA	NA	NA	NA	96	NA	NA
12/1/1987	NA	NA	NA	NA	2	NA	NA
3/9/1988	NA	NA	NA	NA	<.05	NA	NA
6/8/1988	NA	NA	NA	NA	12	NA	NA
9/14/1988	NA	NA	NA	NA	6.3	NA	NA
9/16/1997	<.5	<.5	<.5	<.5	11.6	<50	NA
11/2/1998	floating product						
12/6/2000	<.5	<.5	<.5	<.5	11.7	1000	NA
12/12/2001	<.5	<.5	<.5	<.5	10	360	NA
12/6/2002	<.5	<.5	<.5	<.5	5.2	150	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

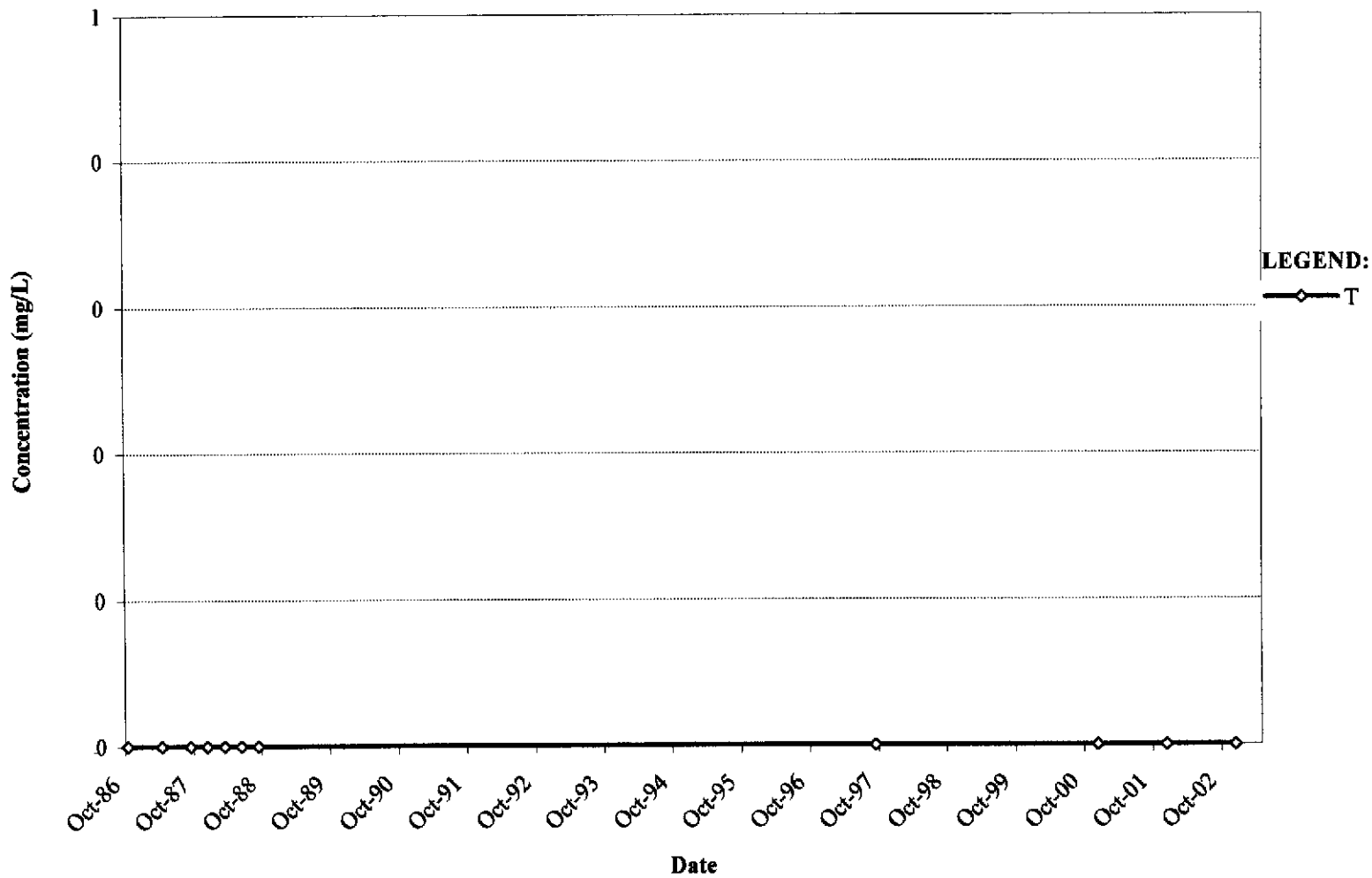
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

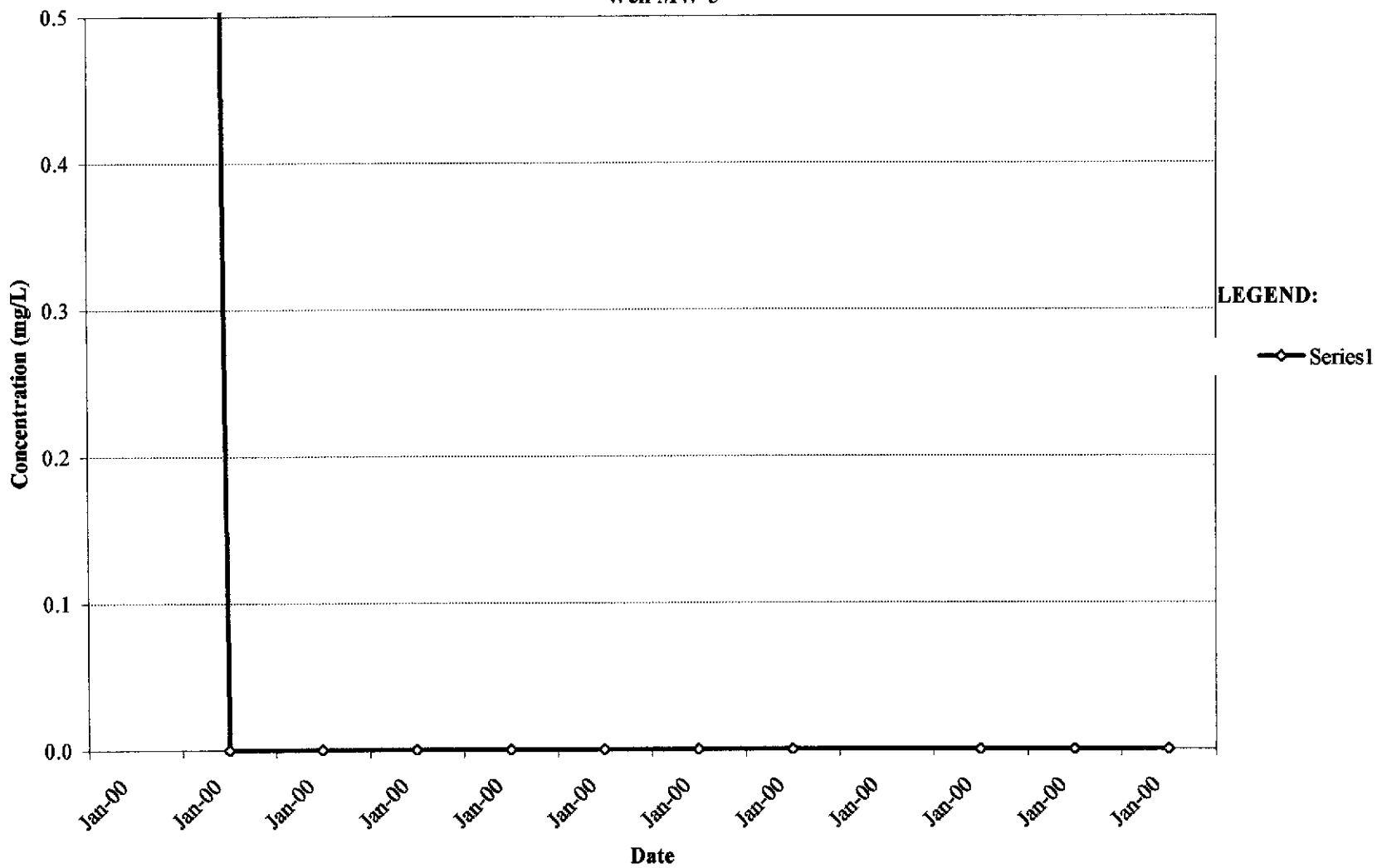
**Trend Plot for Benzene
Well MW-5**



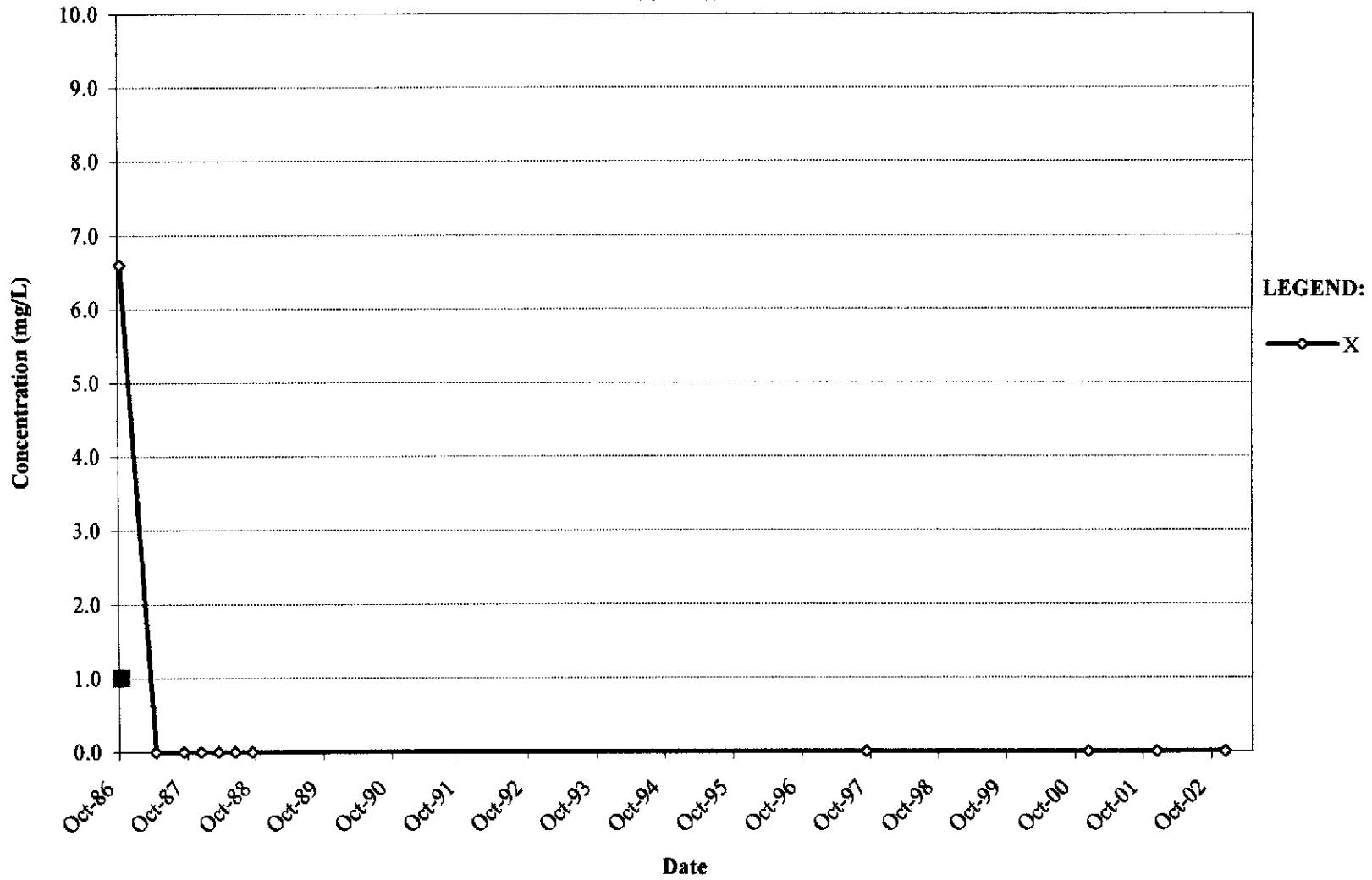
**Trend Plot for Toluene
Well MW-5**



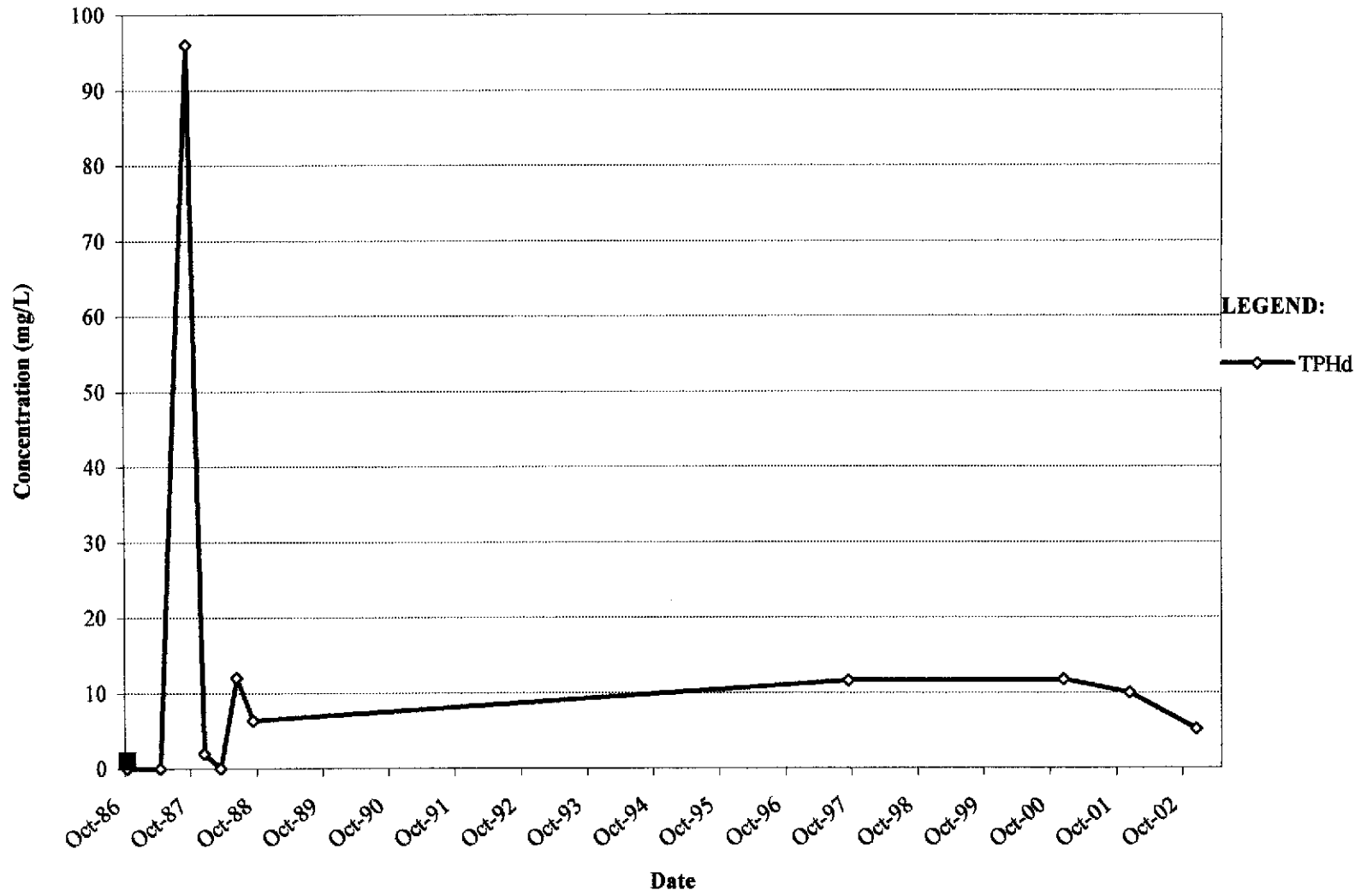
**Trend Plot for Ethylbenzene
Well MW-5**



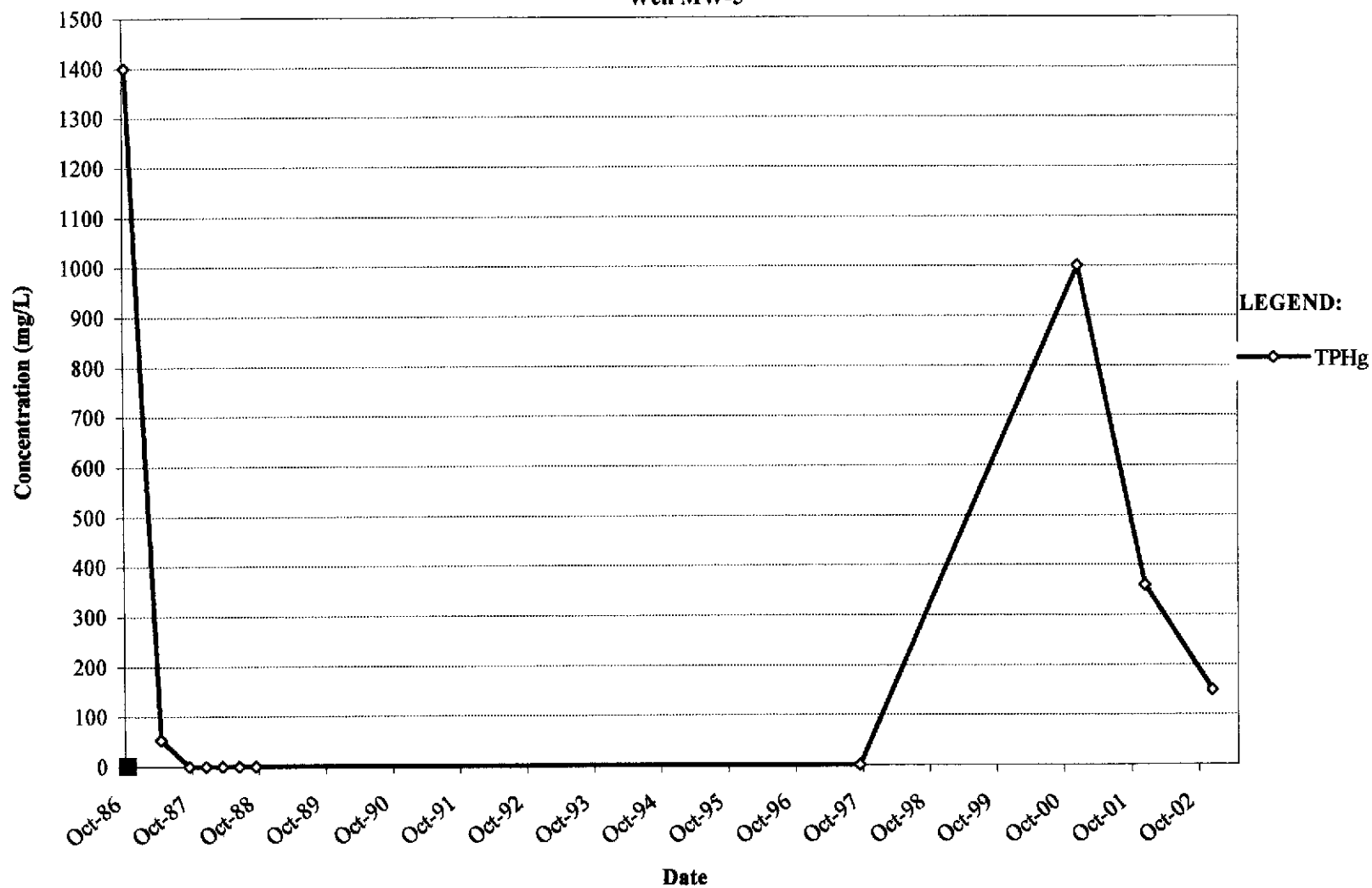
**Trend Plot for Xylenes
Well MW-5**



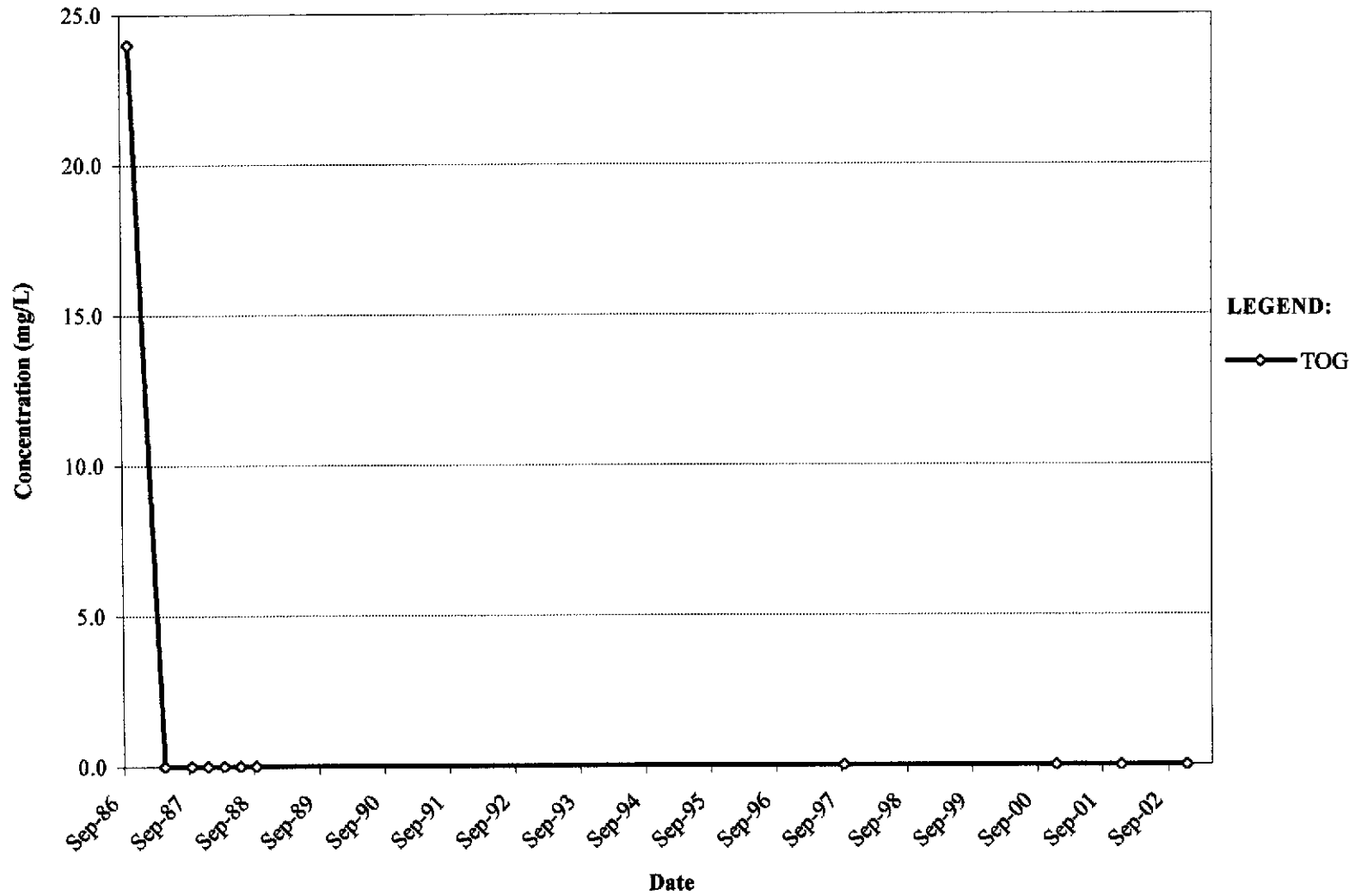
**Trend Plot for TPHd
Well MW-5**



Trend Plot for TPHg
Well MW-5



**Trend Plot for TOG
Well MW-5**



**Historical Groundwater Water Sample
Results for Well MW-7
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

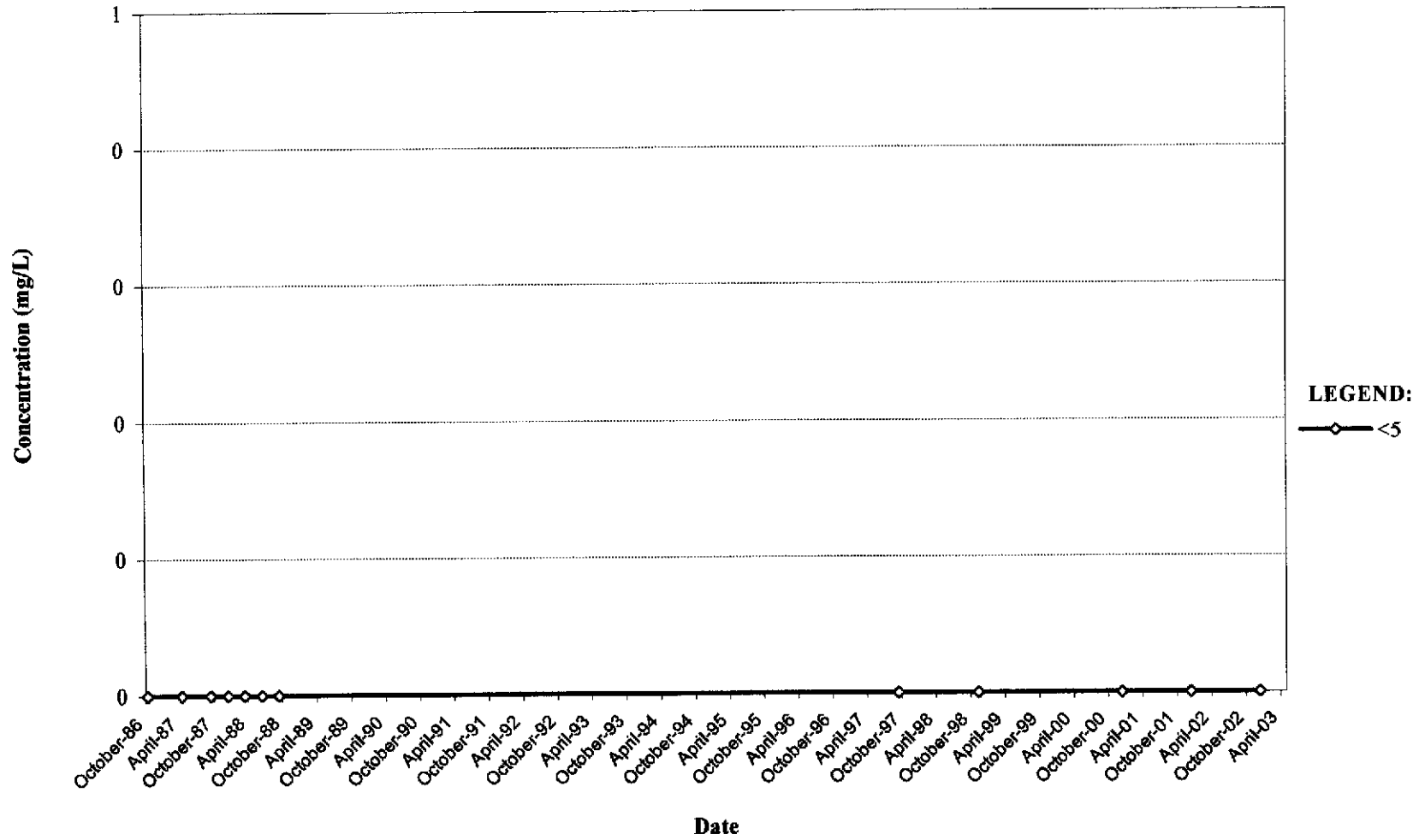
Date	B	T	F	N	TPHd	TPHg	TOG
10/3/1986	<5	<5	NA	<5	NA	260	8
4/9/1987	floating product						
9/16/1987	NA	NA	NA	NA	790	NA	NA
12/1/1987	NA	NA	NA	NA	5.3	NA	NA
3/9/1988	NA	NA	NA	NA	<.05	NA	NA
6/9/1988	NA	NA	NA	NA	12	NA	NA
9/14/1988	NA	NA	NA	NA	67	NA	NA
9/16/1997	<.5	<.5	<.5	<.5	37	850	NA
11/2/1998	floating product						
12/6/2000	<5	<.5	<.5	1.90	3.58	540	NA
12/12/2001	<1	<1	<1	<1	12.6	1200	NA
12/6/2002	<.5	<.5	<.5	<.5	27.6	480	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

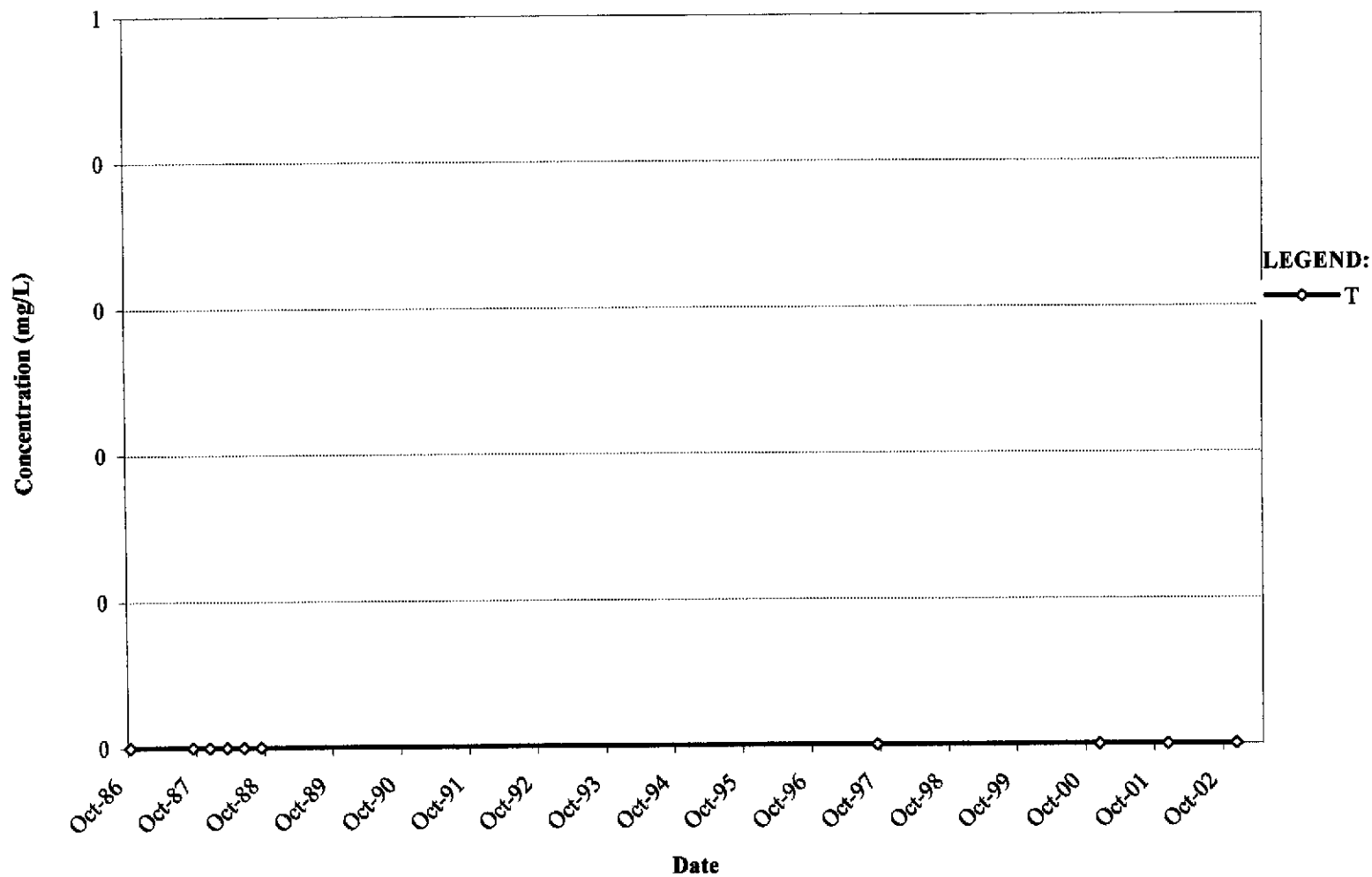
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

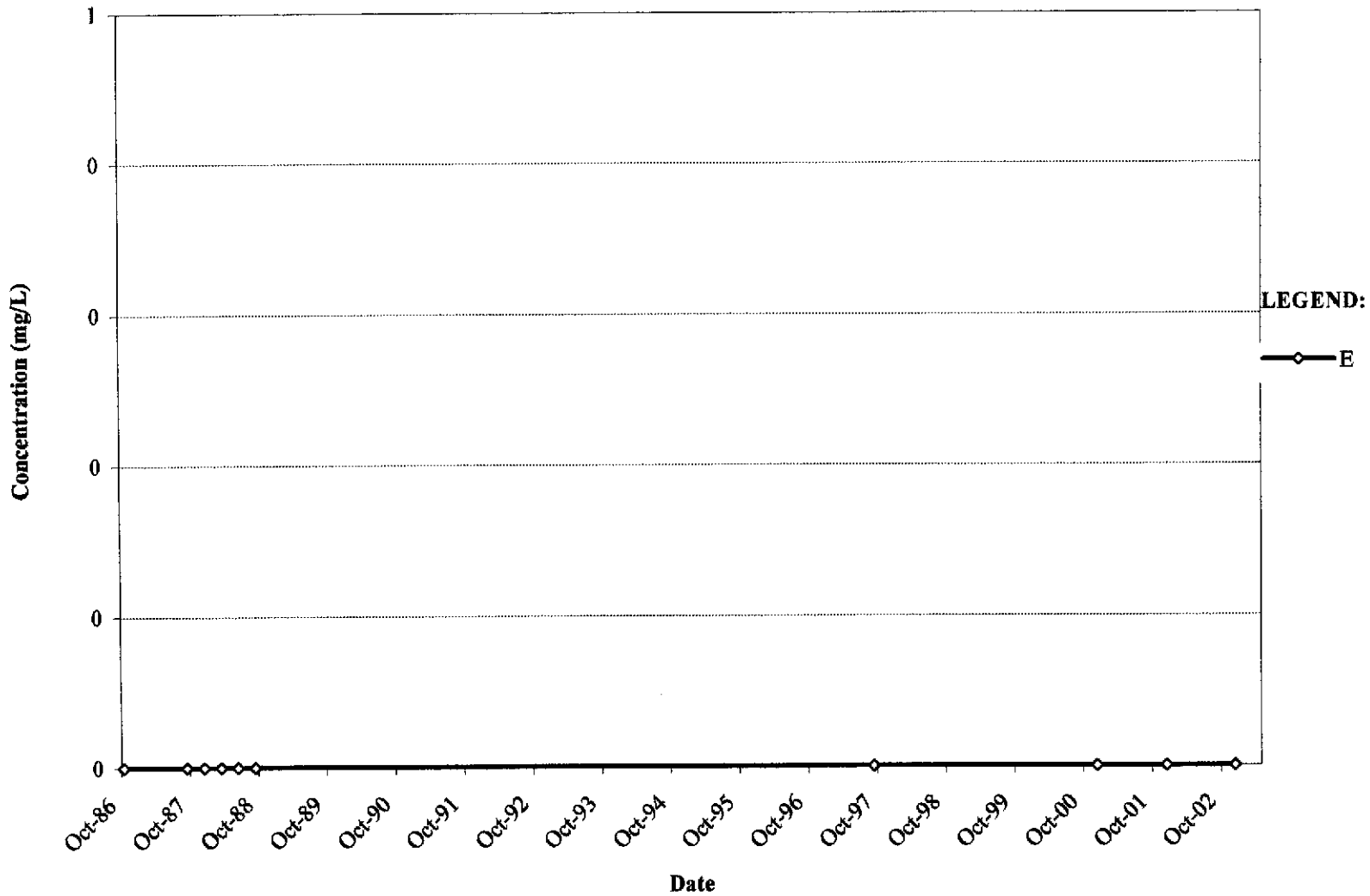
**Trend Plot for Benzene
Well MW-7**



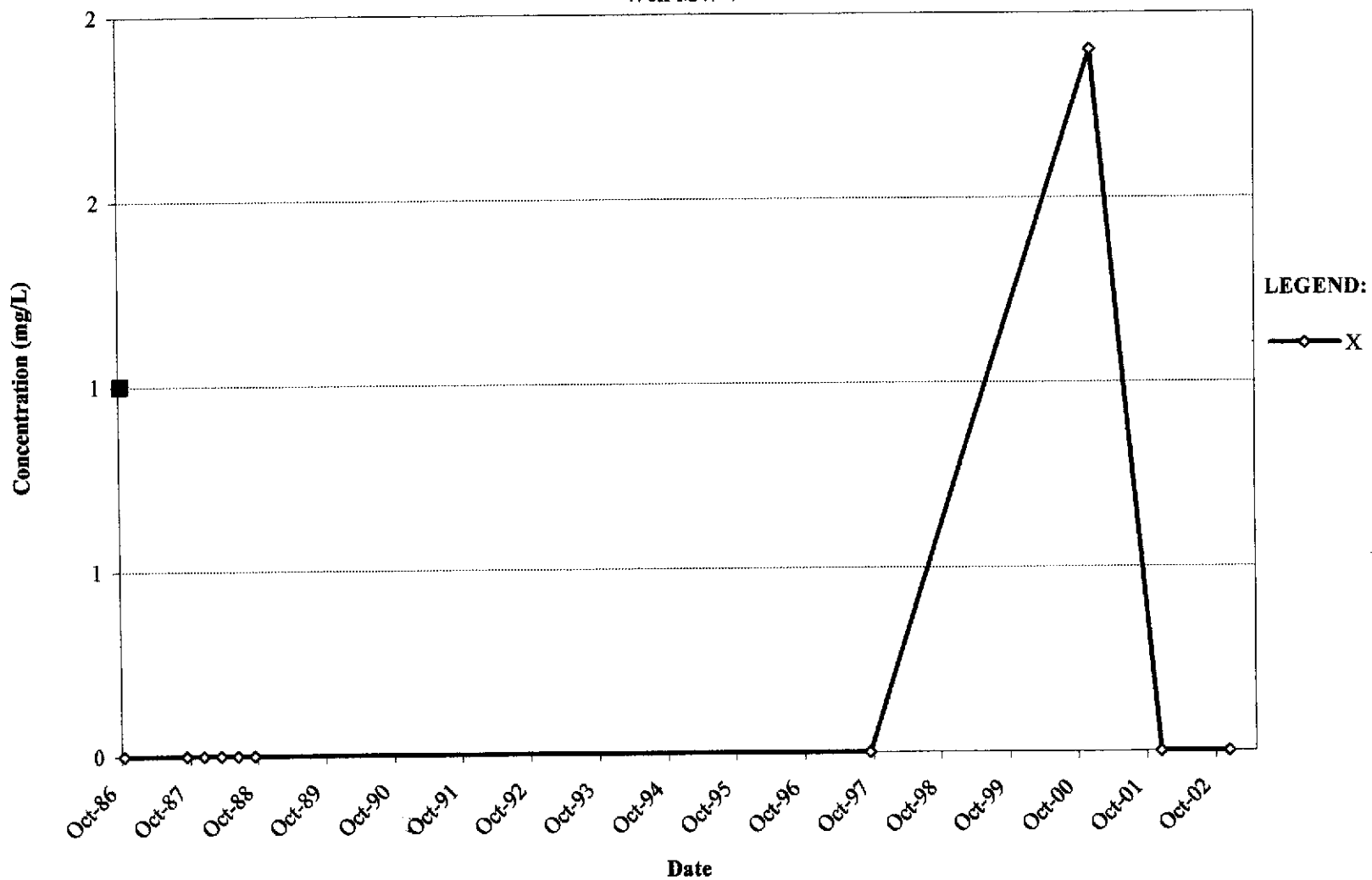
**Trend Plot for Toluene
Well MW-7**



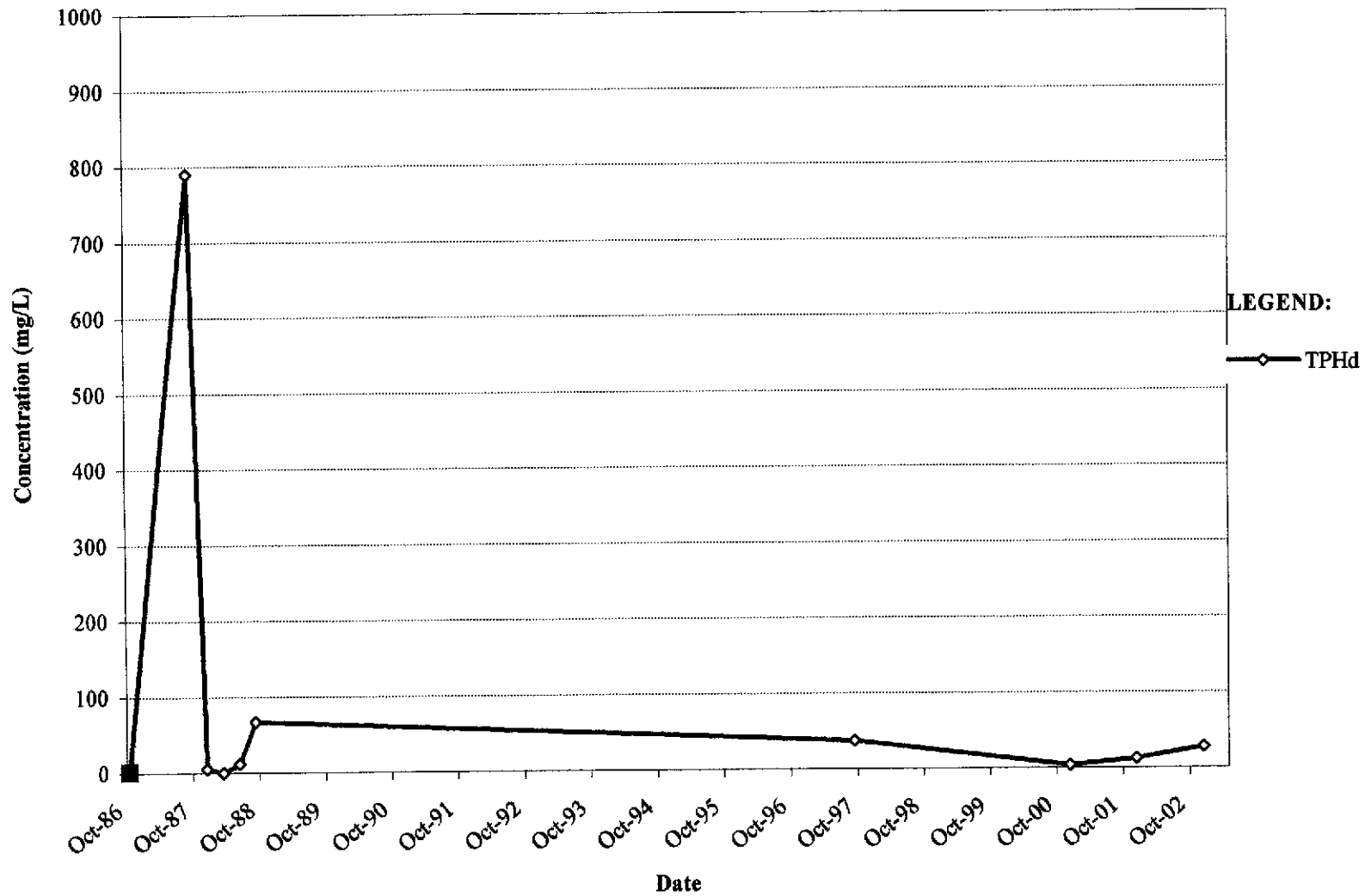
**Trend Plot for Ethylbenzene
Well MW-7**



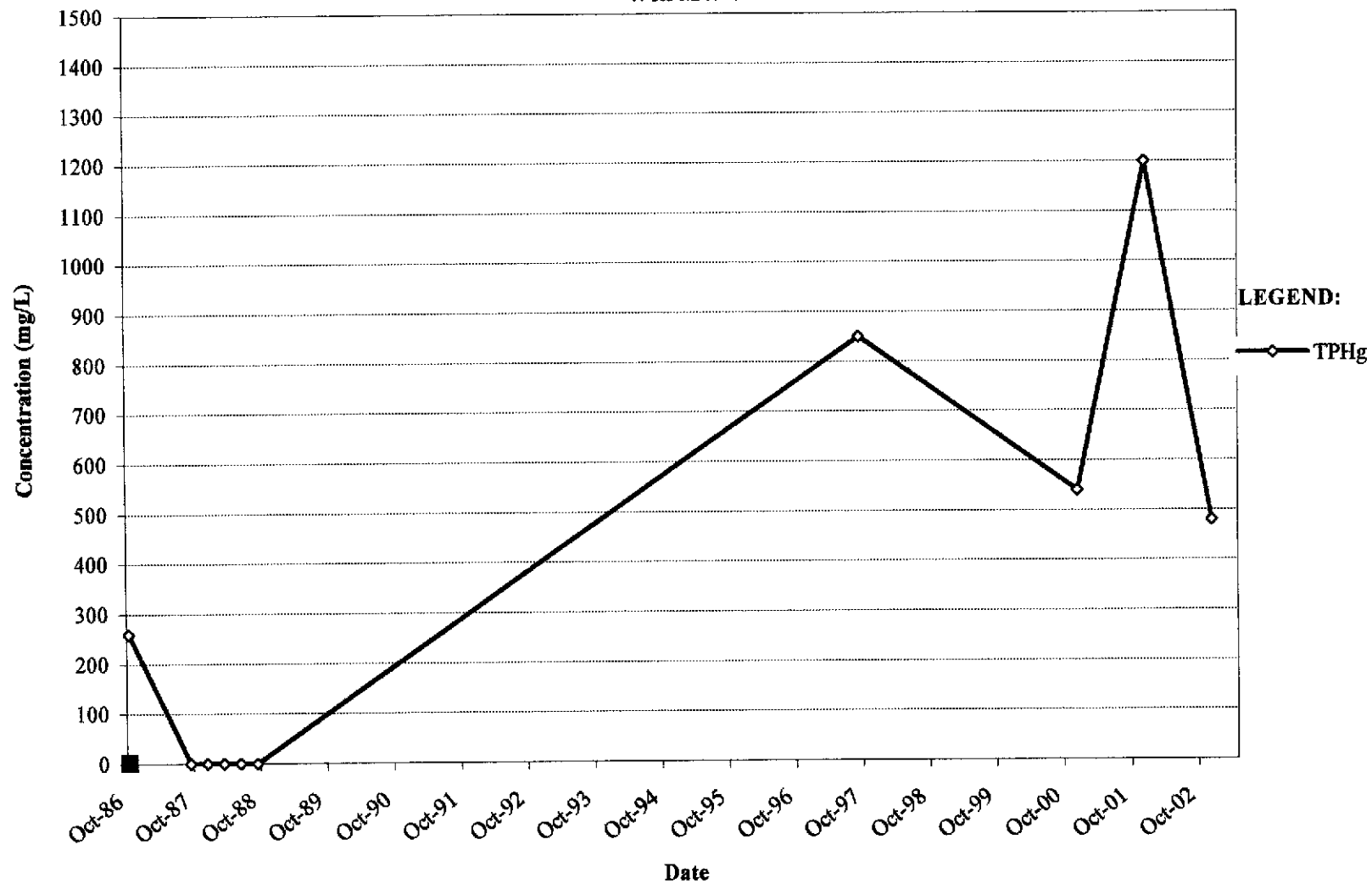
Trend Plot for Xylenes
Well MW-7



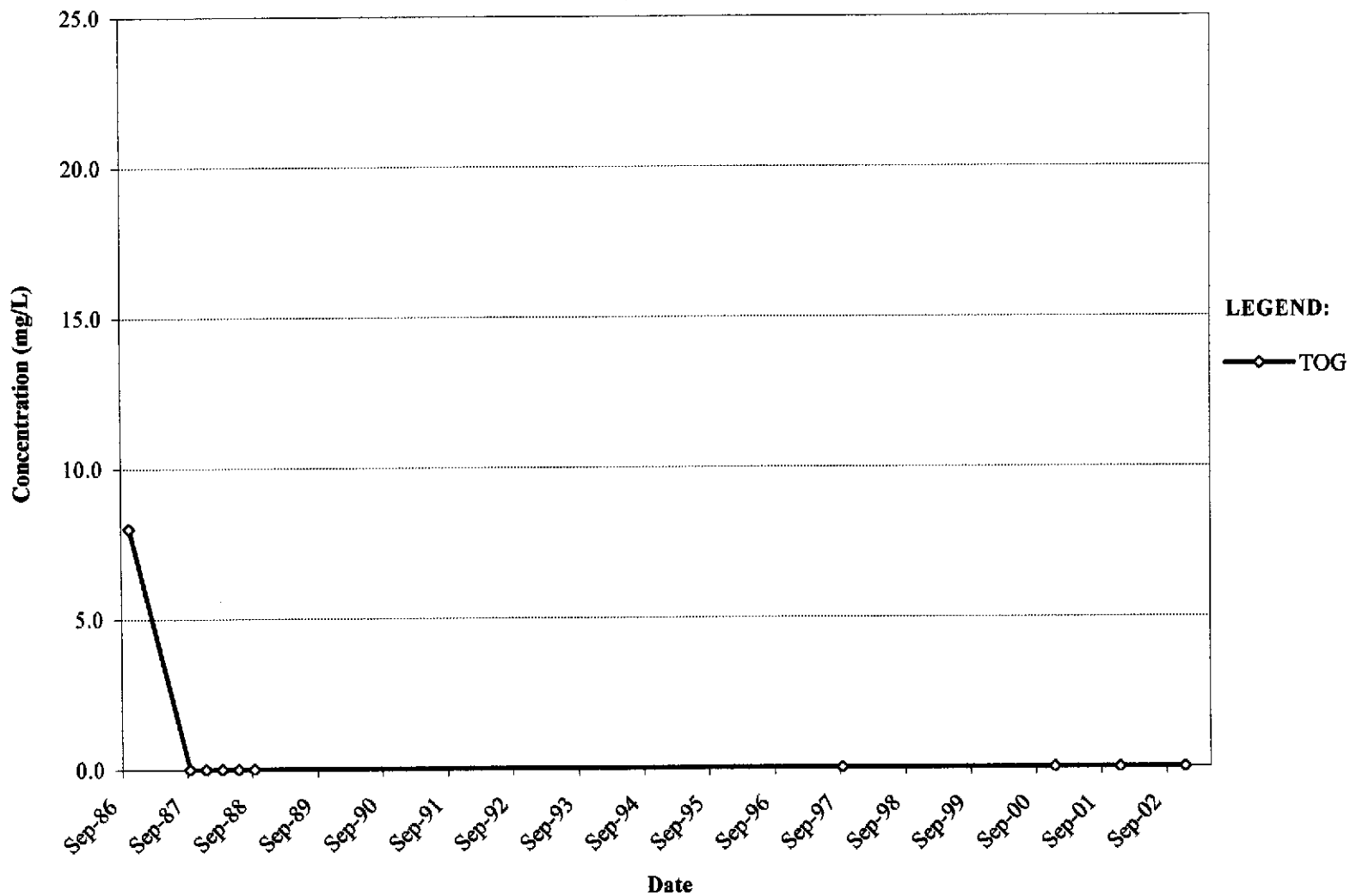
Trend Plot for TPHd
Well MW-7



**Trend Plot for TPHg
Well MW-7**



**Trend Plot for TOG
Well MW-7**



**Historical Groundwater Water Sample
Results for Well MW-8
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

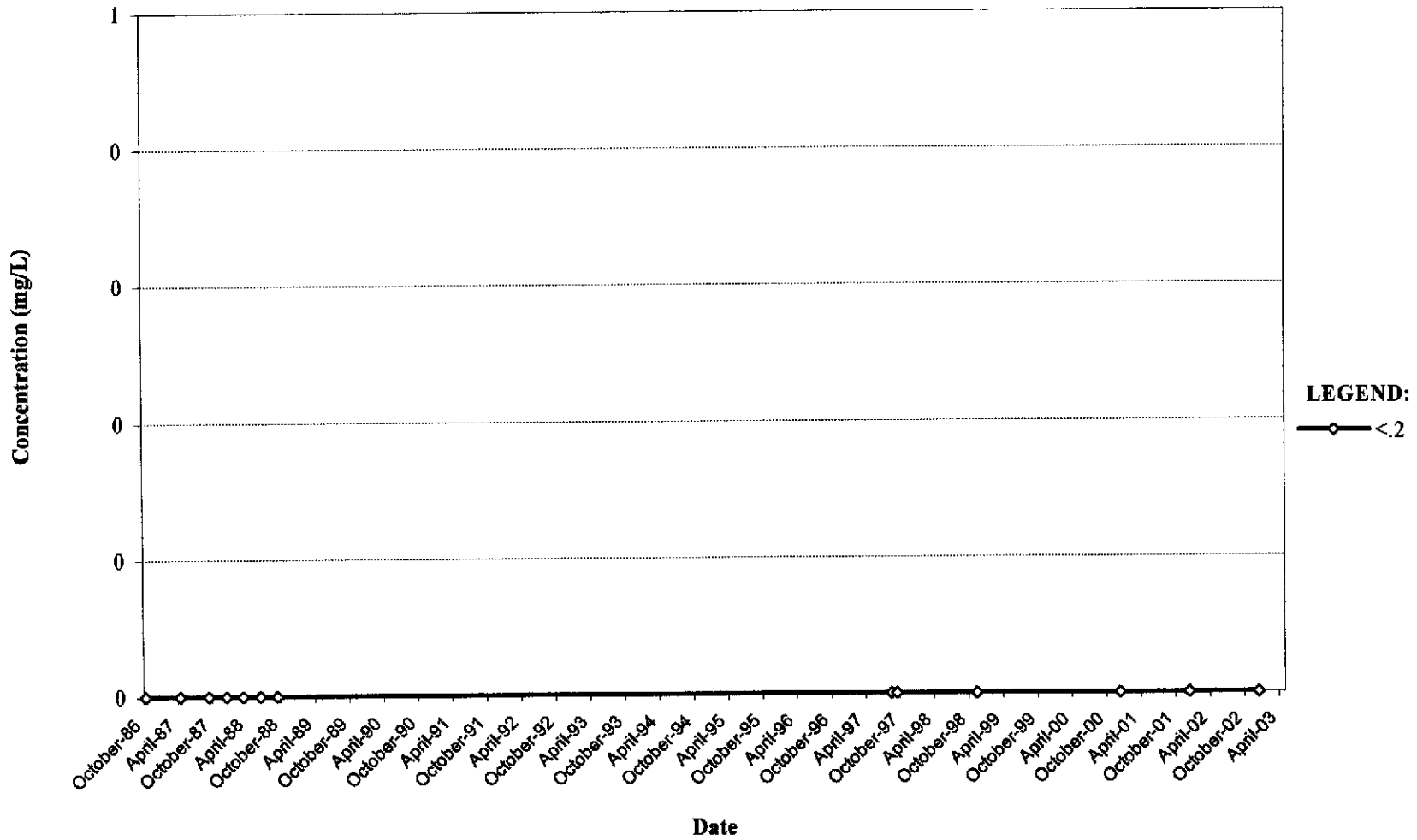
Date	B	T	E	X	TPHd	TPHg	TOG
10/23/1986	<.2	<.2	NA	<1	NA	1300	14
4/9/1987	<.5	<.2	NA	<1	NA	73	NA
9/16/1987	floating product						
12/1/1987	NA	NA	NA	NA	0.63	NA	NA
3/9/1988	NA	NA	NA	NA	2.6	NA	NA
6/9/1988	NA	NA	NA	NA	1.7	NA	NA
9/14/1988	NA	NA	NA	NA	0.15	NA	NA
8/12/1997	floating product						
9/16/1997	<.5	<.5	<.5	<.5	0.29	<50	NA
11/2/1998	<.5	<.5	<.5	<.5	1.3	<50	NA
12/6/2000	<.5	<.5	<.5	<.5	0.16	<50	NA
12/12/2001	<.5	<.5	<.5	<.5	<.05	<50	NA
12/5/2002	<.5	<.5	<.5	<.5	0.17	55	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

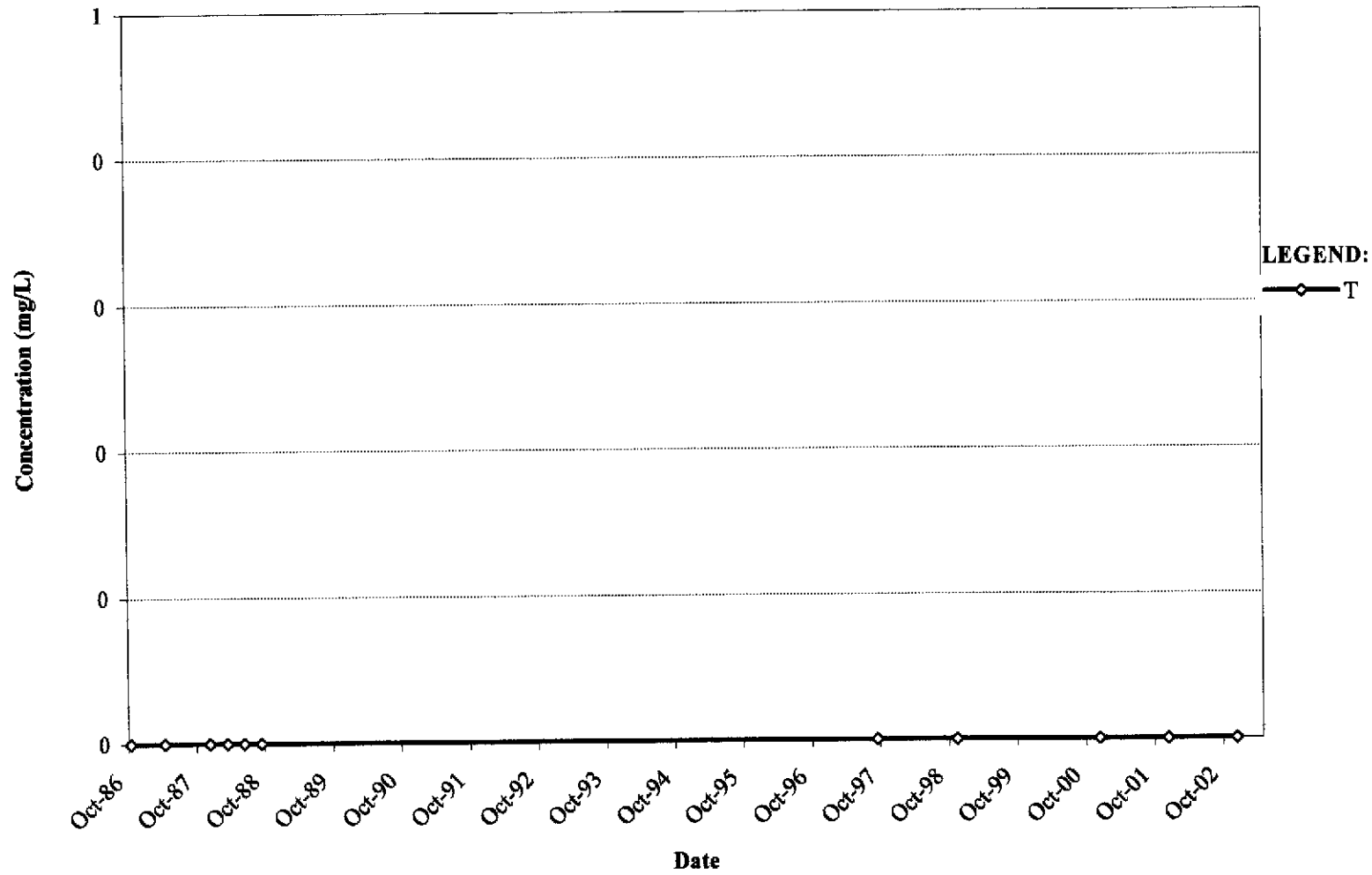
All other results are in micrograms per litre (ug/l)

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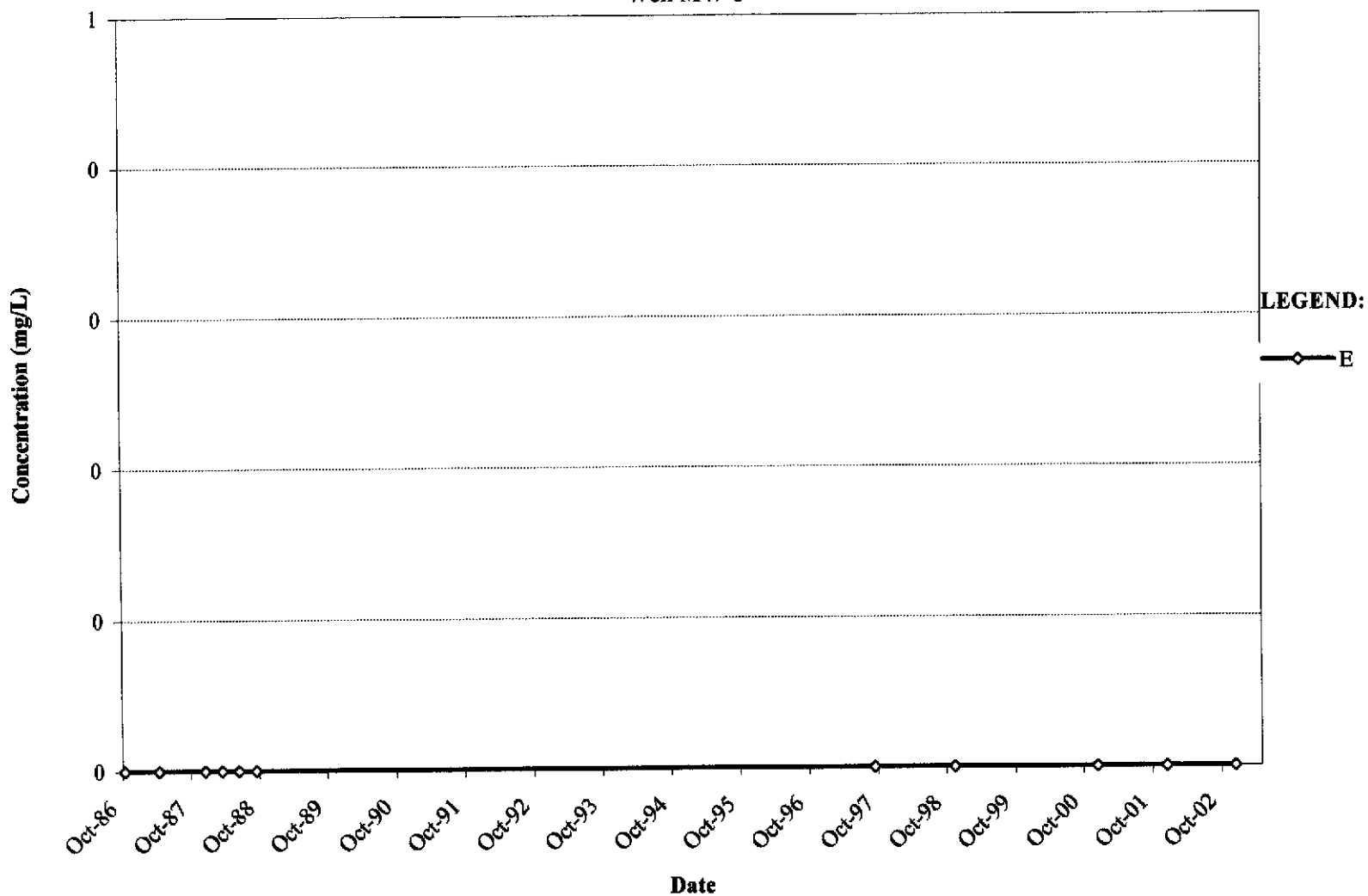
**Trend Plot for Benzene
Well MW-8**



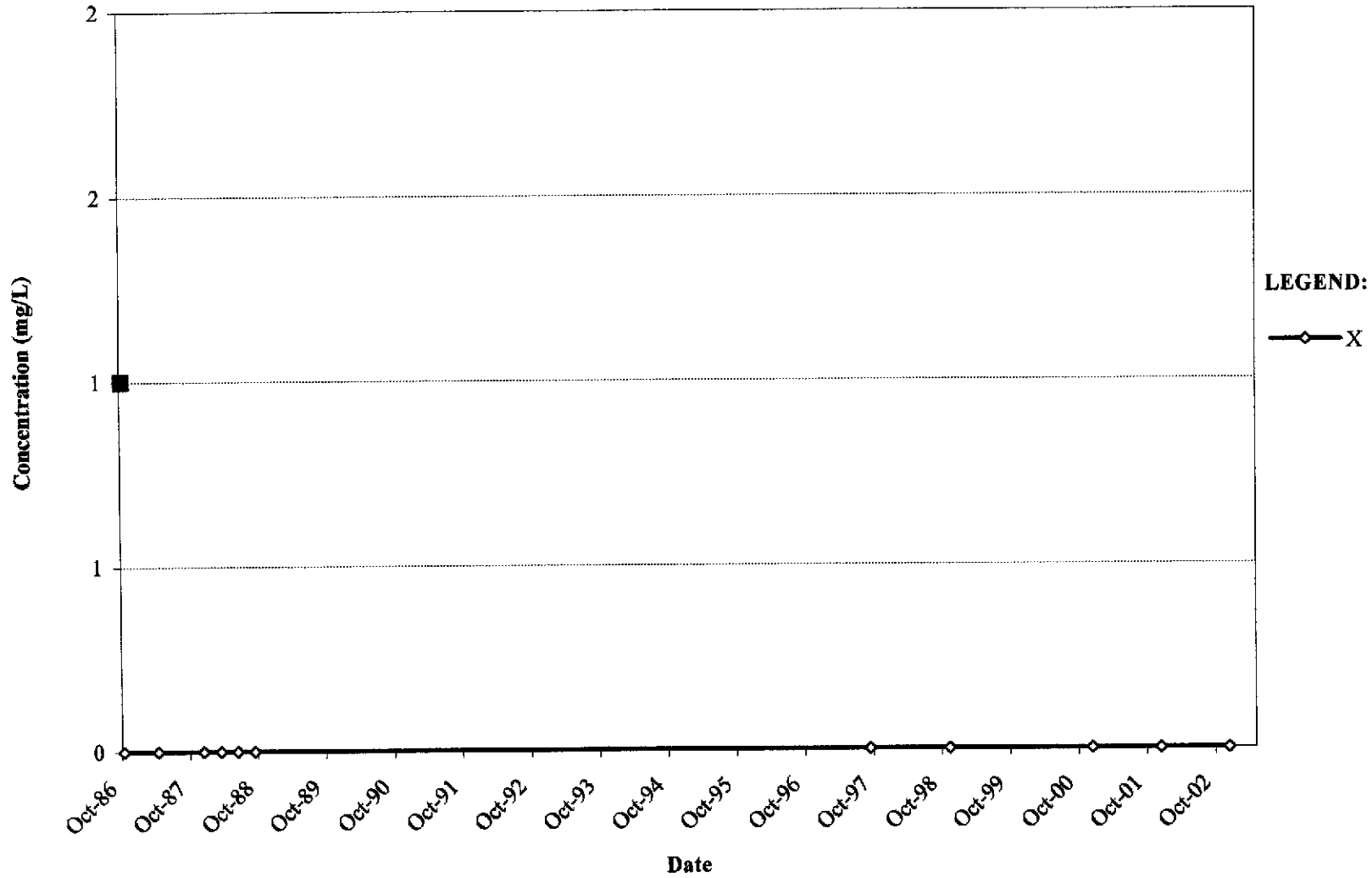
**Trend Plot for Toluene
Well MW-8**



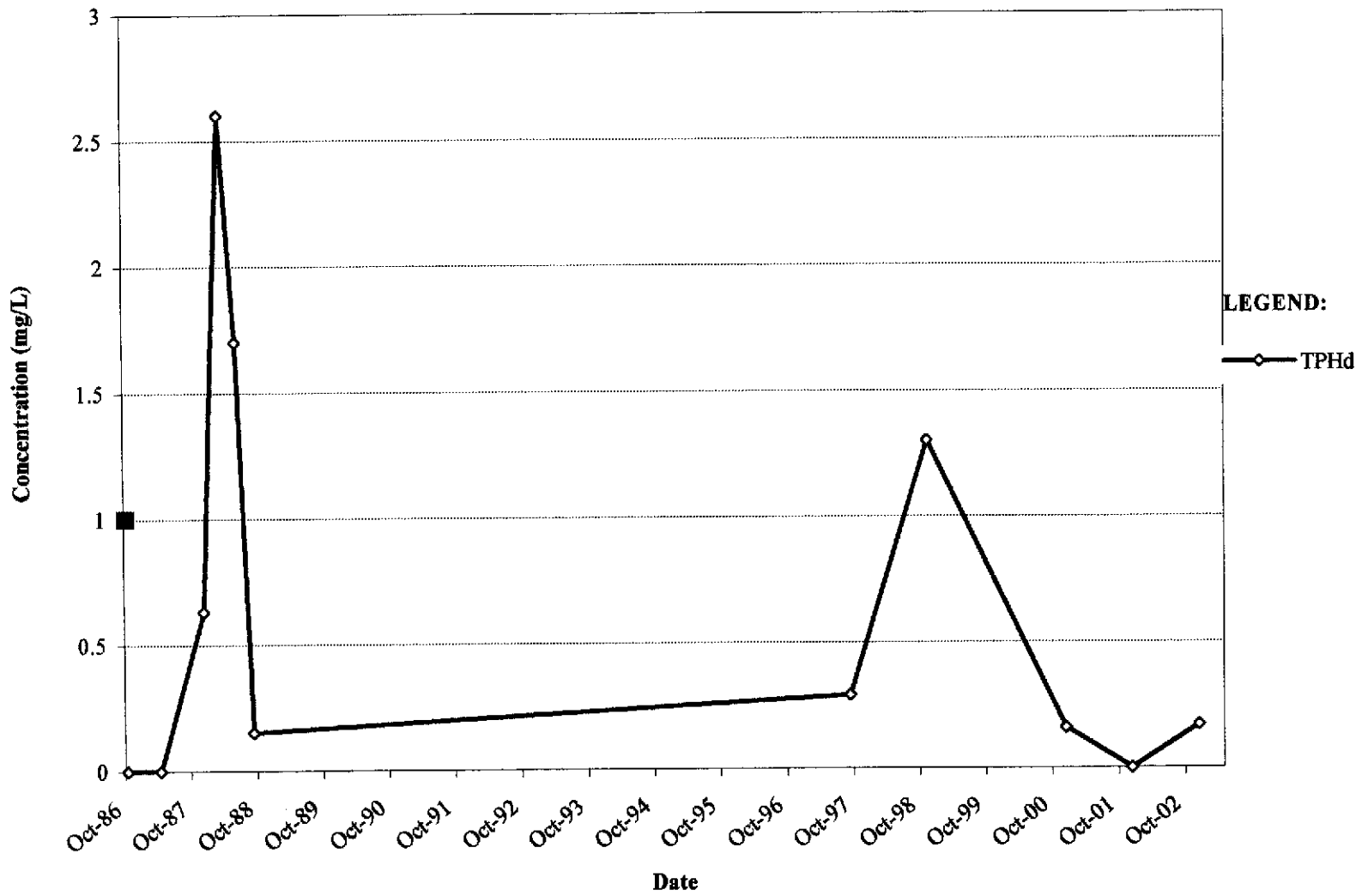
**Trend Plot for Ethylbenzene
Well MW-8**



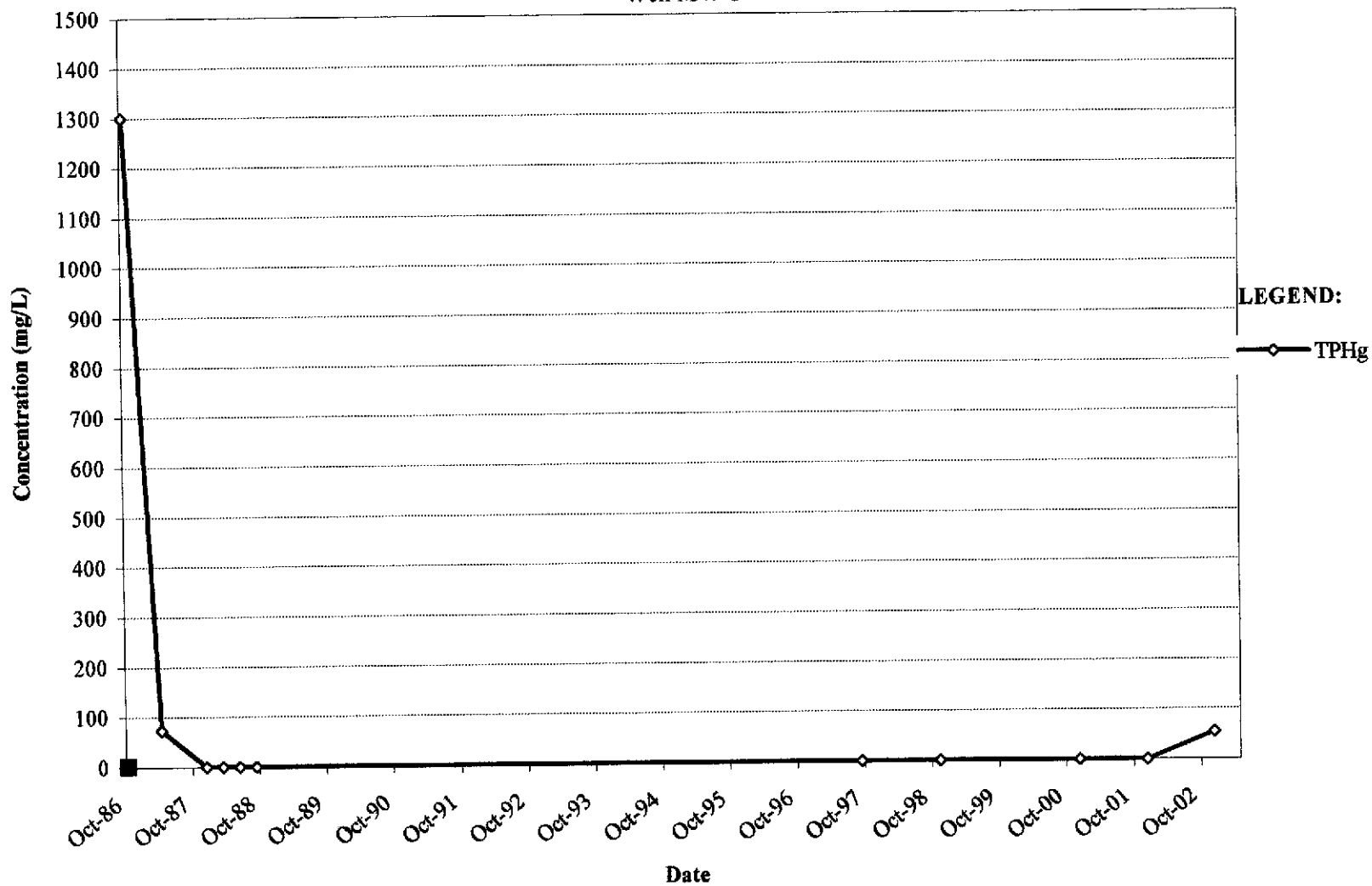
Trend Plot for Xylenes
Well MW-8



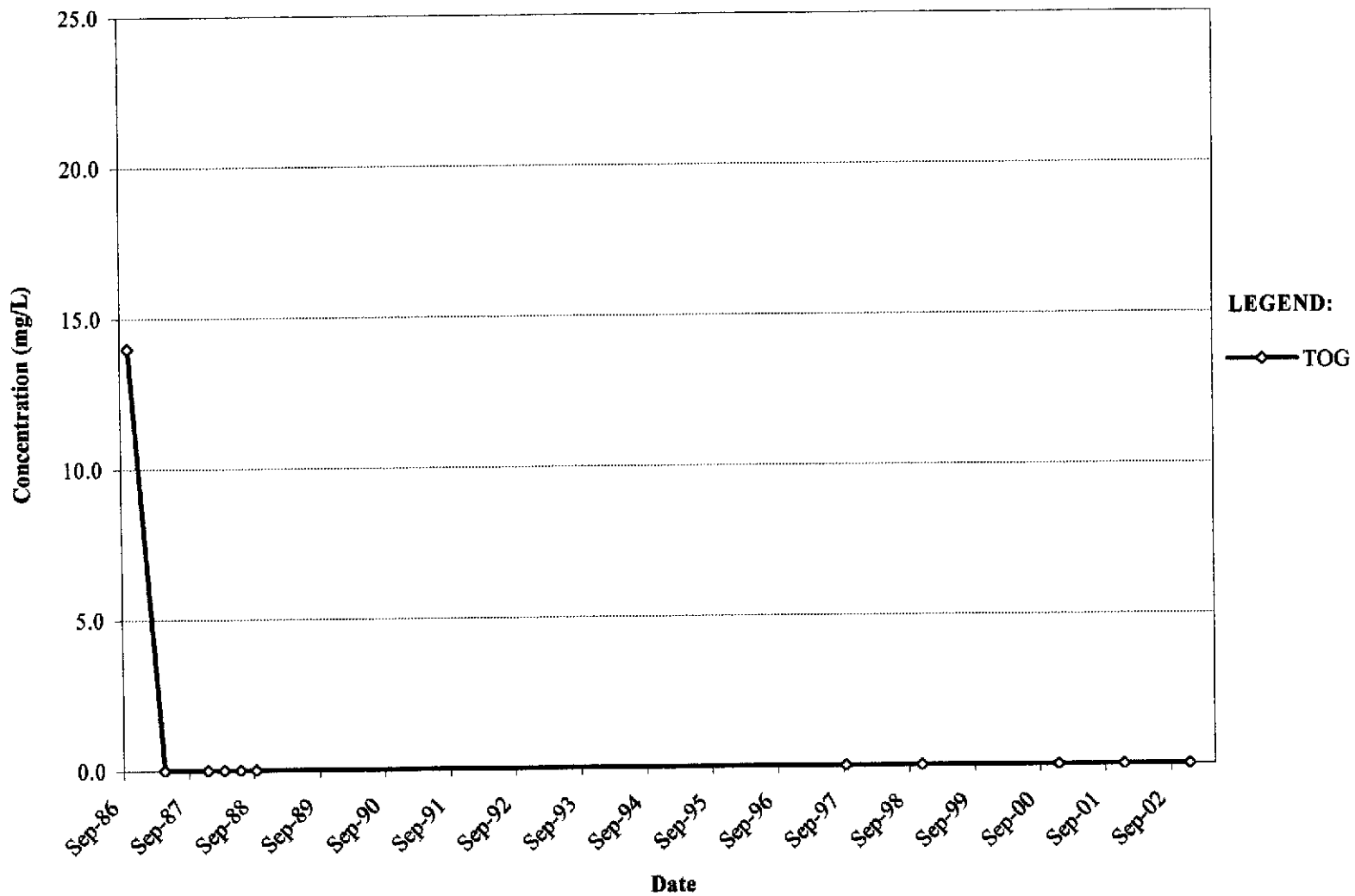
Trend Plot for TPHd
Well MW-8



**Trend Plot for TPHg
Well MW-8**



**Trend Plot for TOG
Well MW-8**



**Historical Groundwater Water Sample
Results for Well MW-9
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

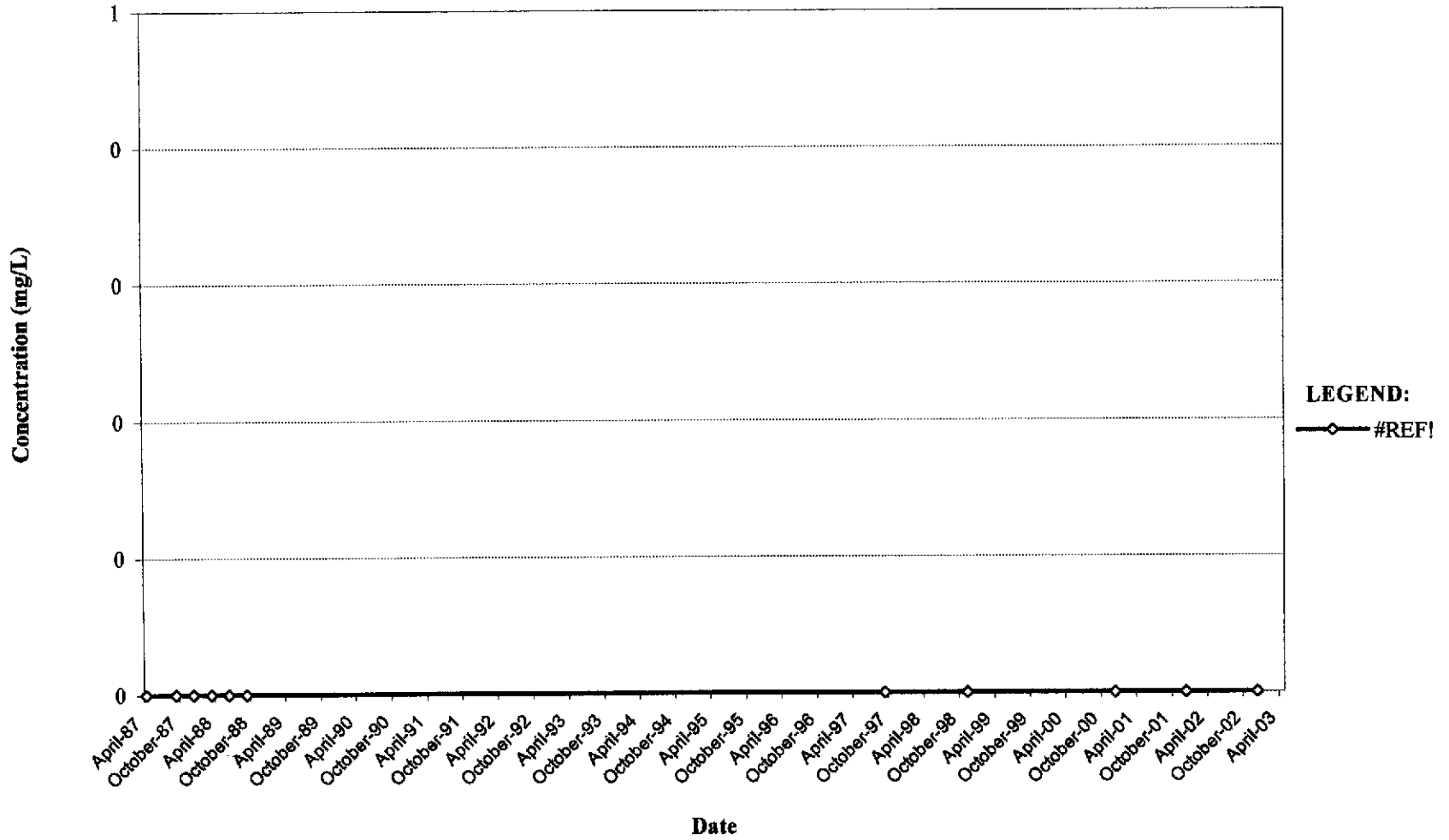
Date	B	T	E	X	TPHd	TPHg	TOG
4/9/1987	floating product						
9/16/1987	NA	NA	NA	NA	1.3	NA	NA
12/1/1987	NA	NA	NA	NA	18	NA	NA
3/9/1988	NA	NA	NA	NA	47	NA	NA
6/8/1988	floating product						
9/14/1988	floating product						
9/16/1997	<13	<13	<13	18.00	28	6000	NA
11/2/1998	floating product						
12/6/2000	<5	<.5	<.5	<.5	28	790	NA
12/12/2001	innaccessible						
12/5/2002	innaccessible						

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

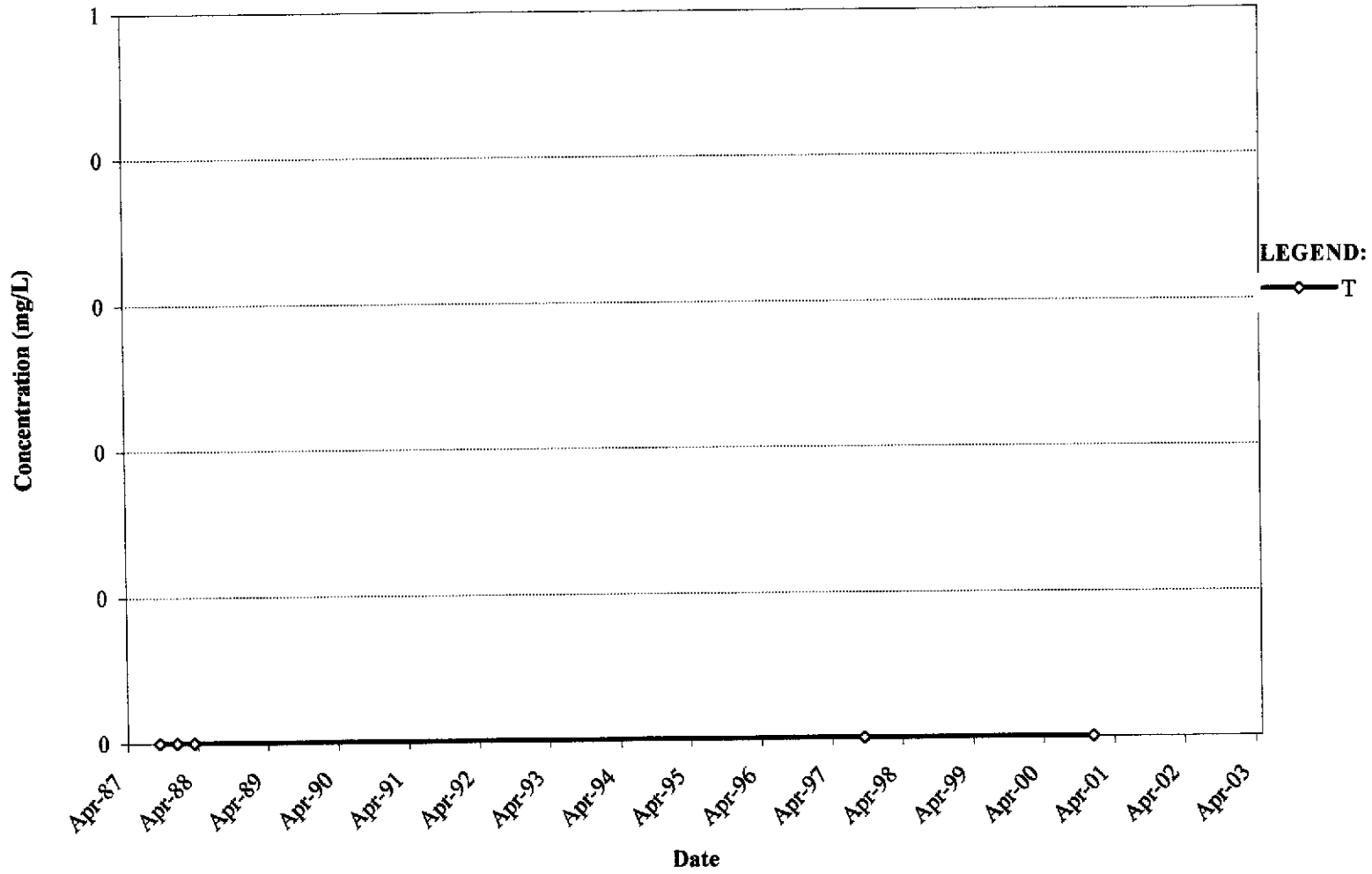
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

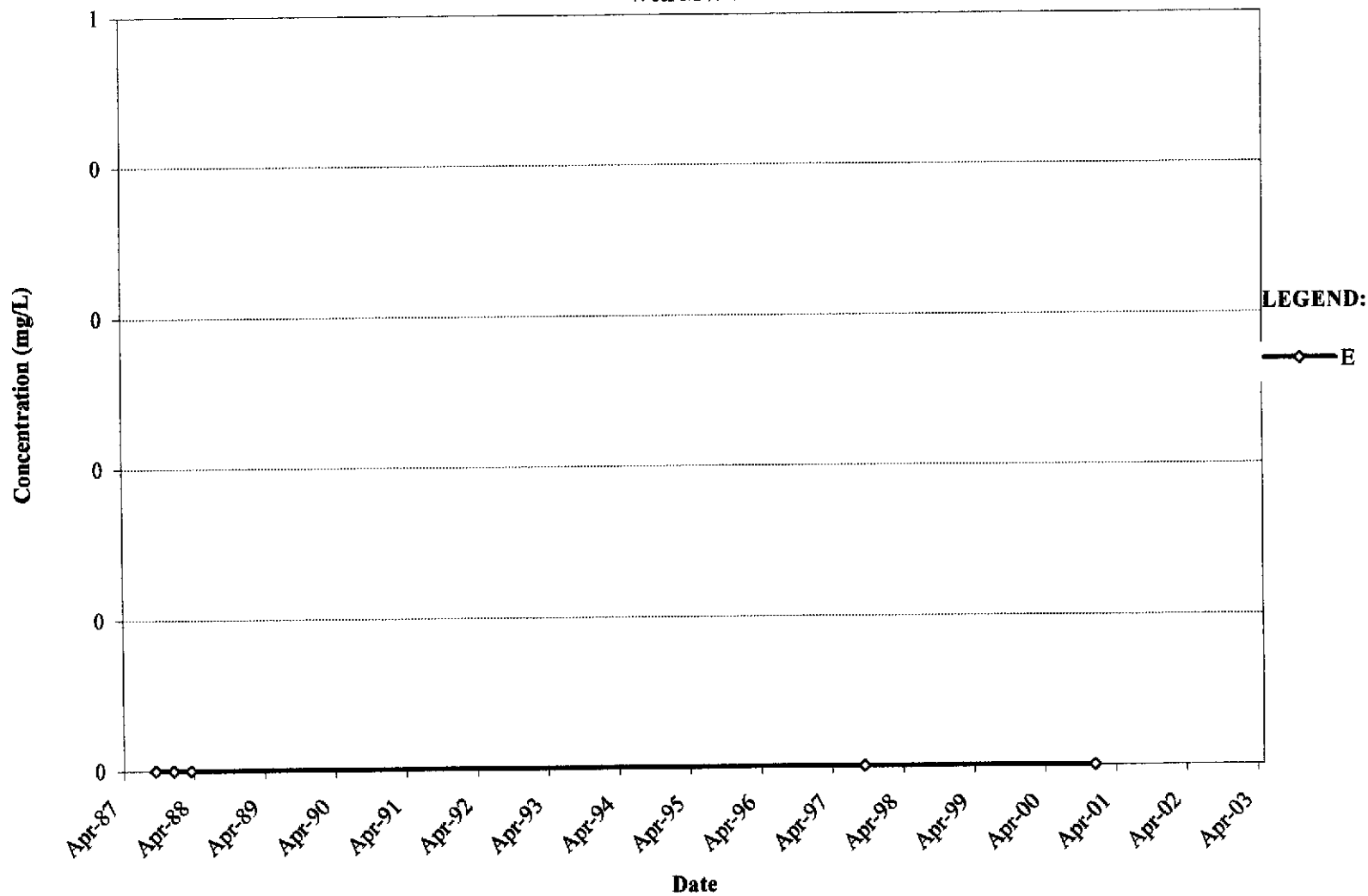
**Trend Plot for Benzene
Well MW-9**



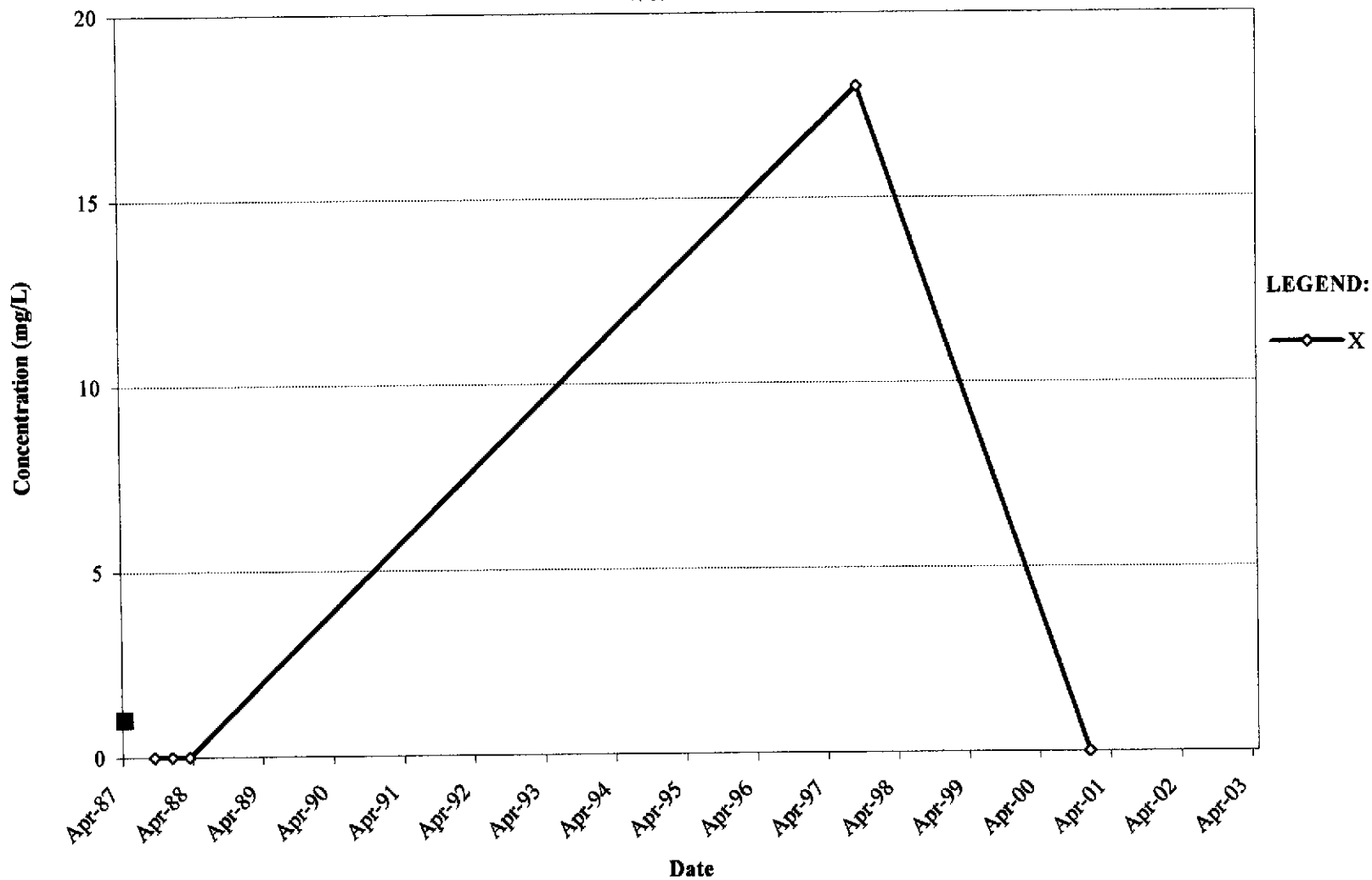
Trend Plot for Toluene
Well MW-9



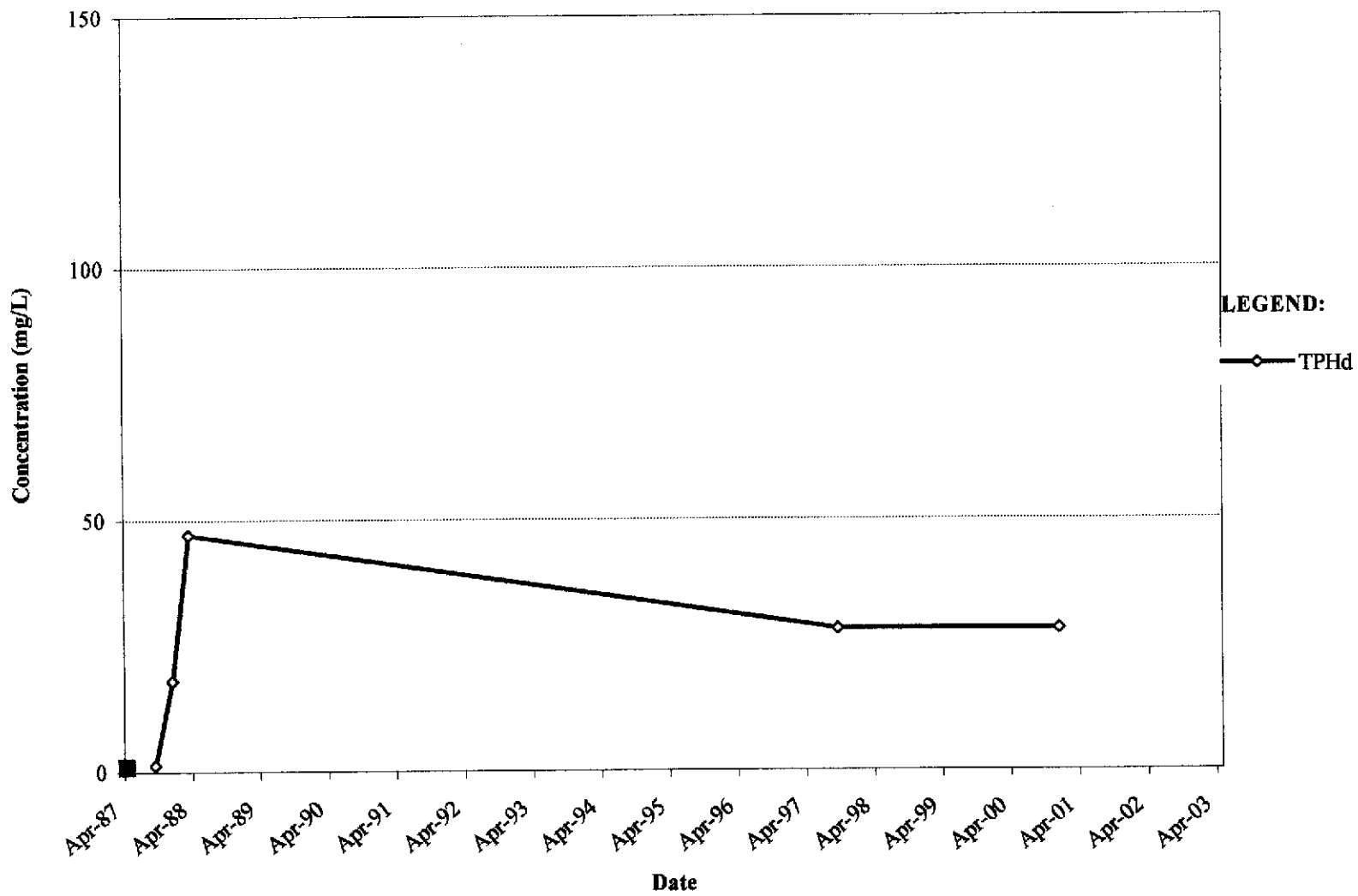
**Trend Plot for Ethylbenzene
Well MW-9**

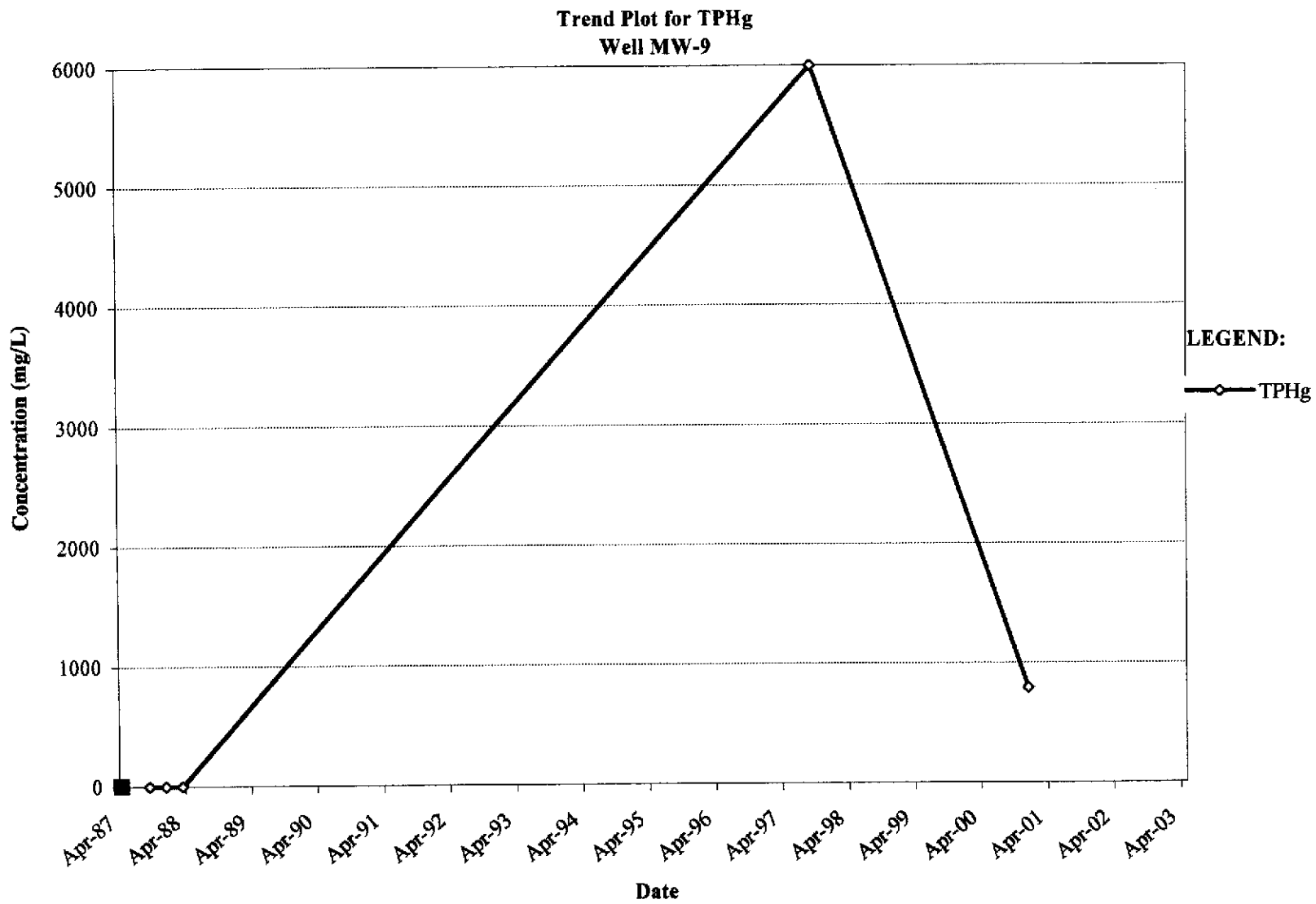


Trend Plot for Xylenes
Well MW-9

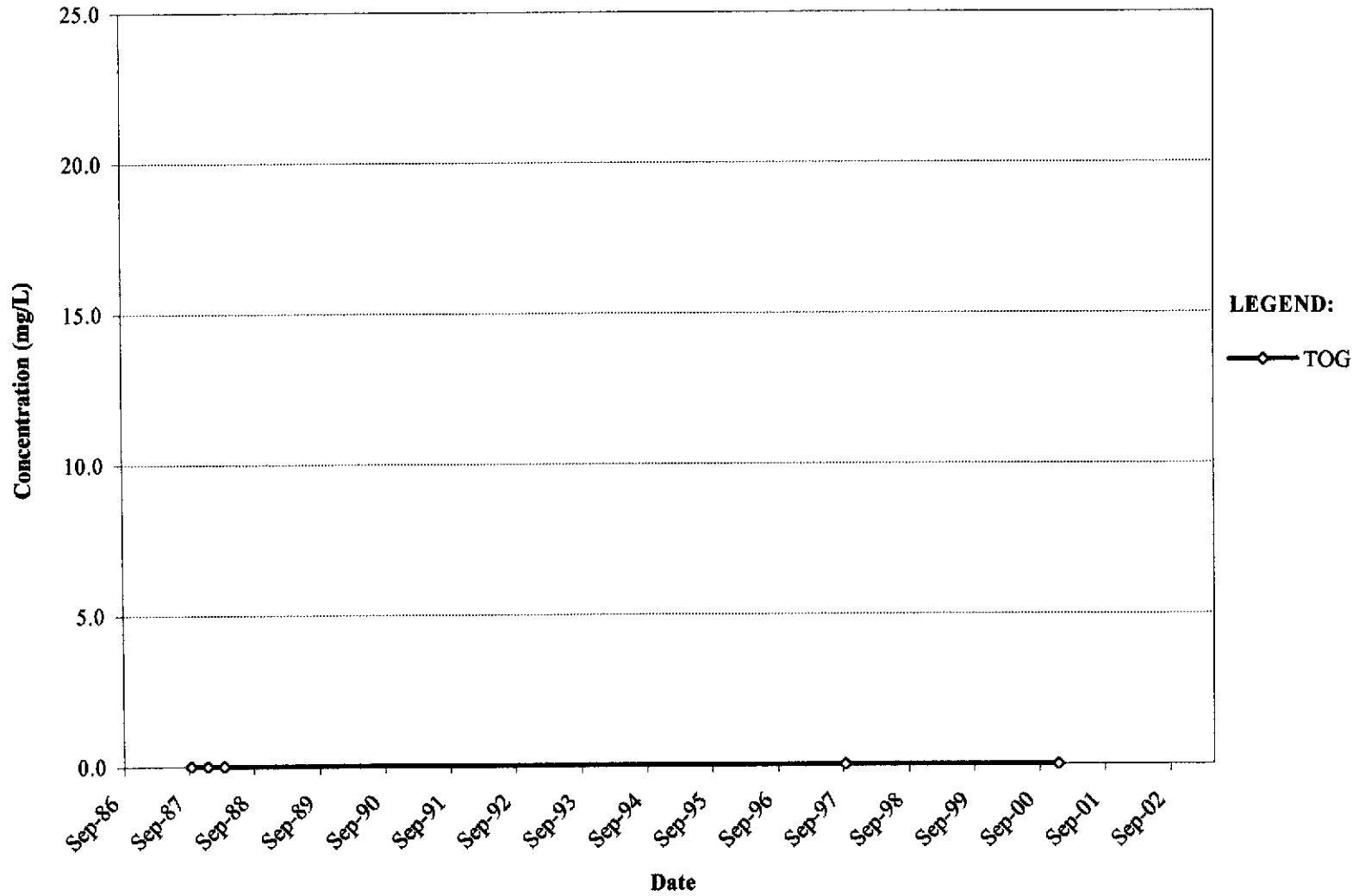


**Trend Plot for TPHd
Well MW-9**





**Trend Plot for TOG
Well MW-9**



**Historical Groundwater Water Sample
Results for Well MW-10
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

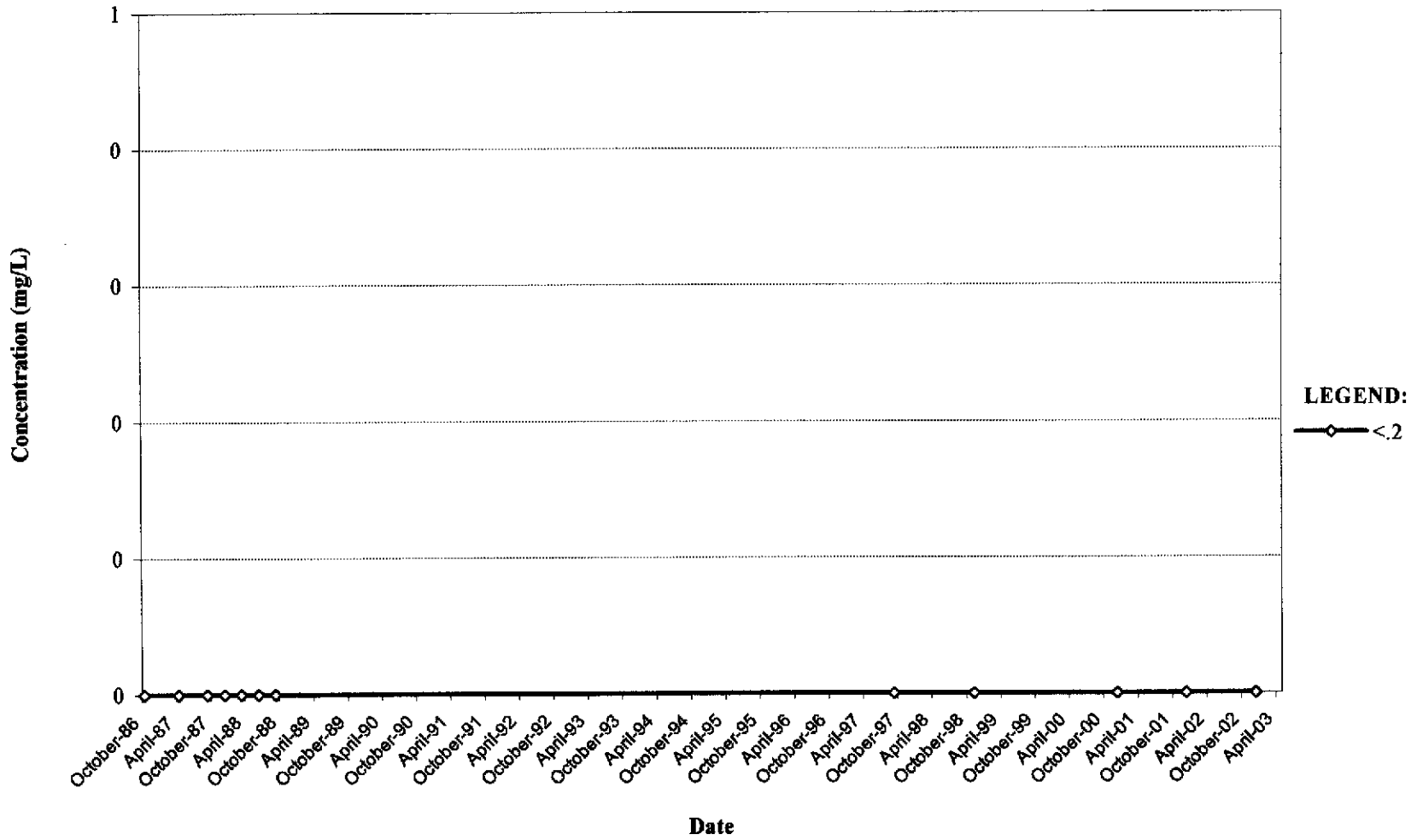
Date	B	T	E	X	TPHd	TPHg	TOG
10/23/1986	<.2	<.2	NA	<.2	NA	380	7.2
4/9/1987	<.2	<.2	NA	<.2	NA	300	NA
9/16/1987	NA	NA	NA	NA	3.8	NA	NA
12/1/1987	NA	NA	NA	NA	0.59	NA	NA
3/8/1988	NA	NA	NA	NA	<.5	NA	NA
6/8/1988	NA	NA	NA	NA	3.8	NA	NA
9/14/1988	NA	NA	NA	NA	0.57	NA	NA
9/16/1997	<.5	<.5	<.5	<.5	1.3	<50	NA
11/2/1998	<.5	<.5	<.5	<.5	1.4	<50	NA
12/6/2000	<.5	<.5	<.5	0.70	0.73	150	NA
12/11/2001	<.5	<.5	<.5	<.5	0.63	210	NA
12/5/2002	<.5	<.5	<.5	<.5	0.84	210	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

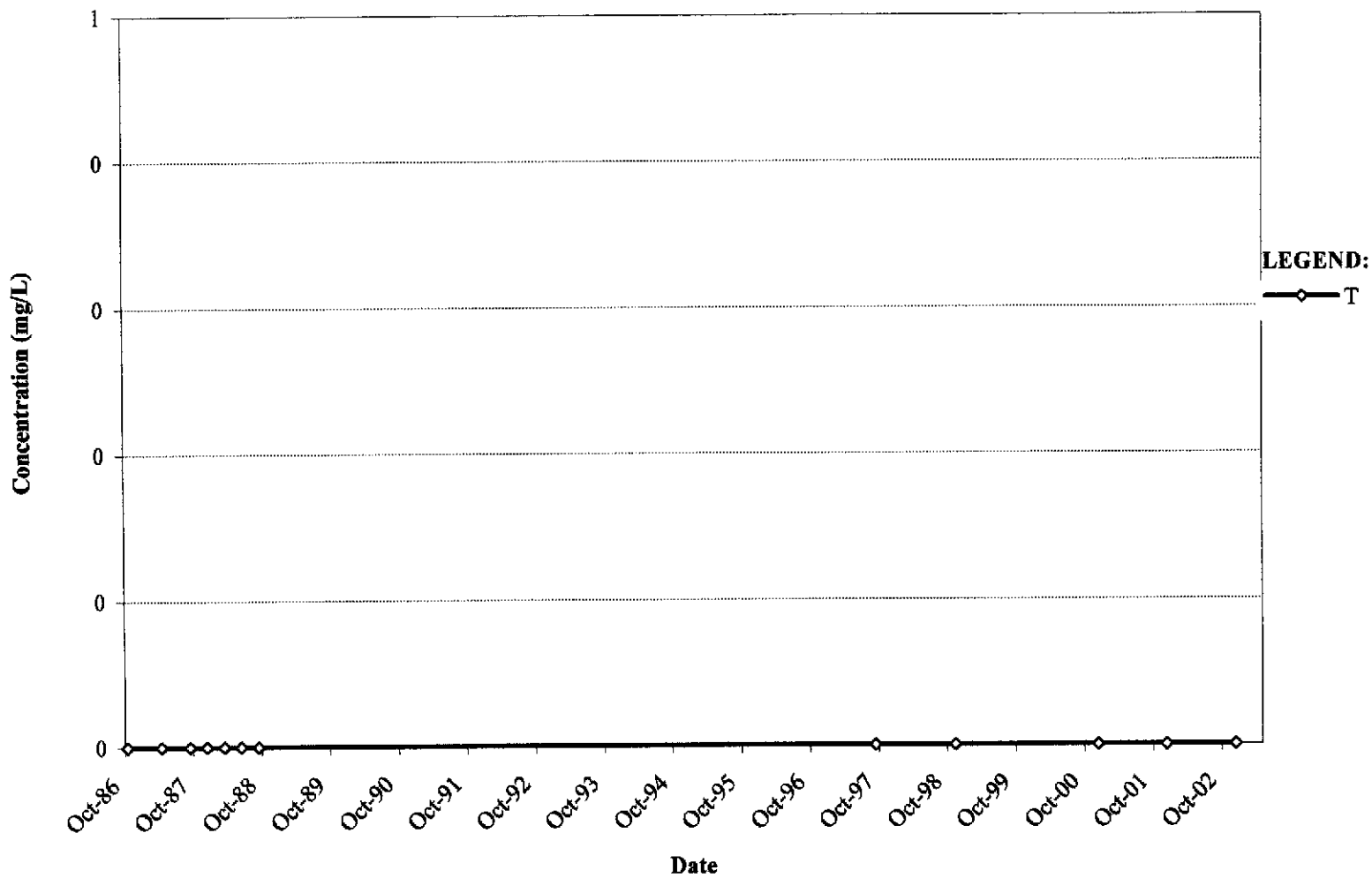
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

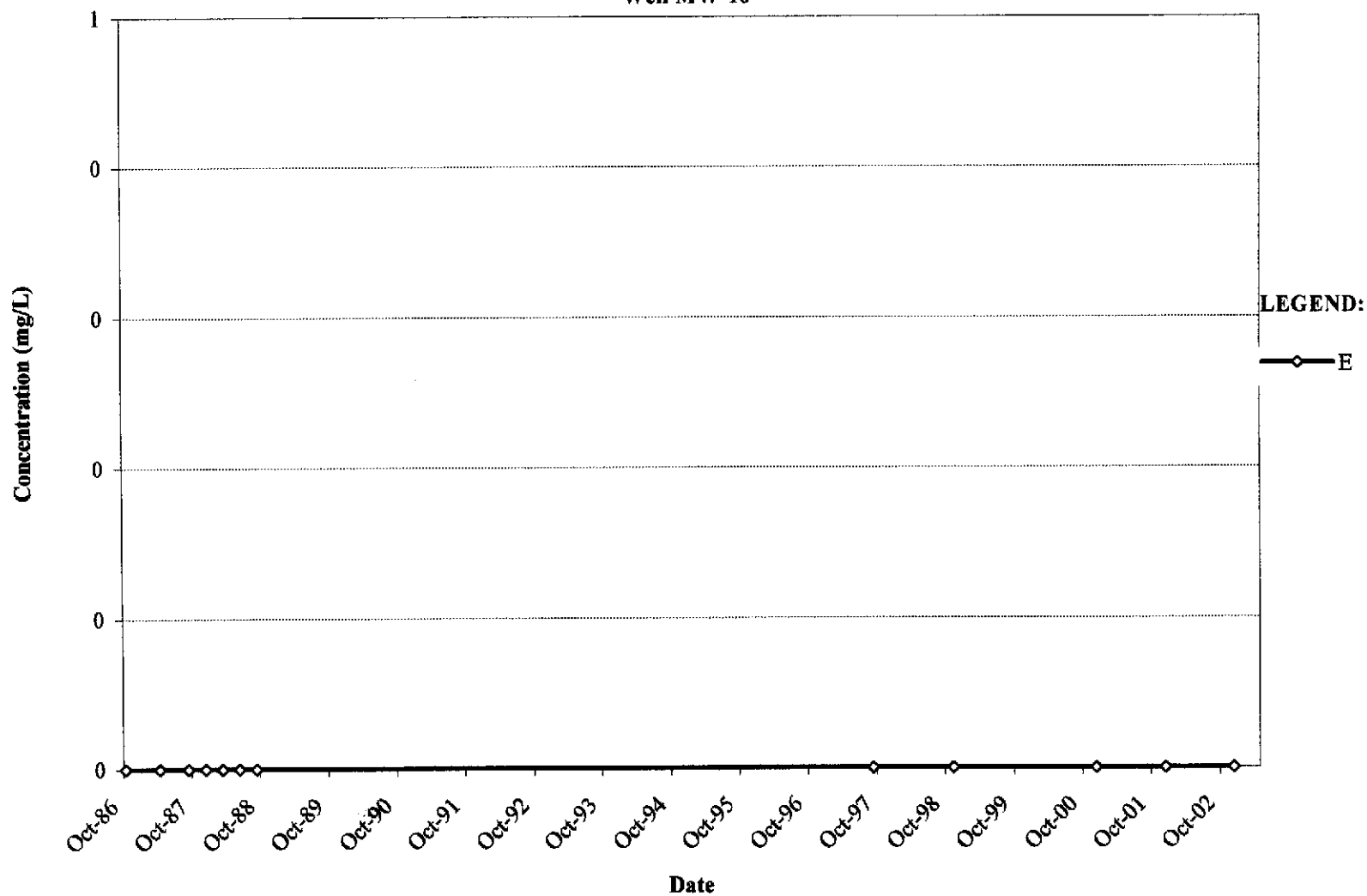
**Trend Plot for Benzene
Well MW-10**



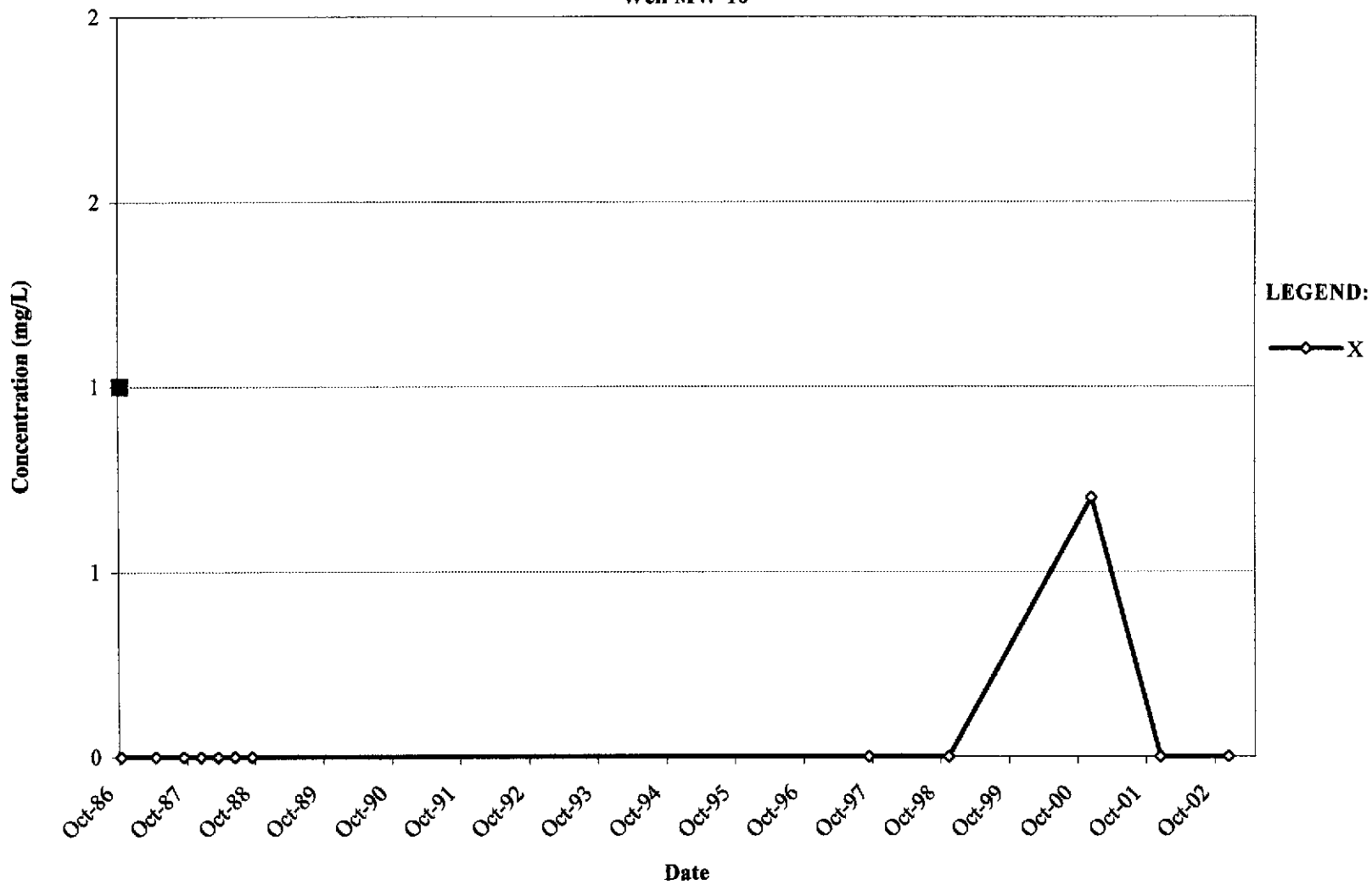
**Trend Plot for Toluene
Well MW-10**



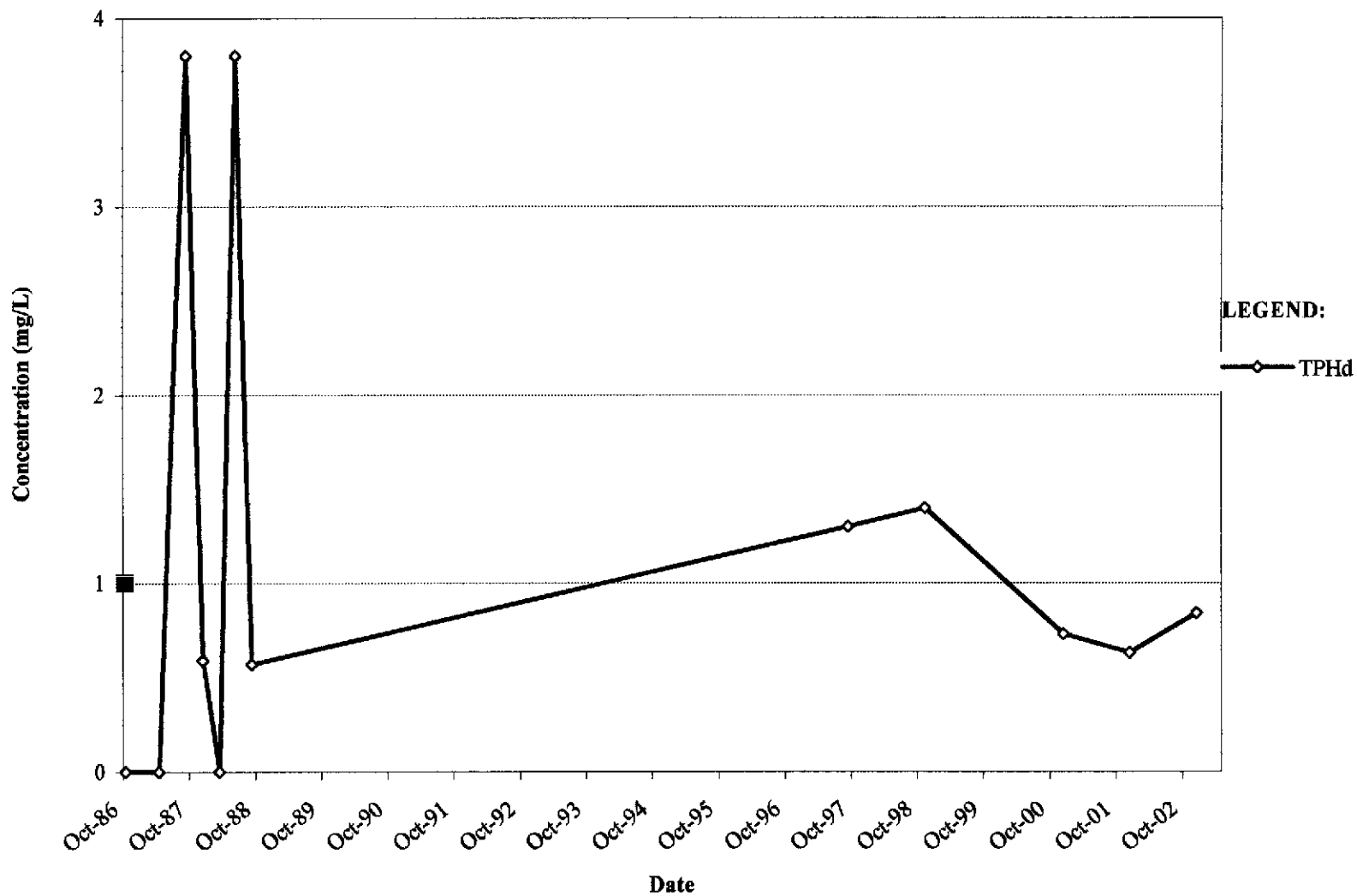
**Trend Plot for Ethylbenzene
Well MW-10**



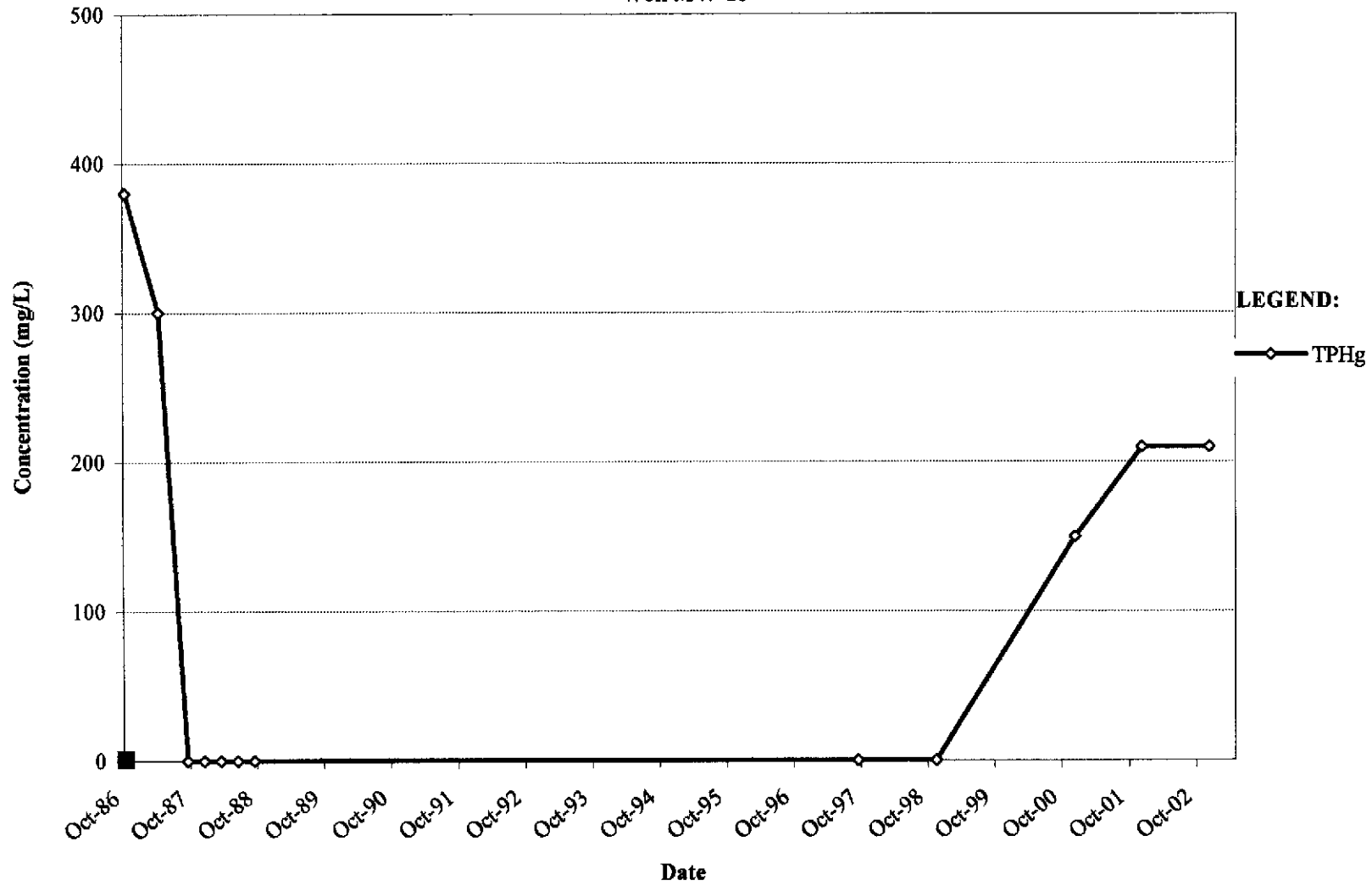
Trend Plot for Xylenes
Well MW-10



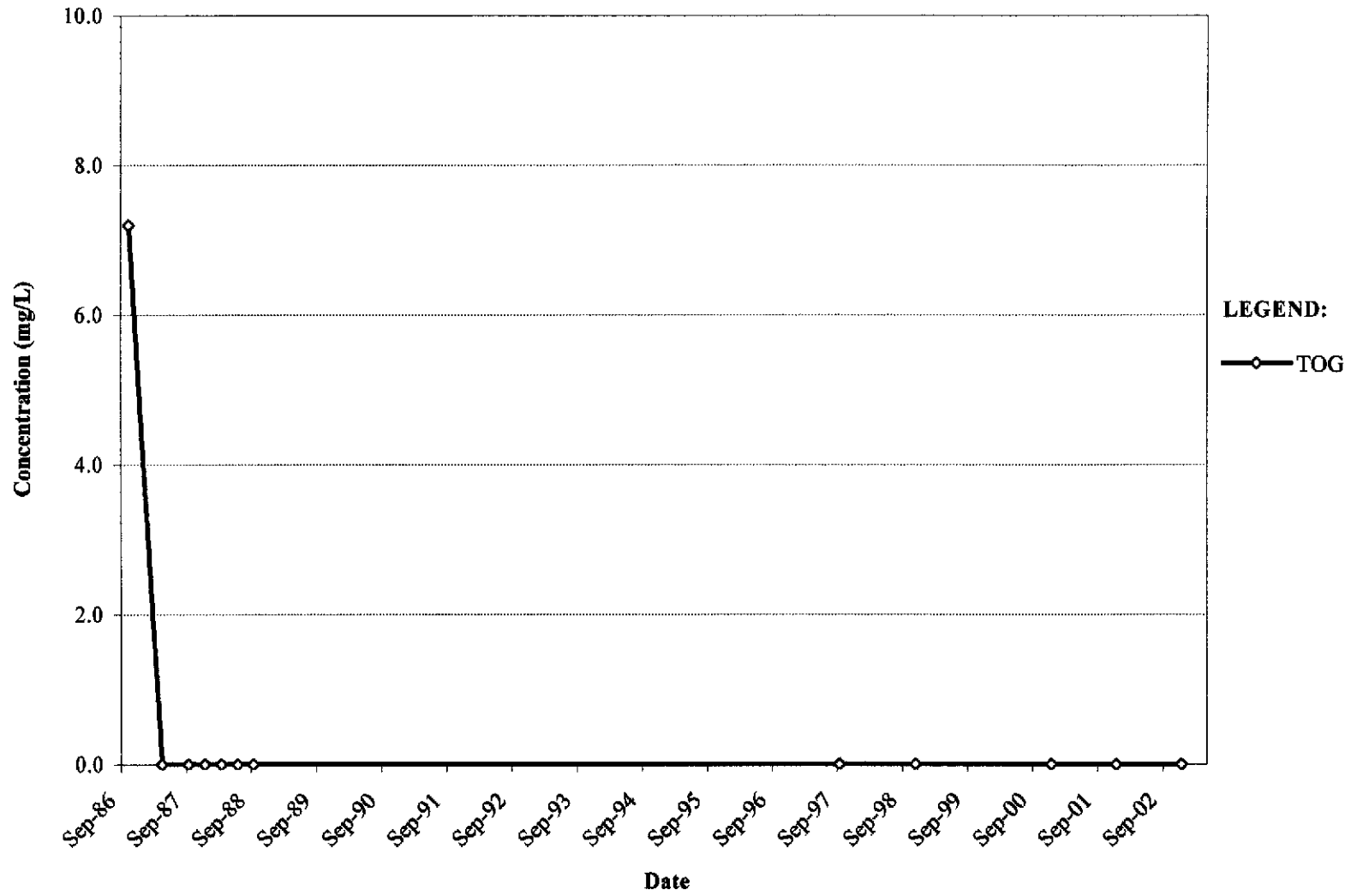
Trend Plot for TPHd
Well MW-10



Trend Plot for TPHg
Well MW-10



**Trend Plot for TOG
Well MW-10**



GASOLINE AREA

**Historical Groundwater Water Sample
Results for Well MW-13
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

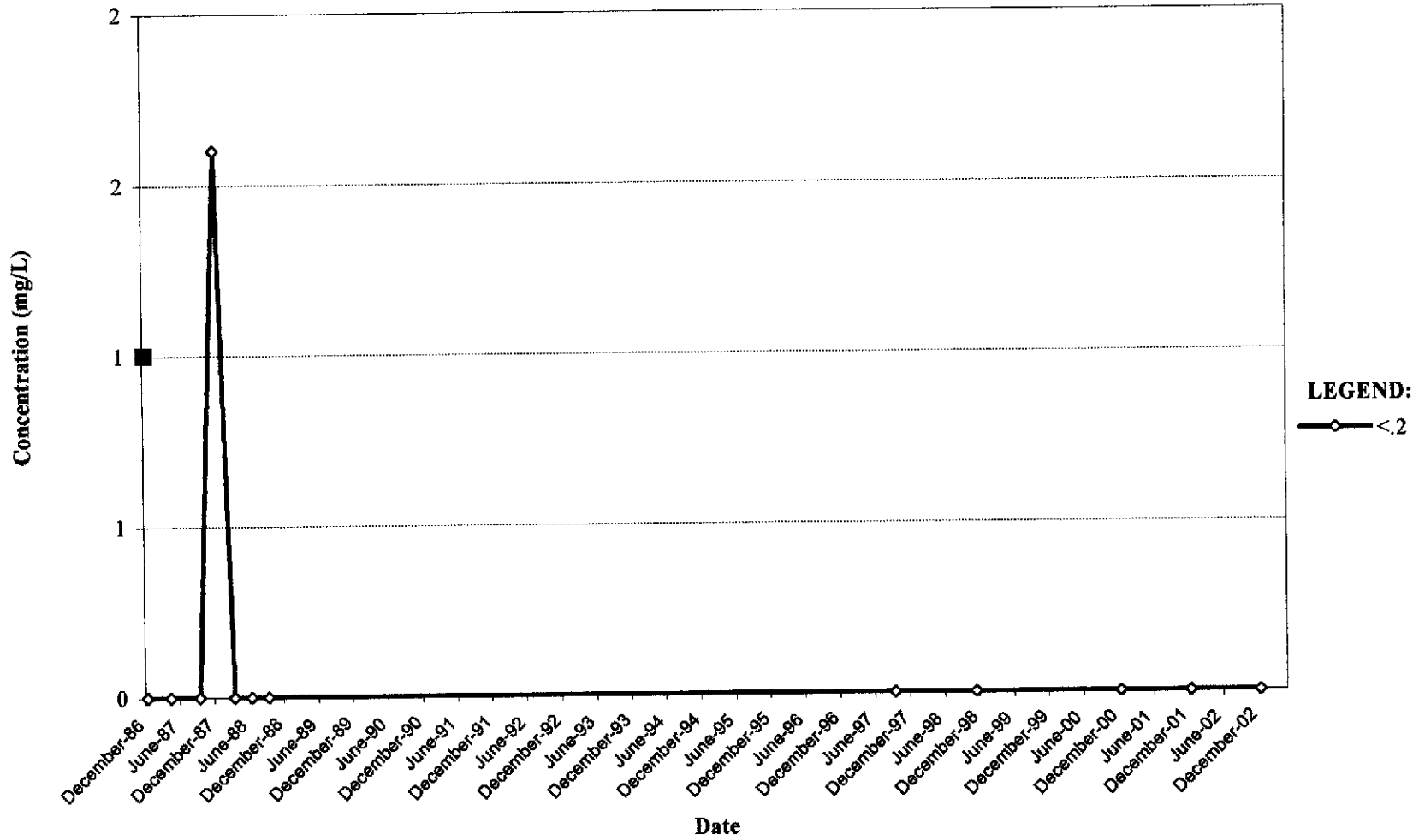
Date	B	T	E	X	TPHd	TPHg	TOG
12/24/1986	<2	<9	NA	<9	NA	<10	57
4/9/1987	<5	<5	NA	<5	NA	<10	NA
9/16/1987	<5	<5	NA	<5	NA	<10	NA
12/1/1987	1.6	<5	NA	12	NA	<10	NA
3/8/1988	<5	<5	NA	<5	<.5	7.7	NA
6/8/1988	<5	<5	NA	<5	<.5	<10	NA
9/14/1988	<5	<5	NA	<5	0.13	<10	NA
9/16/1997	<5	<5	<5	<5	0.12	<50	NA
11/2/1998	<5	<5	<5	<5	0.12	<50	NA
12/6/2000	<5	<.5	<.5	<.5	0.2	<50	NA
12/11/2001	<.5	<.5	<.5	<.5	0.091	<50	NA
12/5/2002	<.5	<.5	<.5	<.5	0.19	<50	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

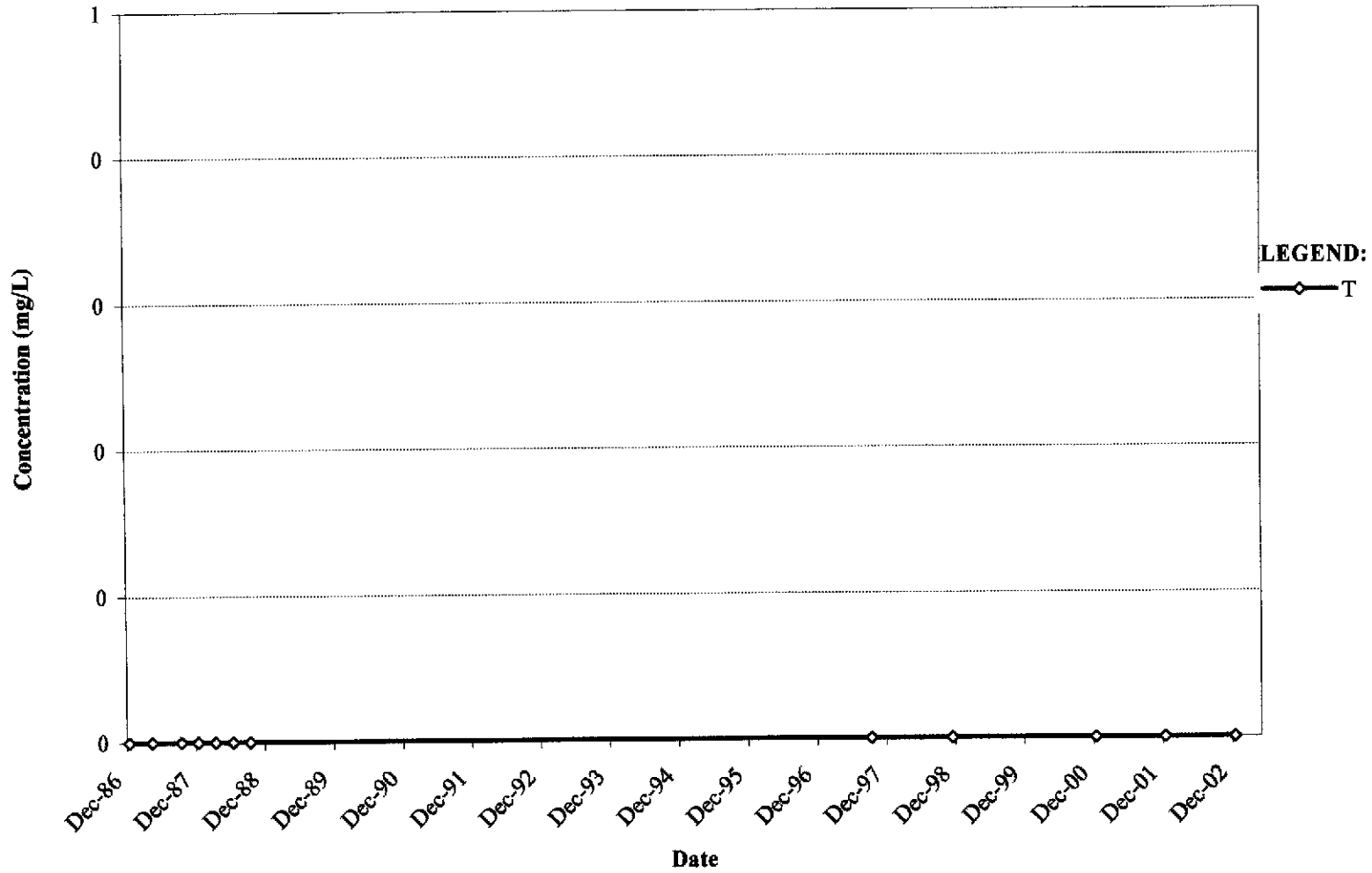
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

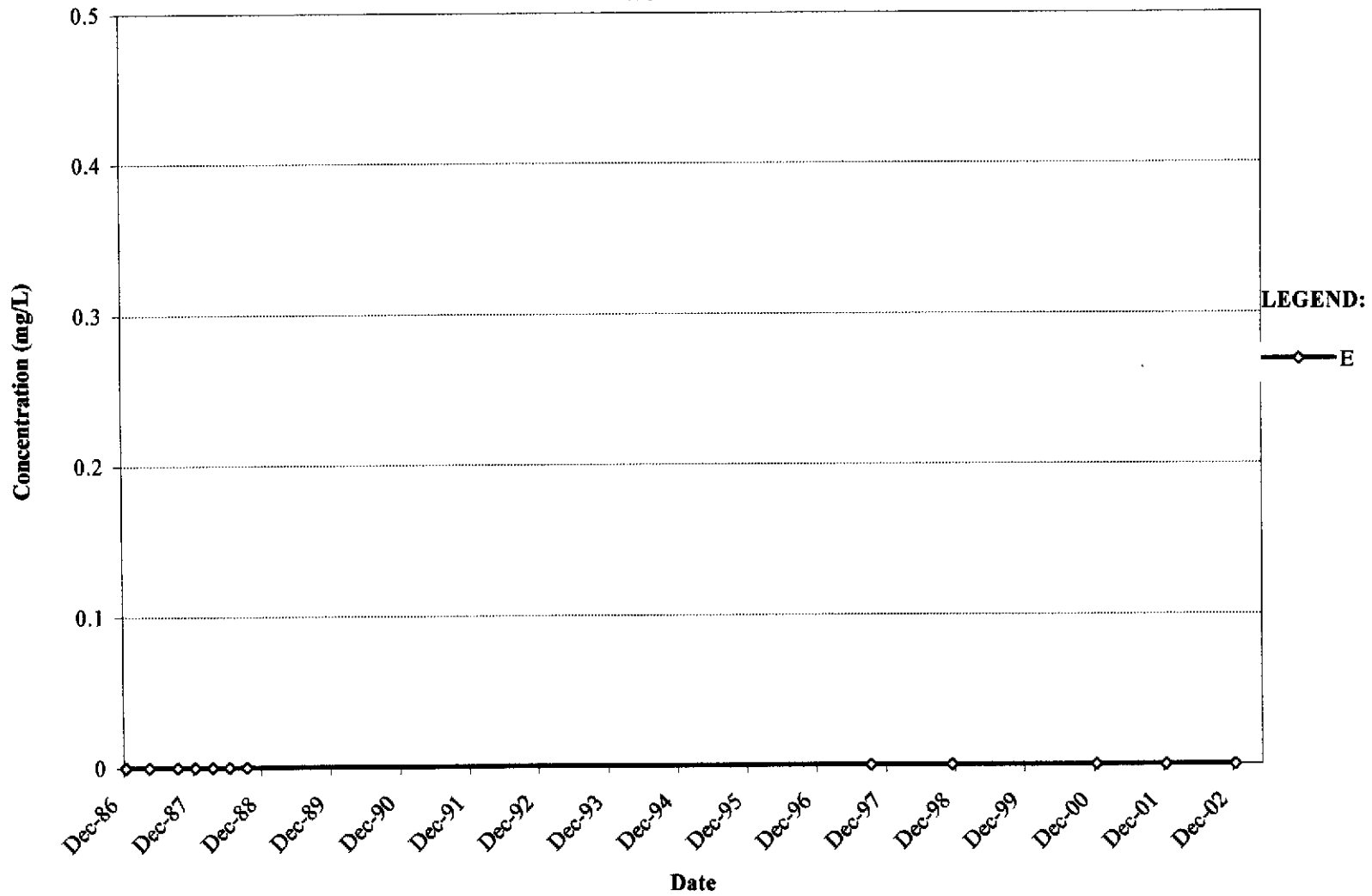
**Trend Plot for Benzene
Well MW-13**



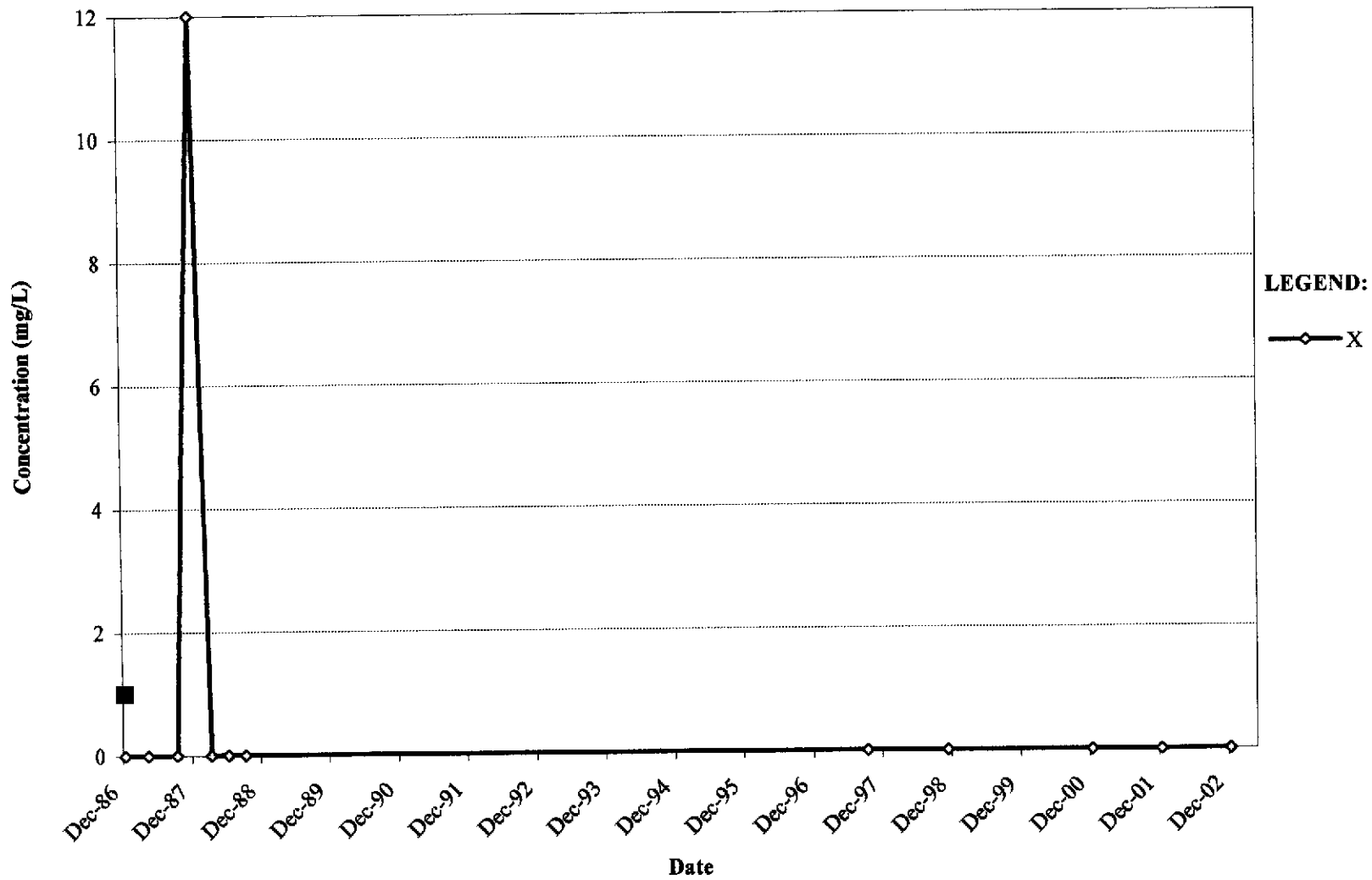
**Trend Plot for Toluene
Well MW-13**



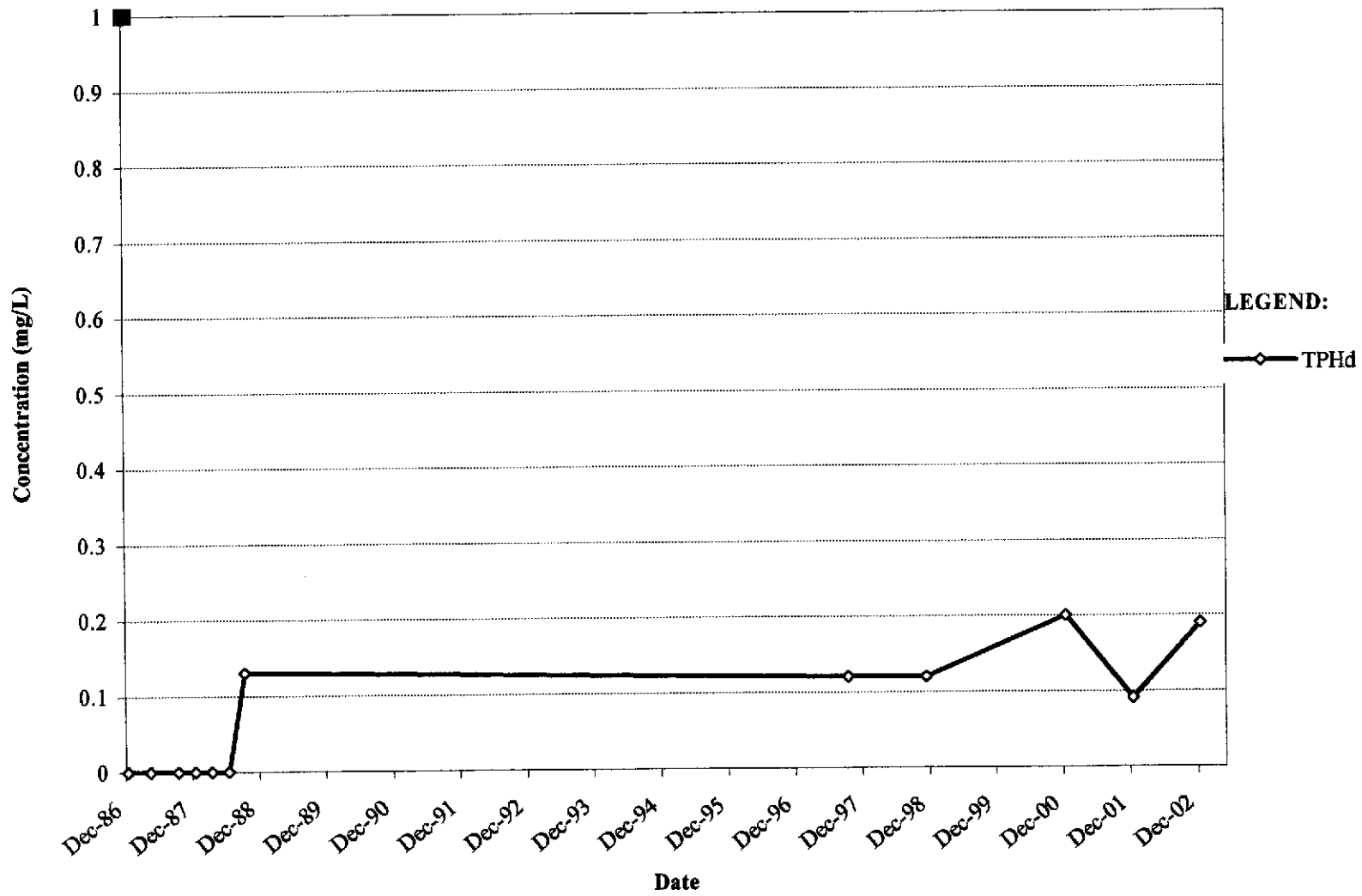
**Trend Plot for Ethylbenzene
Well MW-13**



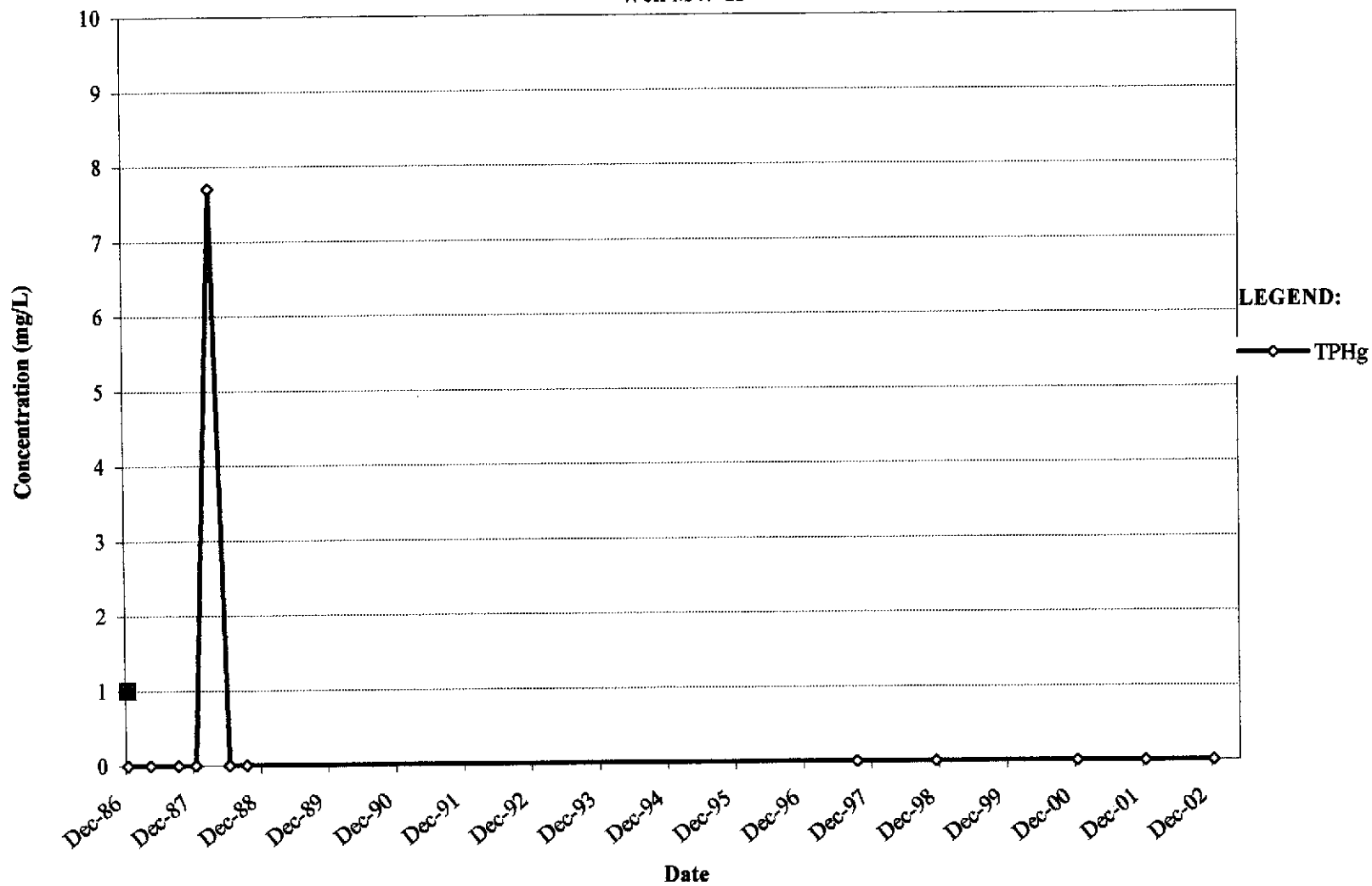
**Trend Plot for Xylenes
Well MW-13**



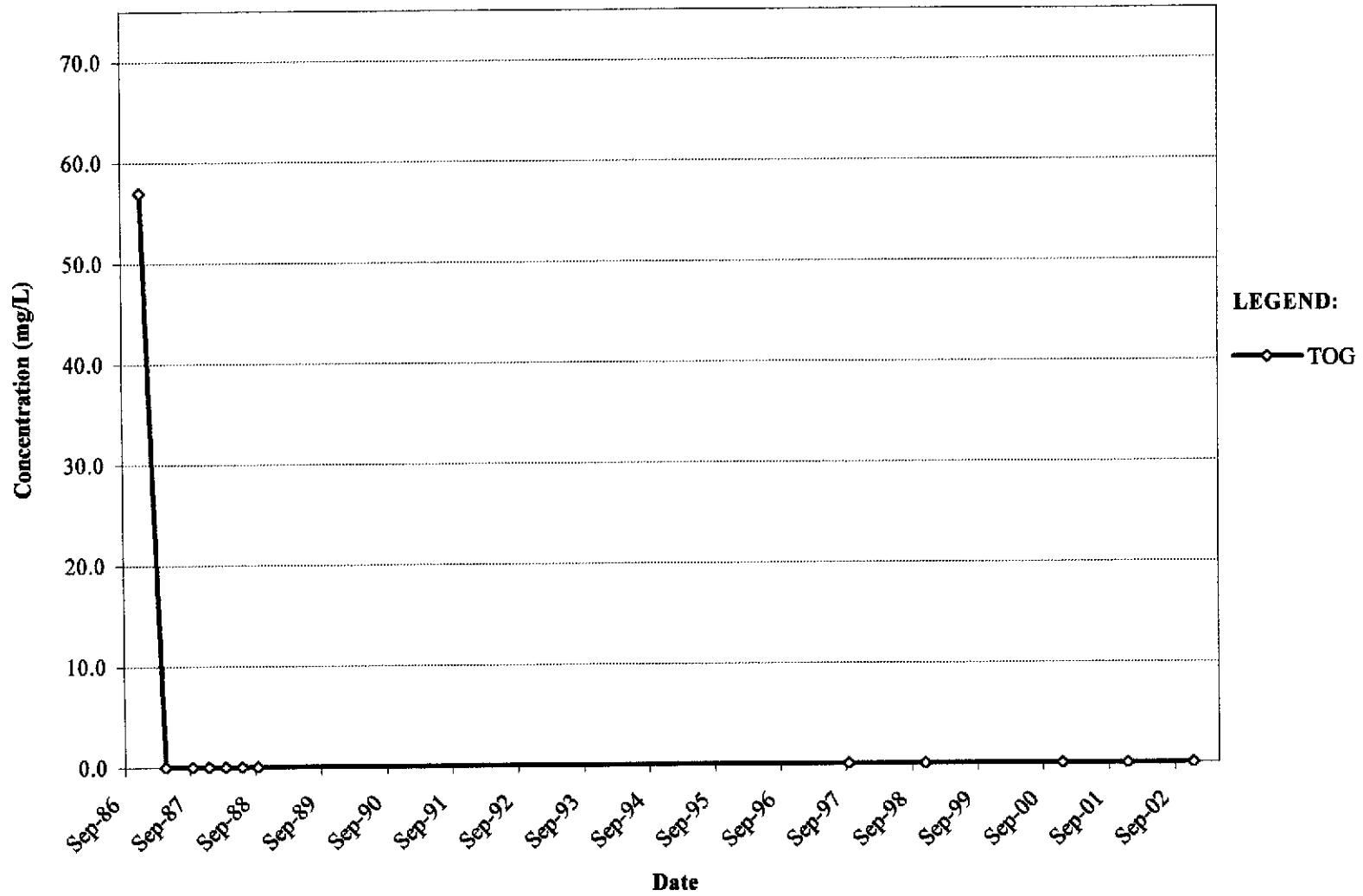
**Trend Plot for TPHd
Well MW-13**



**Trend Plot for TPHg
Well MW-13**



**Trend Plot for TOG
Well MW-13**



**Historical Groundwater Water Sample
Results for Well MW-15
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

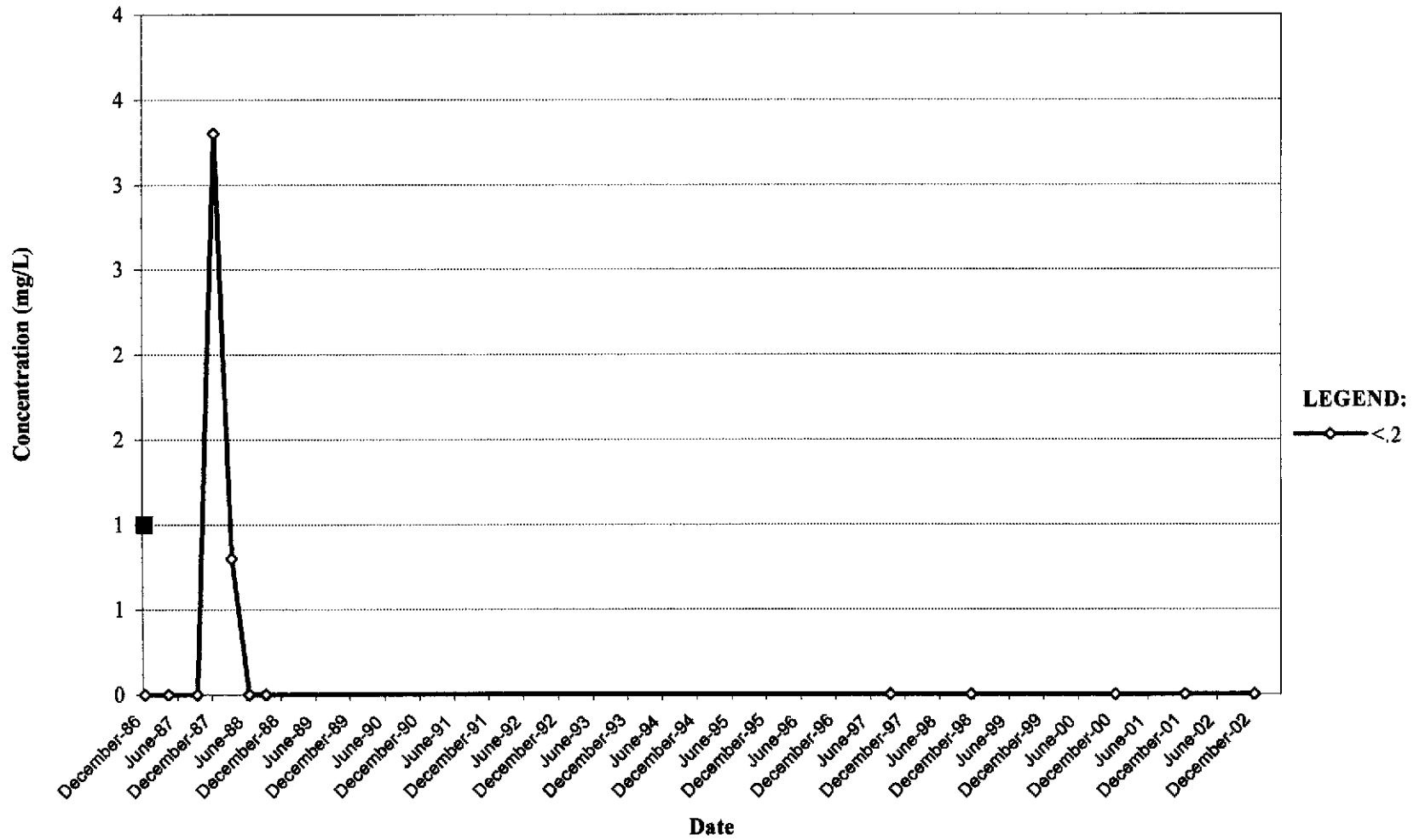
Date	B	T	E	X	TPHd	TPHg	TOG
12/24/1986	<2	<9	NA	9.20	NA	120	1.6
4/9/1987	<5	<5	NA	<5	NA	<5	NA
9/16/1987	<5	<5	NA	<5	<1	8.4	NA
12/1/1987	3.30	0.84	NA	14	NA	<5	NA
3/8/1988	0.80	<5	NA	<5	<1	90	NA
6/9/1988	<5	<5	NA	<5	<1	53	NA
9/14/1988	NA	NA	NA	NA	0.1	NA	NA
9/16/1997	<5	<5	<5	<5	1.27	<50	NA
11/2/1998	<5	<5	<5	<5	0.34	<50	NA
12/6/2000	<5	<5	<5	<5	0.4	<50	NA
12/11/2001	<5	<5	<5	<5	0.29	<50	NA
12/5/2002	<5	<5	<5	<5	0.44	<50	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

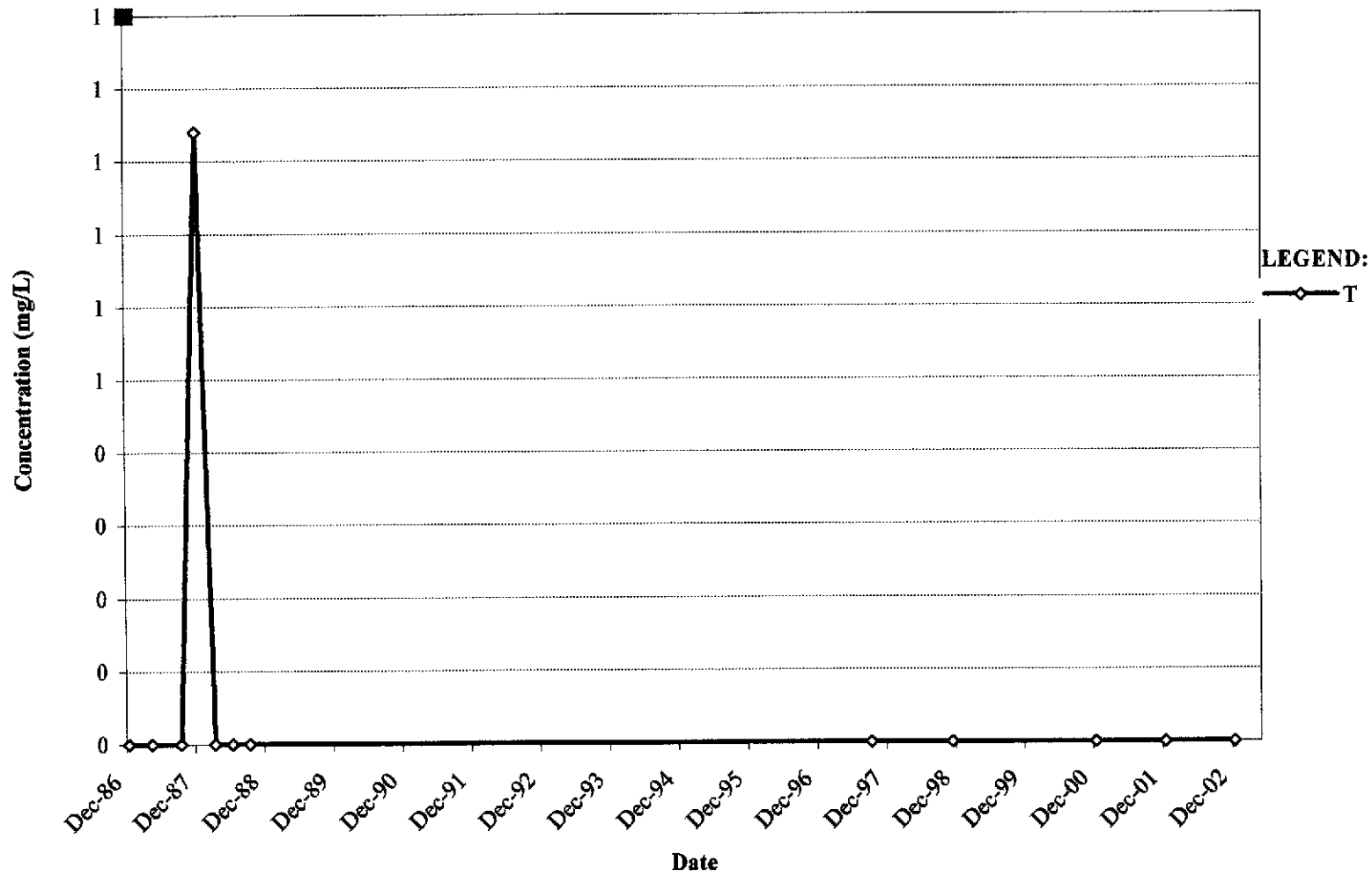
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

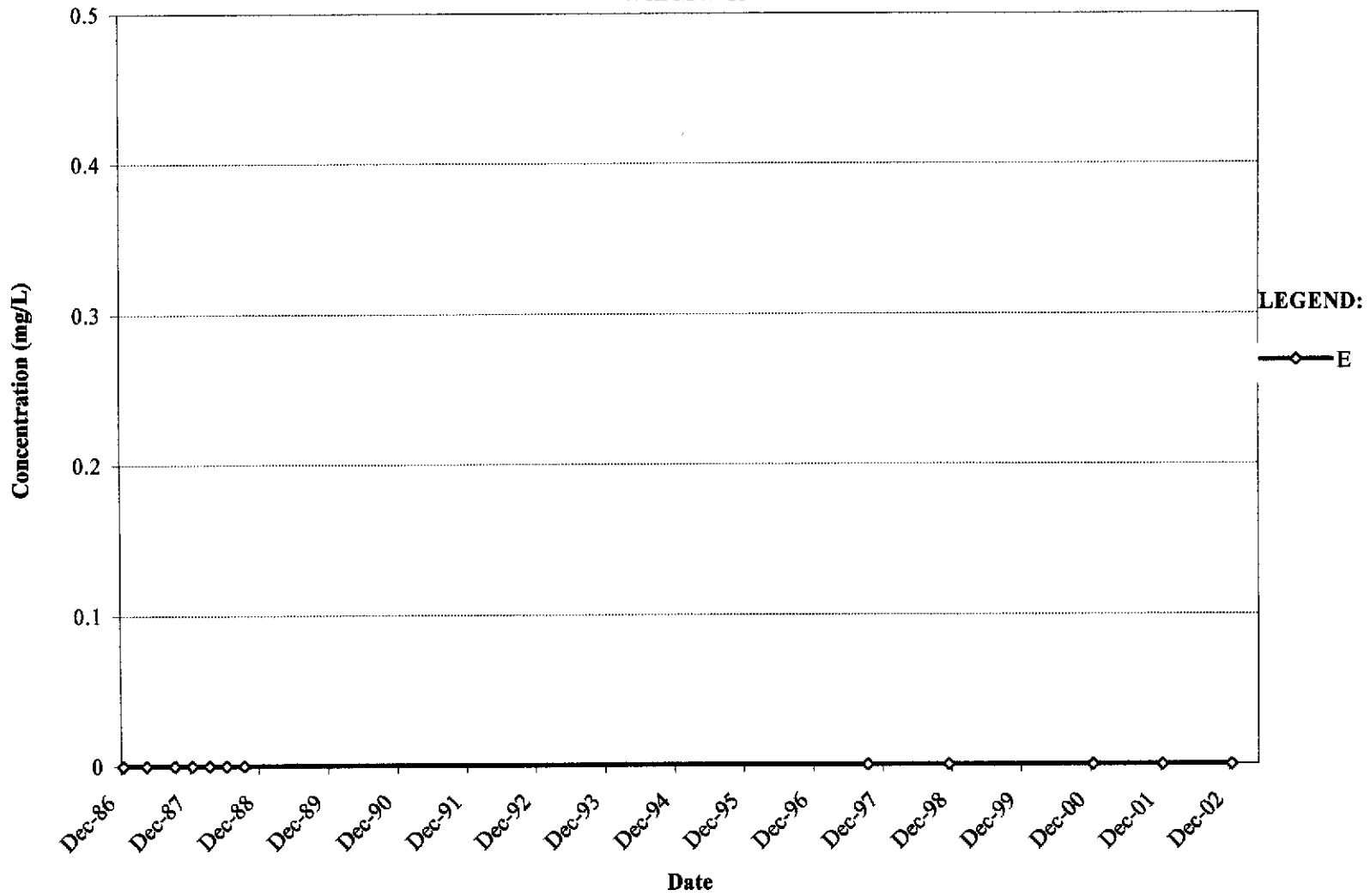
Trend Plot for Benzene
Well MW-15



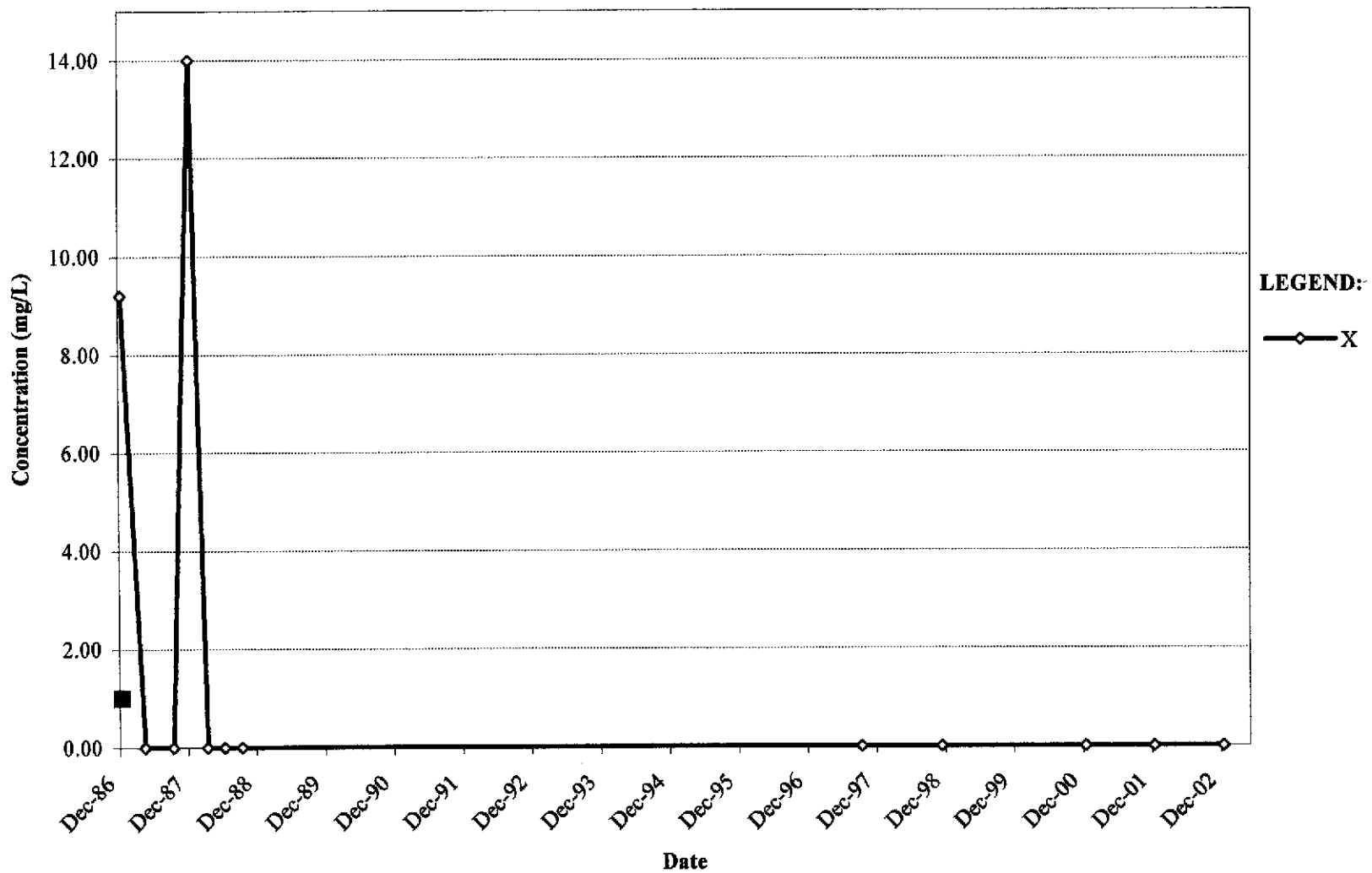
**Trend Plot for Toluene
Well MW-15**



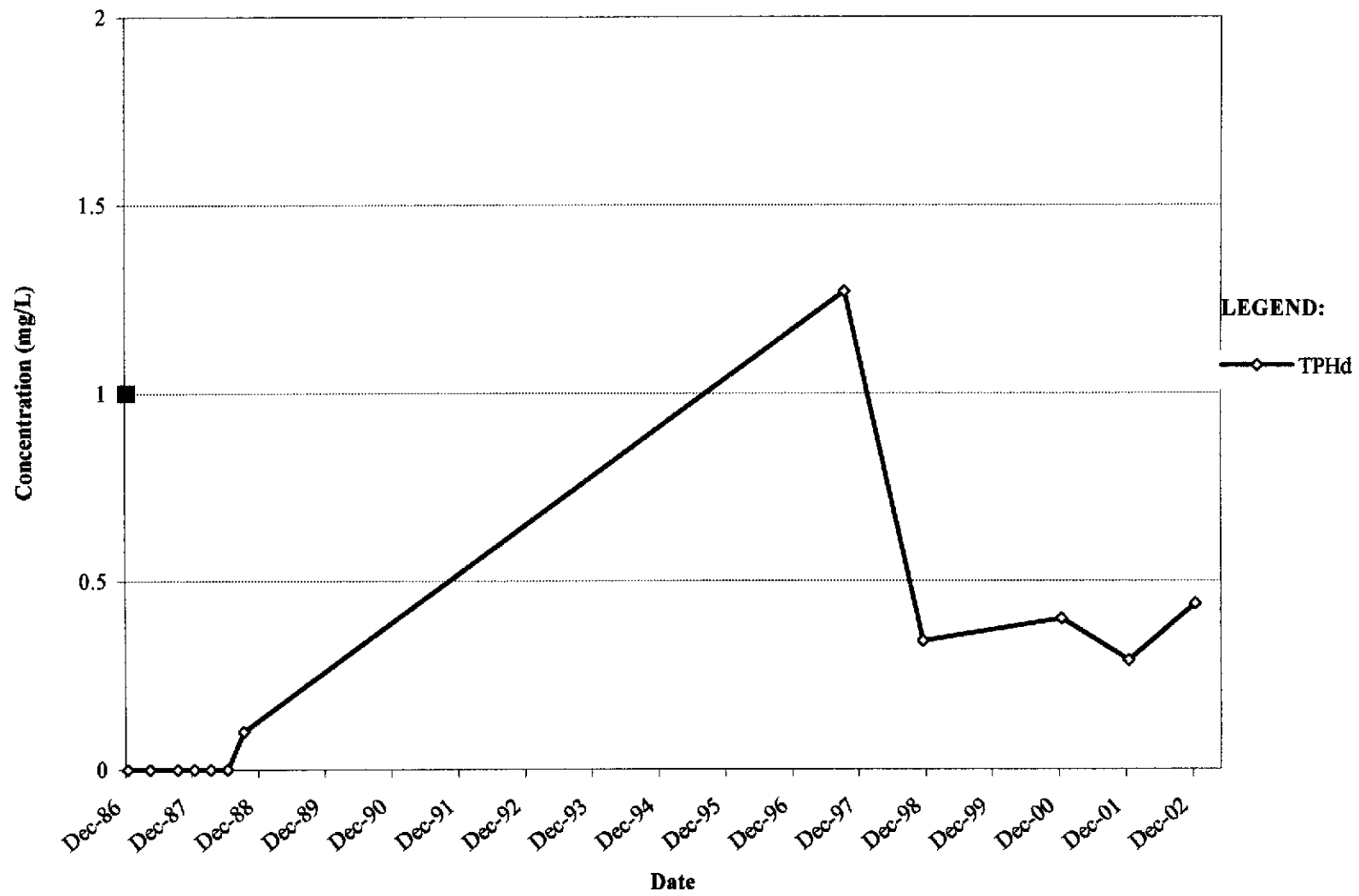
**Trend Plot for Ethylbenzene
Well MW-15**



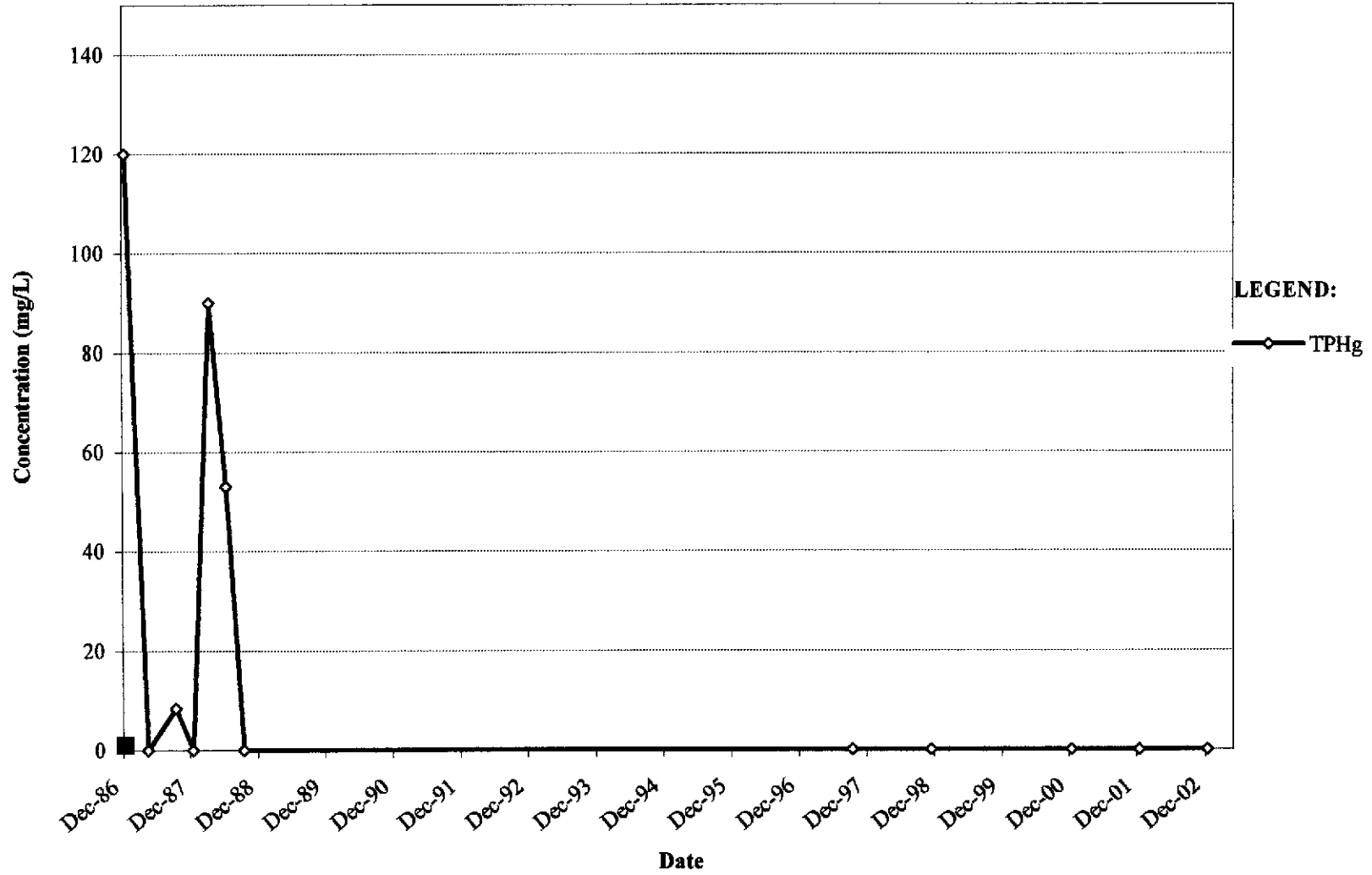
**Trend Plot for Xylenes
Well MW-15**



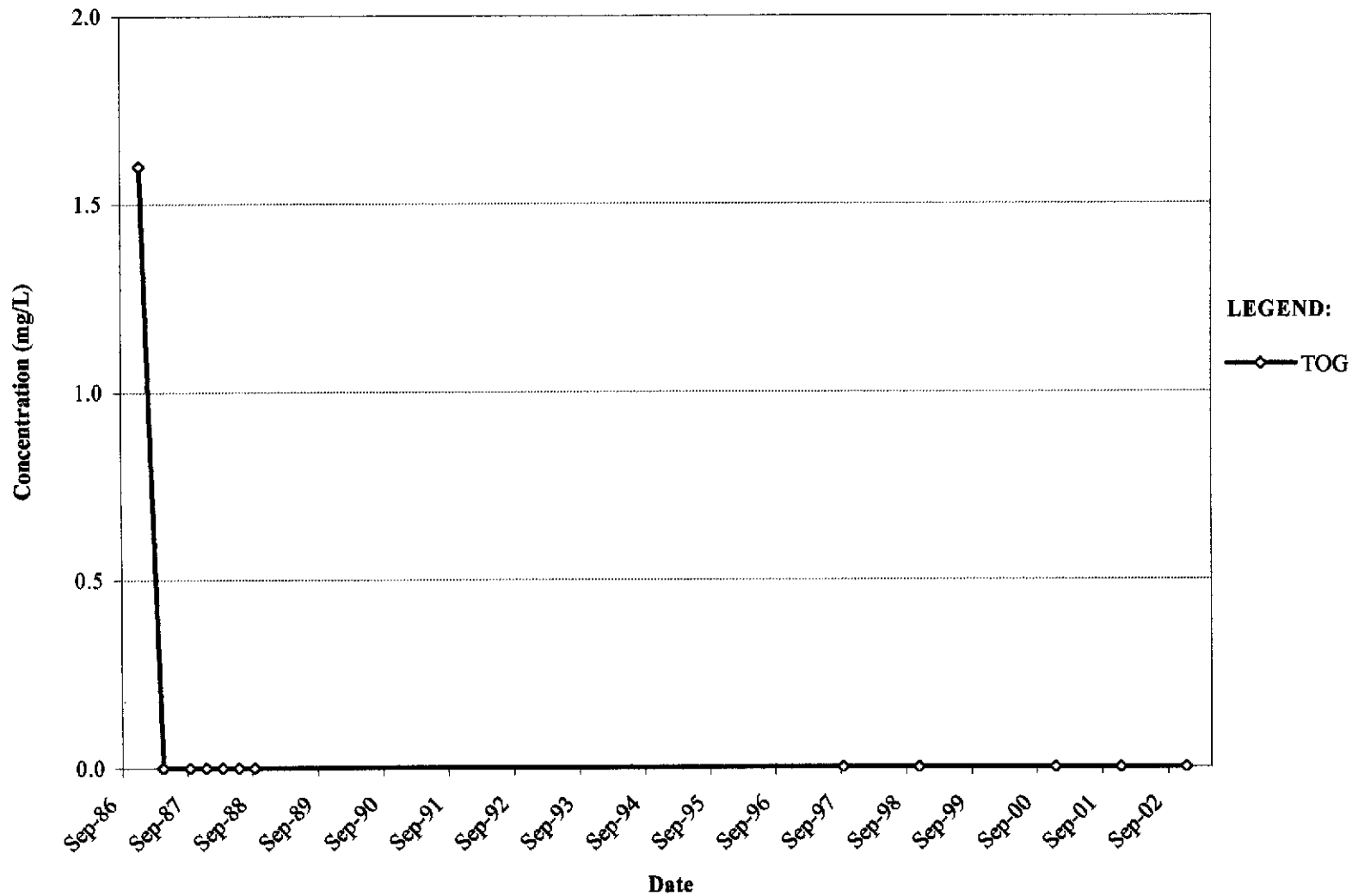
**Trend Plot for TPHd
Well MW-15**



**Trend Plot for TPHg
Well MW-15**



**Trend Plot for TOG
Well MW-15**



**Historical Groundwater Water Sample
Results for Well MW-16
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

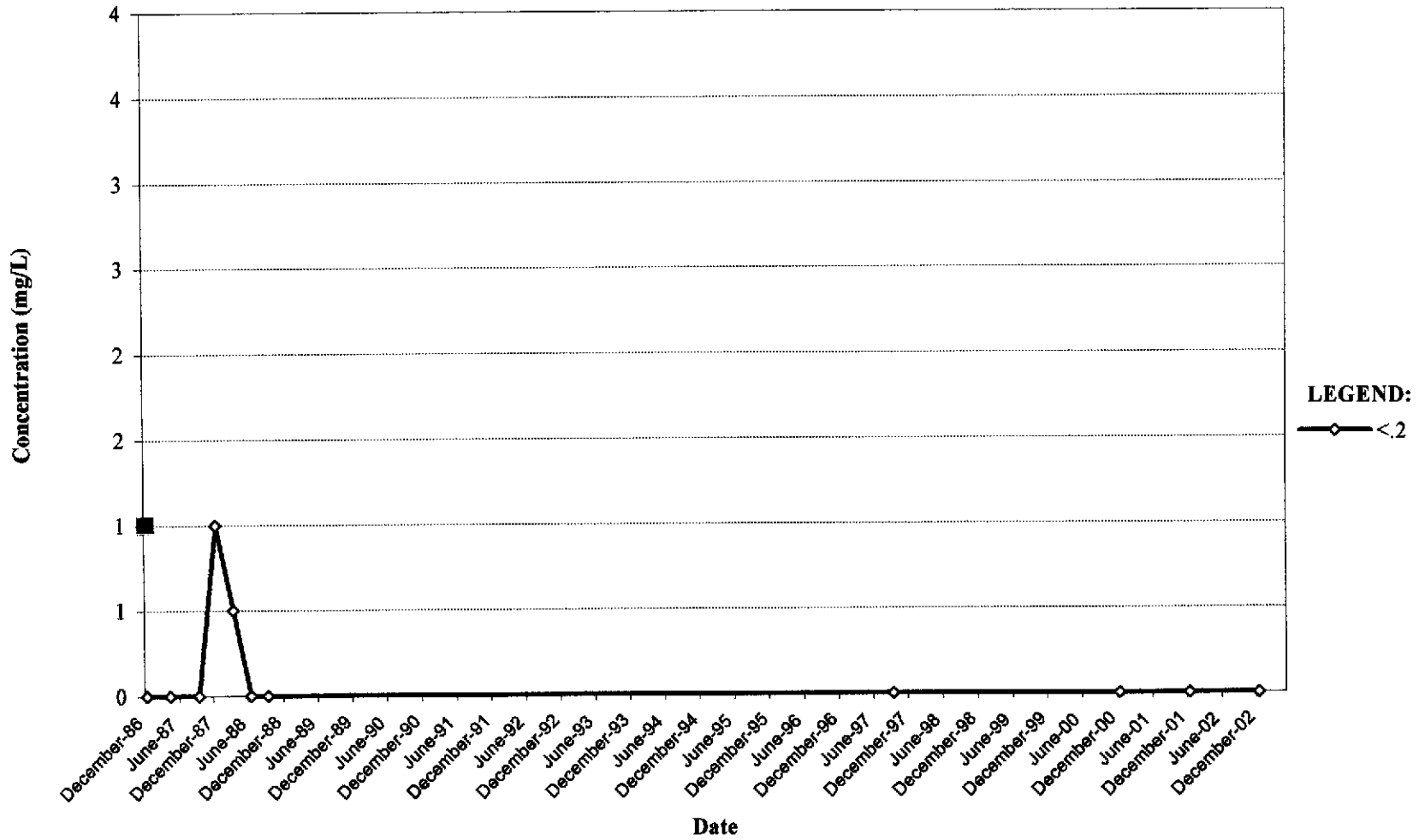
Date	B	T	E	X	TPHd	TPHg	TOG
12/24/1986	<2	<9	NA	<9	NA	<10	1.2
4/9/1987	<5	<5	NA	<5	NA	<5	NA
9/16/1987	<5	<5	NA	<5	0.064	<5	NA
12/1/1987	1.00	0.37	NA	9.1	0.15	120	NA
3/7/1988	0.50	<5	NA	<5	<.1	10	NA
6/8/1988	<5	<5	NA	<5	<.1	<0.5	NA
9/14/1988	<5	<5	NA	<5	0.19	<0.5	NA
9/16/1997	floating product						
12/6/2000	<5	<5	<5	<5	0.097	<50	NA
12/11/2001	<5	<5	<5	<5	<0.05	<50	NA
12/5/2002	<5	<5	<5	<5	0.051	<50	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

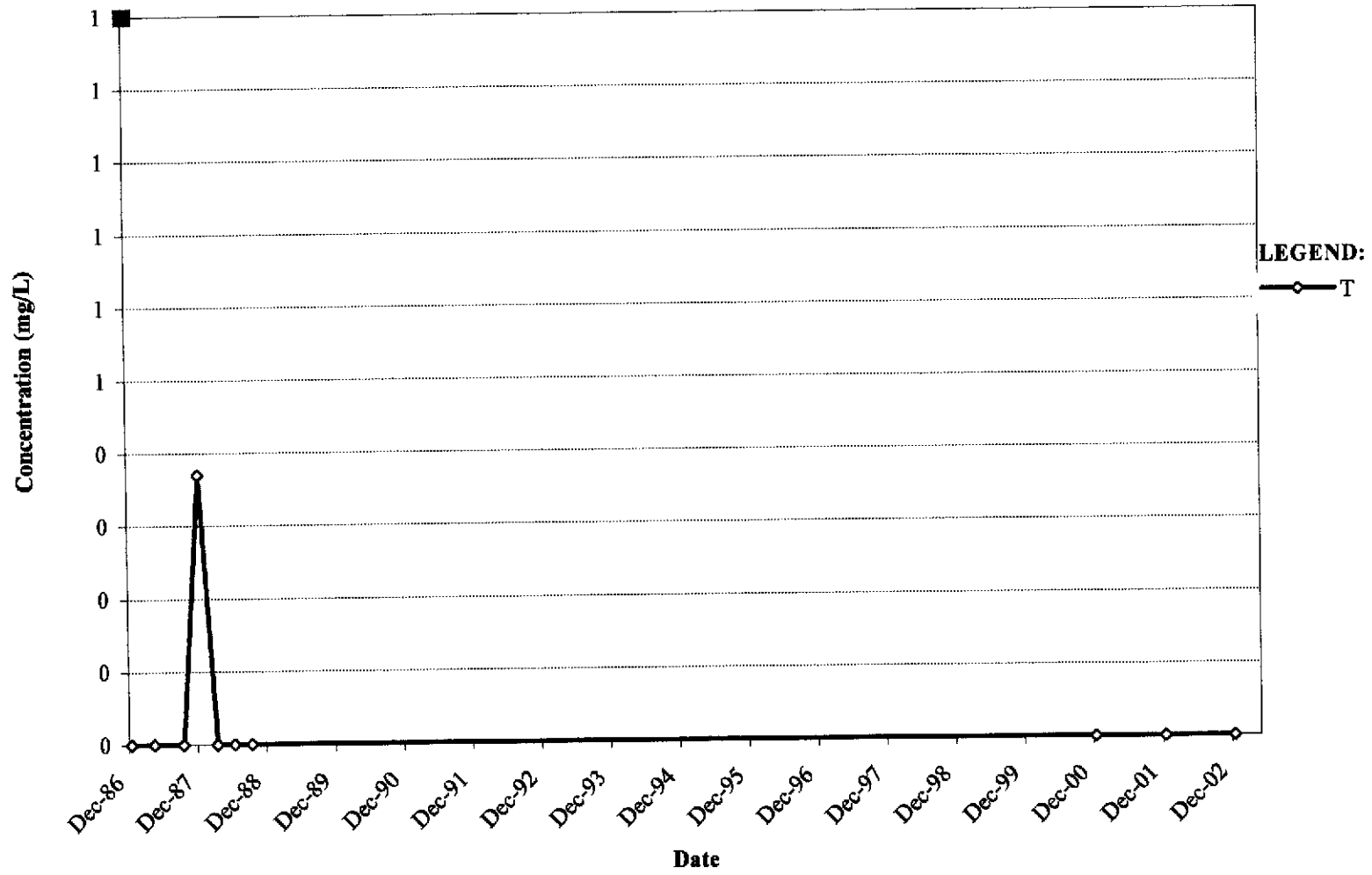
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

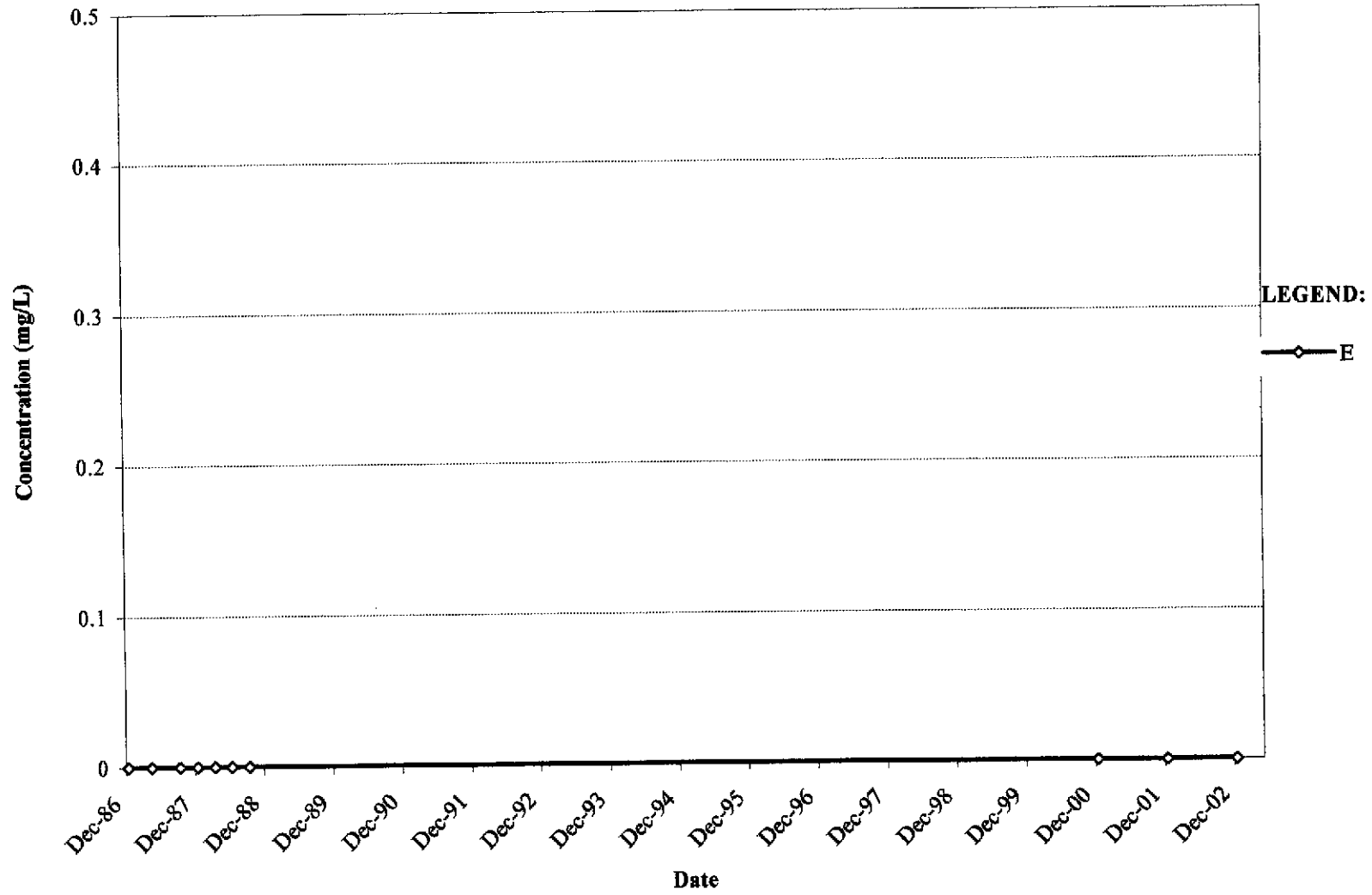
Trend Plot for Benzene
Well MW-16



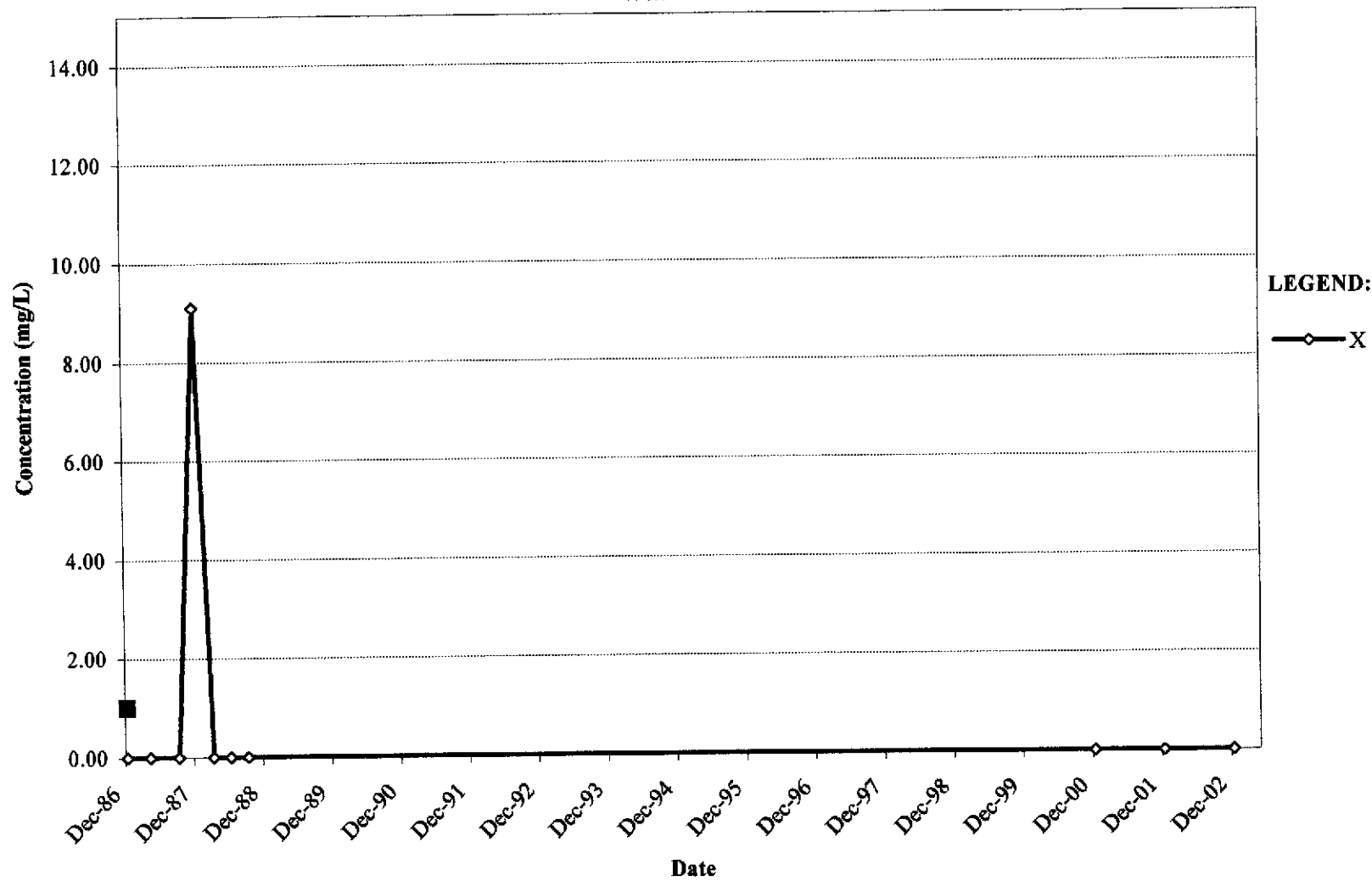
**Trend Plot for Toluene
Well MW-16**



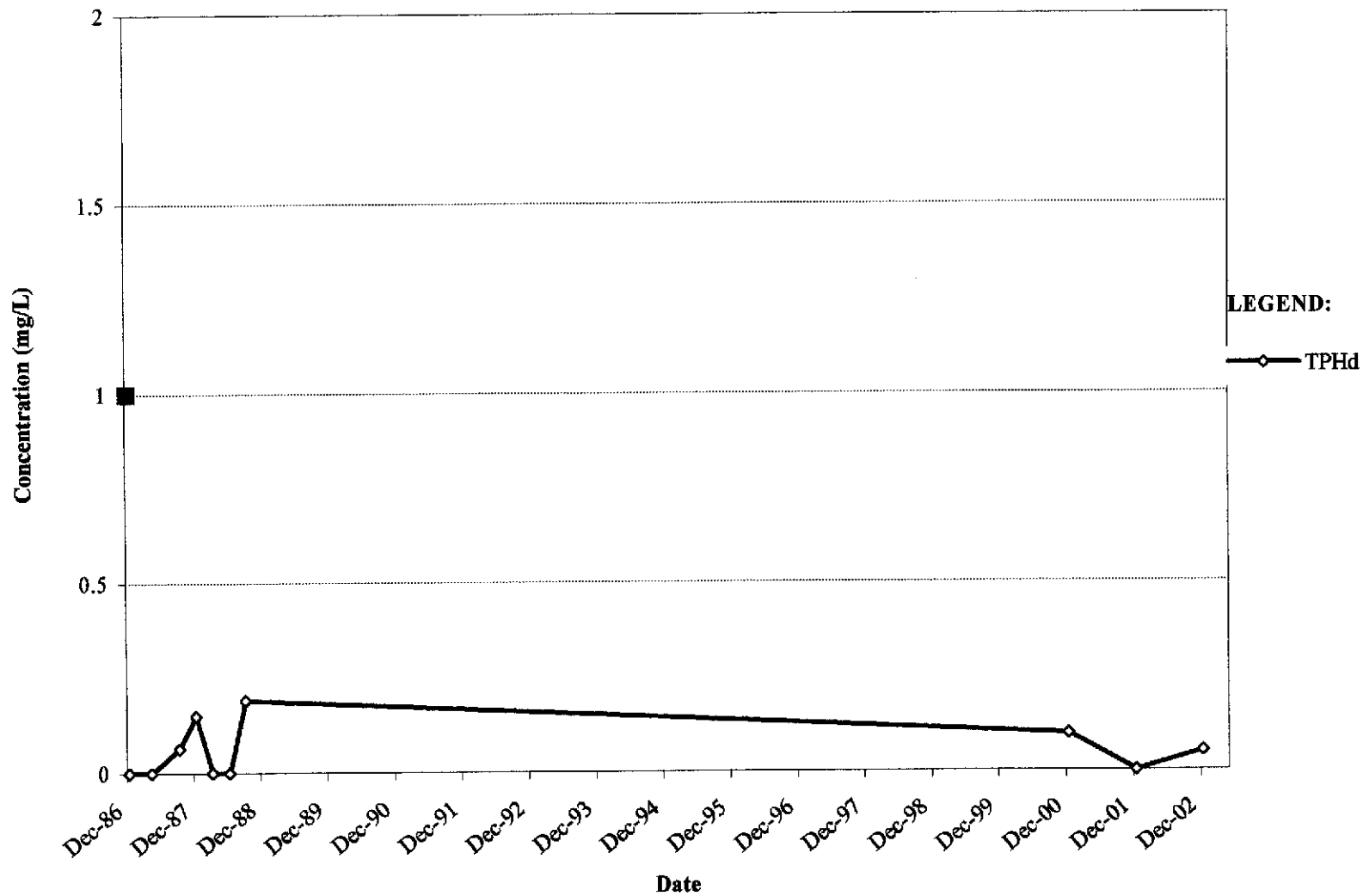
**Trend Plot for Ethylbenzene
Well MW-16**



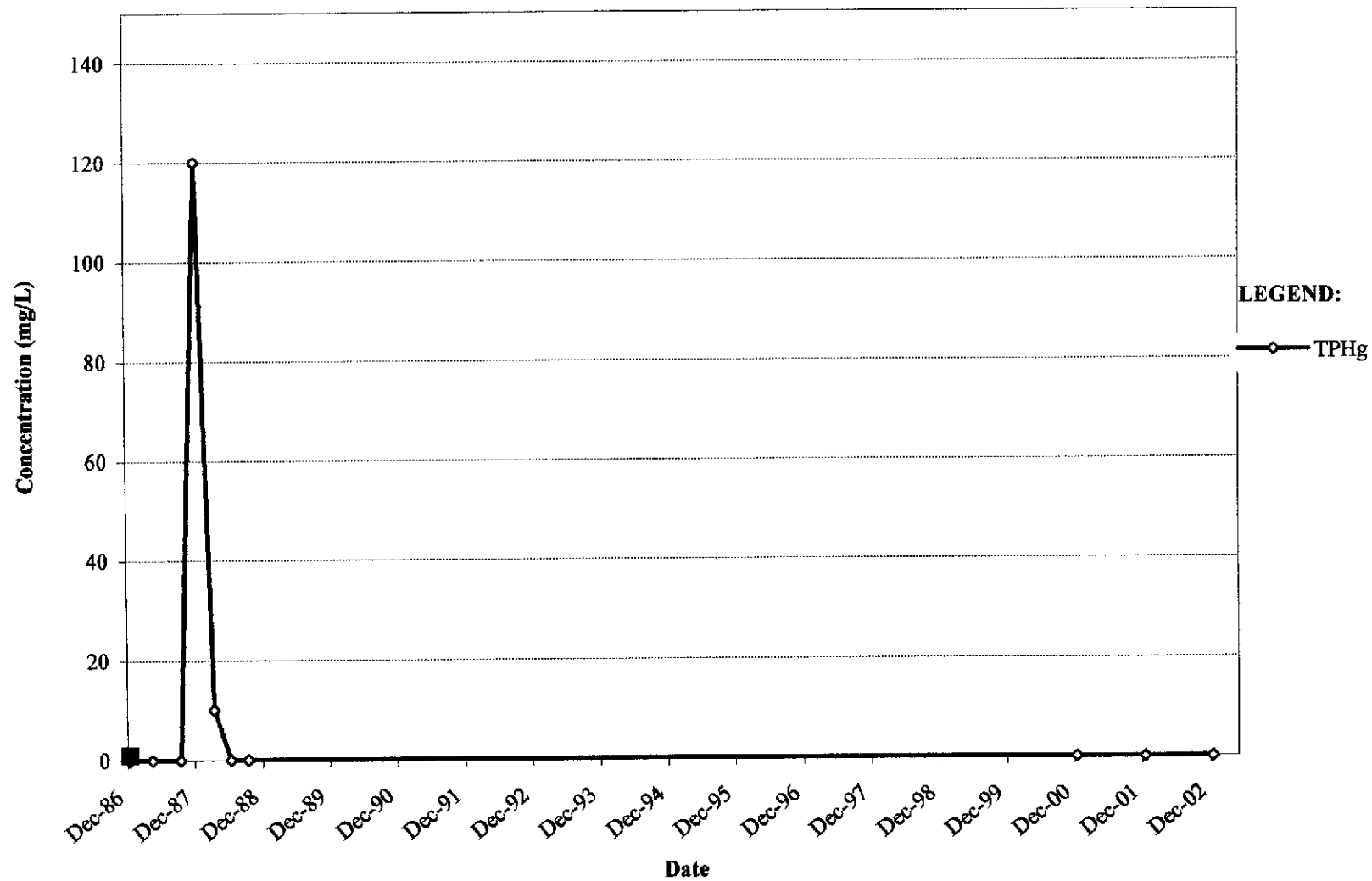
**Trend Plot for Xylenes
Well MW-16**



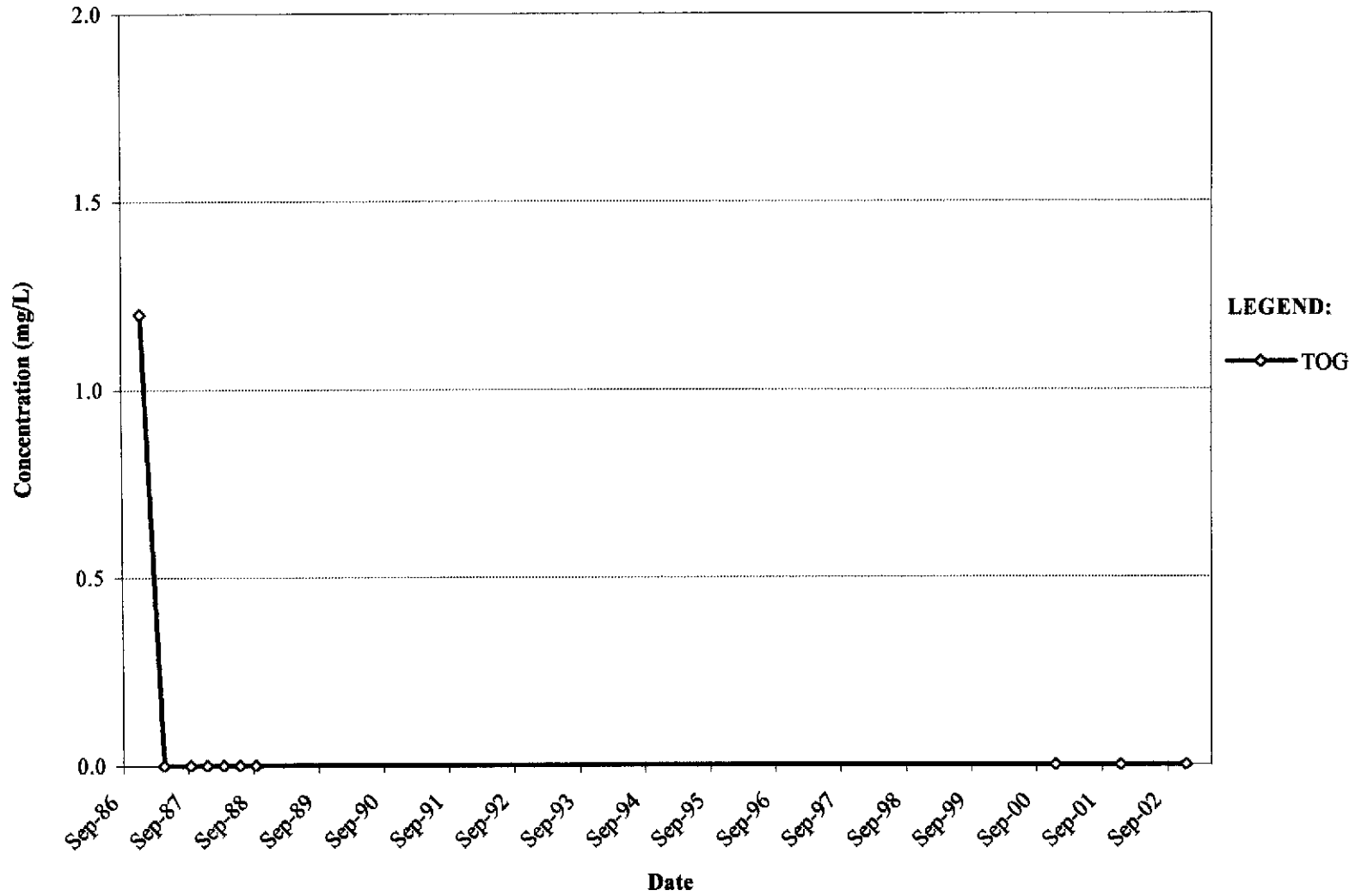
**Trend Plot for TPHd
Well MW-16**



Trend Plot for TPHg
Well MW-16



Trend Plot for TOG
Well MW-16



**Historical Groundwater Water Sample
Results for Well MW-17
Owens-Brockway Glass Container, Inc.
3600 Alameda Avenue, Oakland, California**

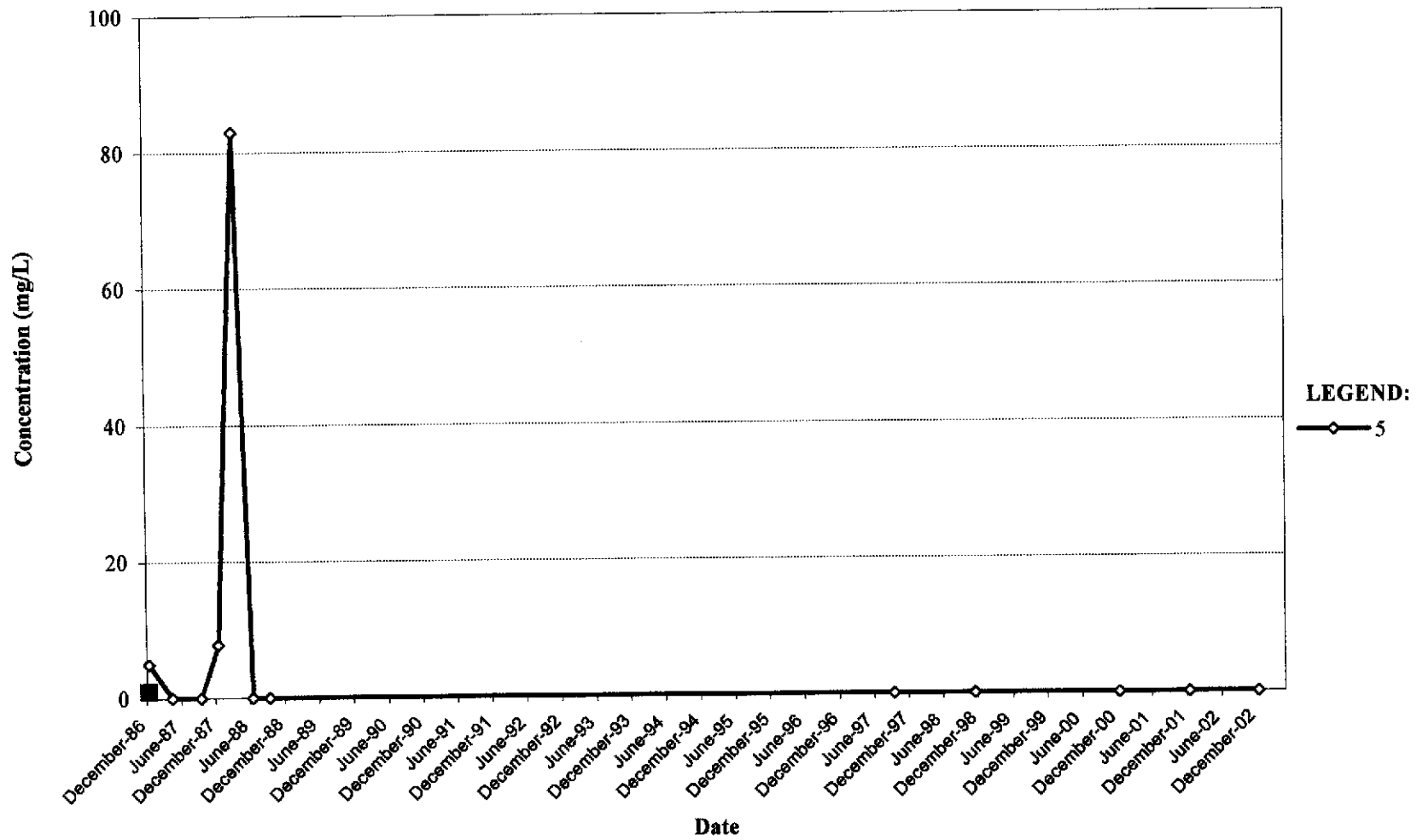
Date	B	T	E	X	TPHd	TPHg	TOG
12/24/1986	5	1.20	NA	14.00	NA	240	2.4
4/9/1987	<5	<5	NA	<5	NA	<5	NA
9/16/1987	<5	<5	NA	0.55	0.68	44	NA
12/1/1987	7.80	2.40	NA	28	1.3	540	NA
3/8/1988	83.00	<5	NA	46	3.8	4300	NA
6/8/1988	INACCESSABLE						
9/14/1988	<5	<5	<5	<5	64	54000	NA
9/16/1997	<5	<5	<5	<5	119.6	1900	NA
11/2/1998	<5	<5	<5	0.60	16	<50	NA
12/6/2000	<5	<5	<5	<5	47.8	340	NA
12/11/2001	<10	<10	<10	<10	101	5300	NA
12/5/2002	<5	<5	<5	<5	71	700	NA

Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)

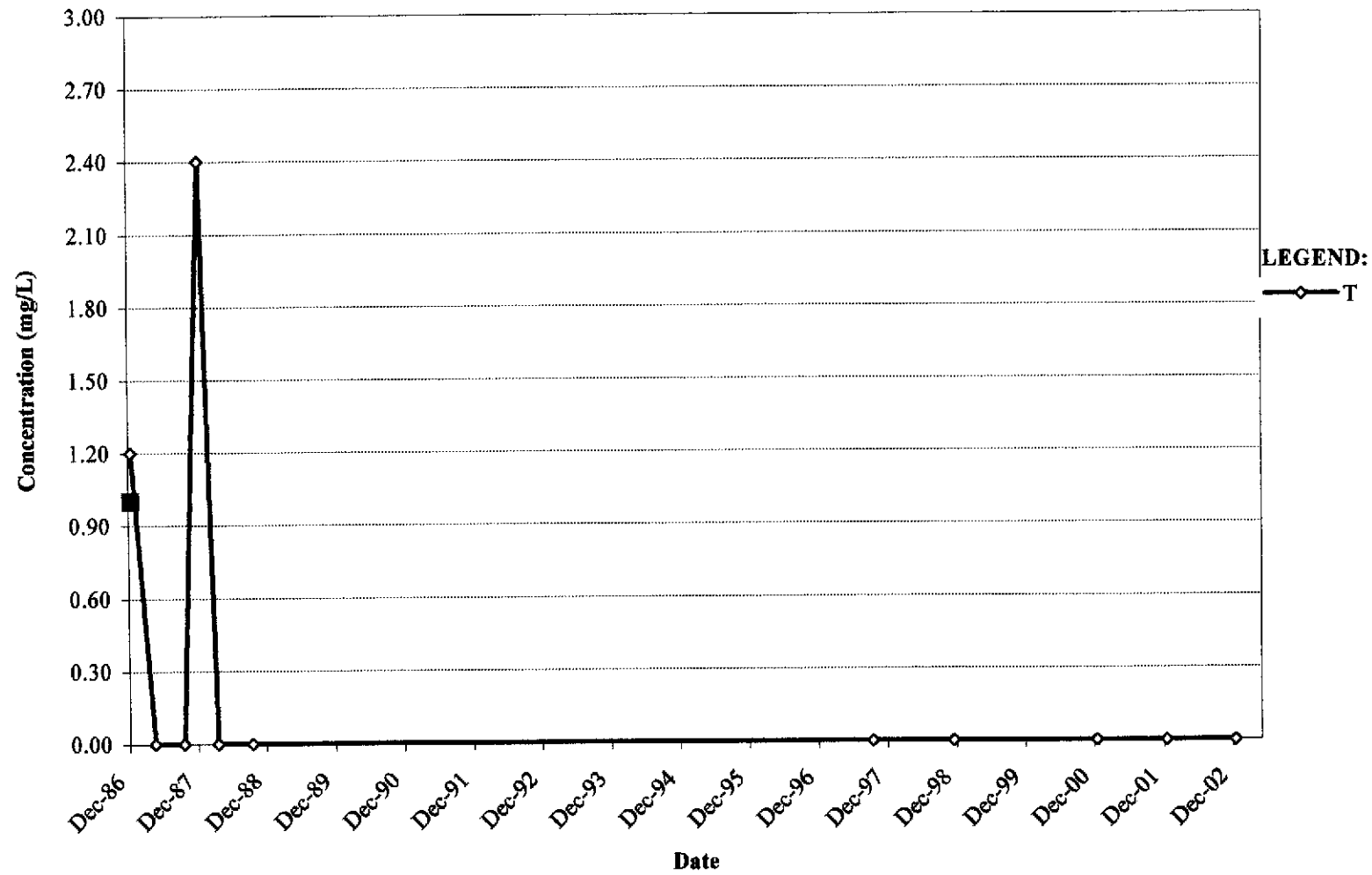
All other results are in micrograms per litre (ug/l)

For the purposes of plotting values reported as < the reporting limit are treated as "0"

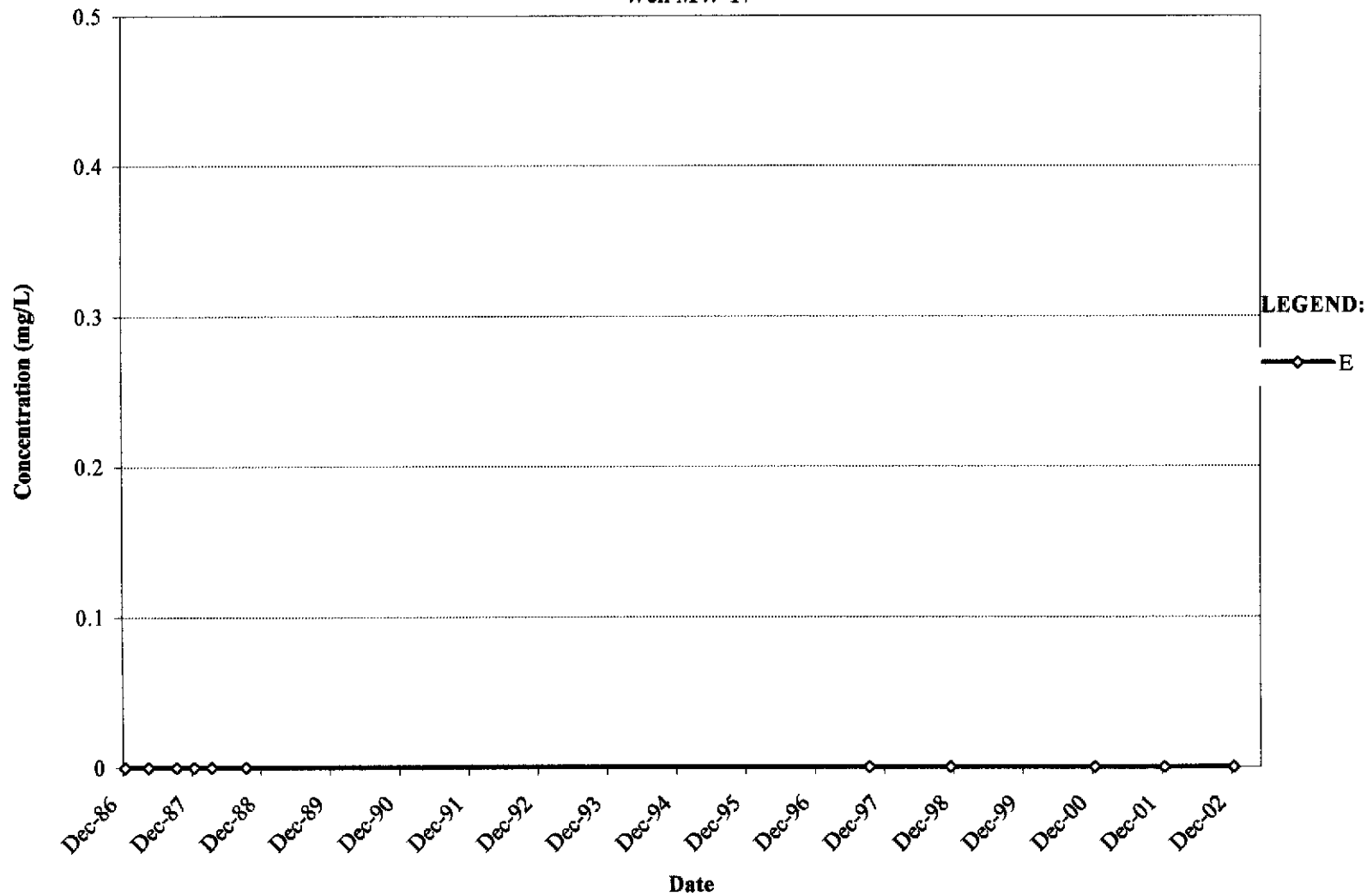
**Trend Plot for Benzene
Well MW-17**



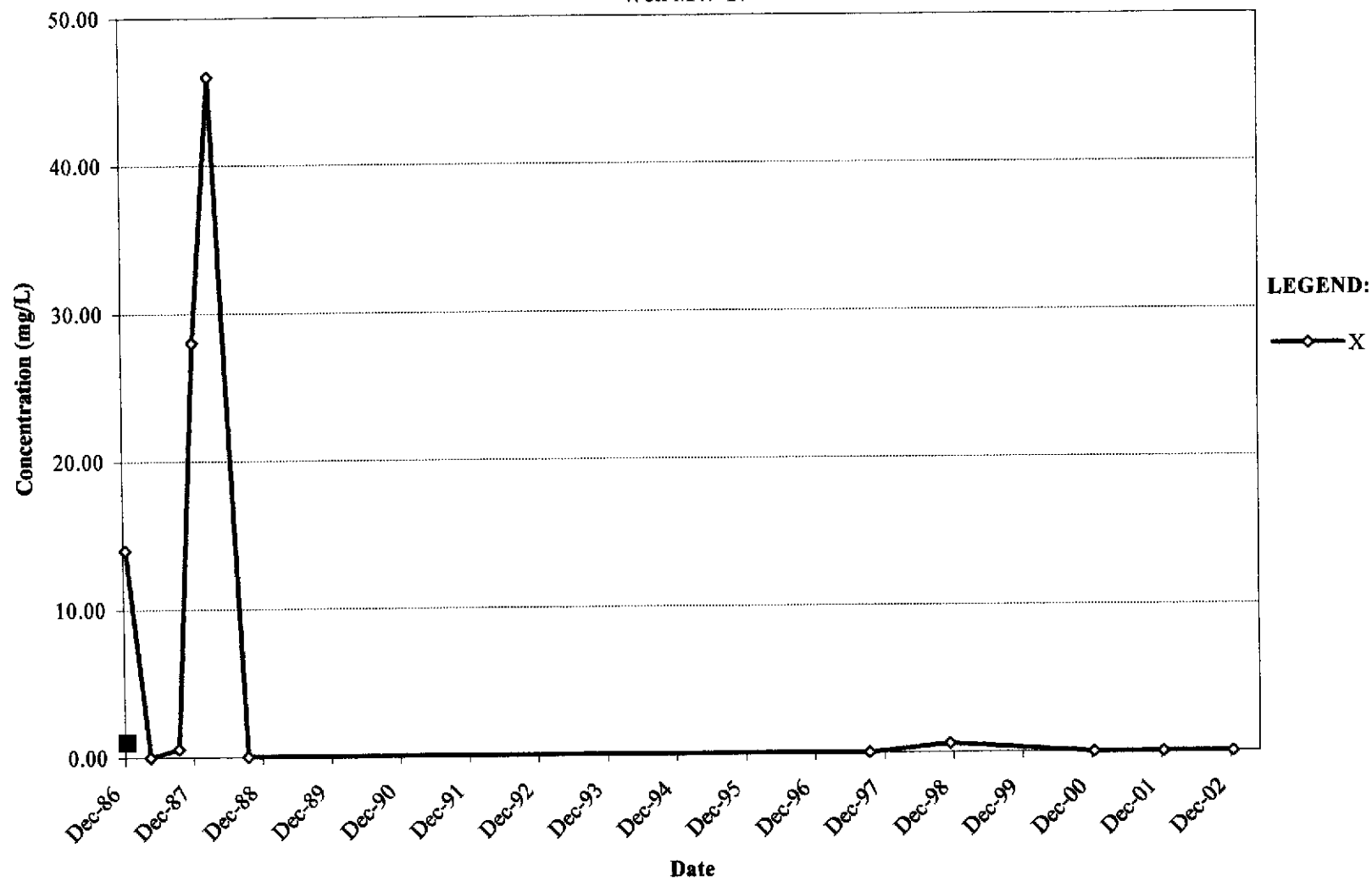
**Trend Plot for Toluene
Well MW-17**



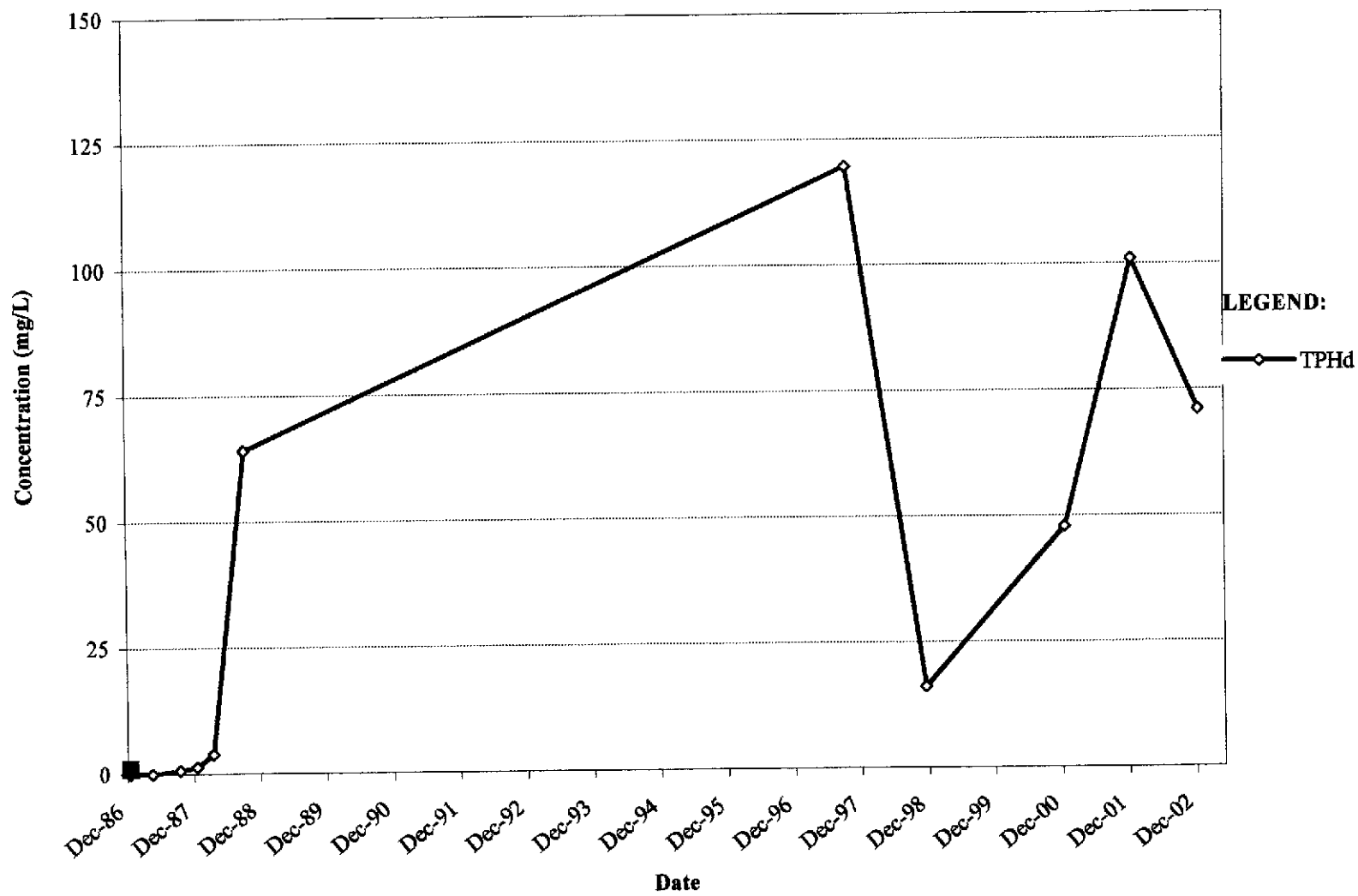
**Trend Plot for Ethylbenzene
Well MW-17**



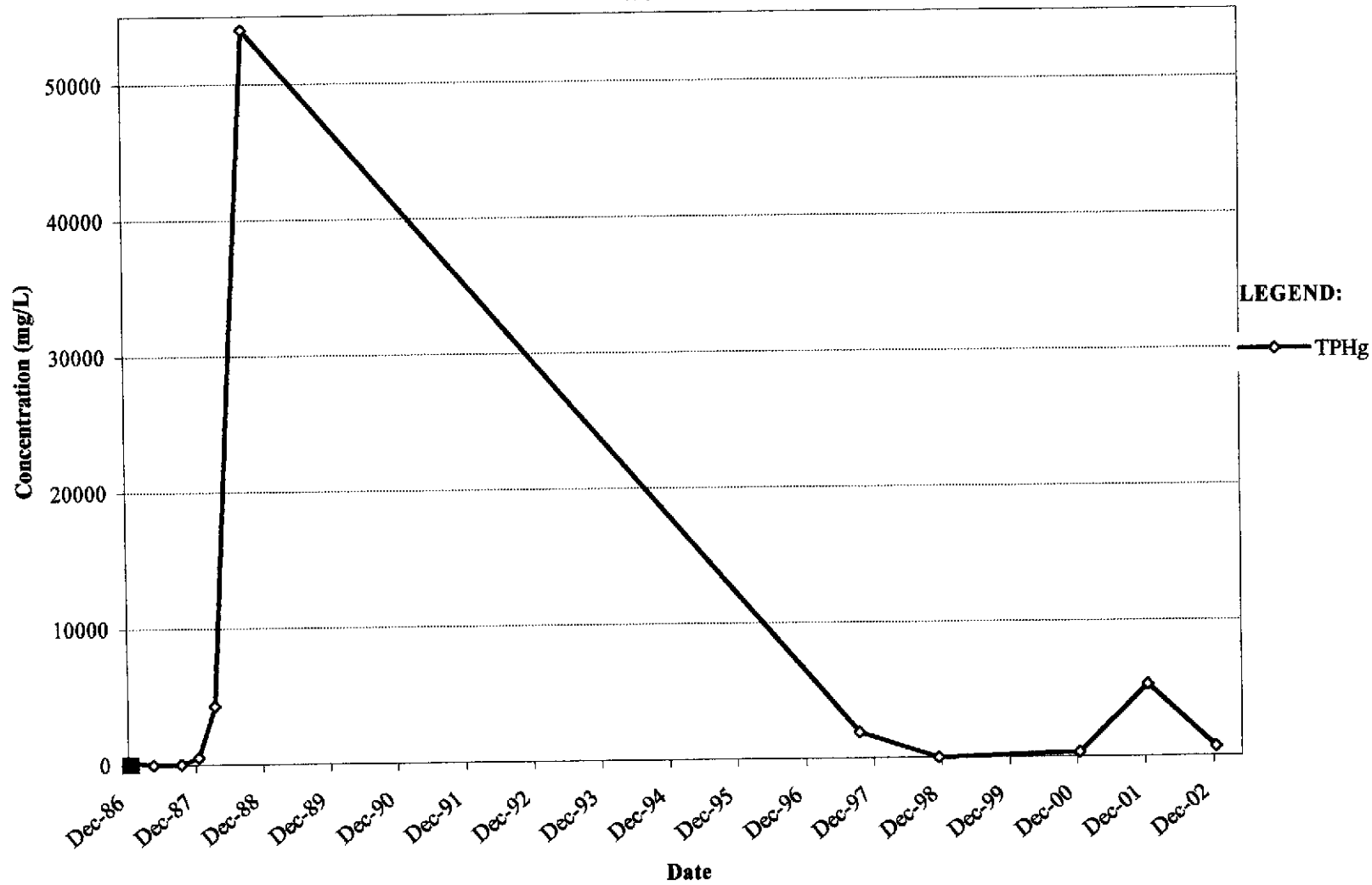
**Trend Plot for Xylenes
Well MW-17**



Trend Plot for TPHd
Well MW-17



Trend Plot for TPHg
Well MW-17



**Trend Plot for TOG
Well MW-17**

