OWENS-BROCKWAY
GLASS CONTAINERS
a unit of Owens-Illinois

November 11, 2003

Mr. Amir Gholami
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1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Data Compilation and Closure Report,
Underground Fuel Storage Tank Locations
Owens-Brockway Glass Container Facility – Oakland, CA

Dear Mr. Gholami:

Enclosed is the subject report. If there are questions regarding its content, please give me or Chris Kennedy a call.

Sincerely,

Robert C. Neal

Robert C. Neal, P.E.
Environmental Administrator

DATA COMPILATION AND CLOSURE REPORT
UNDERGROUND FUEL STORAGE TANK LOCATIONS
OWENS-BROCKWAY GLASS CONTAINER FACILITY
OAKLAND, CALIFORNIA

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A Report Prepared for:

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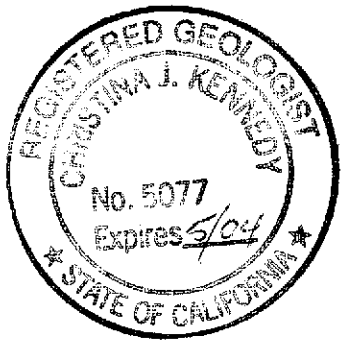
DATA COMPLATION AND CLOSURE REPORT
UNDERGROUND FUEL STORAGE TANK LOCATIONS
OWENS-BROCKWAY GLASS CONTAINER FACILITY,
OAKLAND, CALIFORNIA



November 4, 2003

Prepared by:

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1.0 EXECUTIVE SUMMARY

The Owens-Brockway glass manufacturing facility is located at 3600 Alameda Avenue in Oakland, California. The site is located to the north of the Oakland Estuary with Fruitvale Avenue to the west, a former retail center to the east and residences to the north.

Two underground fuel storage tank (UST) areas existed at the Oakland plant. The first UST area is located on the west side of the plant and included three fuel oil USTs. Impacts by fuel oil to the subsurface were observed 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 this area. When they were removed and replaced by two new USTs, a gasoline release to the subsurface was observed.

CKG compiled all the historic data for the site and completed a Cone Penetration Test (CPT) subsurface investigation and installed one offsite monitoring well. This data was used to refine our understanding of the distribution of petroleum hydrocarbons at the site and to evaluate the UST releases with respect to potential closure.

The historic data compilation showed that the petroleum hydrocarbon plumes at the site are stable and have attenuated substantially over time. The CPT investigation and well installation showed that there are releases of stoddard solvent and kerosene offsite and downgradient of the Owens-Brockway property that are not associated with operations at the property. The fuel oil release appears to extend only slightly off site.

Both UST releases were evaluated with respect to Alameda County's case closure criteria with the conclusion that the two UST cases meet the closure criteria.

CKG recommends that Owens-Brockway submit this report to the Alameda County Health Agency and respectfully request case closure.

2.0 INTRODUCTION

The following report presents the results and conclusions of CKG Environmental's (CKG's), investigation to further assess the distribution of a fuel oil release at the Owens-Brockway Glass Container facility in Oakland, California. This investigation included assessing the lateral extent of impacts on site as well as potential preferential distribution through subsurface utilities, and distribution offsite in the downgradient direction. In addition, CKG compiled all the data associated with underground fuel storage tanks (USTs) that have been collected to date. These include the USTs associated with the fuel oil and those associated with gasoline storage. The work was performed in general accordance with CKG's work plan dated April 22, 2003.

2.1 SITE DESCRIPTION

The Owens-Brockway glass manufacturing facility is located at 3600 Alameda Avenue in Oakland, California, (Plate 1). The site is located to the north of the Oakland Estuary with Fruitvale Avenue to the west, a former retail center to the east and residences to the north.

Onsite facilities include the operating glass manufacturing plant, warehouses, offices and two former underground fuel storage tank areas, (Plate 2).

Fuel Oil USTs

One UST site is located on the west side of the plant and included three former USTs, which were used to contain fuel oil. At the time these USTs were removed it was discovered that fuel oil had been released to the subsurface. Owens-Brockway excavated impacted soil at the time the USTs were removed. Floating product associated with the fuel oil release exists and past efforts to remove it have been unsuccessful. This lack of success is mainly due to the clay rich nature of the subsurface and the viscosity of the product. Groundwater monitoring has been ongoing for the last 16 years. A Geoprobe™ investigation completed in 1999 by Kennedy/Jenks Consultants included collecting groundwater samples from five locations off-site in the downgradient direction. Three of these samples were found to contain petroleum hydrocarbons.

Gasoline USTs

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. Owens-Brockway excavated impacted soil at the time the USTs were removed. Groundwater monitoring has shown that the gasoline release has attenuated naturally.

2.2 REGULATORY STATUS

Owens-Brockway would like to move forward with the petroleum hydrocarbon release cases, either by closing the cases or by reviewing alternatives to remediate the release area if needed. To that end, CKG and Mr. Robert Neal of Owens-Brockway met with Mr. Barney Chan of the Alameda County Health Agency on September 27, 2002 to discuss an approach. Mr. Chan suggested that although the fuel oil appears to have moved off site toward the Oakland Estuary, it may be possible to close the site as a "Low Risk" site if the groundwater concentration of fuel oil is lower than levels set by the Regional Water Quality Control Board for aquatic protection. Previous offsite sampling using a Hydropunch indicated that petroleum hydrocarbons are present in groundwater. For this reason the Alameda County Health Agency requested that Owens-Brockway install a groundwater monitoring well to obtain more reliable data. Since the September 27, 2002 meeting, regulatory oversight of the case has been transferred to Mr. Amir Gholami.

A similar approach is also possible for the gasoline release since it does not extend offsite and no floating product remains at the site.

2.3 HISTORIC/REMEDIATION SUMMARY

Two underground fuel storage tank (UST) areas existed at the Oakland plant (Plate 2). The first UST area is located on the west side of the plant and included three 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 this 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.
March 1987	The two 24,000-gallon fuel oil tanks were removed.	No soil removal documented at the time.
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.	MW-20 was incorporated into the annual groundwater monitoring program.
July 2001	The recovery wells were deemed a liability due to potential surface water infiltration.	Recovery wells were destroyed
April 2003	Encroachment permit to install MW-19 granted.	Site summary letter prepared and submitted to Alameda County Health.
May 2003	MW-19 installed and sampled.	MW-19 detected kerosene, a product not used at the Owens-Brockway facility.

GASOLINE USTs		
DATE	ACTION	RESULT
1986	Removed existing USTs (one 350 gallon, two 8,000 gallon and one12,000 gallon). Replaced with two double walled USTs (one for gasoline and one for diesel).	Visible releases from the tanks were observed during removal. 350 cubic yards of soil were removed.
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.

2.4 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. The data compilations and charts are contained in Appendix A.

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

2.4.1 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.

2.4.2 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.

2.5 OBJECTIVE

The objective of this scope of work is to complete an investigation to assess the distribution of fuel oil in the area of the fuel oil release, particularly with respect to subsurface conduits, and to install a monitoring well offsite in the downgradient direction. CKG will then evaluate the data from these investigations, along with all the monitoring data from the past 16 years against the following criteria for case closure.

Criteria for Case Closure:

1. Has the site been adequately investigated? (are soil/groundwater plumes defined?)
2. Has source (primary) been removed? (Tank removed?)
3. Is F.P. removed to the extent practicable? (floating product removed?)
4. Do you have a stable plume? (stable or decreasing plume?)
5. Any current / future public health threat?
6. Any current / future ecological threat? (i.e. any creek around?)
7. Any current/ future water sources threat? (is groundwater being used?)
8. Is risk management plan in place? (use RMP if some petroleum hydrocarbons left in place for bigger petroleum hydrocarbon sites only)

2.6 SCOPE OF WORK

CKG completed the following scope of work to meet the above objective. Off site locations were advanced in accordance with an encroachment permit granted by the City of Oakland.

Install One Groundwater Monitoring Well Off Site

CKG contracted with an appropriately C-57 licensed contractor to install one monitoring well off site, south of Alameda Avenue near the estuary.

Complete One Round of Groundwater Monitoring In the New Well

CKG developed and sampled the new monitoring well. A round of groundwater monitoring was not completed because it took so long to obtain the encroachment permit that the groundwater monitoring had been completed on its usual schedule in December 2002.

Assess Fuel Oil Distribution in Southwest Corner of Plant

CKG contracted with Gregg Drilling to use a Cone Penetrating Test (CPT) rig equipped with ultraviolet infrared (UVIF) sensing instrumentation. The CPT rig was used to map out the vertical and horizontal fuel oil distribution in soil and groundwater.

3.1 CPT INVESTIGATION

On May 28 through 29, 2003, Cone Penetration Test (CPT) probes were advanced at a total of 15 locations as shown on Plate 2. The CPT investigation was completed under the direction of Christina J. Kennedy, R.G. of CKG. Borings were advanced to depths of 18 - 25 feet below ground surface (bgs) depending on the depth of groundwater or on whether or not there was a response from the UVIF detector. CPT logs are presented in Appendix B.

3.2 WELL INSTALLATION AND SAMPLING

MW-19 was installed on May 29, 2003. The two-inch monitoring well was constructed inside an 8-inch borehole using 2-inch diameter schedule 80 PVC pipe. The screen size was 0.03 inches with 2/16 sand used for the filter pack. Construction details for the groundwater monitoring well are described in the boring log presented in Appendix C.

3.2.1 Monitoring Well Development

On June 20, 2003 the new monitoring well was developed by Blaine Tech Services, Inc. The well was developed by surging and pumping. Temperature, pH and conductivity were monitored during pumping. The well was developed until approximately 10 well volumes of water were removed. A sheen and odor were observed during development. The well also dewatered. The monitoring parameters were relatively stable however the turbidity remained high. The well development log is provided in Appendix D.

3.2.2 Monitoring Well Sampling

On June 23 a groundwater sample was collected from MW-19. An odor was noted in the water but no sheen was observed at the time of sampling. The well was sampled using the following protocol:

- The depth-to-water was measured using a conductivity-based water level indicator.
- The volume of water standing in the well was calculated by subtracting the depth-to-water measurement from the total depth of the well, and multiplying by the appropriate volume conversion factor.
- A minimum of three well volumes of water was purged from the well using a centrifugal pump. The pump was decontaminated prior to use in each well by washing with TSP and rinsing with distilled water.
- Physical parameters of pH and temperature were monitored for stability during purging.
- Sample bottles, provided by the analytical laboratory were filled from a new clean disposable bailer at each well.
- Samples were immediately labeled and placed in an iced sample container. The samples were picked up by the analytical laboratory, under chain-of-custody control the following day.

3.3 CHEMICAL ANALYSIS

The groundwater sample was submitted under chain-of-custody to McCampbell Analytical Laboratory in Pacheco, California. McCampbell is a laboratory certified with the California Department of Health Services under the California Environmental Laboratory Accreditation Program (ELAP) for the requested analyses. The chemical analyses performed include the following:

- Total Petroleum Hydrocarbons quantified as diesel, gasoline and motor oil (TPHd, TPHg, and TPHmo) by Modified EPA Method 8015
- Benzene, Toluene, Ethylbenzene, xylenes, (BTEX) and MTBE by EPA Method 8020
- Semivolatile organics by EPA Method 8270
- Total Dissolved Solids (TDS)
- Conductivity

3.4 INVESTIGATION DERIVED WASTES (IDW)

Investigation derived wastes (IDW) were generated during the investigation and included soil cuttings, and well development and purge water. IDW solids were placed in an "oily cullet" bin to be disposed as part of the ongoing waste stream. Purge water was placed into the on-site oil/water separator system.

4.0 FINDINGS

The following describes the results of the CPT investigation and well installation at the Owens-Brockway Glass Container facility in Oakland, California. Analytical laboratory reports are included in Appendix E. Sample locations are presented on Plate 2.

4.1 SUBSURFACE LITHOLOGY

The CPT sensor provides a continuous soil log for each location based on soil density and friction on the probe. In addition, the soil cuttings from MW-19 were observed. To assess the subsurface lithology and distribution of petroleum hydrocarbons in the soil and groundwater CKG prepared a series of cross-sections using the CPT lithologic data and overlaying the UV/IF response. Cross section locations are shown on Plate 3. Cross-sections are shown on Plates 4A-4D. The two UST source areas also can be seen on Plates 4A and 4D. A review of this data indicates that the subsurface is characterized by interbedded layers of clays and silts with a few thin sands. The soils adjacent to the estuary (MW-19) appear to contain more sandy material. In general, throughout the investigation area, sands occur at a depth of approximately 20 feet bgs. Groundwater was encountered at a depth of approximately 15 feet bgs.

4.2 SUMMARY OF CPT FINDINGS

One of the objectives of the CPT investigation was to assess whether or not petroleum hydrocarbon distribution was controlled by subsurface utilities. The subsurface utility survey indicated that there were a number of utilities that crossed the site including water lines, electrical lines, gas lines, and storm drains. Within the site there also are lines associated with the former product recovery system and with the UST's.

The UV/IF response shown on Plates 4A – 4D shows that the fuel oil has spread out laterally from each former UST location within the soil column for a distance of 10-15 feet, although in some areas sandier material allowed the fuel to spread further. Once the fuel oil reached groundwater then it spread to its present configuration. The subsurface utilities are rarely deeper

than 5 or 6 feet below ground surface so it appears that they may not have had a significant effect in distributing the fuel oil except to a lesser extent along the UST piping.

When the CPT probe was pulled from each sample location it was possible to observe the fuel oil product on the bottom of the probe. The fuel oil shows a distinctive dark brown/black "curdled" appearance in which the oil occurs in small globules within the watery mixture. The odor would be described as distinctly oily but not especially strong.

4.3 SUMMARY OF WELL INSTALLATION AND SAMPLING OBSERVATIONS

At the time that MW-19 was installed CKG observed that petroleum hydrocarbon impacted soil was encountered at a depth of approximately 15 feet bgs. This impacted soil had a strong odor that resembled diesel and was strongly discolored green and blue-green. The odor was not consistent with that observed in the CPT investigation. The odor suggested that the petroleum hydrocarbon encountered was a lighter type like diesel or kerosene rather than the fuel oil.

The groundwater sample analysis from MW-19 confirmed that the petroleum hydrocarbon encountered was not fuel oil but was kerosene. Kerosene falls into a slightly lighter hydrocarbon range than diesel but can be quantified when analyzed for TPHd by EPA Method 8015. The following is a summary of the groundwater analytical result from MW-19.

ANALYTE	RESULT
TPHg	480 µg/l (noted that strongly aged gas or diesel present)
BTEX	None detected above laboratory reporting limits of 0.5 µg/l
MTBE	None detected above laboratory reporting limit of 0.5 µg/l
TPHd	1100 mg/kg (noted to be kerosene)
Semivolatile Organics	None detected above laboratory reporting limit of 0.5 µg/l
TDS	490 mg/l
Specific Conductance	790 µmhos/cm

4.4 DISCUSSION OF DIFFERENT PETROLEUM HYDROCARBON TYPES

As a result of the unexpected discovery of kerosene in the vicinity of MW-19 CKG examined the analytical data from the December 1999 Geoprobe™ investigation. The laboratory notes indicated that the petroleum hydrocarbon detected did not resemble fuel oil but that it fell into the chromatogram range for stoddard solvent (mineral spirits). At the time the Geoprobe™ investigation report was written, this discrepancy in detected hydrocarbon was attributed to weathering effects.

As a result of this observation CKG requested that the analytical laboratory that conducted the analyses for the December 2002 annual monitoring event (STL San Francisco of Pleasanton) provide copies of the chromatograms for all the wells sampled at the site. The chromatograms for the 1999 data were unavailable because of their age. CKG then provided these to McCampbell Analytical so that they could compare them with the chromatogram for MW-19 and review them for their interpretation of the hydrocarbons present. Copies of the chromatograms are provided in Appendix F. The analytical laboratory identified the chromatograms from the different data points as follows:

SAMPLE	PETROLEUM HYDROCARBON
MW-1	Fuel Oil
MW-2	Fuel Oil
MW-5	Fuel Oil
MW-6	Fuel Oil
MW-7	Stoddard Solvent
MW-8	Fuel Oil
MW-10	Fuel Oil
MW-13	Fuel Oil
MW-15	Unidentifiable
MW-16	Unidentifiable
MW-17	Unidentifiable
MW-19	Kerosene
MW-20	Unidentifiable

Stoddard solvent is a hydrocarbon that is somewhat lighter than diesel but a little heavier than gasoline. In the past it was used as a dry cleaning solvent, and is still used for cleaning greasy parts or equipment. CKG spoke with the chemist at McCampbell analytical and was told that

usually stoddard solvent is better analyzed using the purge and trap method in the same way gasoline is analyzed.

Typically hydrocarbon weathering involves biodegradation where the lighter fractions of the hydrocarbon are degraded preferentially. The result is that the remaining hydrocarbon is heavier than the original. It is therefore impossible to degrade fuel oil and end up with a hydrocarbon that resembles stoddard solvent. On that basis CKG believes that the stoddard solvent occurs in the subsurface as the result of a separate and different release. The same logic applies to the kerosene encountered at MW-19. The analytical laboratory reviewed the chromatograms for MW-19 and is confident in their identification that the hydrocarbon present is kerosene.

Plate 5 shows the estimated extents of the fuel oil, stoddard solvent, and kerosene plumes. The fuel oil plume extends only slightly off site to the west into the areas of MW-5 and MW-6 and perhaps to a limited extent underneath Alameda Avenue. Toward the south it encounters the stoddard solvent plume followed by the kerosene plume.

The gasoline release at the site has reduced in size such that it is limited to the area around the former USTs. There is no indication that the gasoline extends off site. The gasoline distribution is shown on Plate 6.

4.5 DISCUSSION OF POTENTIAL PETROLEUM HYDROCARBON SOURCES

Based on the above discussion it appears that there have been two petroleum hydrocarbon releases that were not recognized before. These include a stoddard solvent release and a kerosene release. The question is, are these releases the result of activities at the Owens-Brockway Glass facility?

4.5.1 On Site Review

Owens-Brockway reviewed purchasing records and interviewed long term employees to assess whether or not stoddard solvent or kerosene had been used at the facility. In particular Ms. Kathy Allen who has been the purchasing clerk for over 30 years reviewed available purchasing

records. She found no record of purchasing stoddard solvent, mineral spirits, safety solvent, white spirit, or kerosene, in the available records. Ms. Allen also had no recollection of these solvents being used or discarded. Also, Mr. Walt Long, retired Environmental Manager (30 years) stated that given the way stoddard solvent is used, the glass making plant would not have any reason to use such a product in any significant quantity.

4.5.2 Off Site Review

To evaluate potential off site sources for stoddard solvent and kerosene, CKG retained the services of Environmental Data Resources, Inc. (EDR) to search public agency records at the federal, state and local levels for cases near the Owens-Brockway property that may have used these products. CKG also had EDR provide copies of Sanborn Fire Insurance Maps, which can provide early historical documentation regarding the types of facilities that operated in an area.

The EDR database report shows the leaking UST cases associated with the plant but there are no other cases documented within a half mile of the plant that have kerosene or stoddard solvent releases. An excerpt from this report is provided in Appendix G. The EDR report also shows the location of drinking water supply wells. There are no drinking water supply wells within one mile of the site.

Sanborn Maps were available from the following years and are provided in Appendix G:

1925
1950
1952
1957
1961
1966
1969

The plant was built in 1938 so the Sanborn Maps from 1950 forward show the plant and road configurations more or less as they appear at the present. The 1925 Sanborn Map shows that before the plant was built Southern Pacific Railroad had a steam and electric train line along the Oakland Estuary adjacent to the plant property on what would later become Alameda Avenue. In addition, a rail spur extended adjacent to the rail line and stopped at a spot approximately

across from what is now MW-3. Although there have not been any releases documented associated with these rail lines it is CKG experience that rail corridors are often impacted with various materials including petroleum hydrocarbons. CKG also has experience with a circumstance where the end of a rail spur had been used as a rail car maintenance location and fuel tank dumping spot.

Neither, the EDR report or the Sanborn Maps document the fact that residences once lined the Oakland Estuary on the south side of Alameda Avenue. A few such residences still remain. It was not unusual for kerosene to be used as a residential heating fuel. Based on the above discussion it is CKG's conclusion that the source of the stoddard solvent and the kerosene is unlikely to be from the Owens-Brockway plant and that the rail spur could provide the opportunity for these products to be released. Also, kerosene fuel associated with the former residences could have provided the source for the kerosene release.

5.0 CLOSURE PROPOSAL

CKG has reviewed and compiled the previous site data, completed an additional investigation, a well installation, and presented that information. With this information it is CKG's opinion that the UST cases open at the site should be considered for closure. The following will present a case for closure for each UST site. The closure criteria are those provided by Alameda County Health Agency and are the basis for the following discussion. Also, CKG has completed an Alameda County Environmental Health Case Closure Summary to the extent possible for each UST case. Copies of these summaries are presented in Appendix H.

5.1 GASOLINE UST CLOSURE SUMMARY

Criteria for Case Closure:

1. Has the site been adequately investigated? (are soil/groundwater plumes defined?)

YES Groundwater monitoring has been ongoing for 17 years. The groundwater plume has reduced in size to that illustrated on Plate 6 and has been stable for many years.

2. Has source (primary) been removed? (Tank removed?)

YES The tanks were removed in 1987

3. Is floating product removed to the extent practicable? (floating product removed?)

YES No free product occurs at the site associated with the gasoline release.

4. Do you have a stable plume? (stable or decreasing plume?)

YES The plume has decreased in size and plots of gasoline concentration over time have reached a stable level at the bottom of an asymptotic curve (see Appendix A)

5. Any current / future public health threat?

NO Residual gasoline occurs in groundwater approximately 10-15 below grade, in a small area of the site. The surface is paved in an industrial area. There is no direct contact with soil or water at the site. Groundwater is not used at the site or downgradient of the site.

6. *Any current / future ecological threat? (i.e. any creek around?)*

NO Although the Oakland Estuary is nearby, the plume is very small and does not extend off site and is therefore not affecting the water body. The gasoline also is not accessible to wildlife because it is capped by paved surfaces.

7. *Any current/ future water sources threat? (is groundwater being used?)*

NO Groundwater is not used for drinking water or irrigation supply in the area. There is no record of drinking water wells within a mile of the site.

8. *Is risk management plan in place? (use RMP if some stuff left in place for bigger stuff/sites only)*

NO There is no specific RMP for this facility other than continuing to operate in its present industrial capacity with most of the surfaces capped with paving or buildings.

5.2 FUEL OIL UST CLOSURE SUMMARY

Criteria for Case Closure:

1. *Has the site been adequately investigated? (are soil/groundwater plumes defined?)*

YES Groundwater monitoring has been ongoing for 17 years. The groundwater plume is documented on Plate 5 and has been stable for many years.

2. *Has source (primary) been removed? (Tank removed?)*

YES The tanks were removed in 1986 and 1987

3. *Is floating product removed to the extent practicable? (floating product removed?)*

YES Free product remains at the site and occurs as blobs of thick brown/black product in a watery mixture. Repeated attempts to remove the product have failed due to the product viscosity and overall low permeability of the site lithology.

4. Do you have a stable plume? (stable or decreasing plume?)

YES The plume has not changed in size and plots of fuel oil concentrations over time have reached a stable level at the bottom of an asymptotic curve (see Appendix A)

5. Any current / future public health threat?

NO Residual fuel oil occurs only in groundwater approximately 10-15 below grade. The surface is paved in an industrial area. There is no direct contact with soil or water at the site. Groundwater is not used at the site or downgradient of the site. In the offsite area at the corner of Fruitvale and Alameda Avenue there is a landscape strip however, in this area the fuel oil only occurs in groundwater. It is unlikely that any utility or road maintenance activities would extend deep enough to encounter it.

6. Any current / future ecological threat? (i.e. any creek around?)

NO Although the Oakland Estuary is nearby and the plume extends off site, it does not appear that the plume extends as far as the estuary or affects the water body. The fuel oil also is not accessible to wildlife because it is capped by paved or vegetated surfaces.

7. Any current/ future water sources threat? (is groundwater being used?)

NO Groundwater is not used for drinking water or irrigation supply in the area. There is no record of drinking water wells within a mile of the site.

8. Is risk management plan in place? (use RMP if some stuff left in place for bigger stuff/sites only)

NO There is no specific RMP for this facility other than continuing to operate in its present industrial capacity with most of the surfaces capped with paving, vegetation, and buildings.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the above data summary and evaluation with respect to closure criteria it is CKG's opinion that the two UST cases at the site should be considered for closure.

Although new releases associated with stoddard solvent and kerosene have been encountered off site there is no reason to believe that activities at the glass plant resulted in these releases. Therefore no further investigation associated with these two UST releases is warranted. CKG recommends that Owens-Brockway submit this report to the Alameda County Health Agency and respectfully request case closure.

7.0 REFERENCES

California Regional Water Quality Control Board – San Francisco Bay region, Order No 99-045, 1999

CKG Environmental, Inc. Summary of Remediation History and Groundwater Impact by Petroleum Hydrocarbons, Owens-Brockway Glass Container Facility, 3600 Alameda Avenue, Oakland, California. April 4, 2003.

CKG Environmental, Inc. Work Plan to Install One Monitoring Well and Assess the Distribution of Petroleum Hydrocarbons, Owens-Brockway Glass Container Facility, Oakland, California, April 22, 2003.

Exeltech, Soil and Groundwater Contamination Investigation for Owens-Illionois Glass Container Division, 3600 Alameda Avenue, Oakland, California, December 1986.

Exeltech, Soil and Groundwater Contamination Investigation for Owens-Illionois Glass Container Division, 3600 Alameda Avenue, Oakland, California, February 1987.

Kennedy/Jenks, Consultants. Groundwater investigation Report, Owens-Brockway Glass Containers, February 16, 1999.

Kennedy/Jenks, Consultants. Annual Groundwater Monitoring Report, Owens-Brockway Glass Containers, January 21, 2003.

Owens-Illinois, Oakland Spill Prevention Control and Countermeasure Plan, January 8, 1985

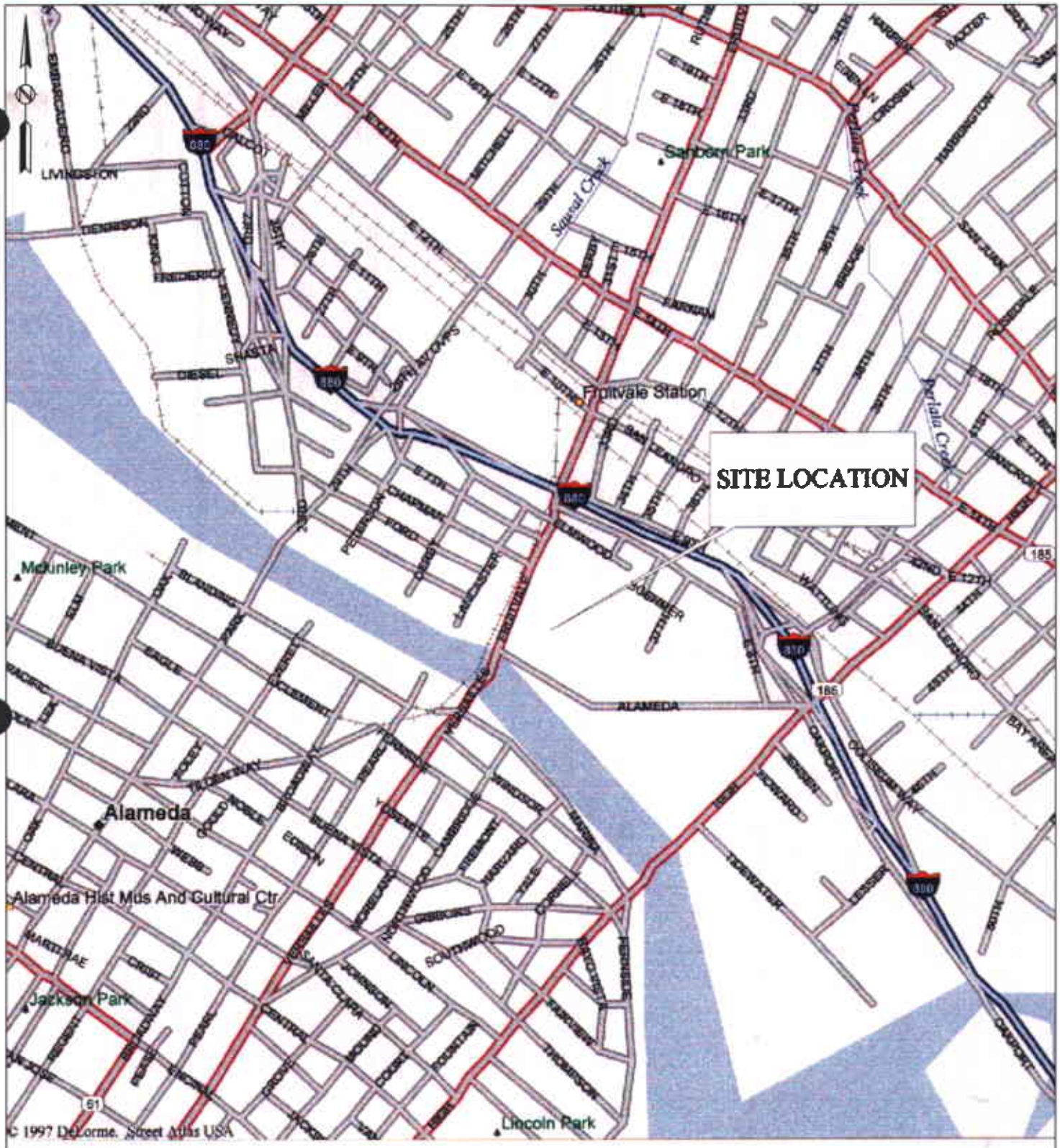
8.0 LIMITATIONS

CKG Environmental, Inc. prepared this report in accordance with generally accepted standards of care which exist in Northern California at this time. It should be recognized that definition and evaluation of geologic and environmental conditions is a difficult and an inexact science.

Conclusions and recommendations presented in this report are based on the results of the scope of work presented in our work plan dated April 22, 2003. This scope of work includes installing a total of 15 CPT points, installing one monitoring well, quantitative analysis of groundwater samples conducted by McCampbell Analytical, and compiling all data collected to date. Only work described herein was performed. As such CKG cannot render opinions on issues not resulting directly from the work performed.

Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. More extensive studies, including additional subsurface investigations, may be performed to reduce uncertainties. If the client wishes to reduce the uncertainties of this investigation, CKG should be notified for additional consultation. No warranty, expressed or implied, is made.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify CKG of such intended use. Based on the intended use of the report, CKG may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release CKG from any liability resulting from the use of this report by any unauthorized party.



Mag 15.00
Mon Jul 28 16:01 2003
Scale 1:15,625 (at center)

1000 Feet

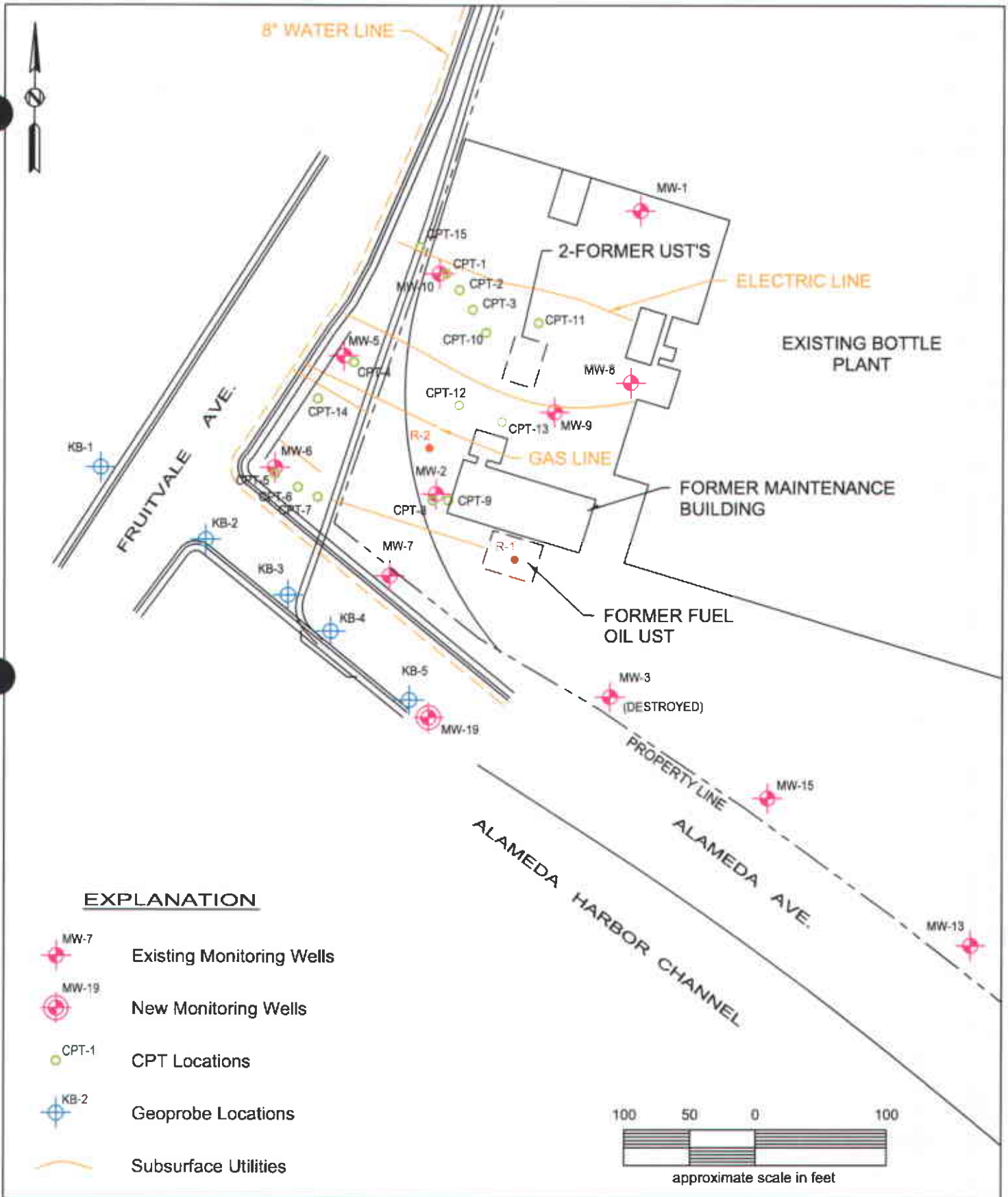
CKG Environmental Inc.

PROJECT NO. 123-04 DATE OCT 2003

SITE LOCATION MAP

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 1



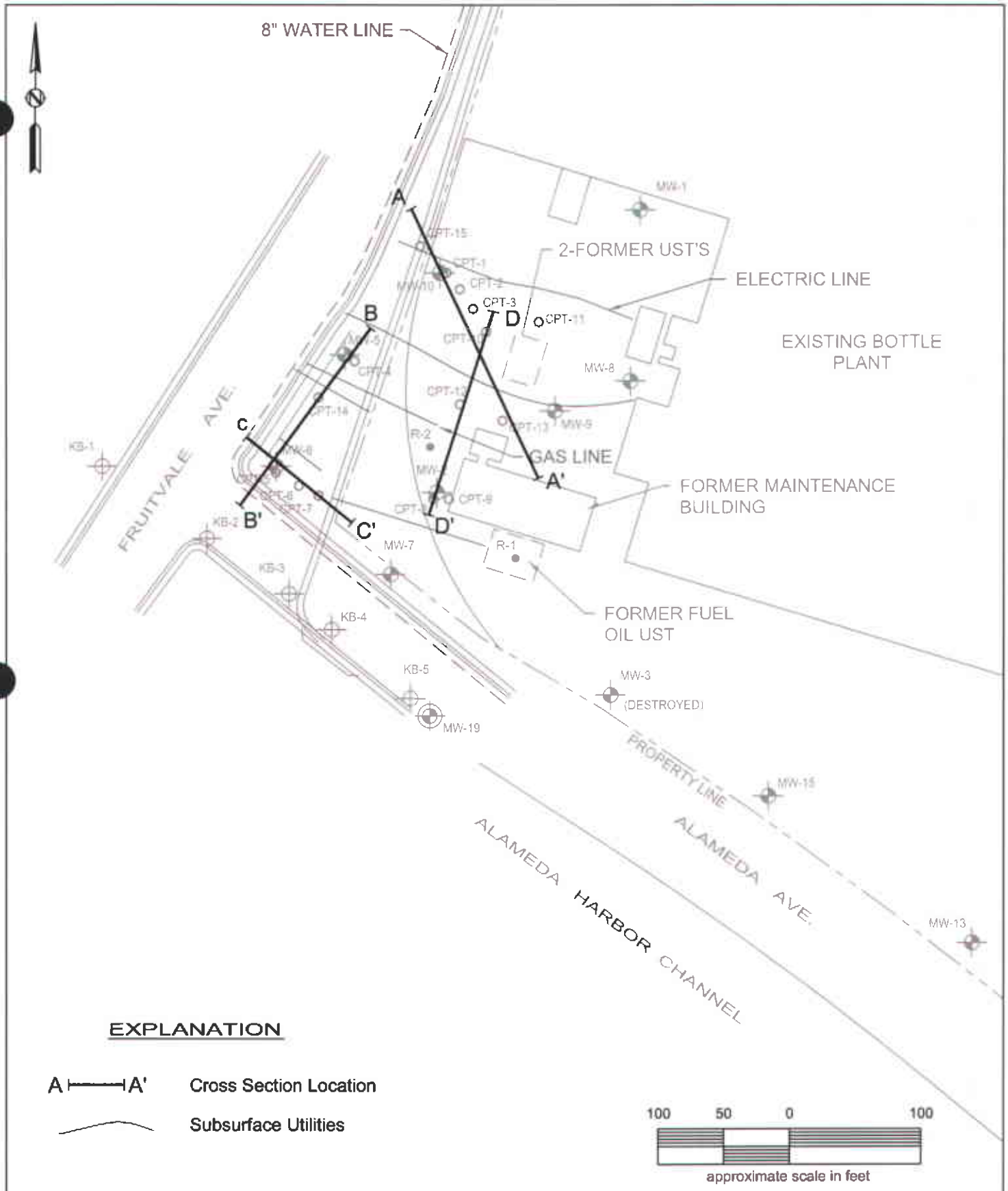
CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

SAMPLE LOCATION MAP

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 2



CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

CROSS SECTION LOCATIONS

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 3

A

A'

CPT-15

CPT-1

CPT-2

CPT-3

CPT-10

Location of Former UST

CPT-13

Electric Line

Utility Line

DEPTH IN FEET

0

-5.0

-10.0

-15.0

-20.0

-25.0

5 2-1/2 0 5

approximate scale in feet

EXPLANATION

CPT-1

Clays

Silts

Sands and Gravels

Qualitative TPH Contours

CPT Log lithology on right
UVIF (TPH) on left (O-2.5v)

CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

CROSS-SECTION A-A'
CPT INTERPRETATION

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE

4A

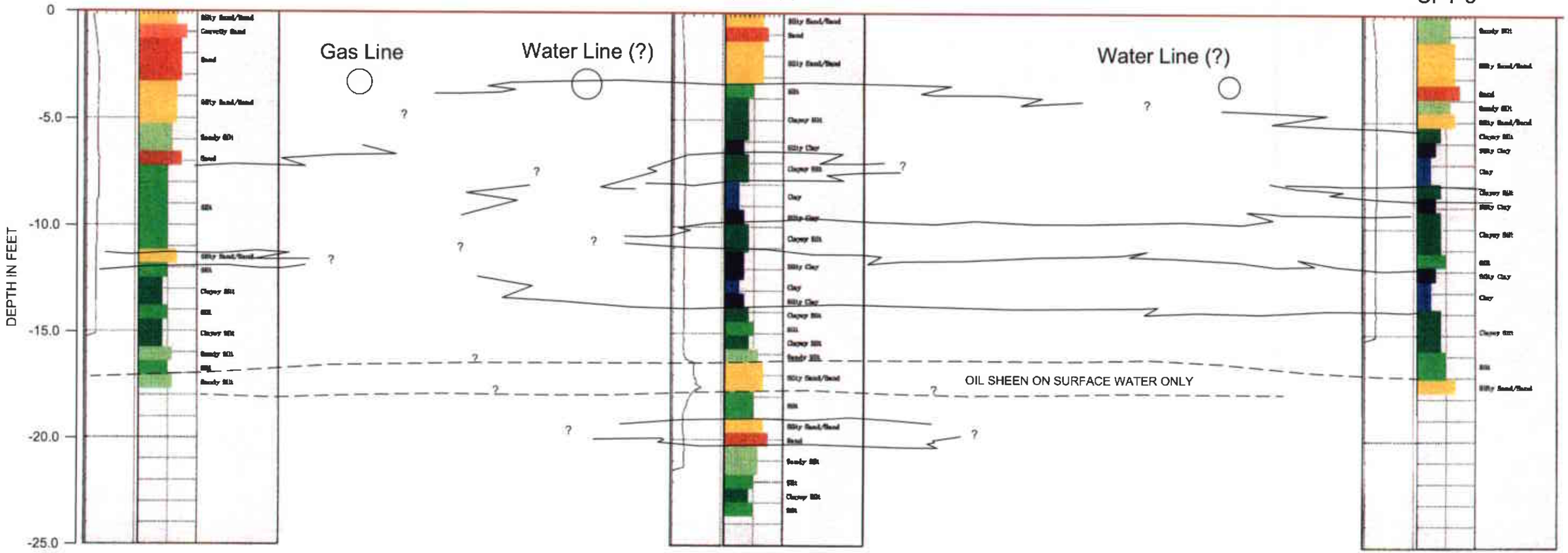
B

B'

CPT-4

CPT-14

CPT-5



EXPLANATION

CPT-1

Clays

Silts

Sands and Gravels

Qualitative TPH Contours

CPT Log lithology on right
UVIF (TPH) on left (O-2.5v)

5 2-1/2 0 5

approximate scale in feet

CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

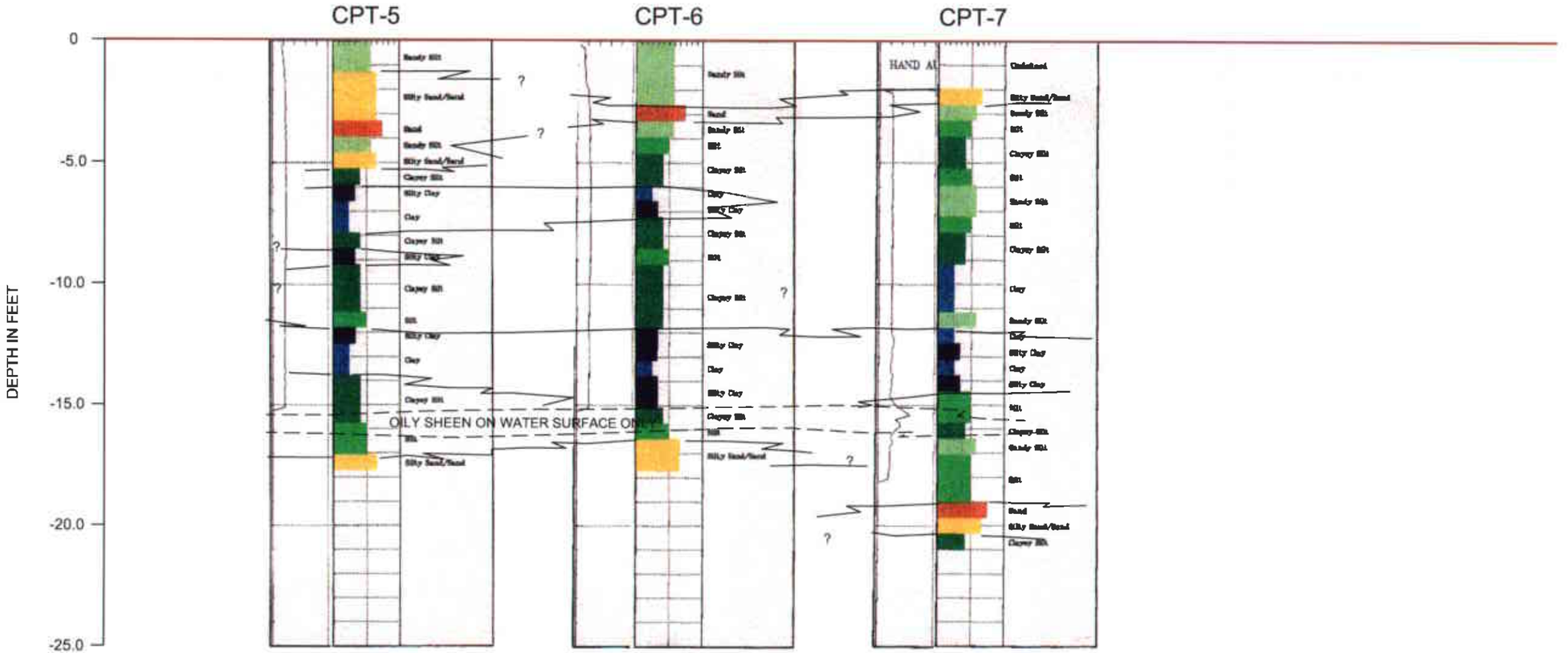
CROSS-SECTION B-B'
CPT INTERPRETATION

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 4B

C

C'



EXPLANATION

CPT-1

Clays

Silts

Sands and Gravels

Qualitative TPH Contours

CPT Log lithology on right
UVIF (TPH) on left (O-2.5v)

5 2-1/2 0 5

approximate scale in feet

CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

CROSS-SECTION C-C'
CPT INTERPRETATION
Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 4C

D

D'

CPT-10

Former UST

CPT-12

CPT-8

DEPTH IN FEET

0

-5.0

-10.0

-15.0

-20.0

-25.0

?

CPT-1

CPT Log lithology on right
UVIF (TPH) on left (O-2.5v)

EXPLANATION

Clays

Silts

Sands and Gravels

Qualitative
TPH Contours

5 2-1/2 0 5

approximate scale in feet

CKG Environmental Inc.

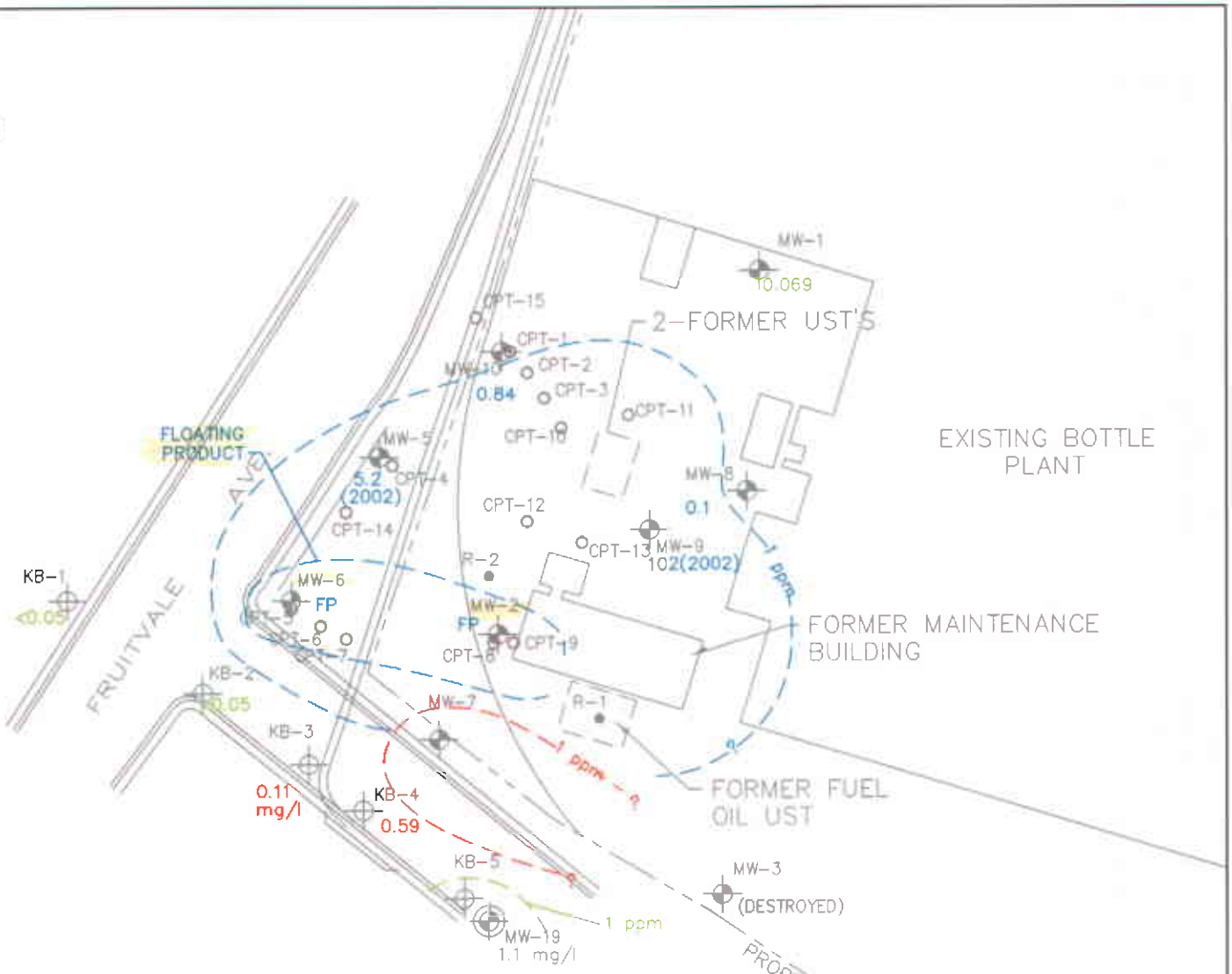
PROJECT NO. 123-04 DATE 7/27/03

CROSS-SECTION D-D'
CPT INTERPRETATION

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE

4D



EXPLANATION

- Fuel Oil
- Stoddard Solvent
- Kerosene
- MW-7 — Existing Monitoring Wells TPHd result (December 2003 unless otherwise indicated)
- MW-19 — New Monitoring Wells TPHd result (June 2003)
- CPT-1 — CPT Locations
- KB-2 — Geoprobe Locations 1999 TPHd result
- FP — Floating Product

100 50 0 100

approximate scale in feet

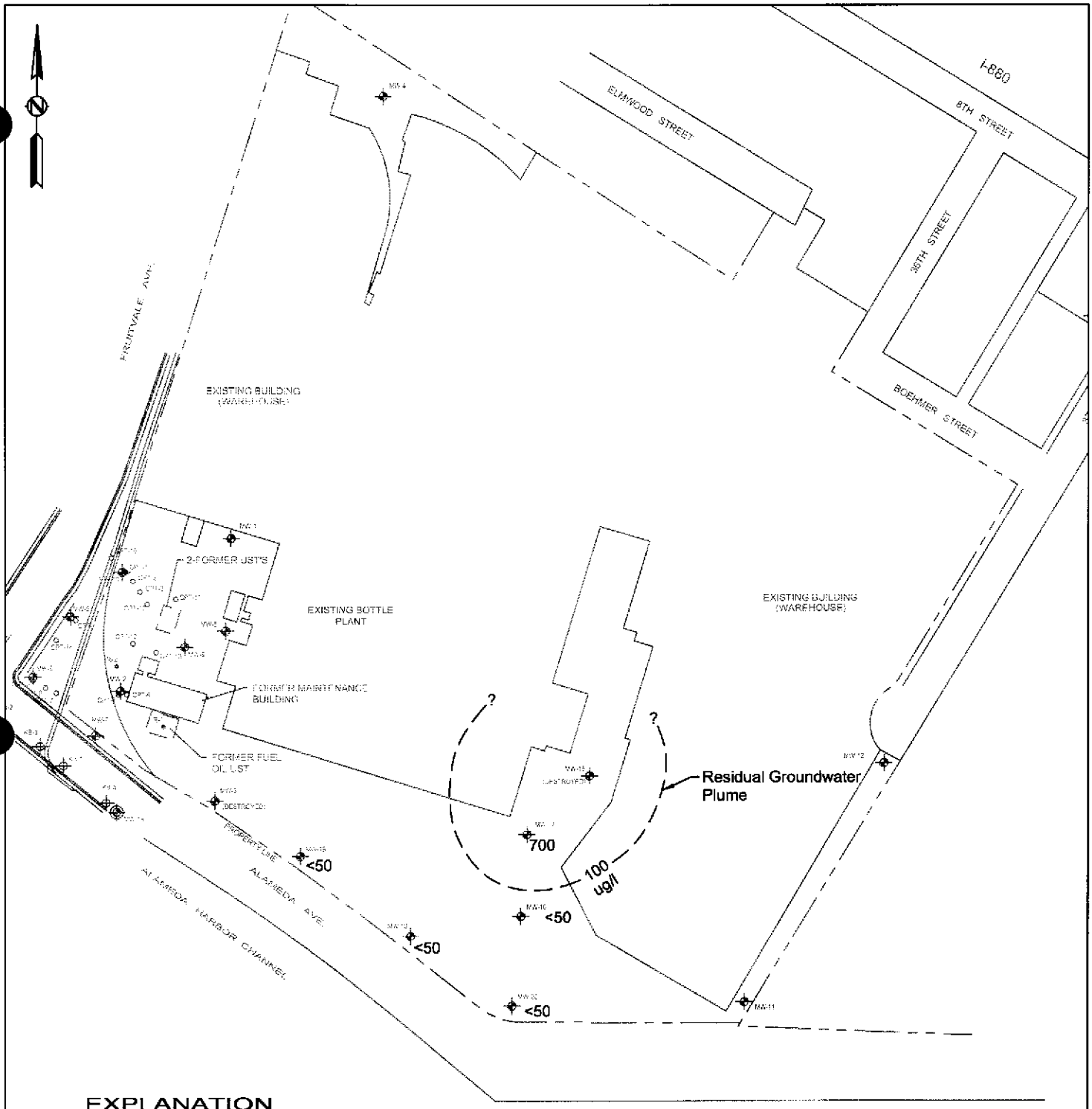
CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

FUEL OIL DISTRUBUTATION MAP

Owens Brockway
Glass Container, Inc.
Oakland, California

PLATE 5



EXPLANATION

MW-7 <50 — Groundwater Monitoring Well TPHg (ug/l)

• — Product Recovery Well

200 100 0 200

approximate scale in feet

CKG Environmental Inc.

PROJECT NO. 123-04 DATE 7/27/03

GASOLINE DISTRIBUTION MAP

Owens Brockway
Glass Container, Inc.
Oakland, California

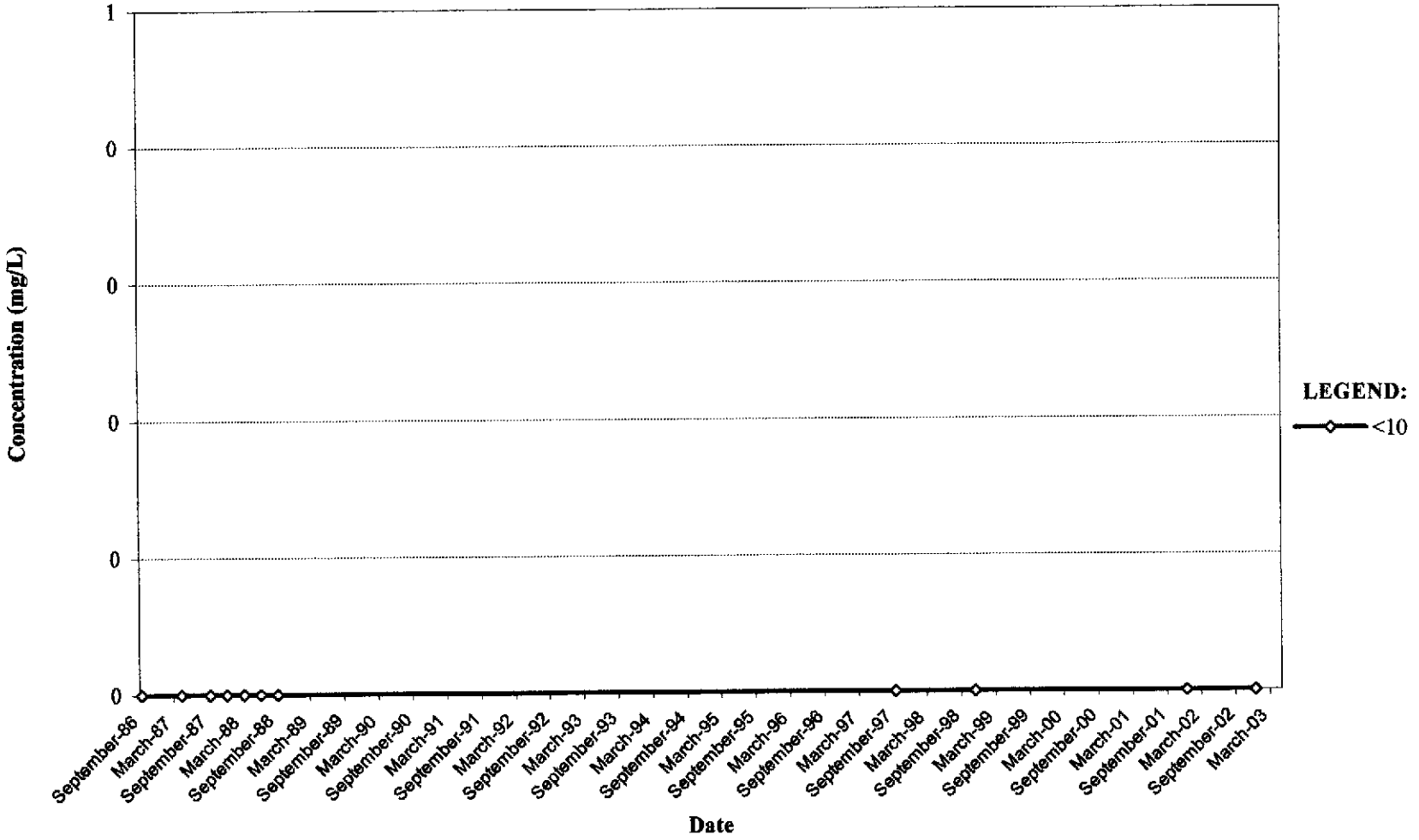
PLATE 6

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

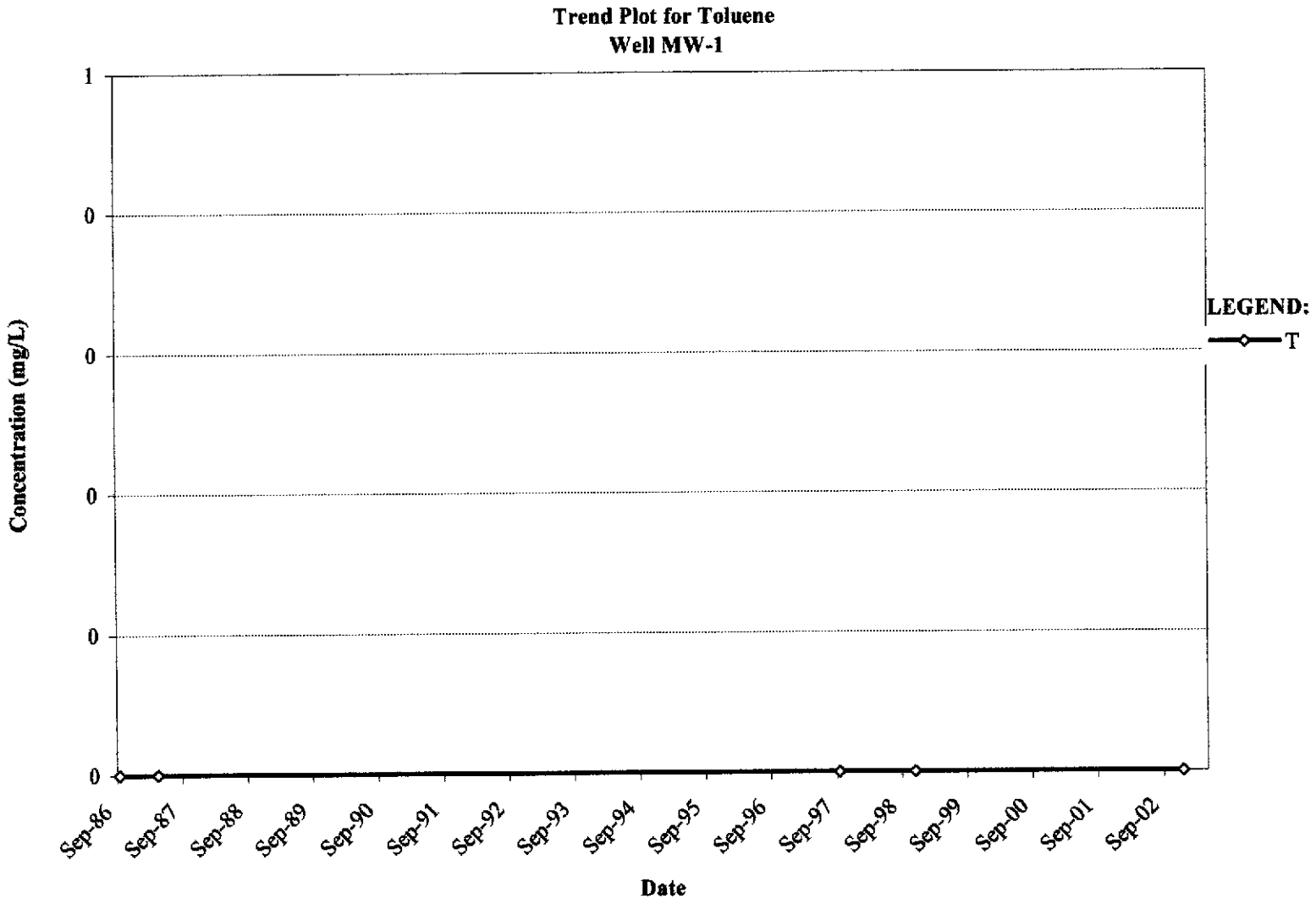
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-1



File:MW-1 Sheet: Benzene

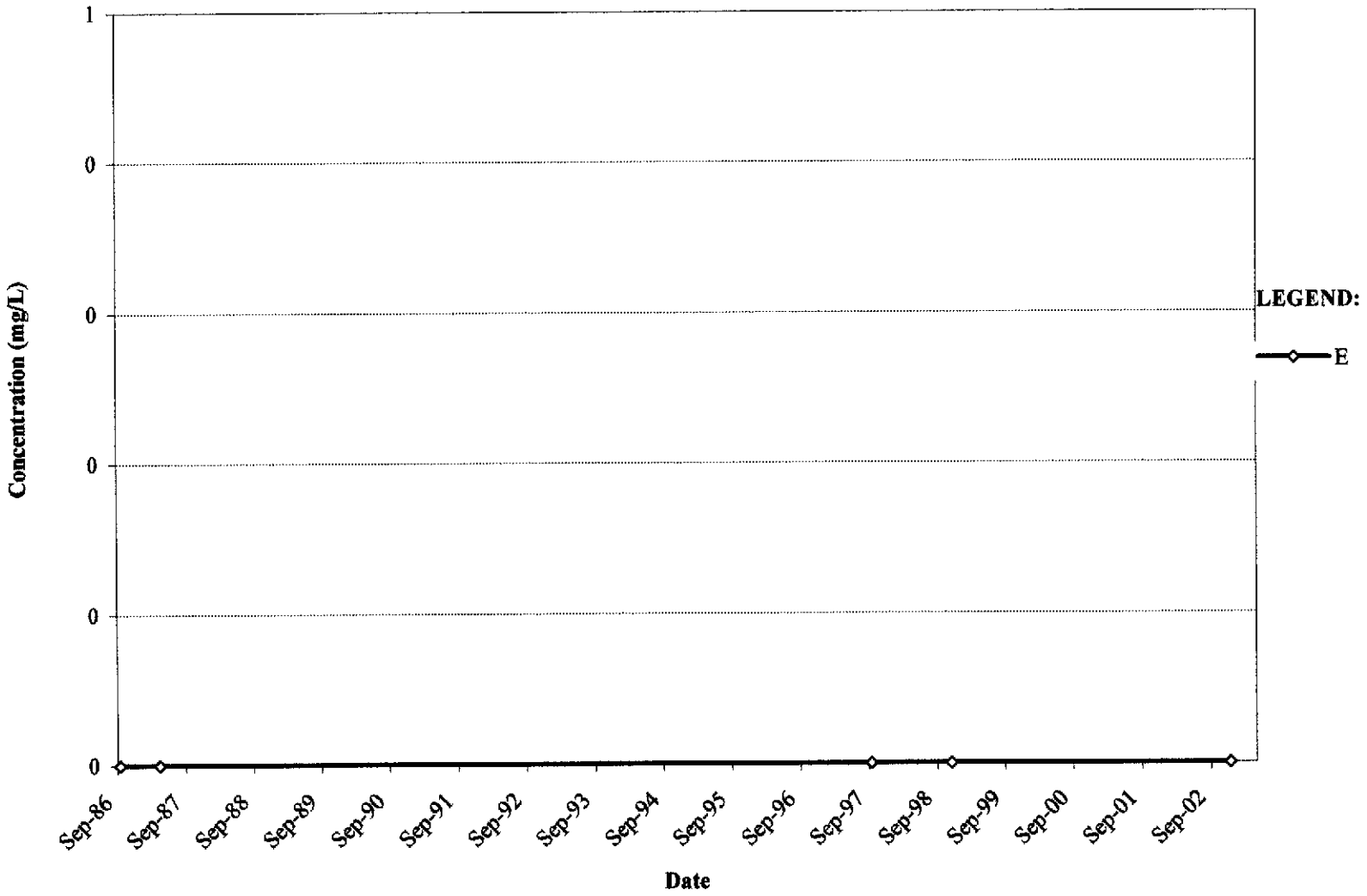
CKG Environmental, Inc.



File:MW-1 Sheet: Toluene

CKG Environmental, Inc.

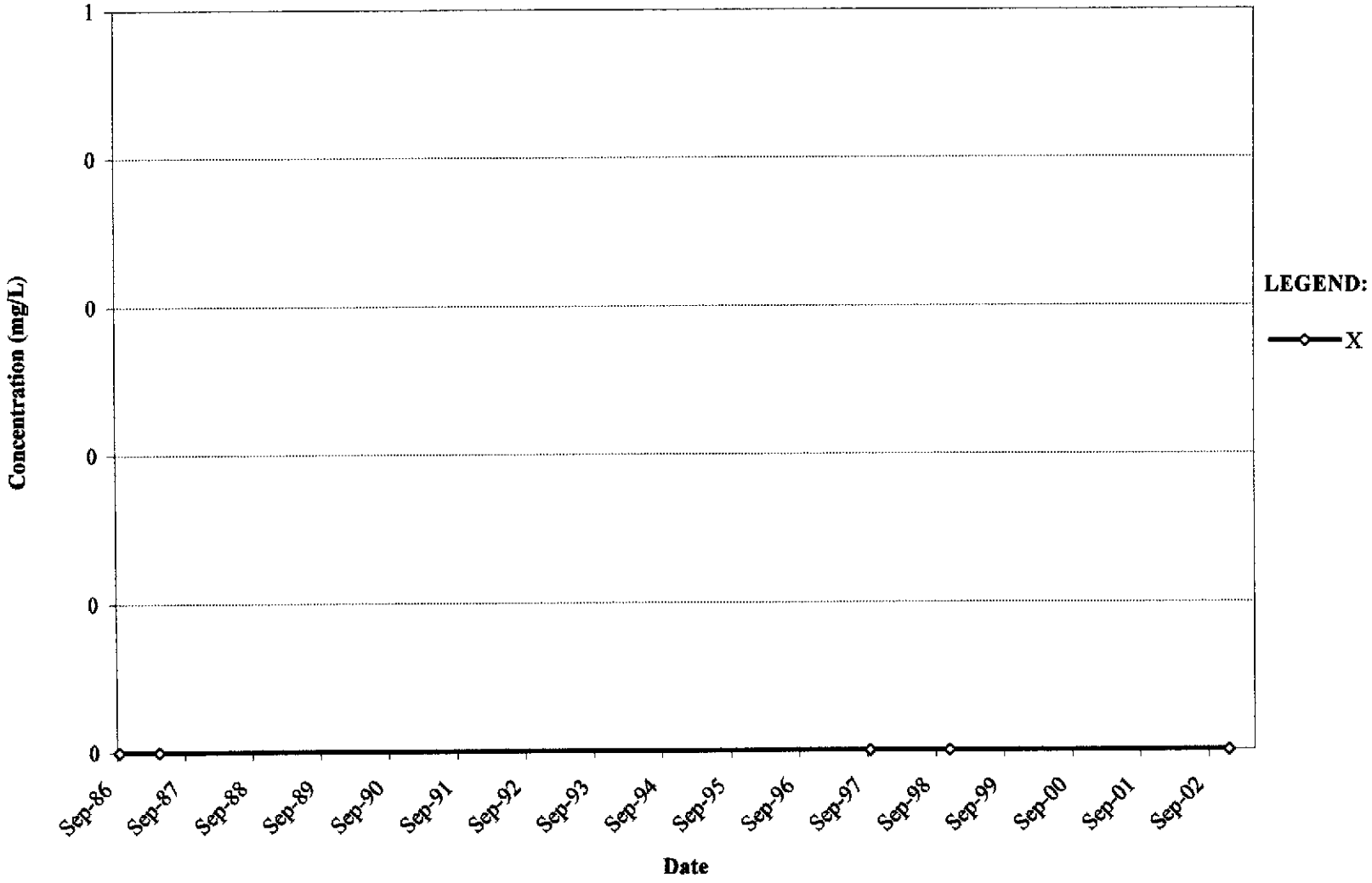
Trend Plot for Ethylbenzene
Well MW-1



File:MW-1 Sheet: Ethylbenzene

CKG Environmental, Inc.

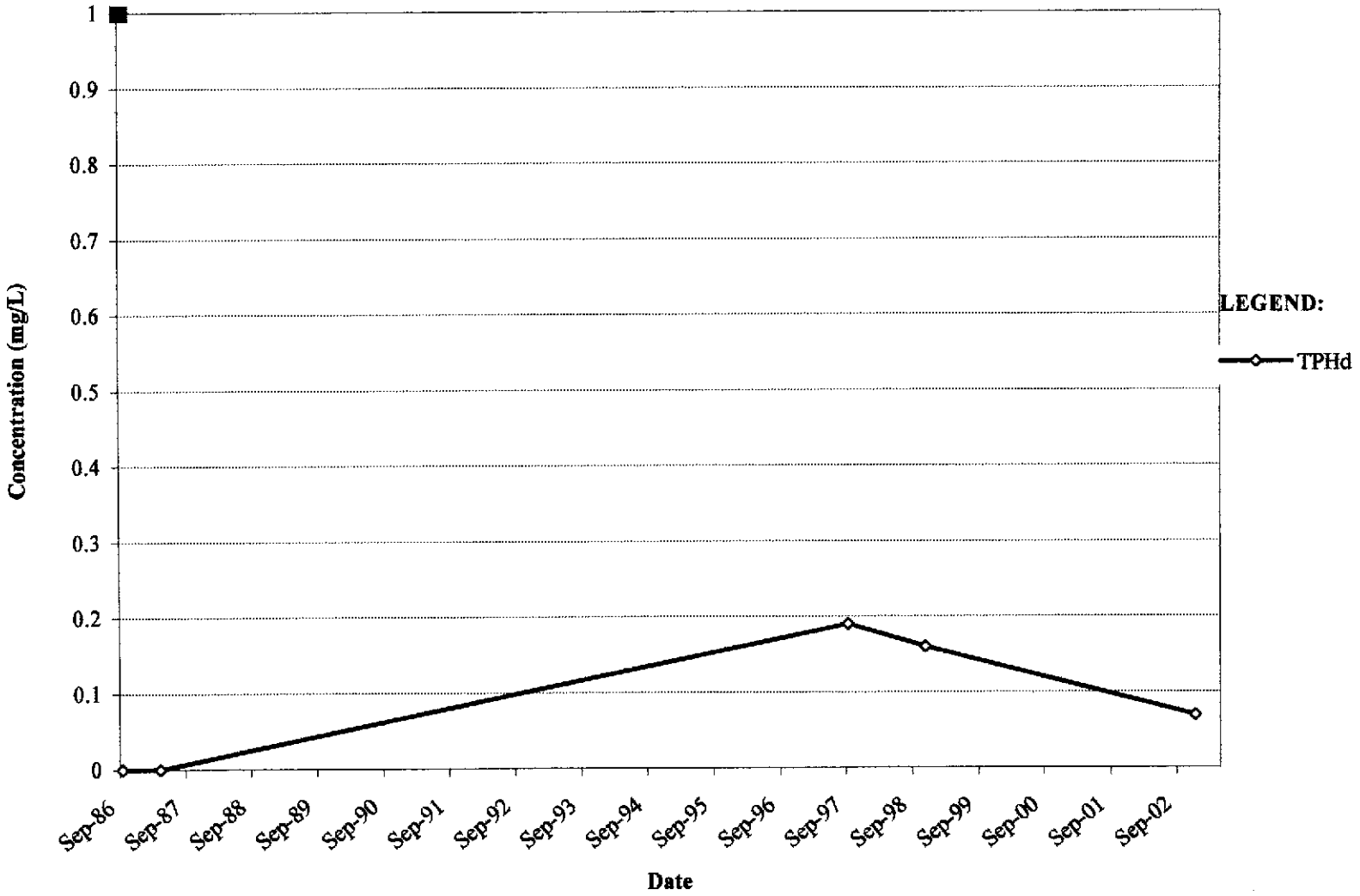
Trend Plot for Xylenes
Well MW-1



File:MW-1 Sheet: Xylenes

CKG Environmental, Inc.

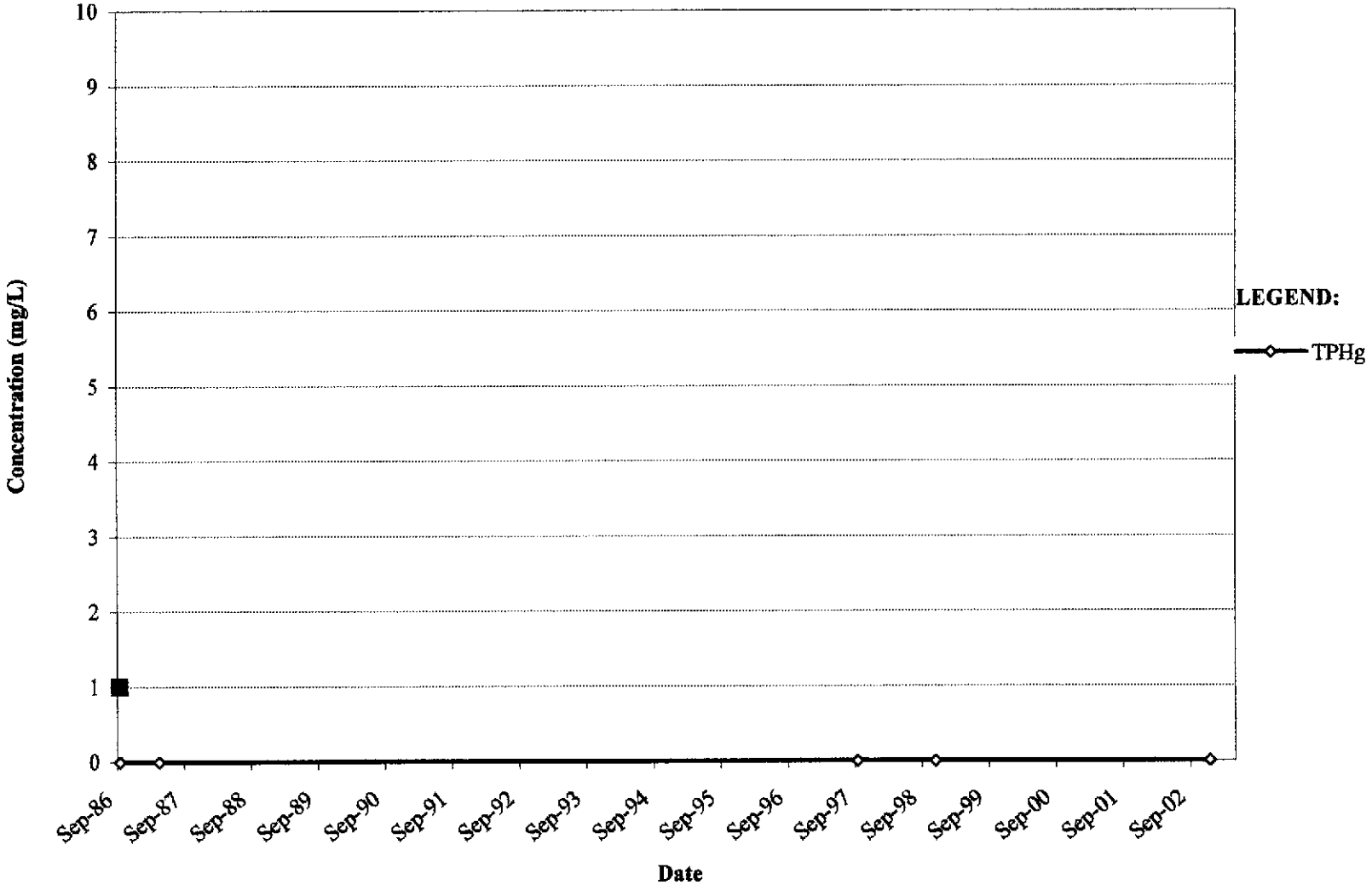
Trend Plot for TPHd
Well MW-1/1A



File:MW-1 Sheet: TPHd

CKG Environmental, Inc.

Trend Plot for TPHg
Well MW-1



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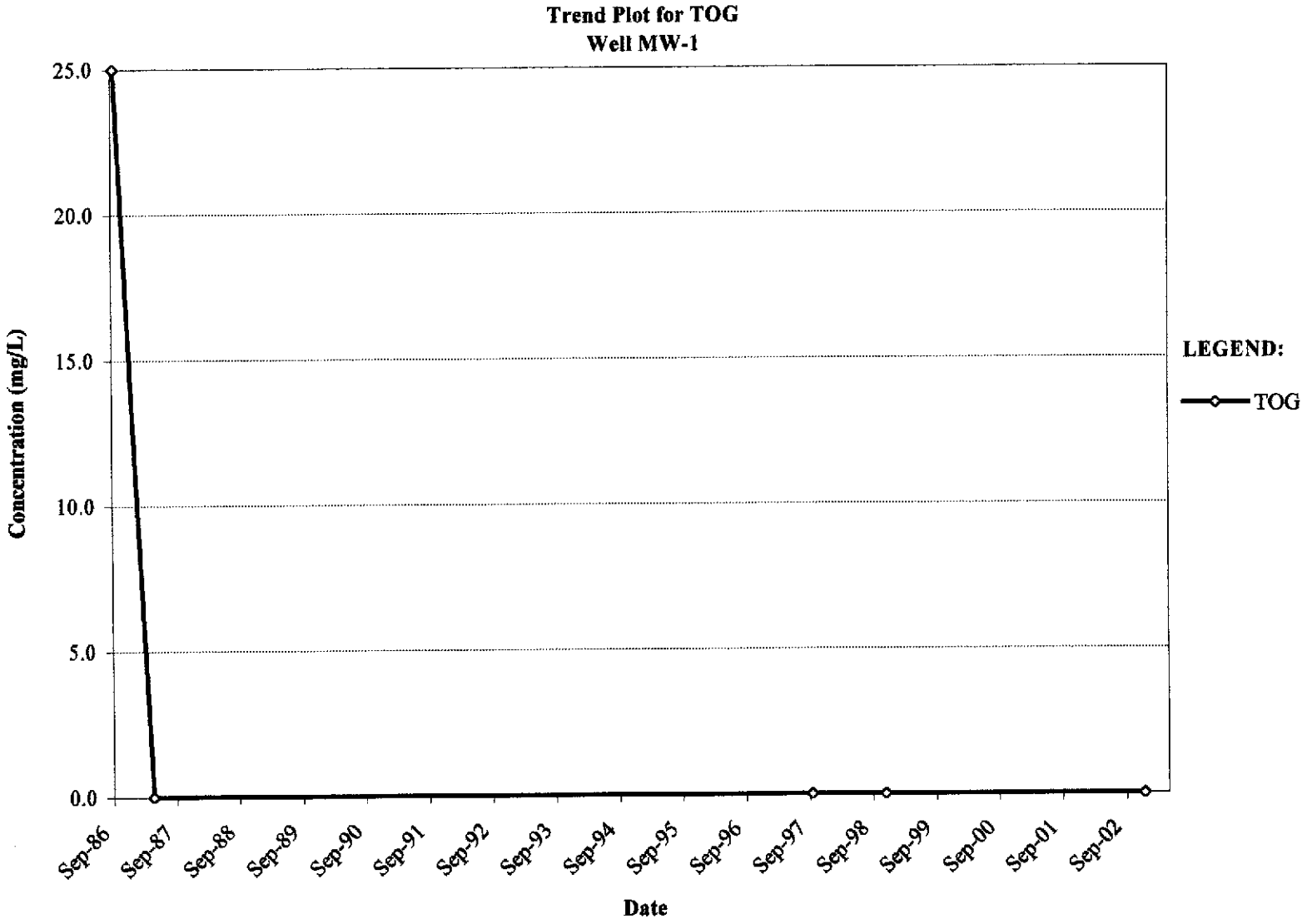
CKG Environmental, Inc.



File:MW-1 Sheet: TOG

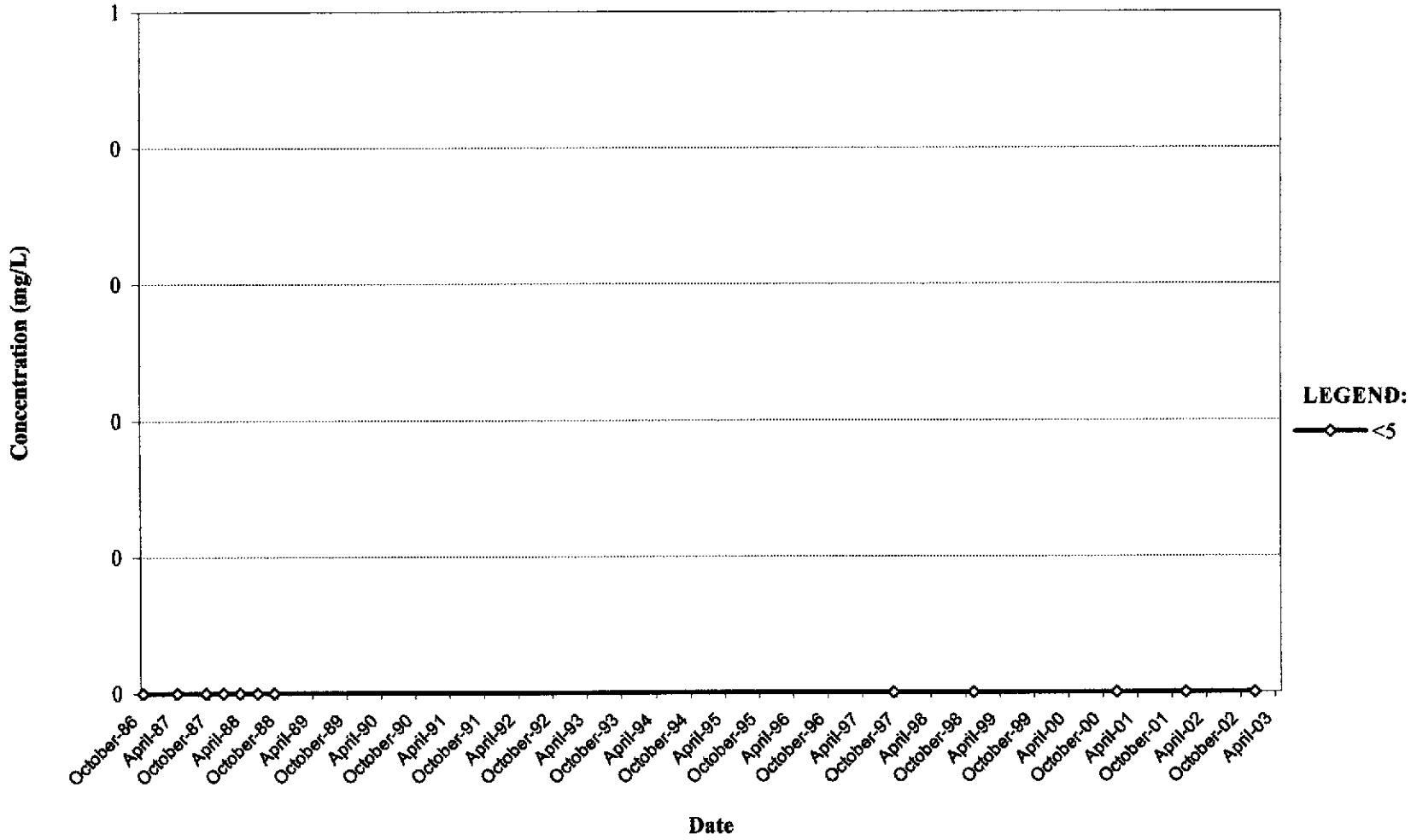
CKG Environmental, Inc.

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

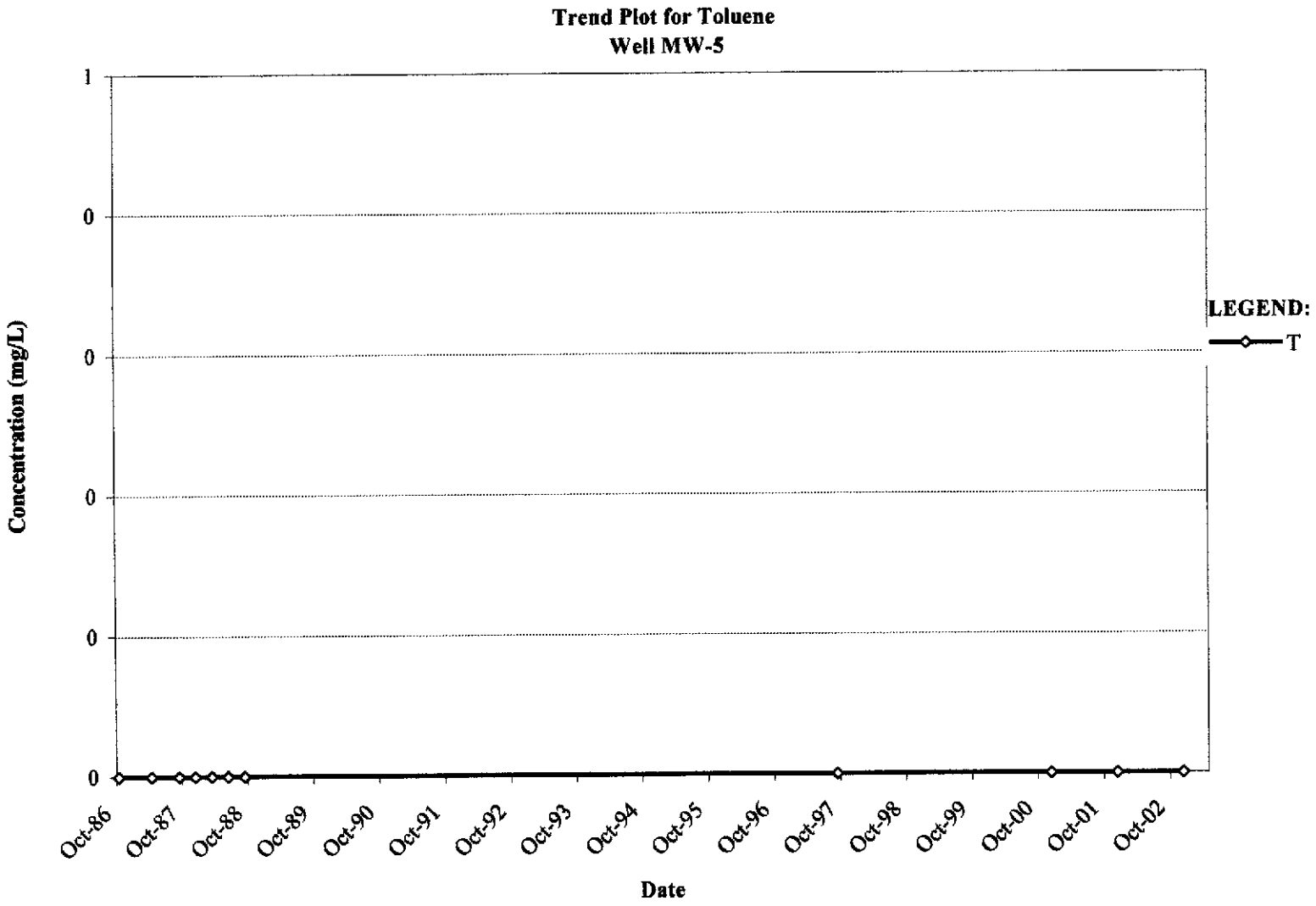
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-5



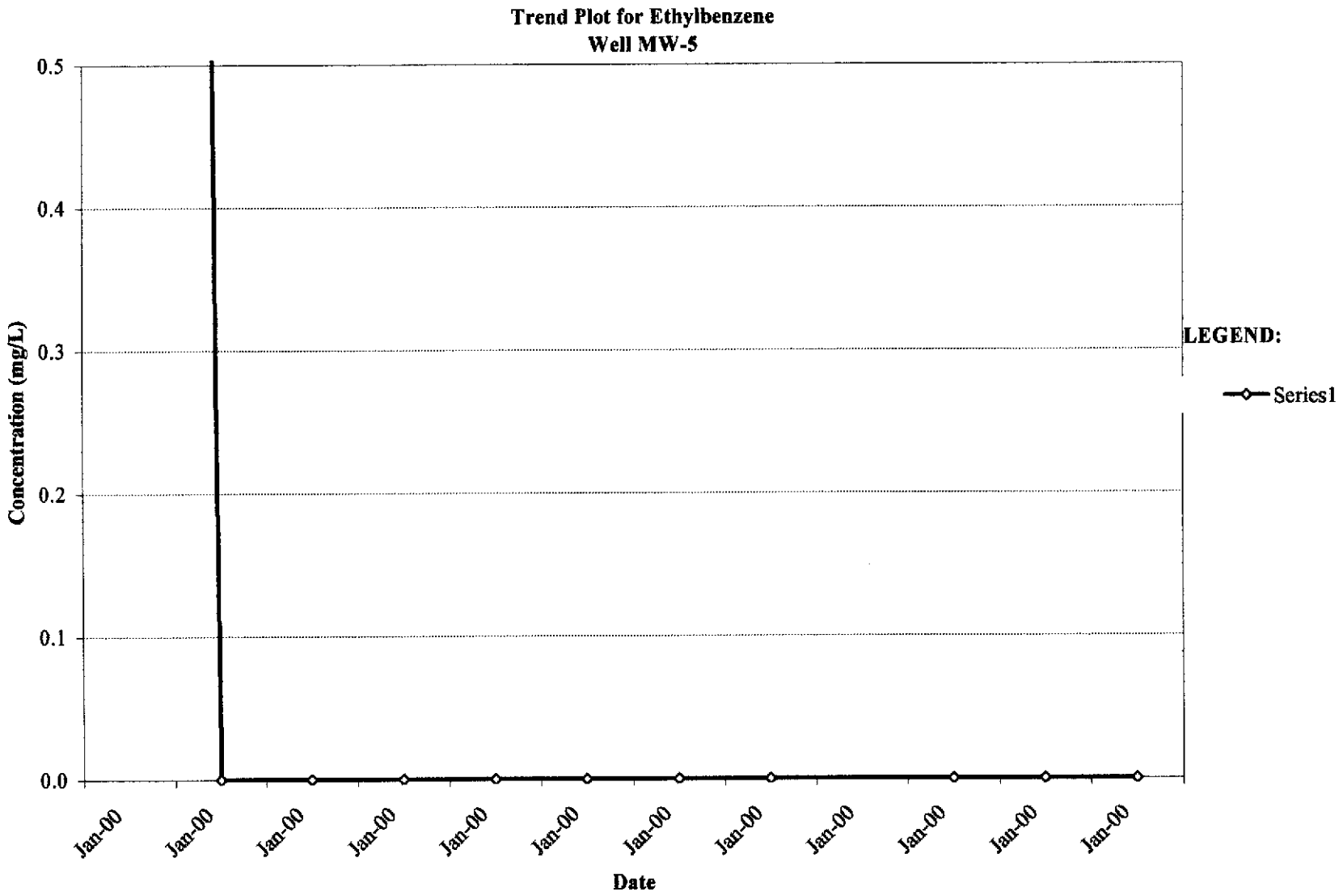
File:MW-5 Sheet: Benzene

CKG Environmental, Inc.



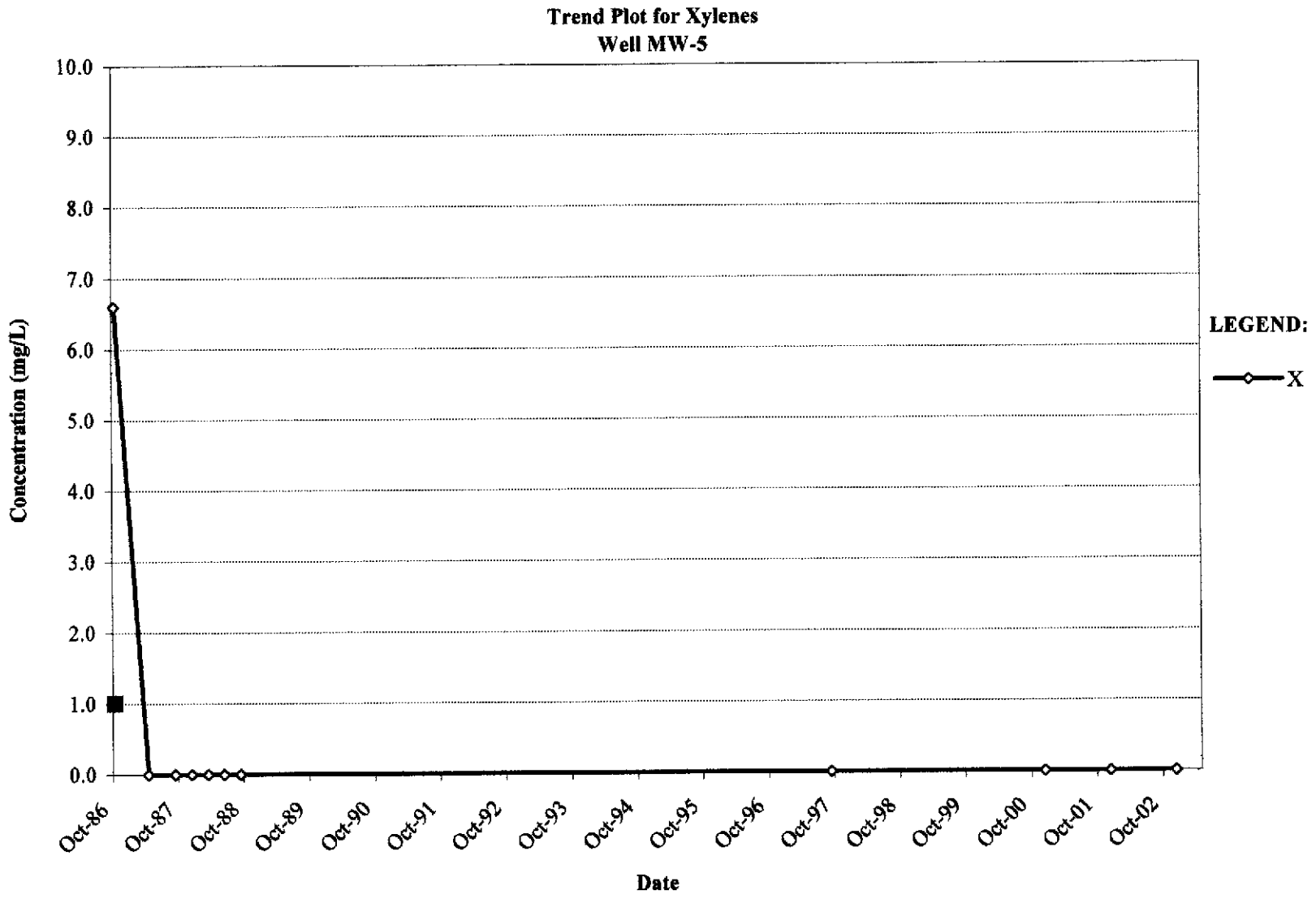
File:MW-5 Sheet: Toluene

CKG Environmental, Inc.



File:MW-5 Sheet: Ethylbenzene

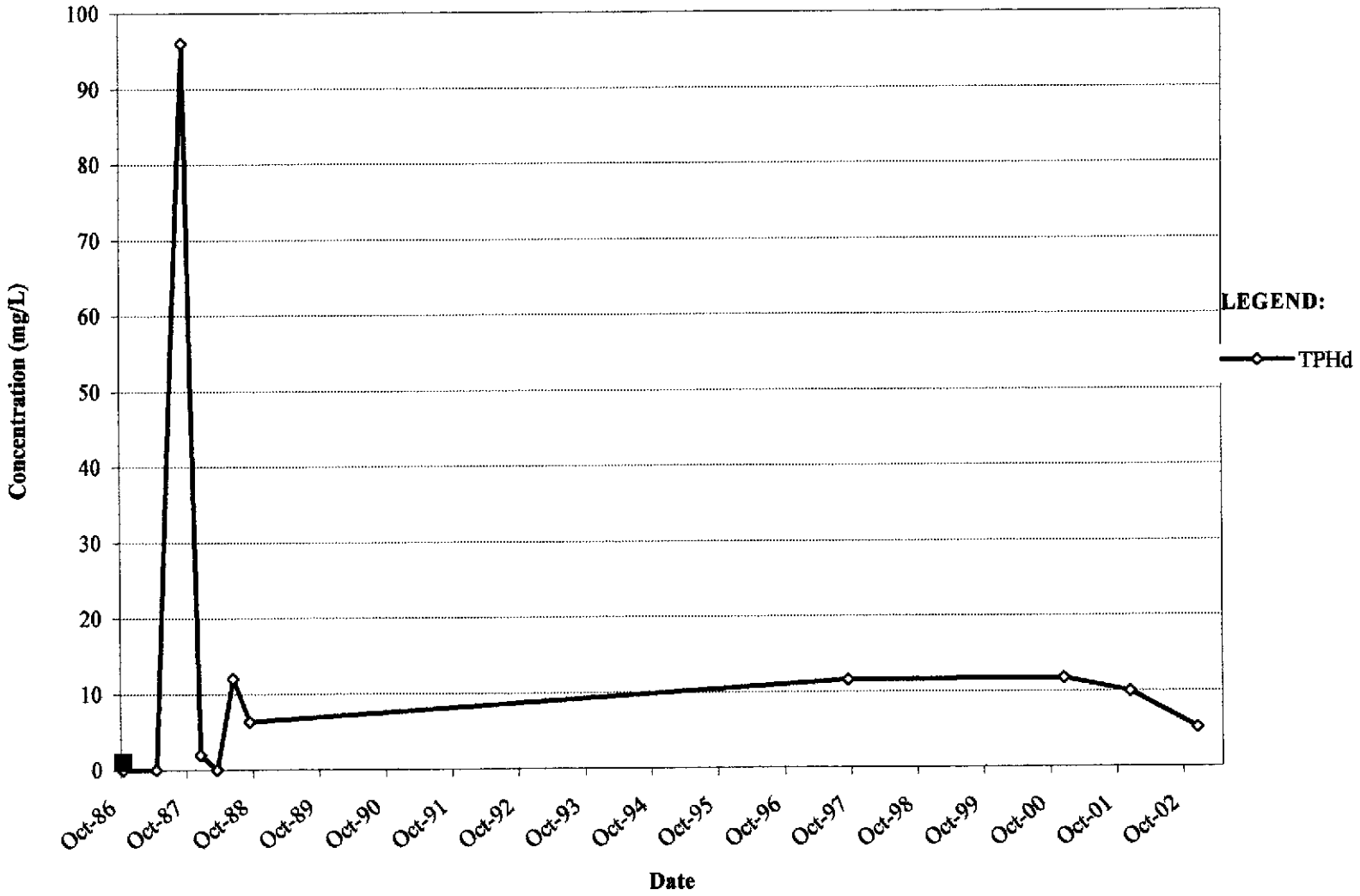
CKG Environmental, Inc.



File:MW-5 Sheet: Xylenes

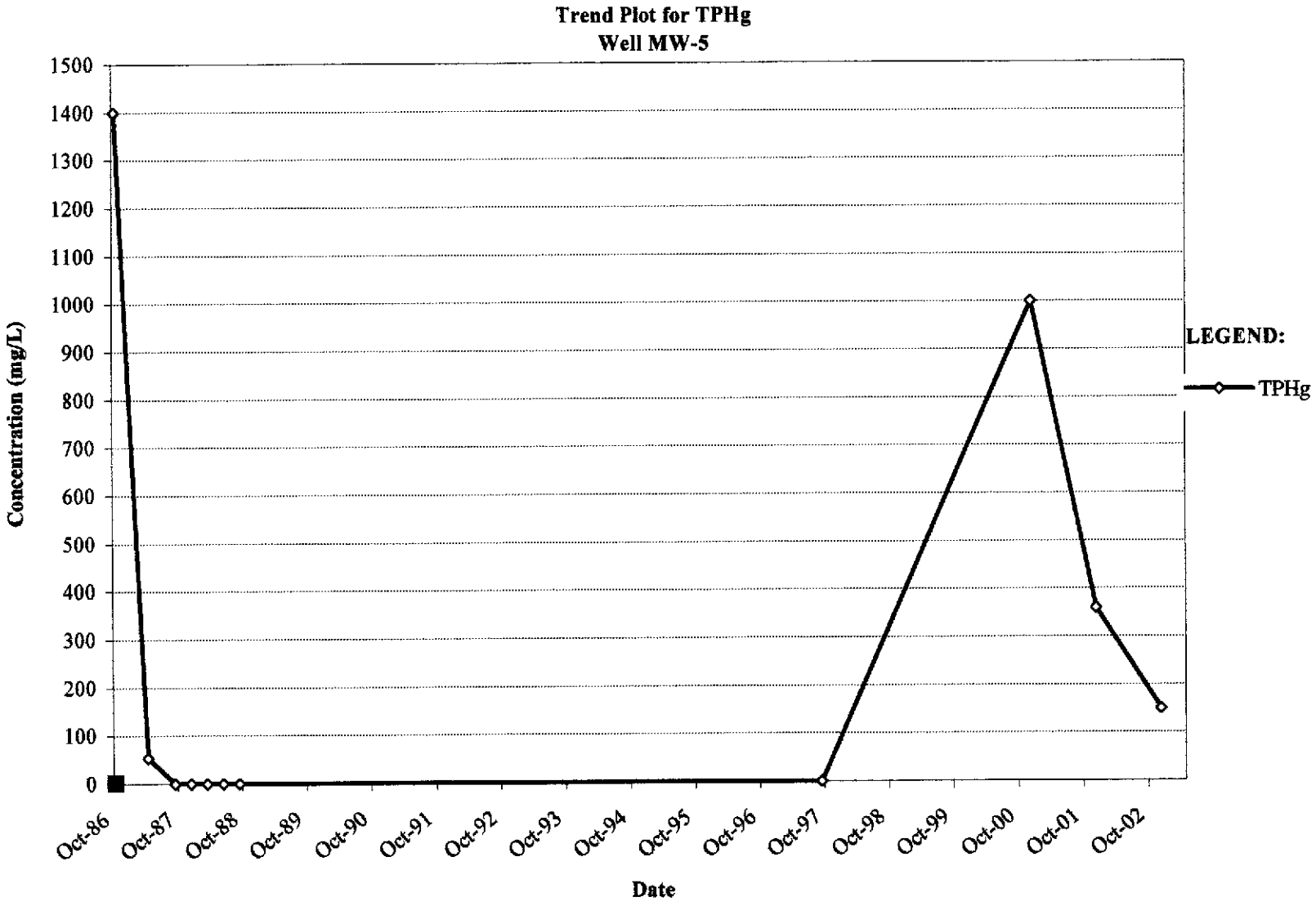
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-5



File:MW-5 Sheet: TPHd

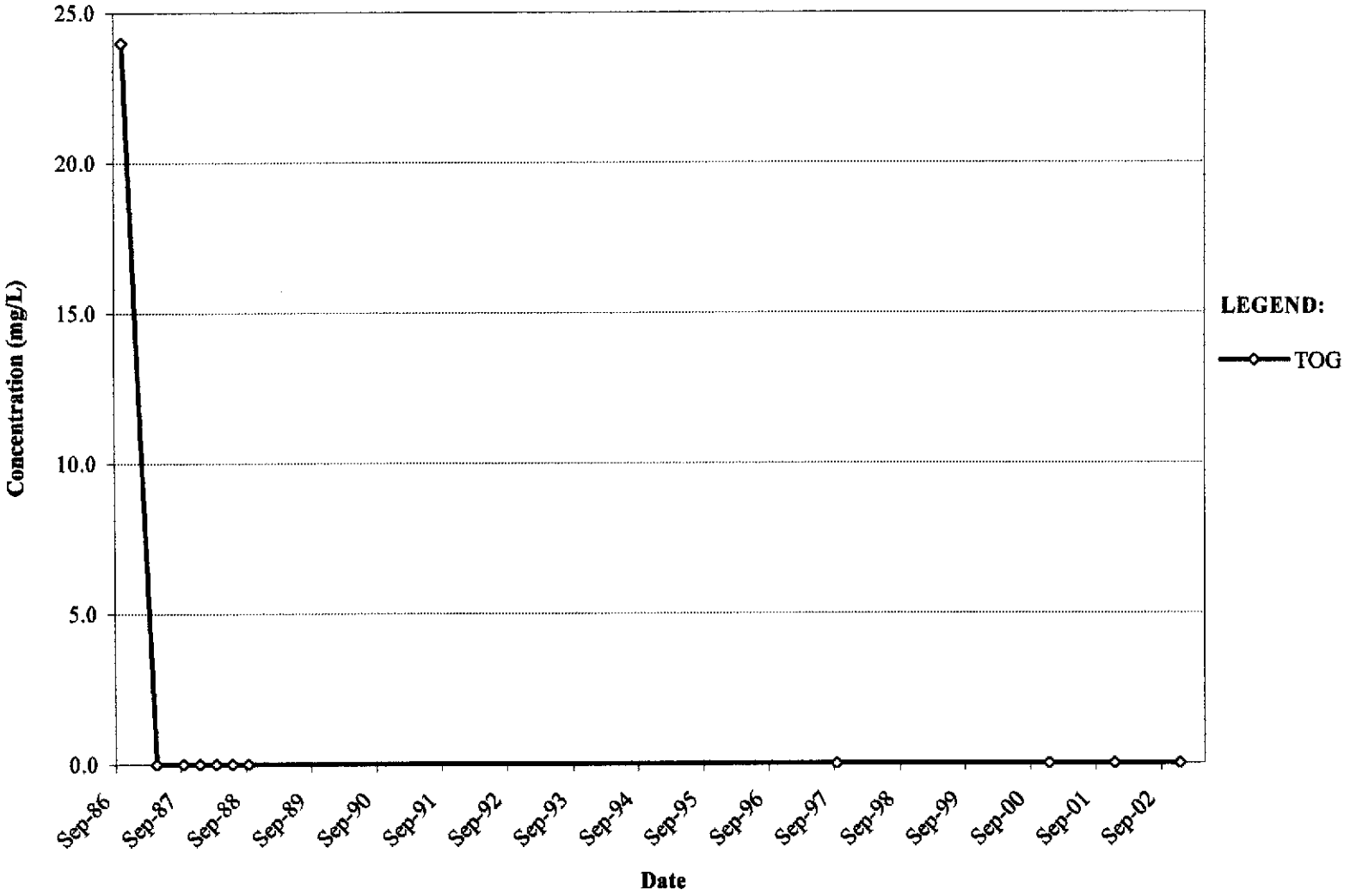
CKG Environmental, Inc.



File:MW-5 Sheet: TPHg

CKG Environmental, Inc.

Trend Plot for TOG
Well MW-5



File:MW-5 Sheet: TOG

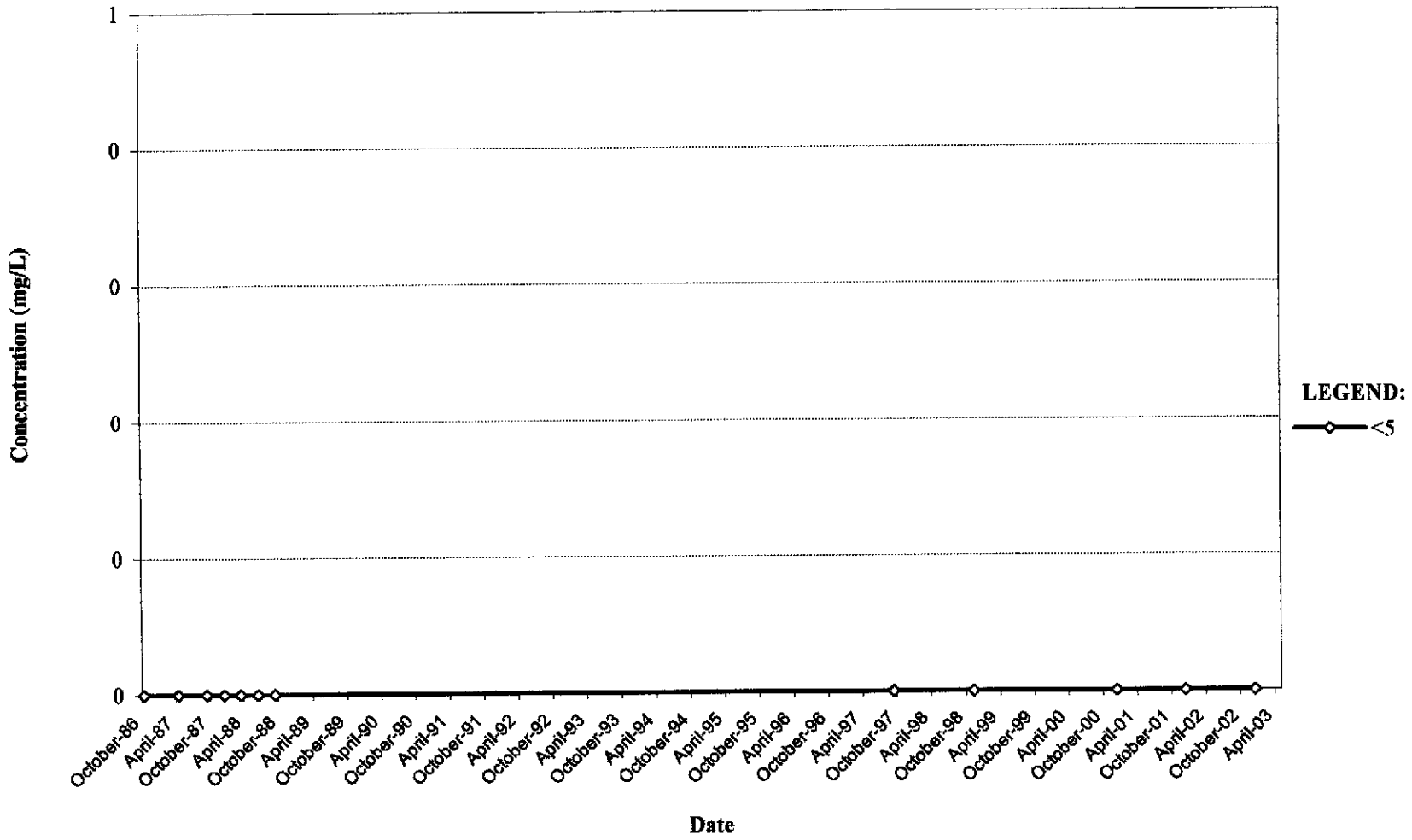
CKG Environmental, Inc.

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

Date	B	T	E	X	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"

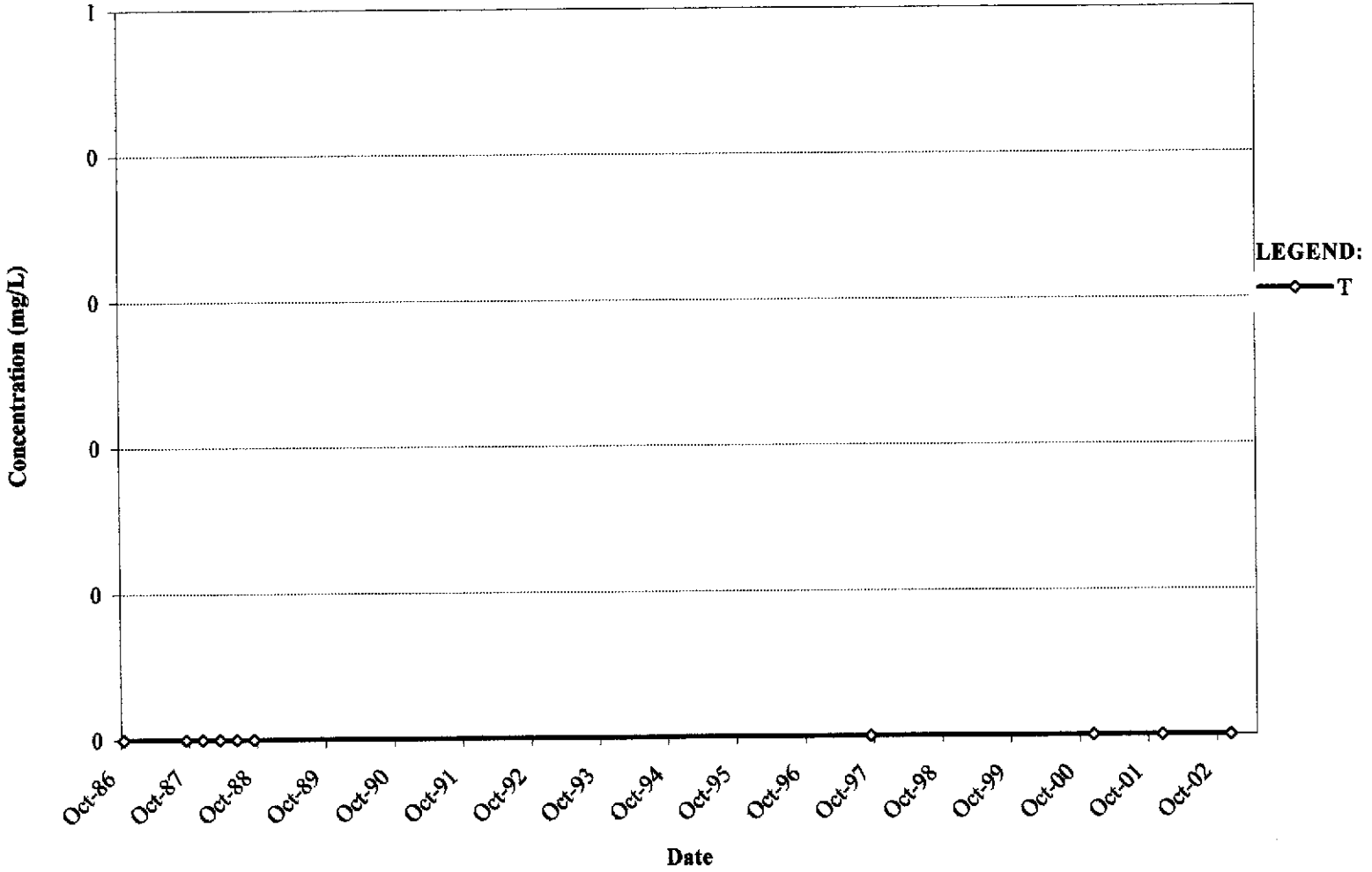
Trend Plot for Benzene
Well MW-7



File:MW-7 Sheet: Benzene

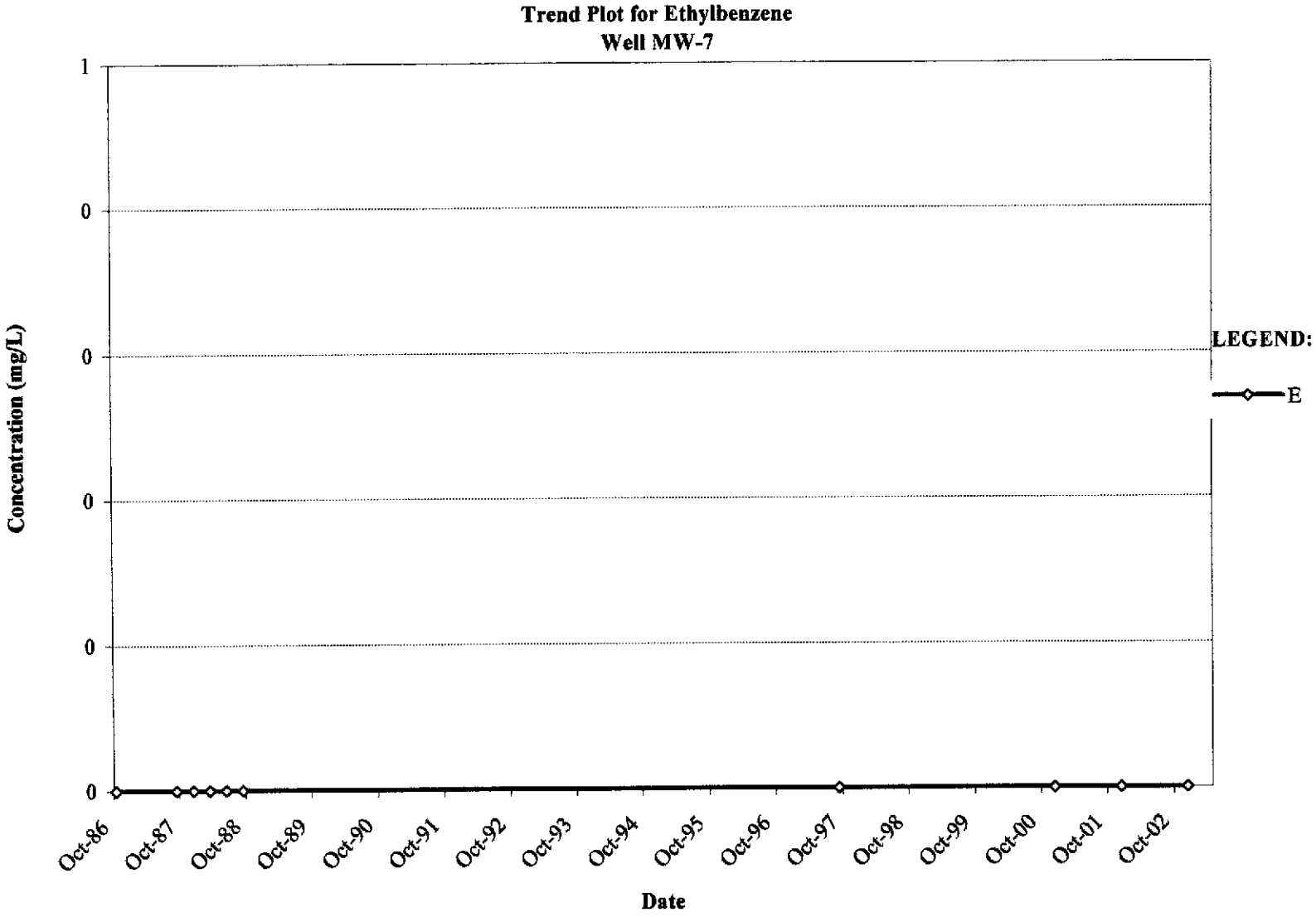
CKG Environmental, Inc.

Trend Plot for Toluene
Well MW-7



File:MW-7 Sheet: Toluene

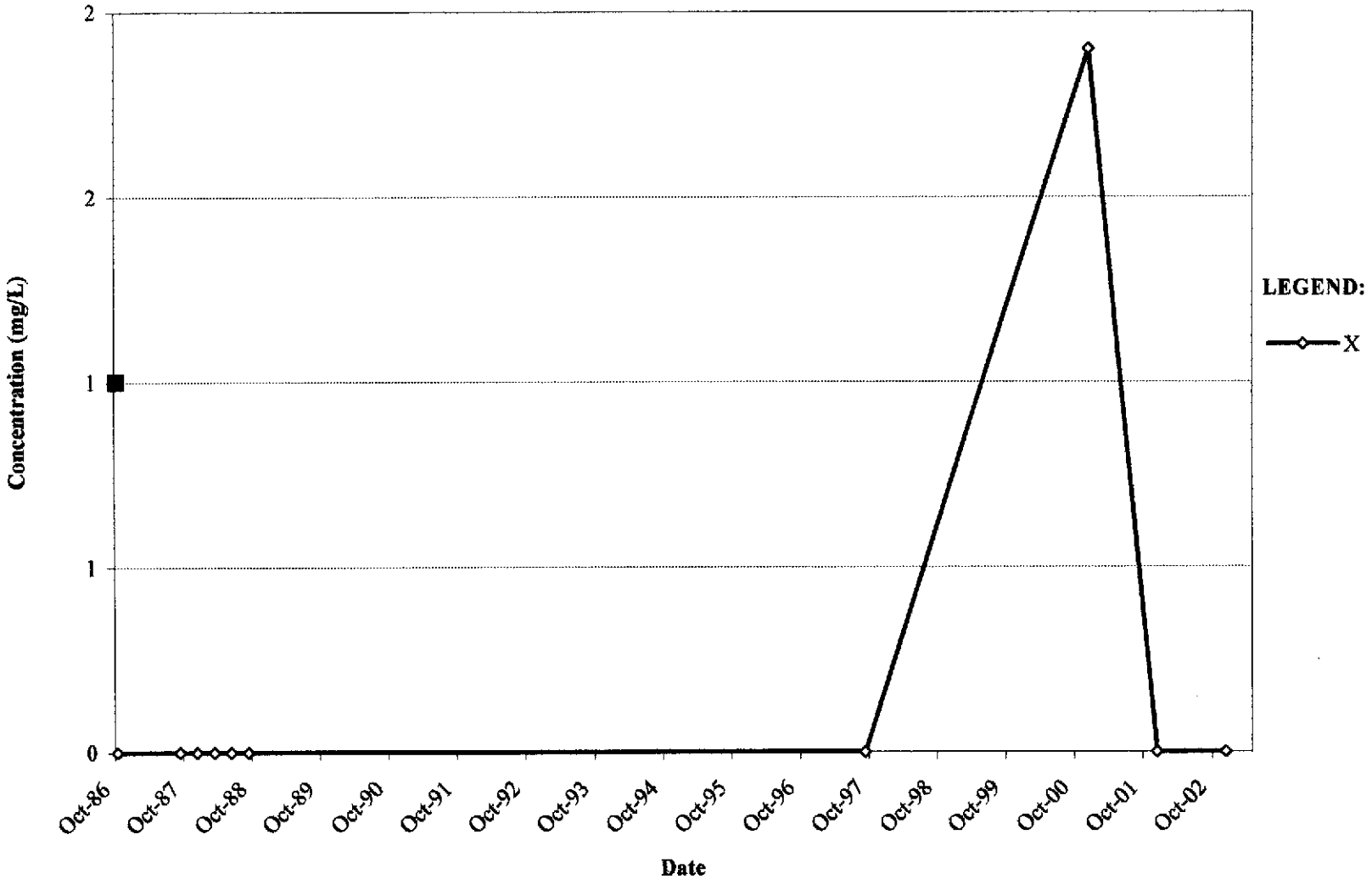
CKG Environmental, Inc.



File:MW-7 Sheet: Ethylbenzene

CKG Environmental, Inc.

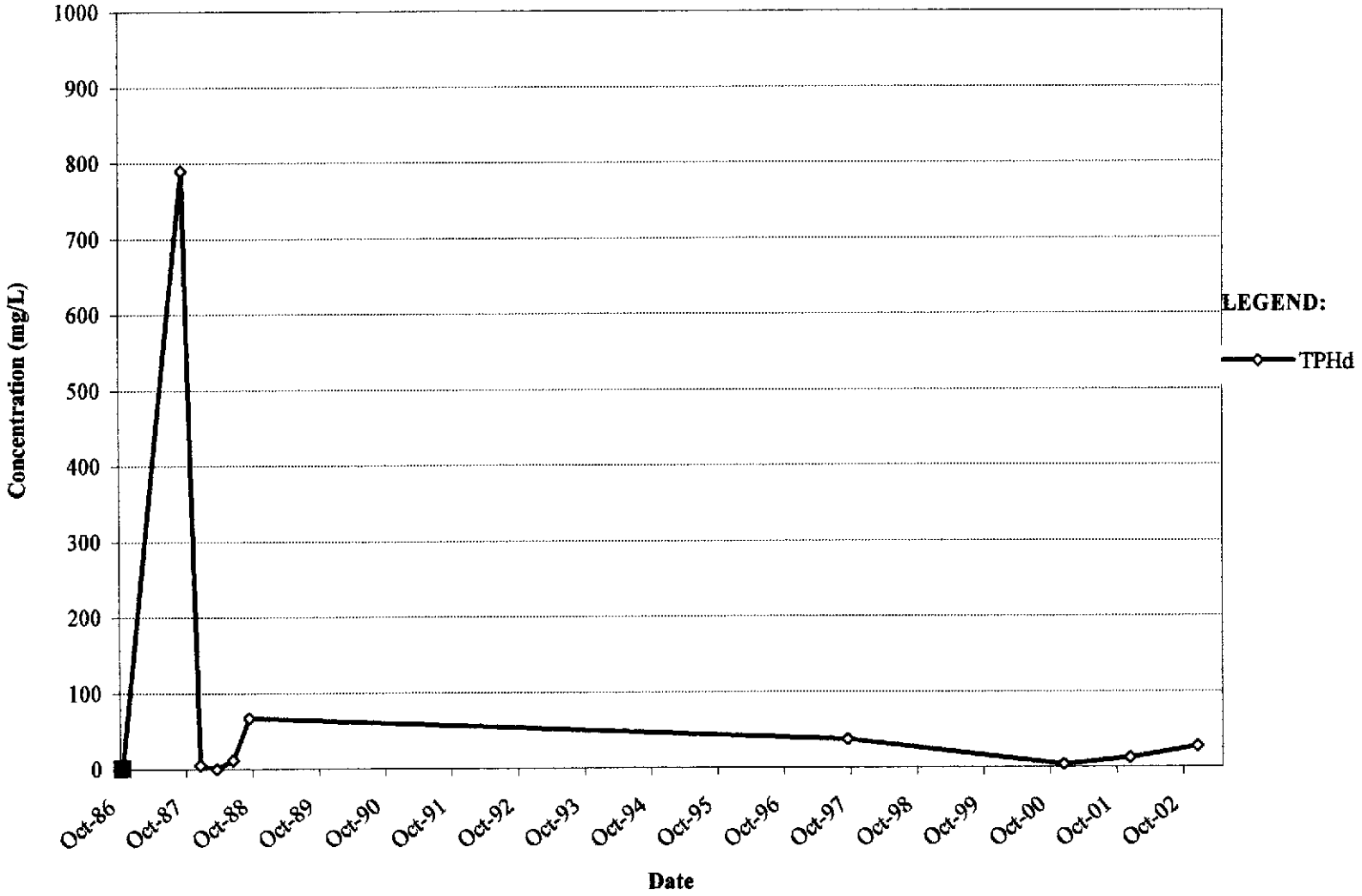
Trend Plot for Xylenes
Well MW-7



File:MW-7 Sheet: Xylenes

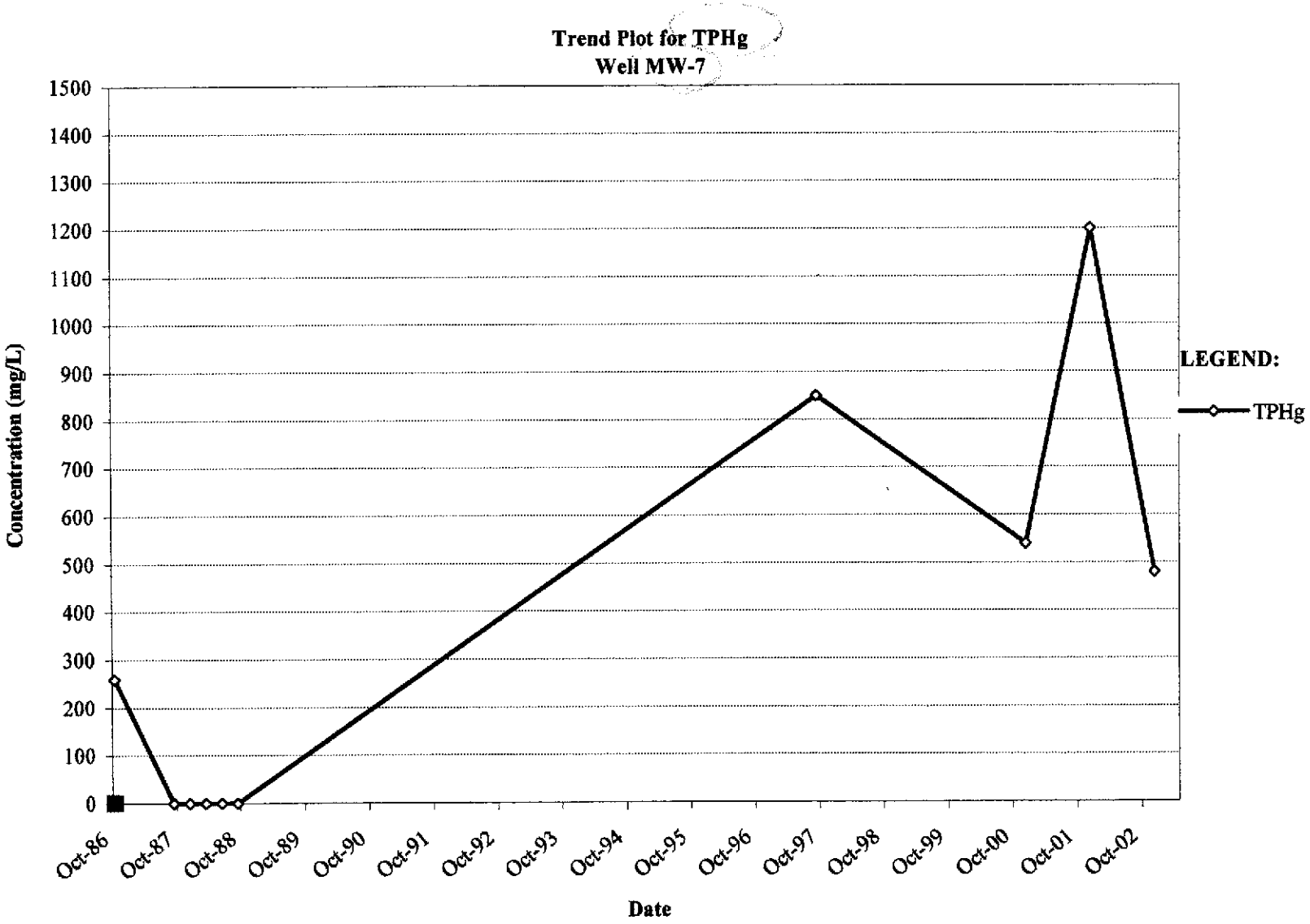
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-7



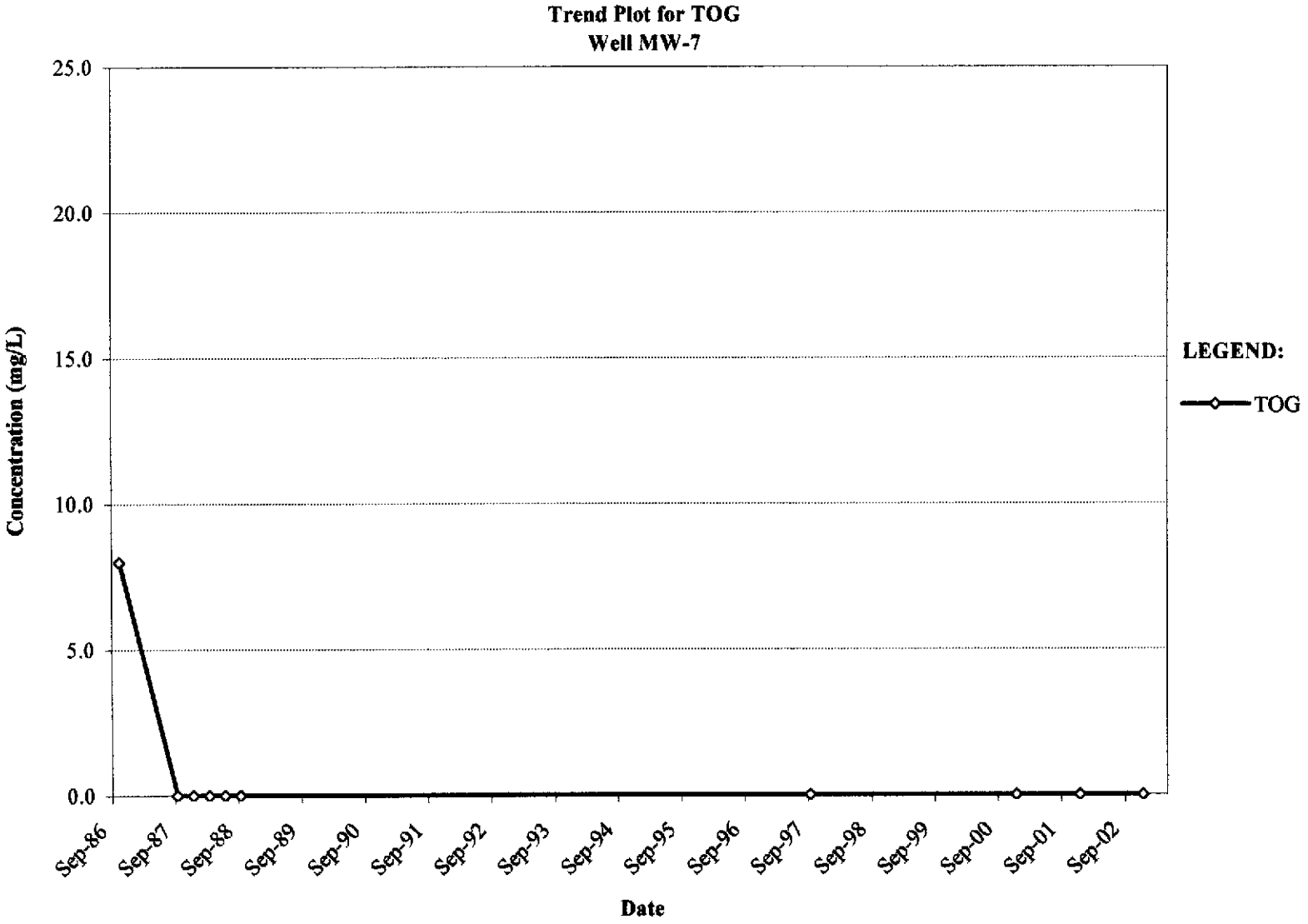
File:MW-7 Sheet: TPHd

CKG Environmental, Inc.



File:MW-7 Sheet: TPHg

CKG Environmental, Inc.



File:MW-7 Sheet: TOG

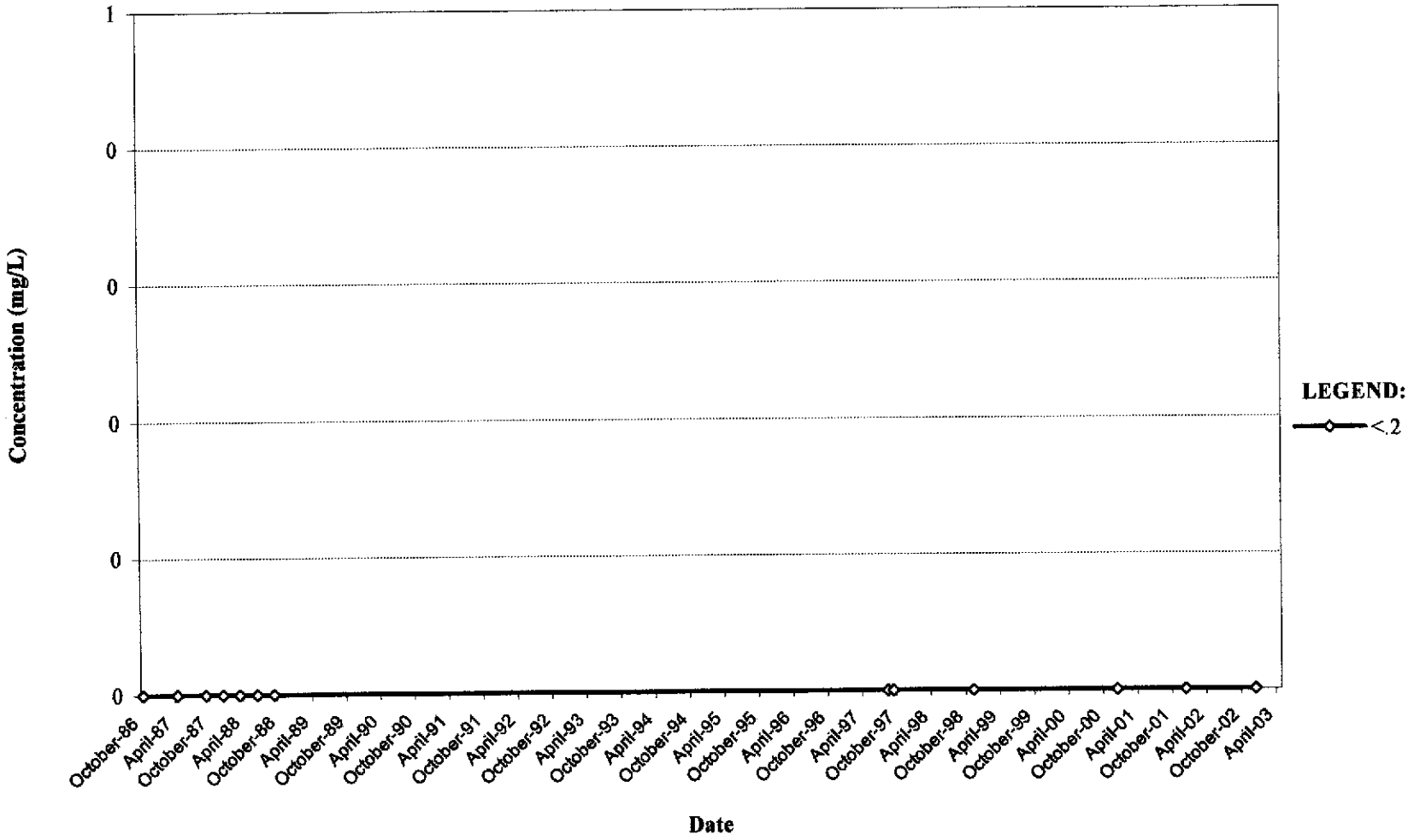
CKG Environmental, Inc.

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

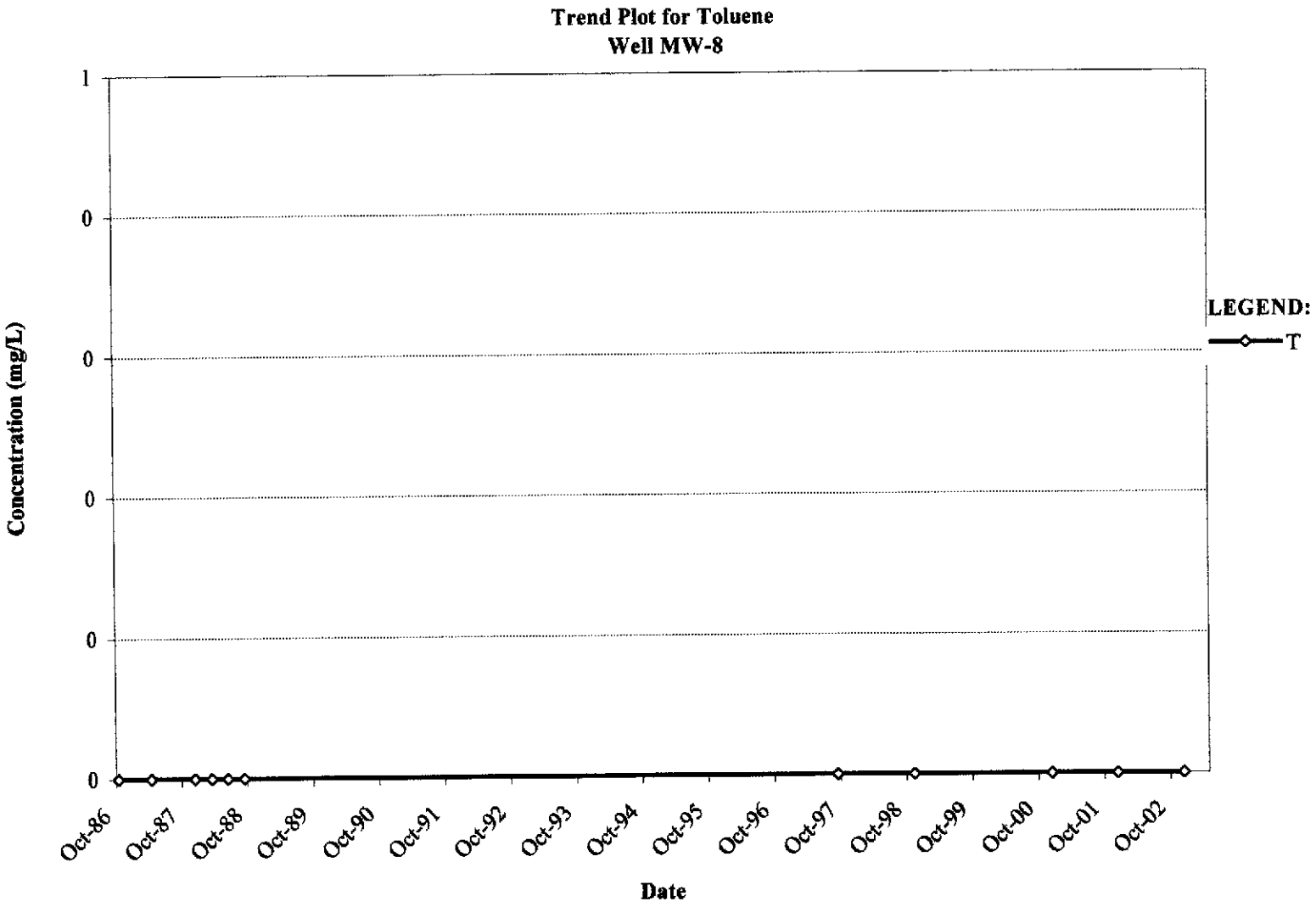
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
fs

Trend Plot for Benzene
Well MW-8



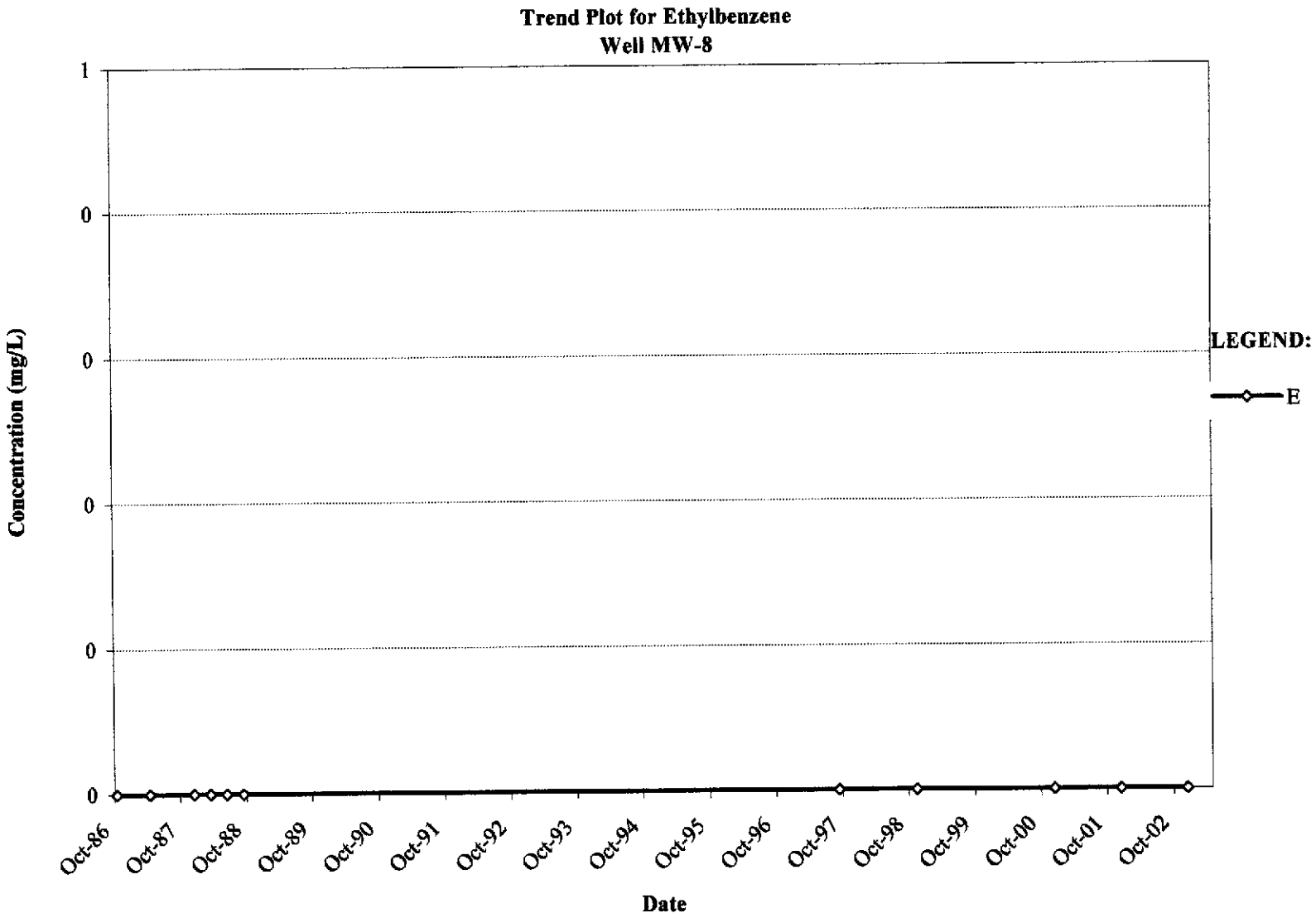
File:Mw-8 Sheet: Benzene

CKG Environmental, Inc.



File:Mw-8 Sheet: Toluene

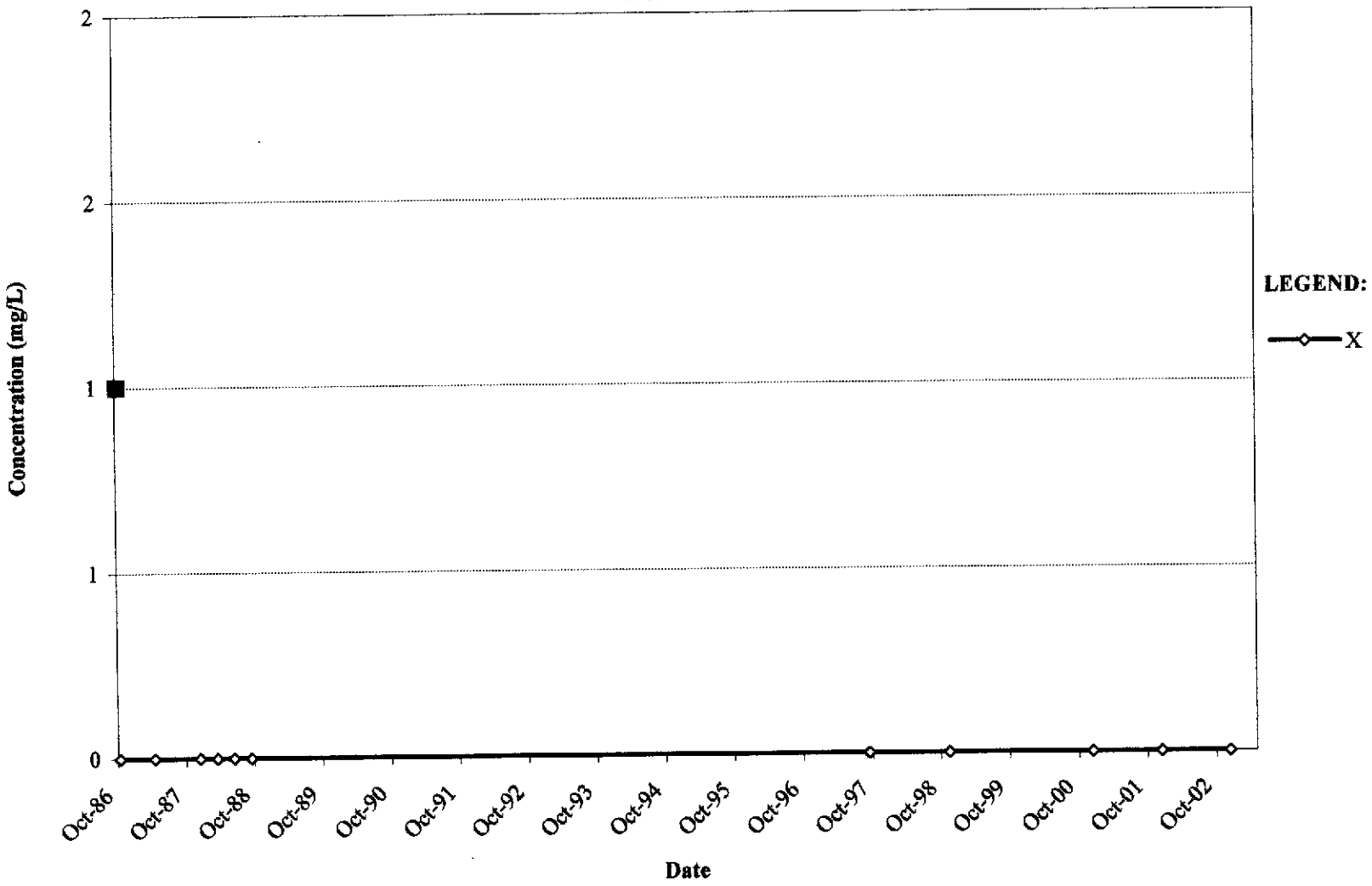
CKG Environmental, Inc.



File:Mw-8 Sheet: Ethylbenzene

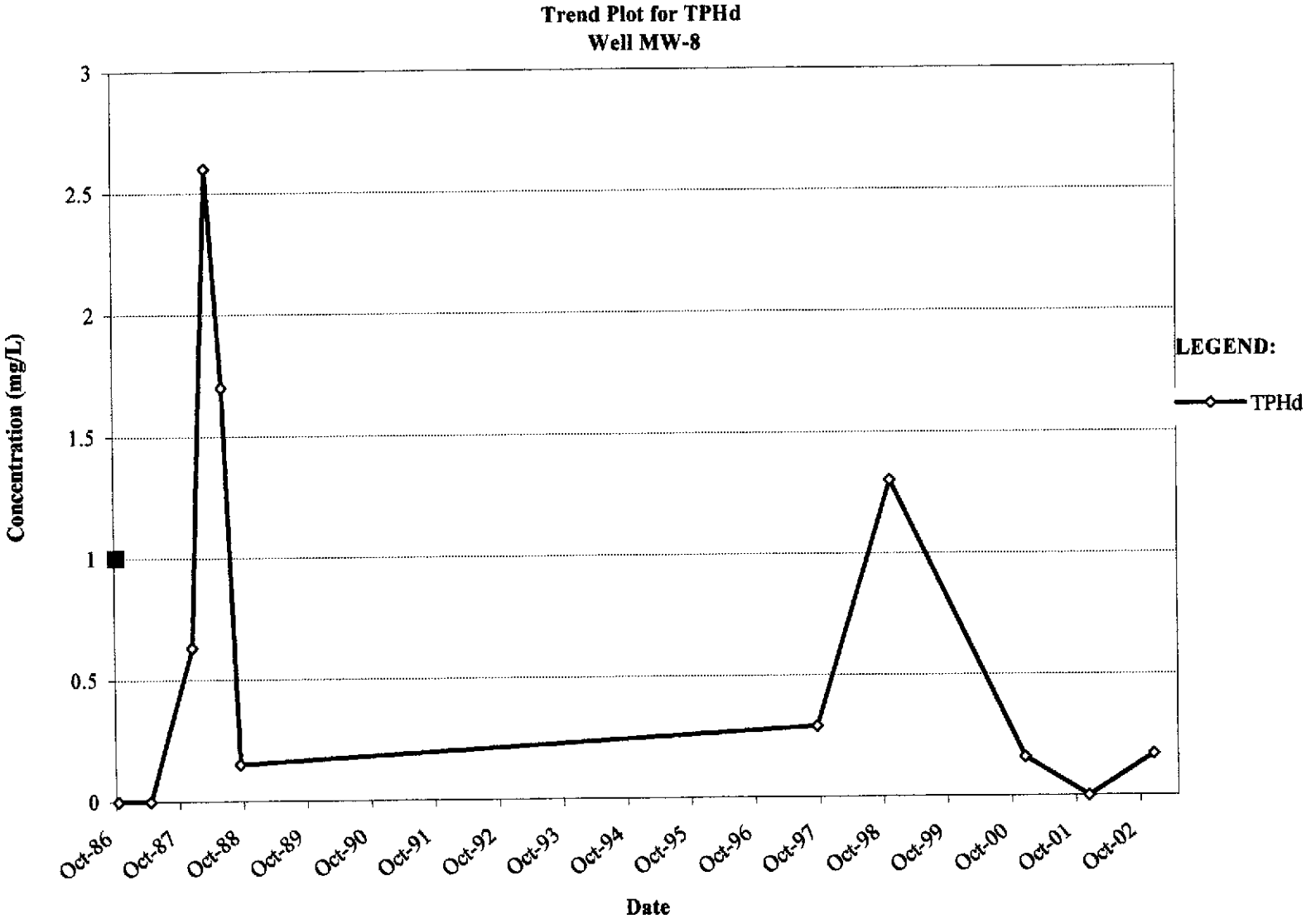
CKG Environmental, Inc.

Trend Plot for Xylenes
Well MW-8



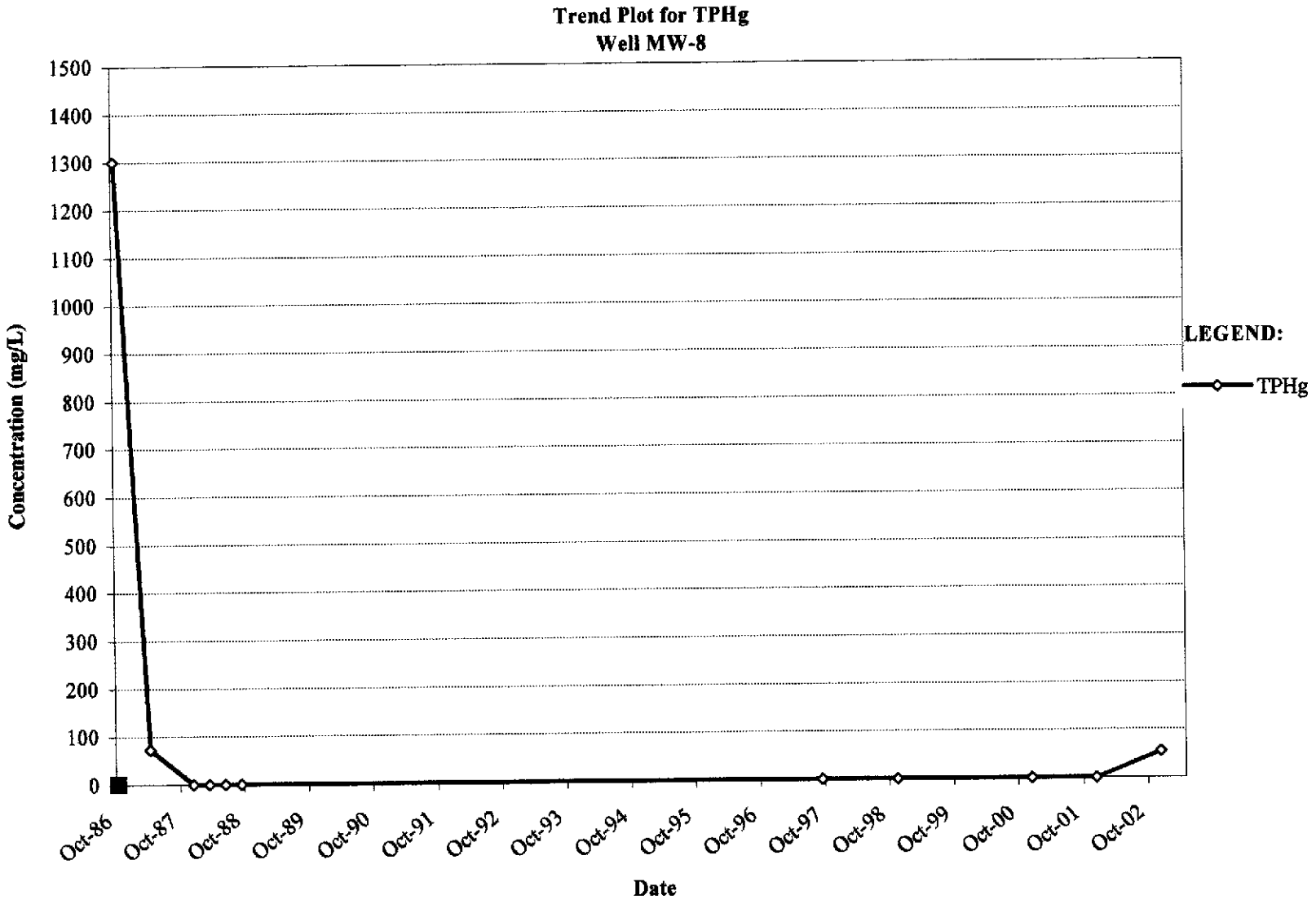
File:Mw-8 Sheet: Xylenes

CKG Environmental, Inc.



File:Mw-8 Sheet: TPHd

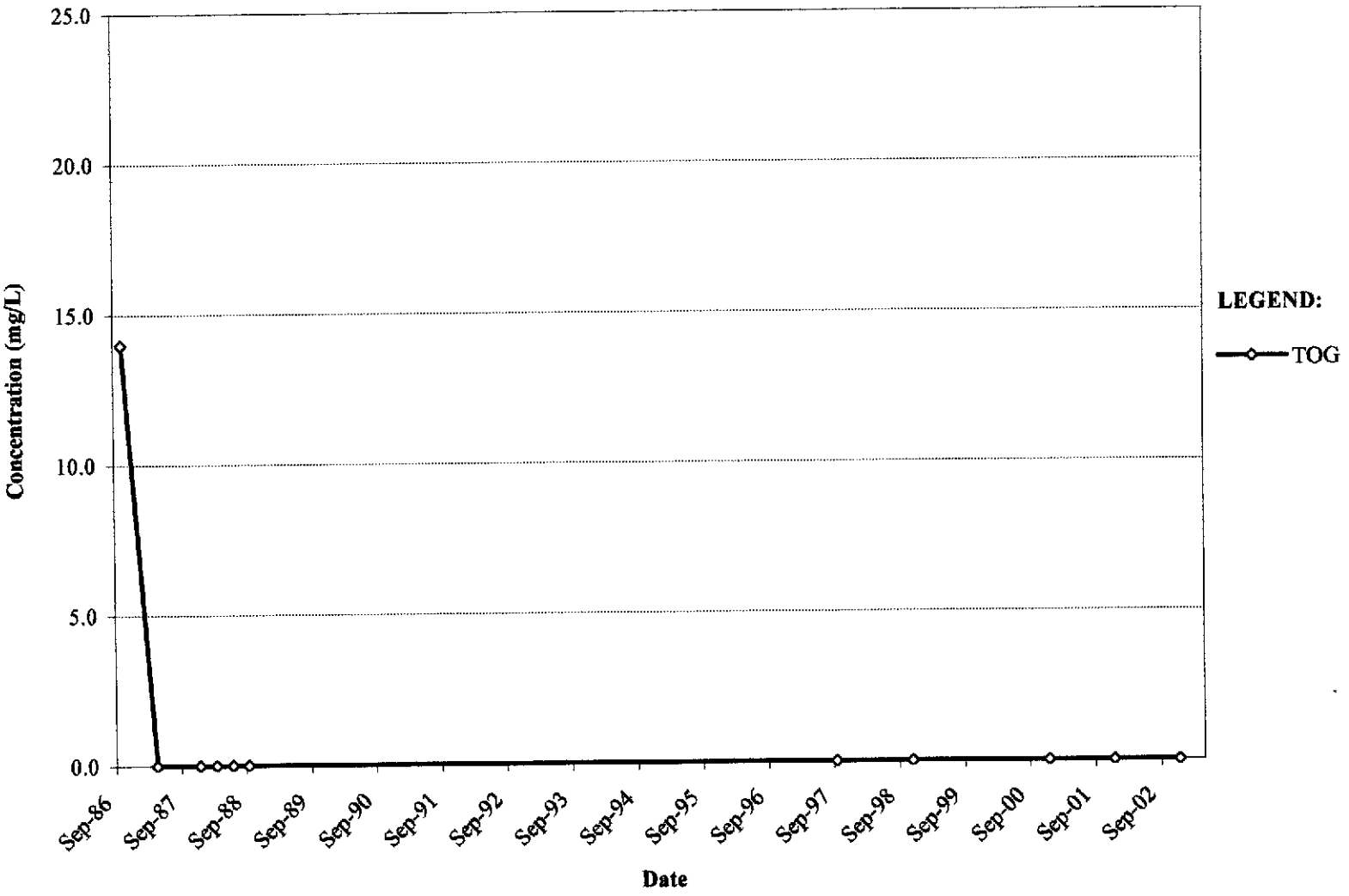
CKG Environmental, Inc.



File:Mw-8 Sheet: TPHg

CKG Environmental, Inc.

Trend Plot for TOG
Well MW-8



File:Mw-8 Sheet: TOG

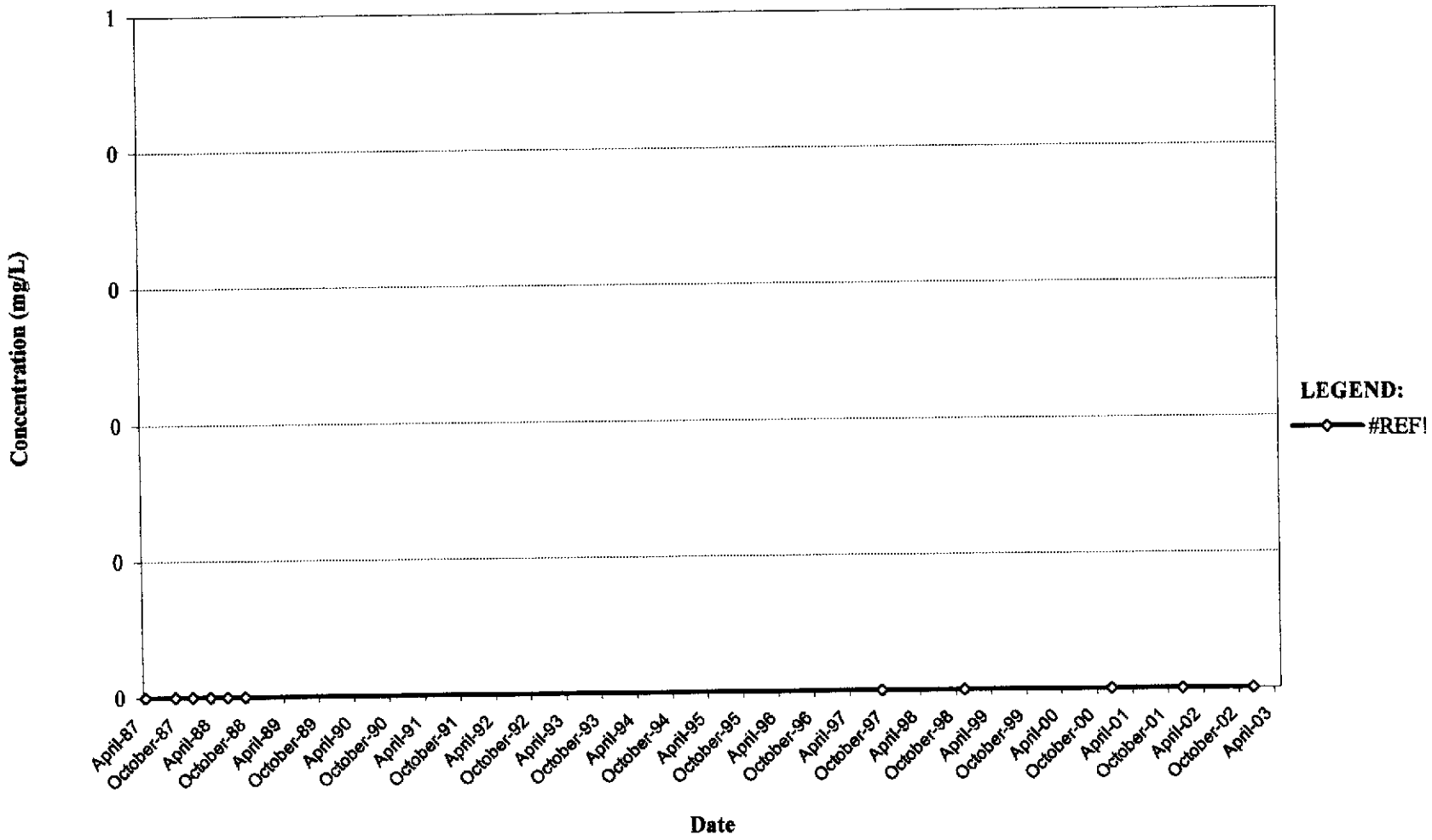
CKG Environmental, Inc.

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						

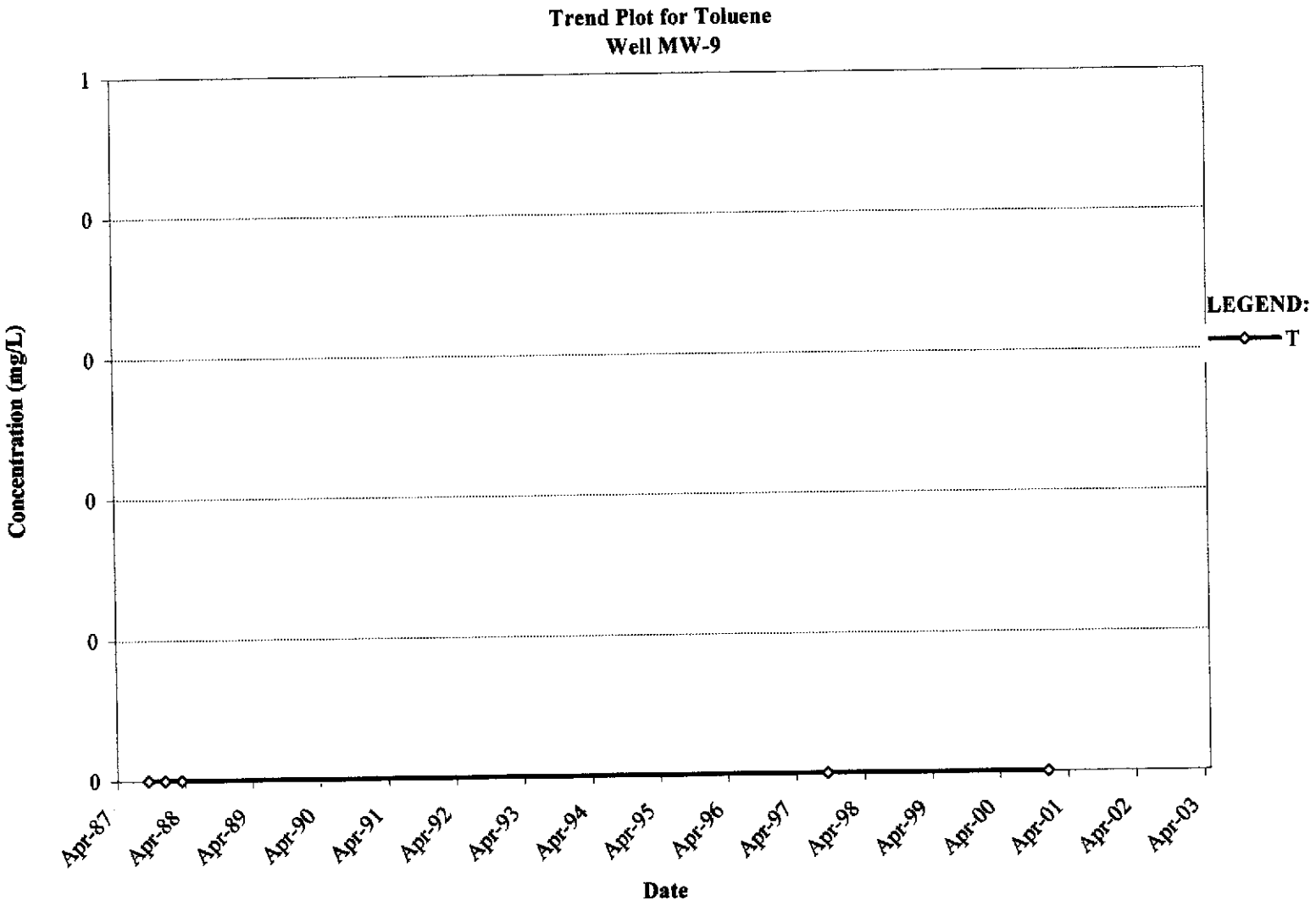
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-9



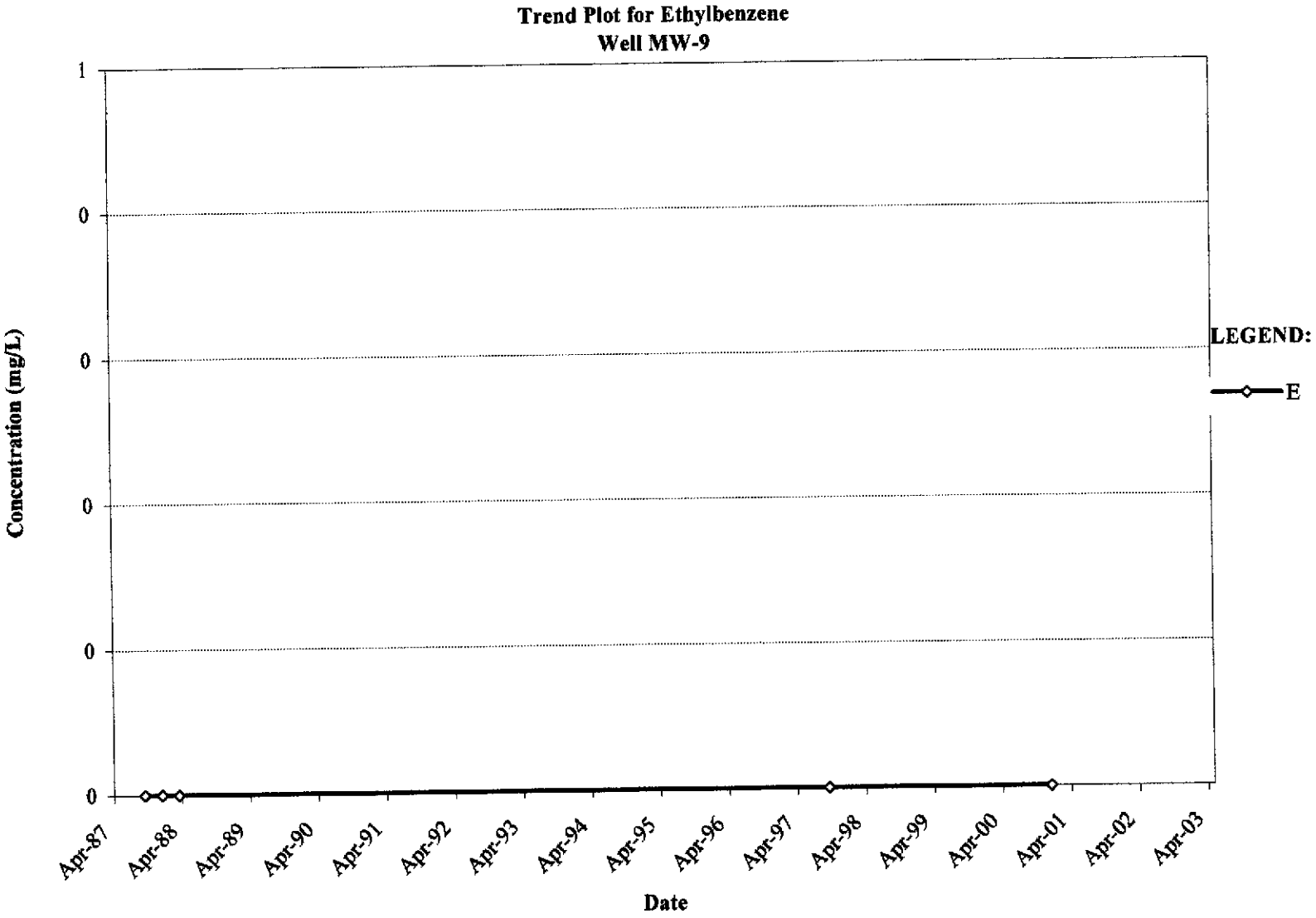
File:MW-9 Sheet: Benzene

CKG Environmental, Inc.



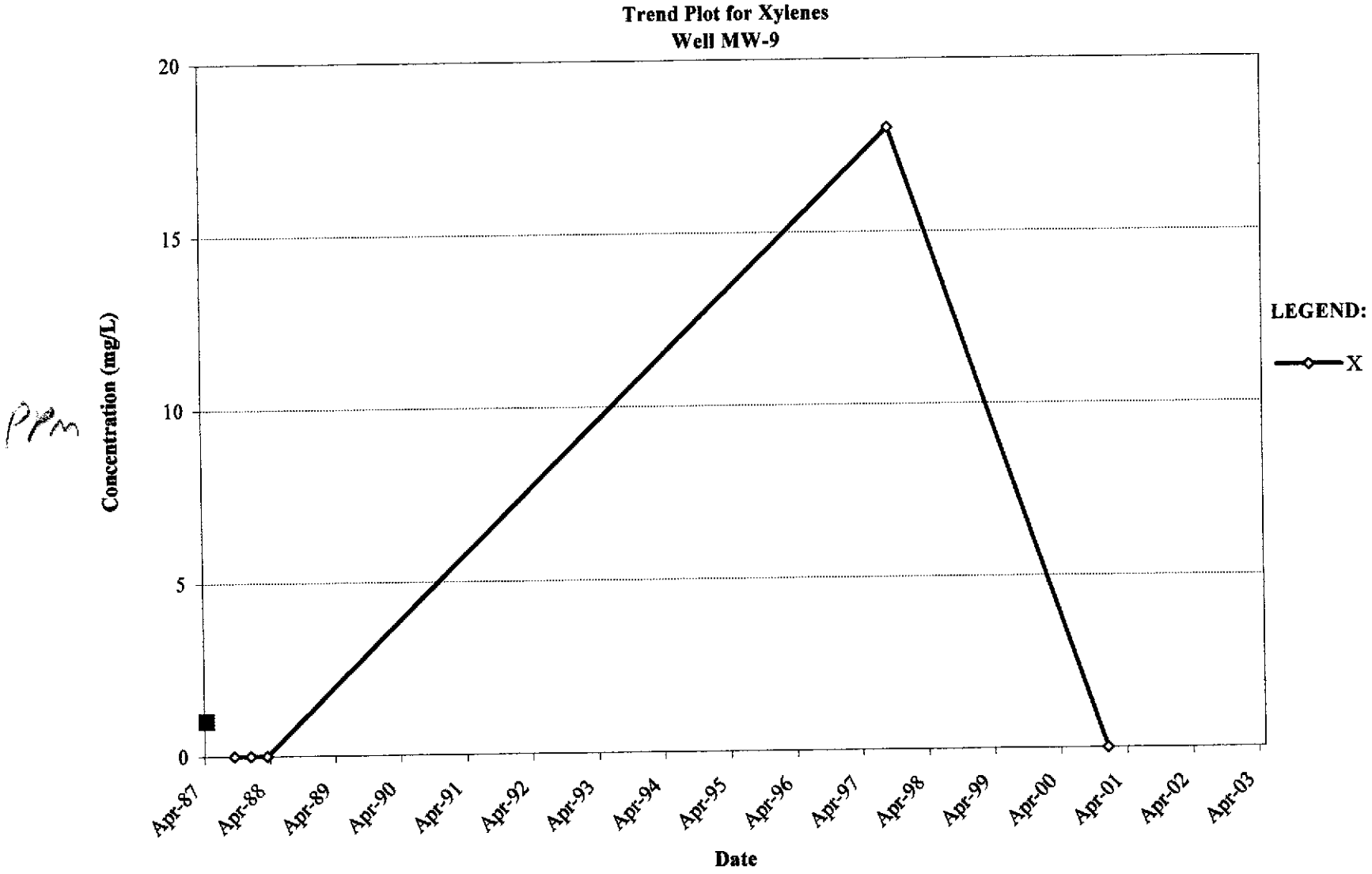
File:MW-9 Sheet: Toluene

CKG Environmental, Inc.



File:MW-9 Sheet: Ethylbenzene

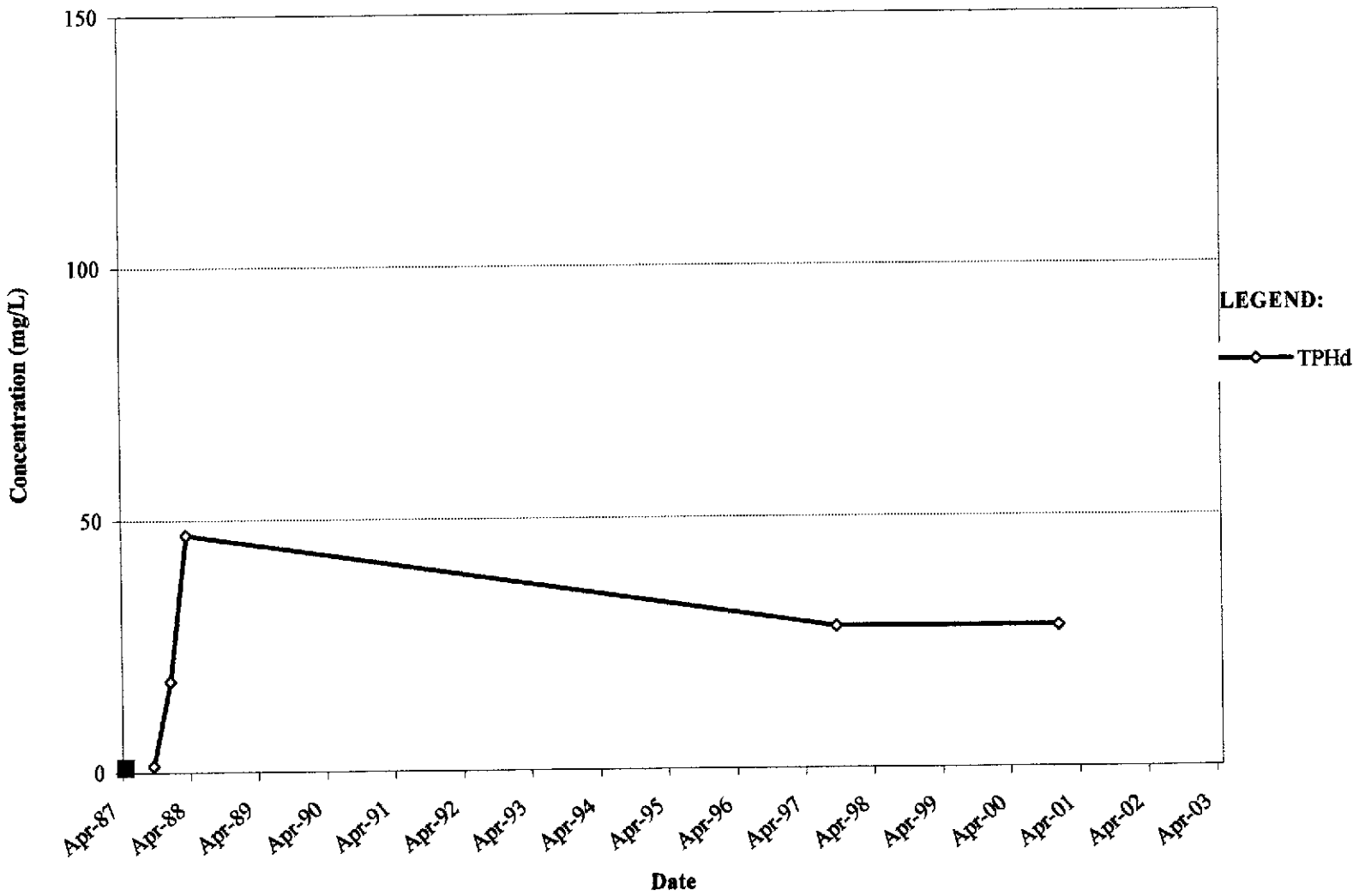
CKG Environmental, Inc.



File:MW-9 Sheet: Xylenes

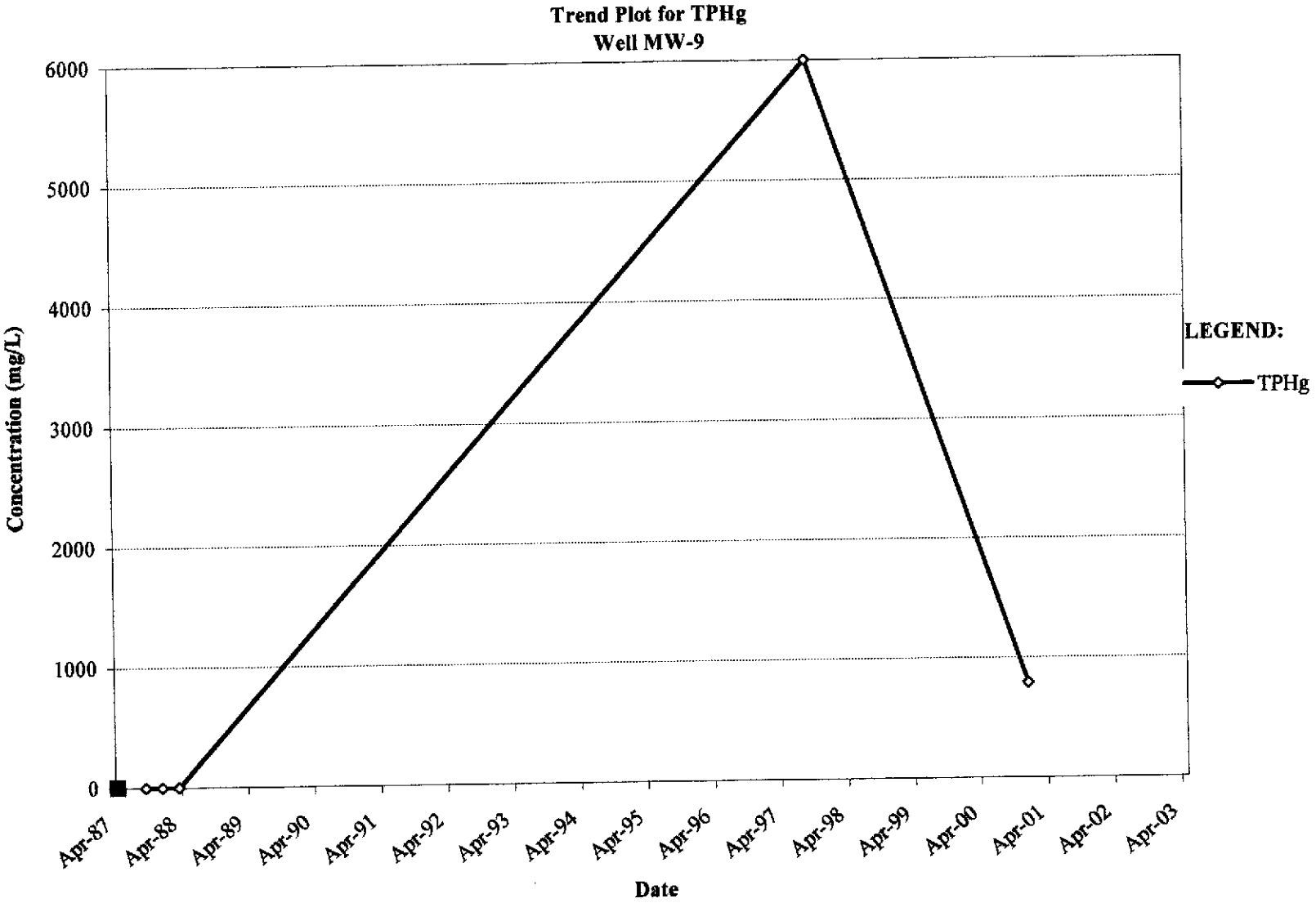
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-9



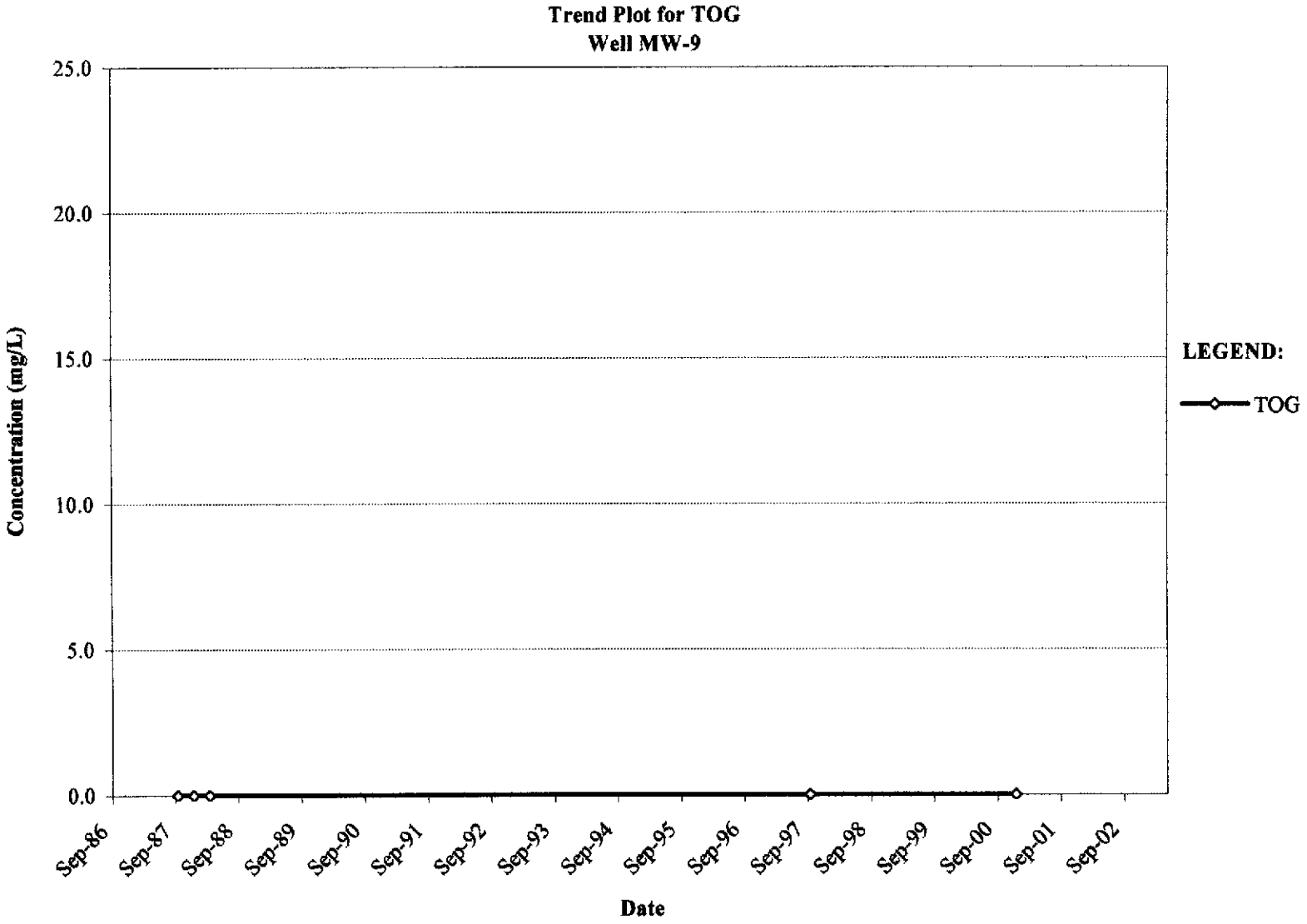
File:MW-9 Sheet: TPHd

CKG Environmental, Inc.



File:MW-9 Sheet: TPHg

CKG Environmental, Inc.



File:MW-9 Sheet: TOG

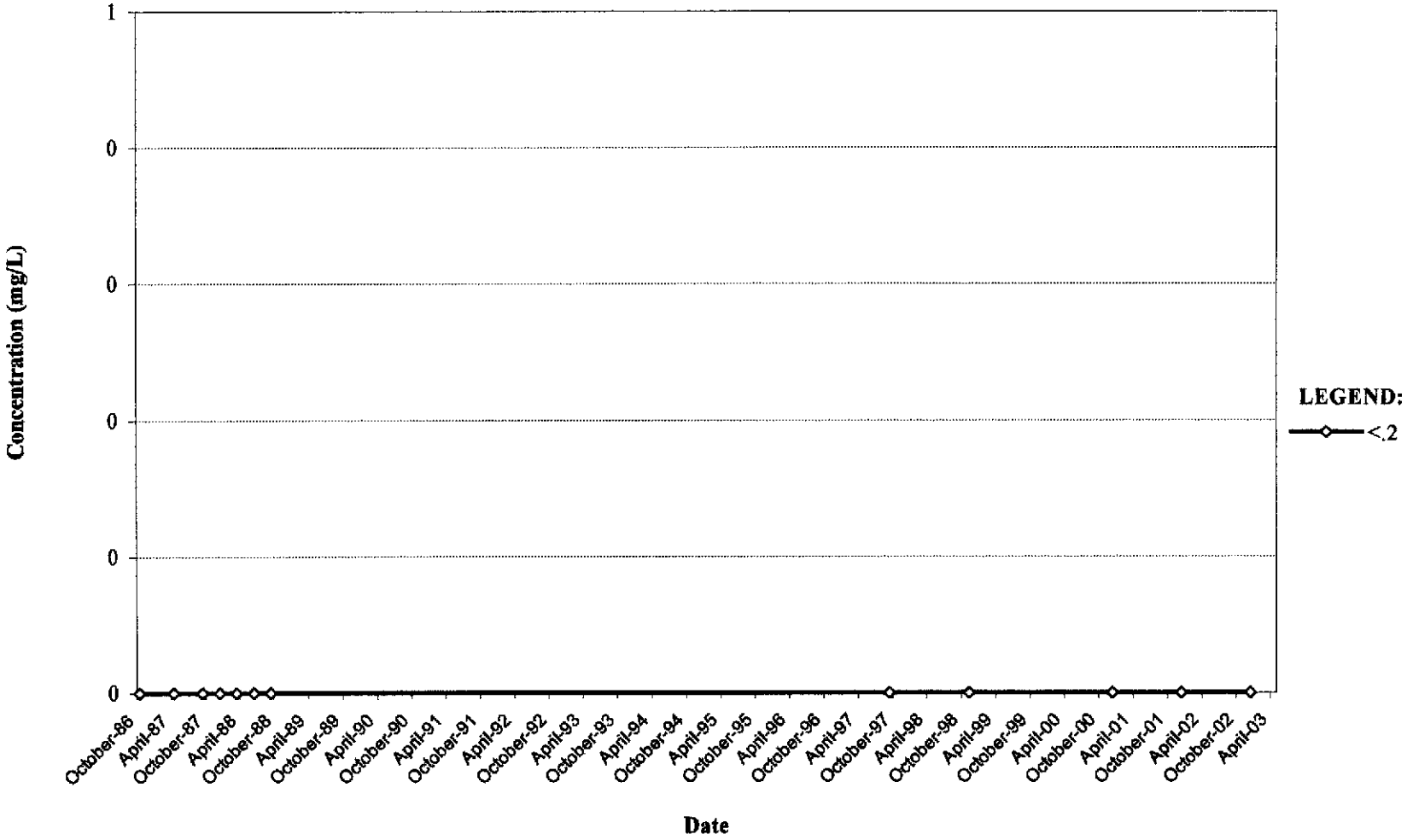
CKG Environmental, Inc.

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

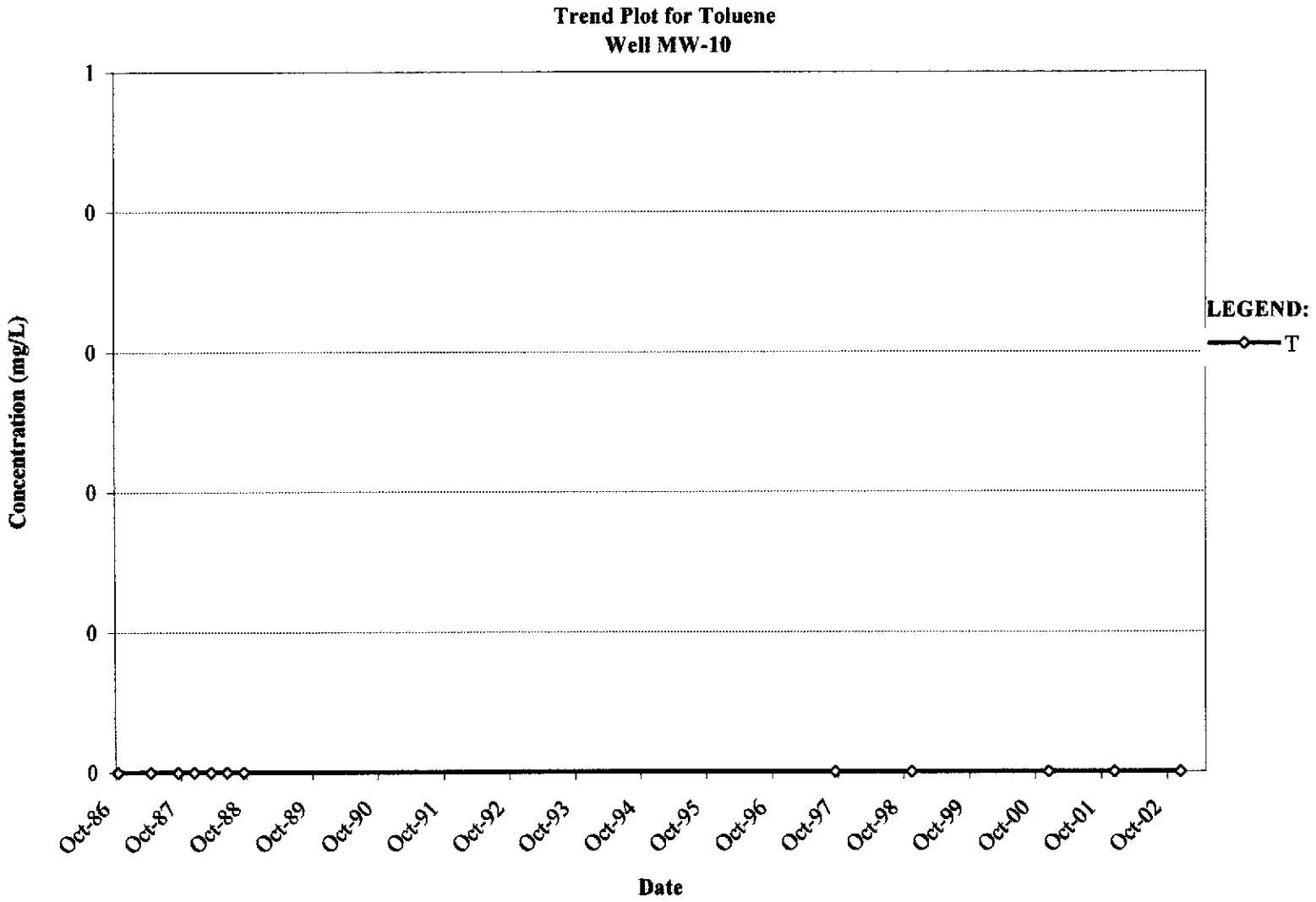
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-10



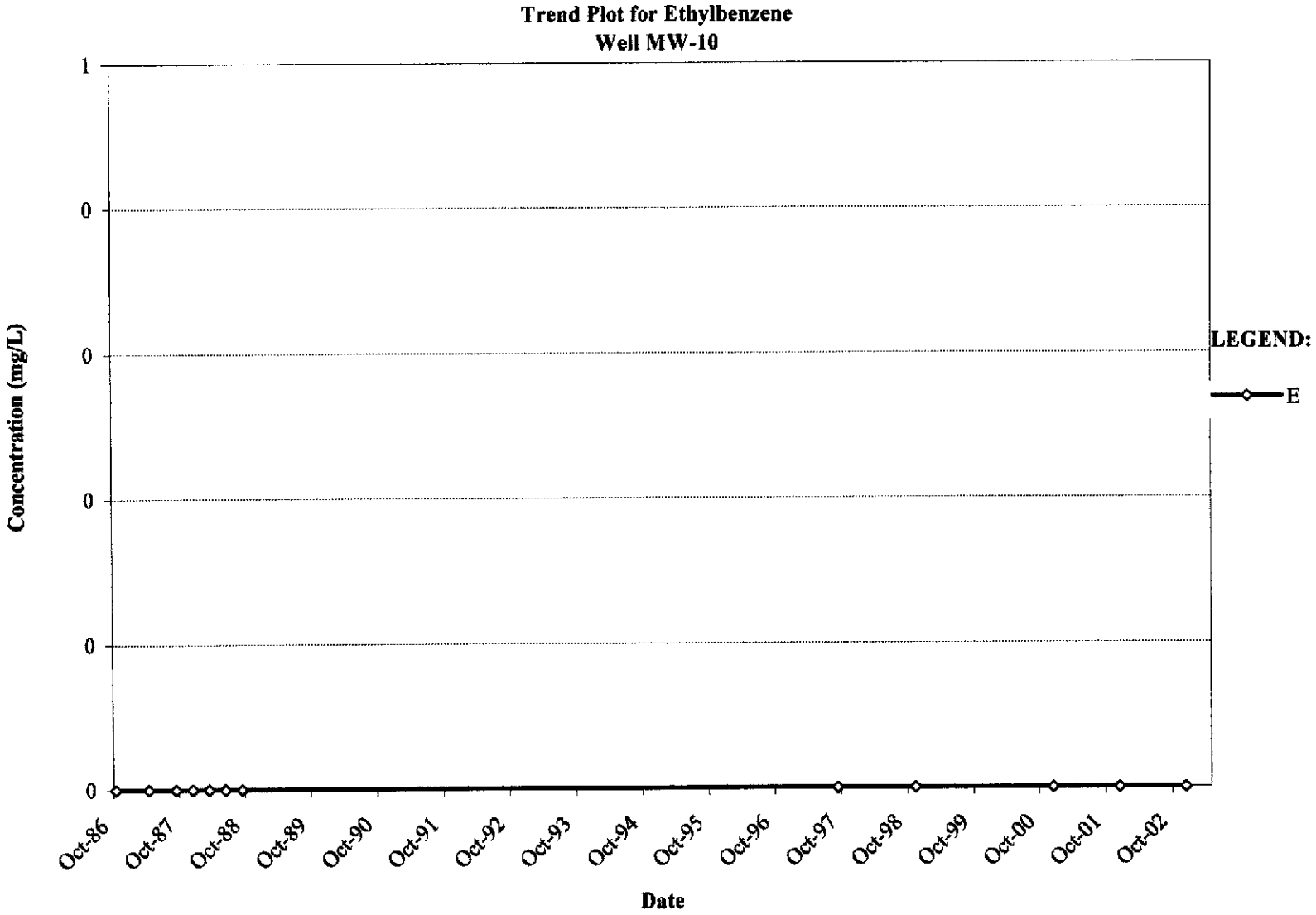
File:Mw-10 Sheet: Benzene

CKG Environmental, Inc.



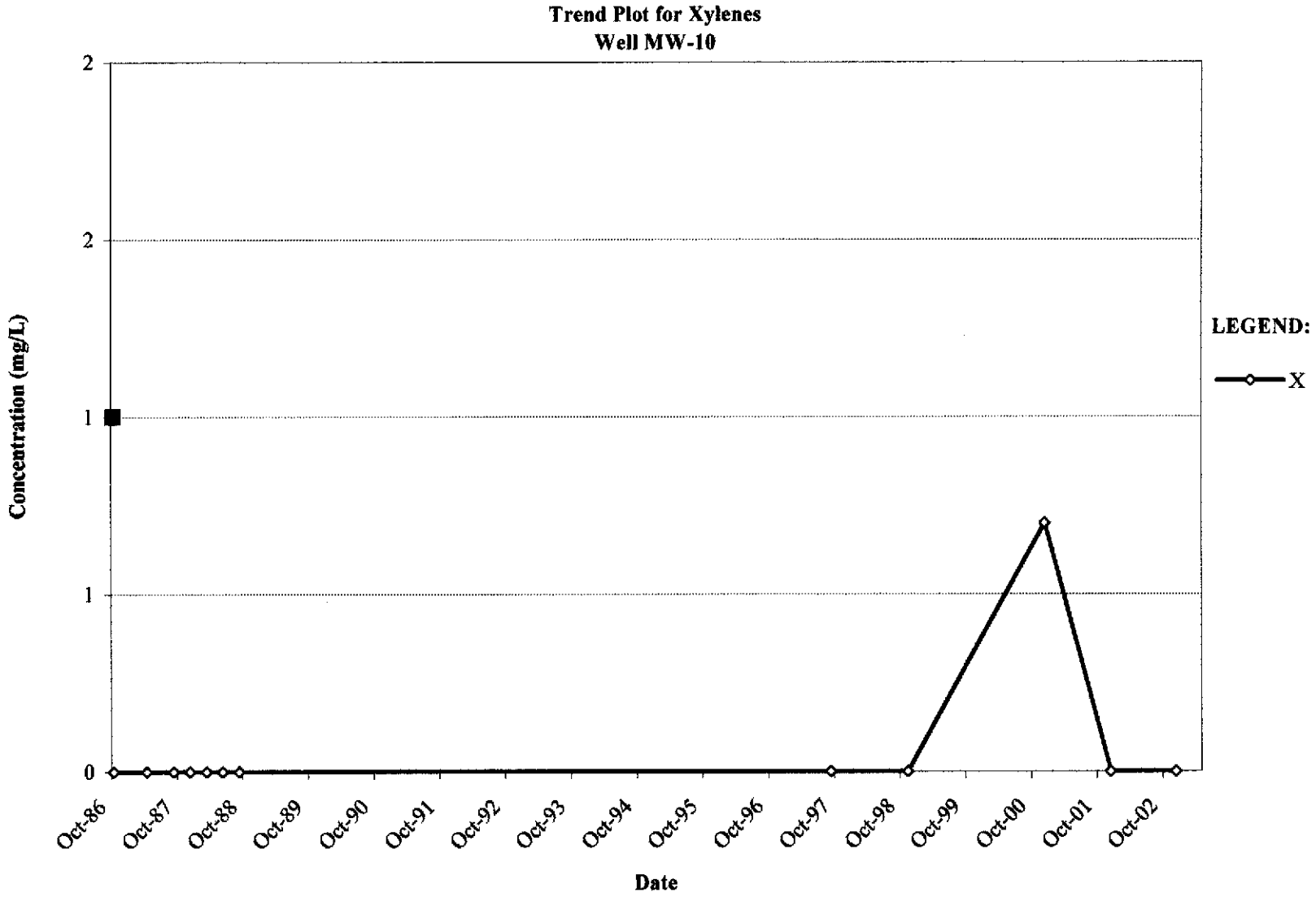
File:Mw-10 Sheet: Toluene

CKG Environmental, Inc.



File:Mw-10 Sheet: Ethylbenzene

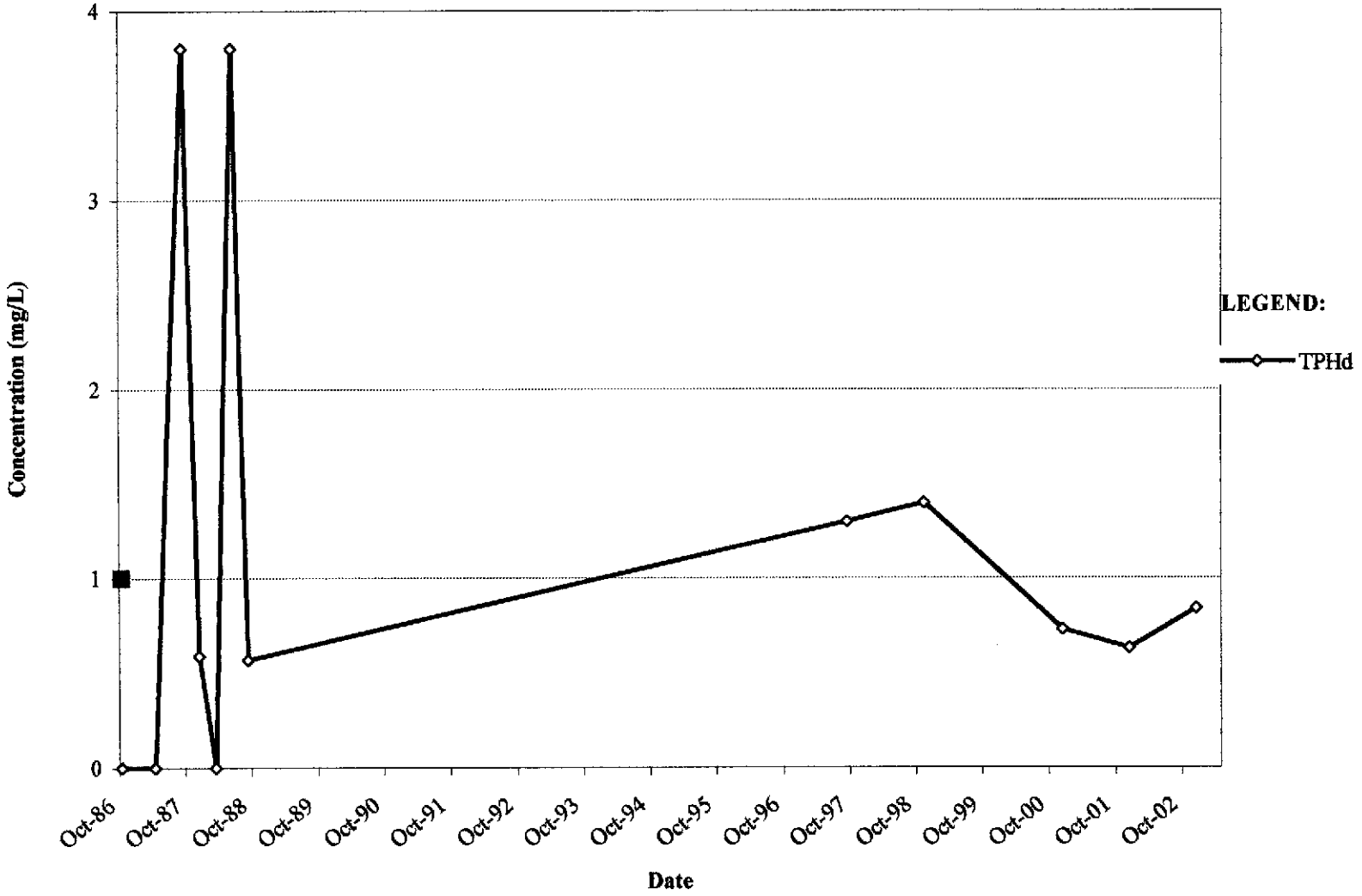
CKG Environmental, Inc.



File:Mw-10 Sheet: Xylenes

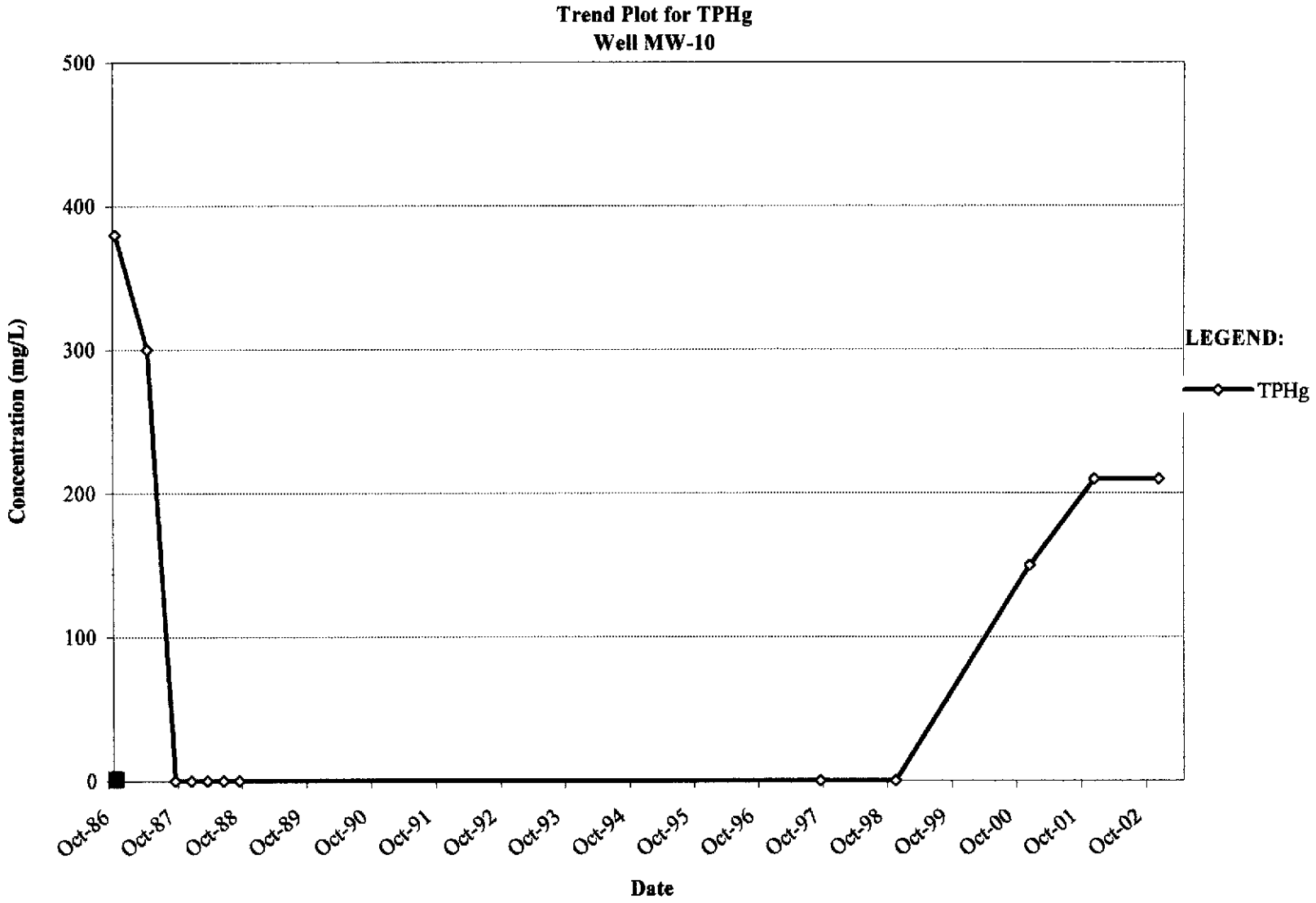
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-10



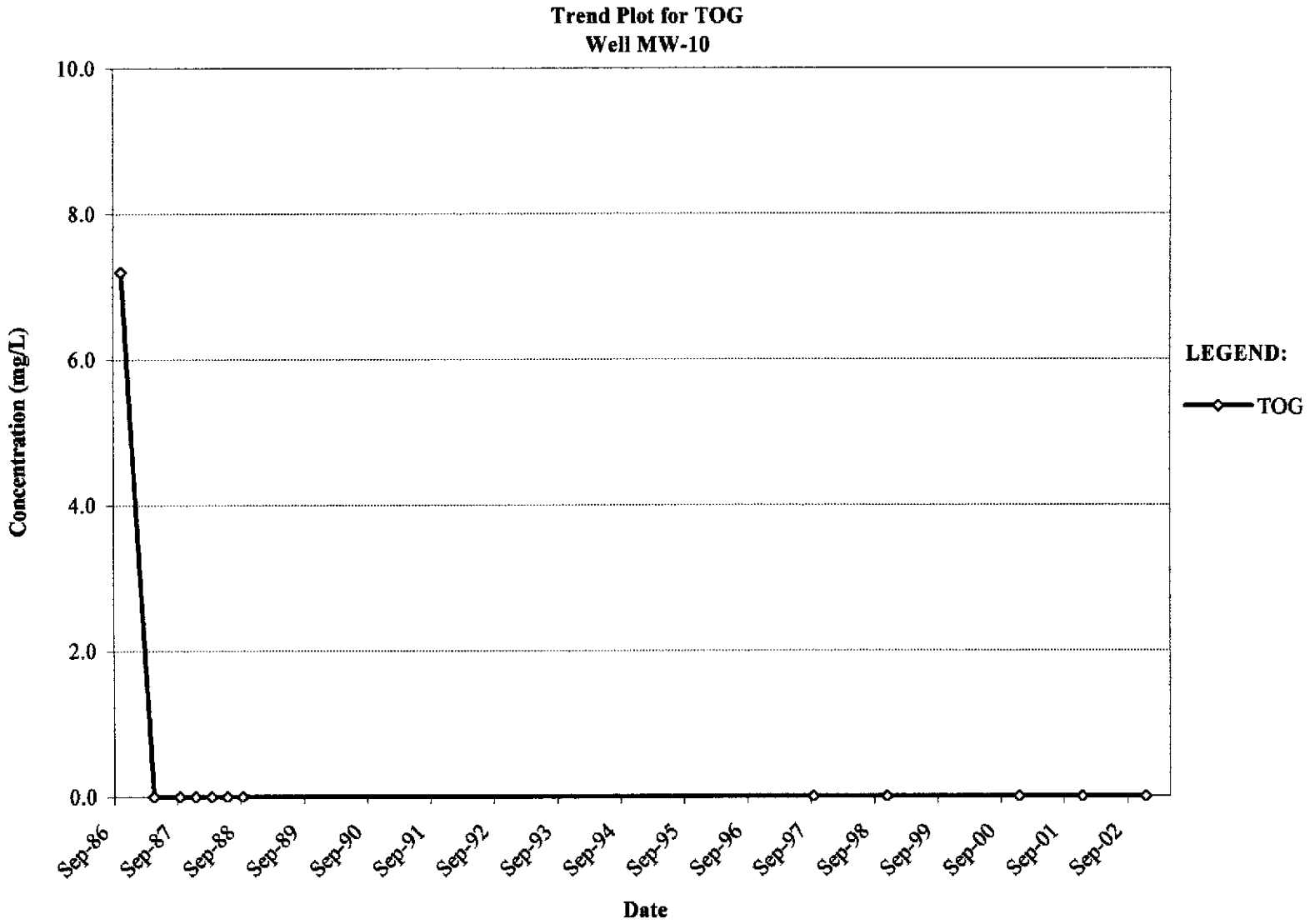
File:Mw-10 Sheet: TPHd

CKG Environmental, Inc.



File:Mw-10 Sheet: TPHg

CKG Environmental, Inc.



File:Mw-10 Sheet: TOG

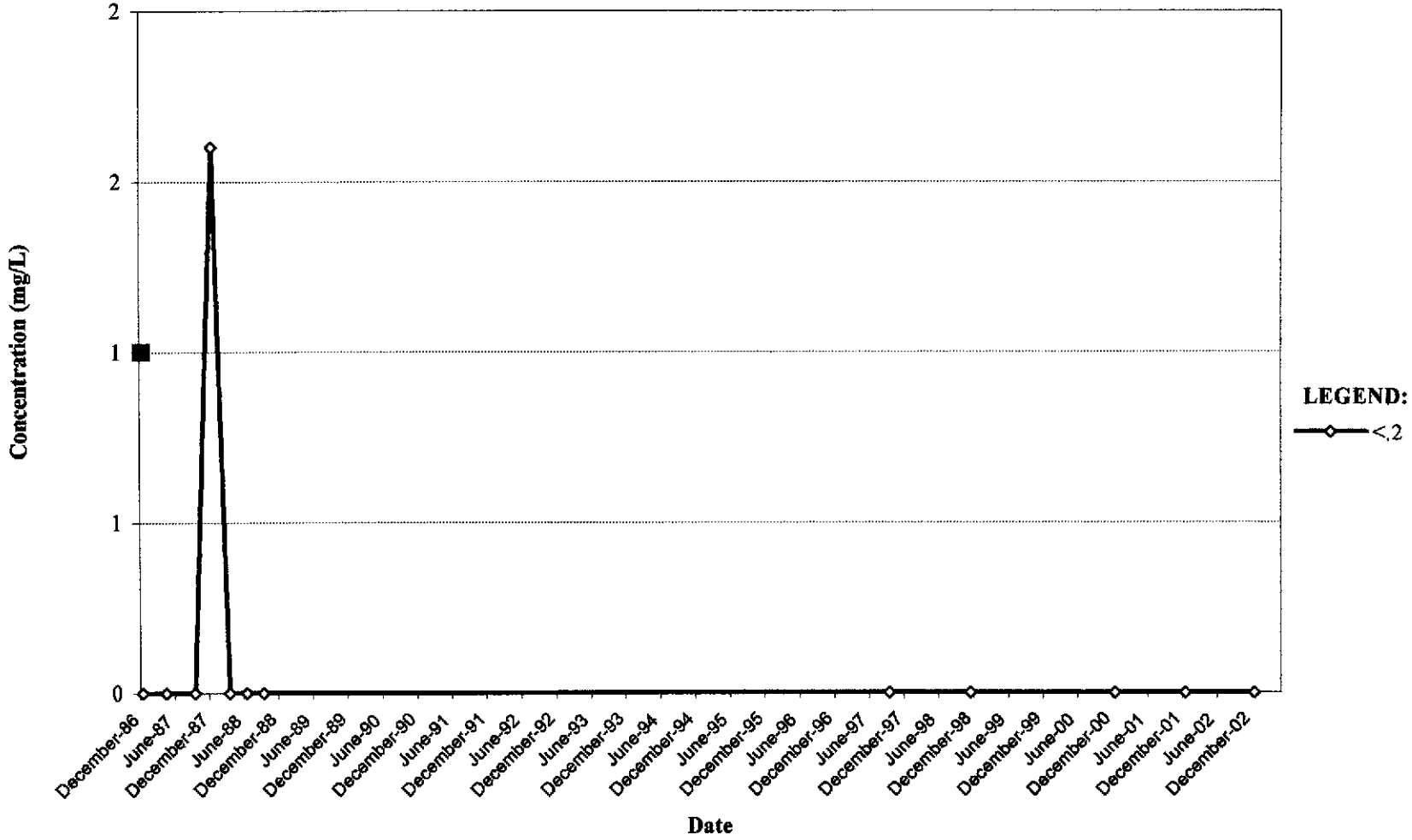
CKG Environmental, Inc.

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

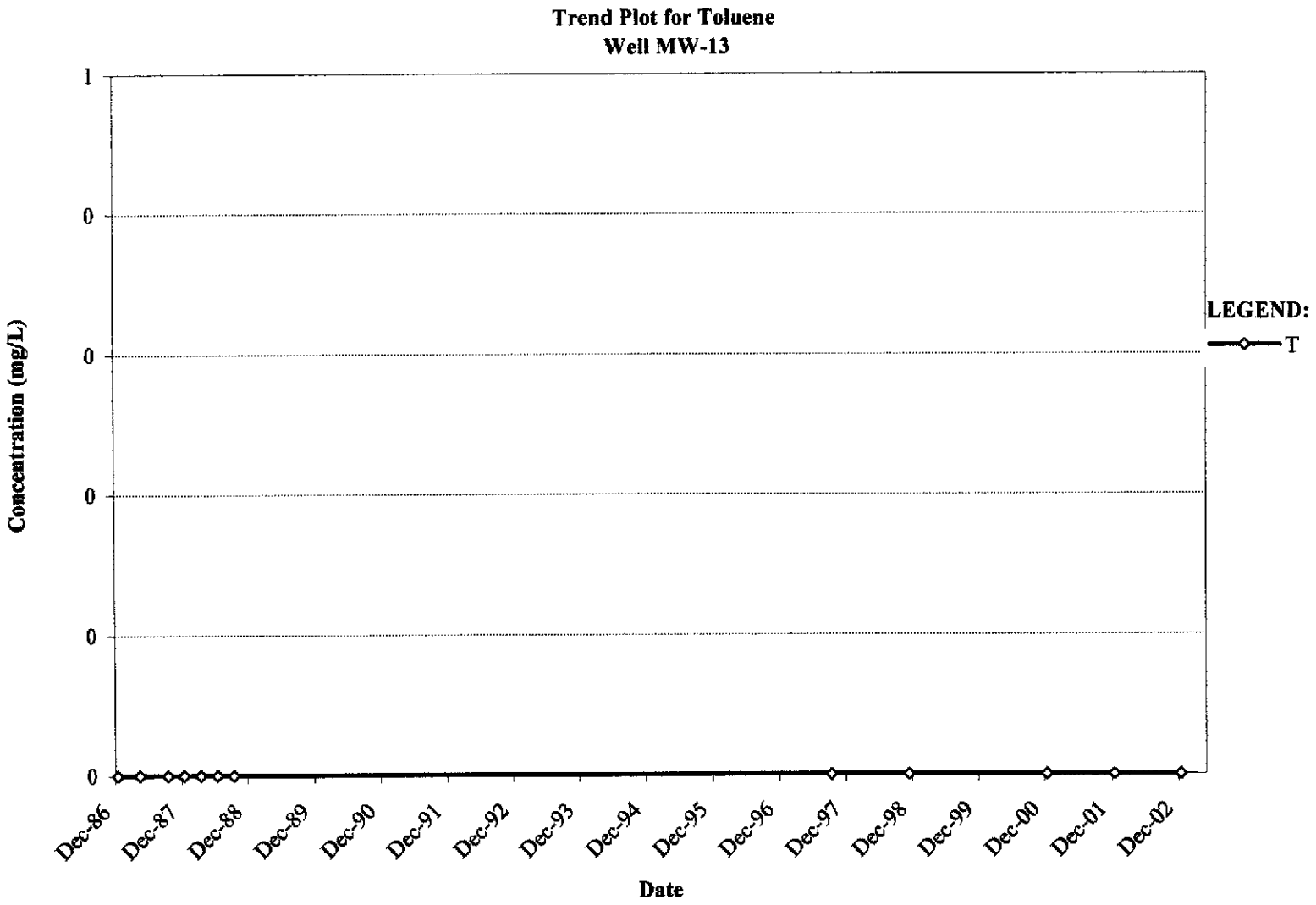
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-13



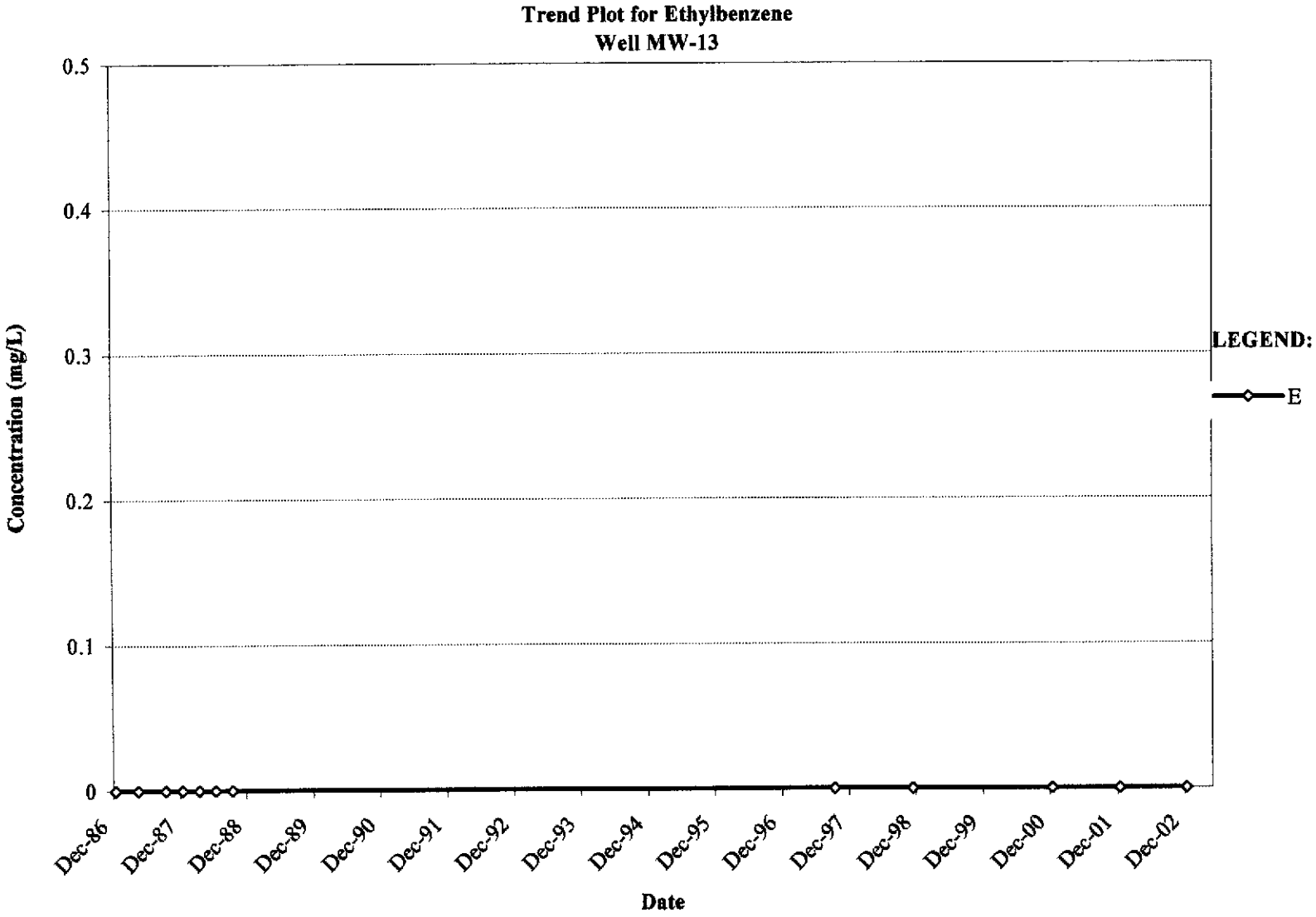
File:Mw-13 Sheet: Benzene

CKG Environmental, Inc.



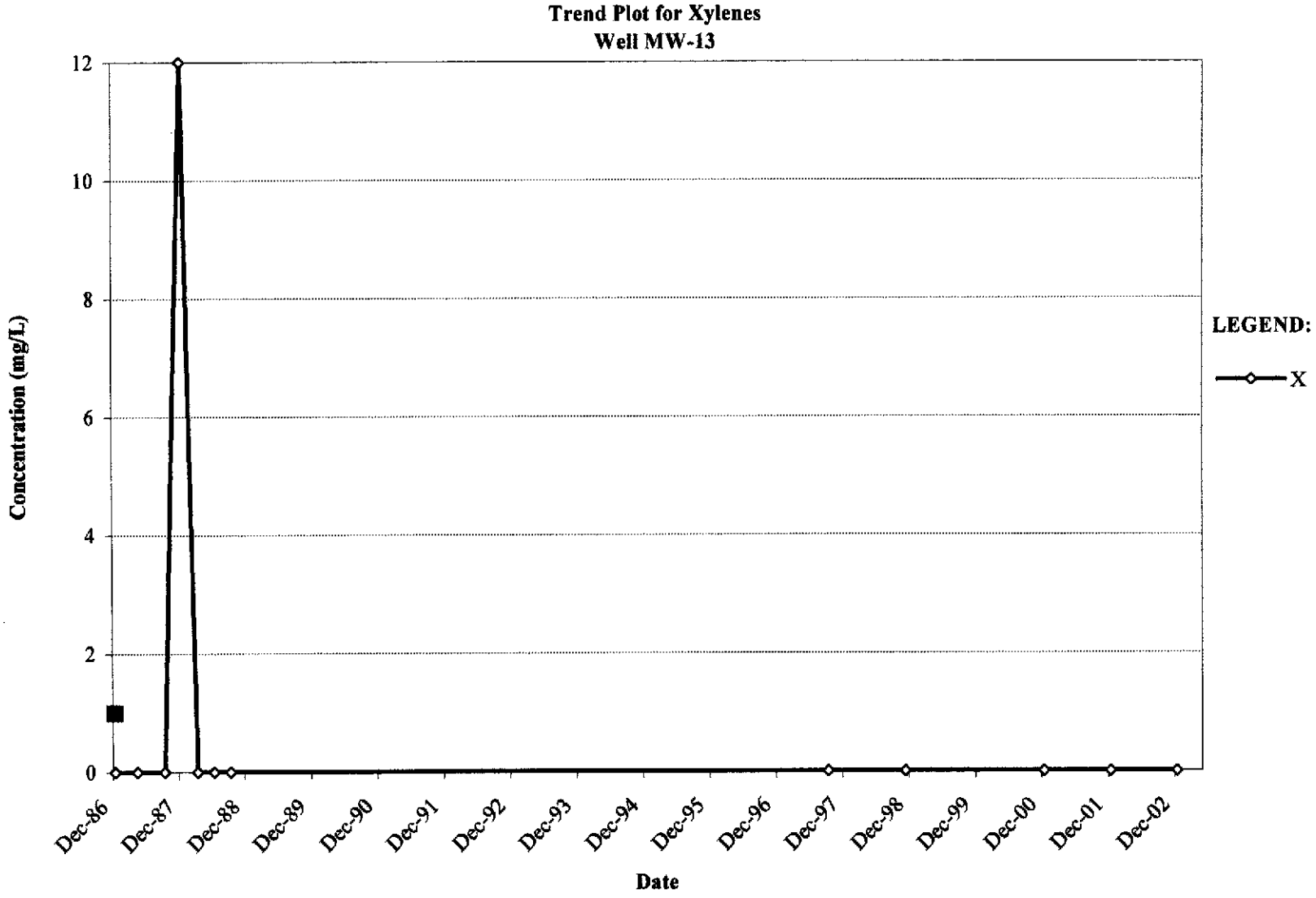
File:Mw-13 Sheet: Toluene

CKG Environmental, Inc.



File:Mw-13 Sheet: Ethylbenzene

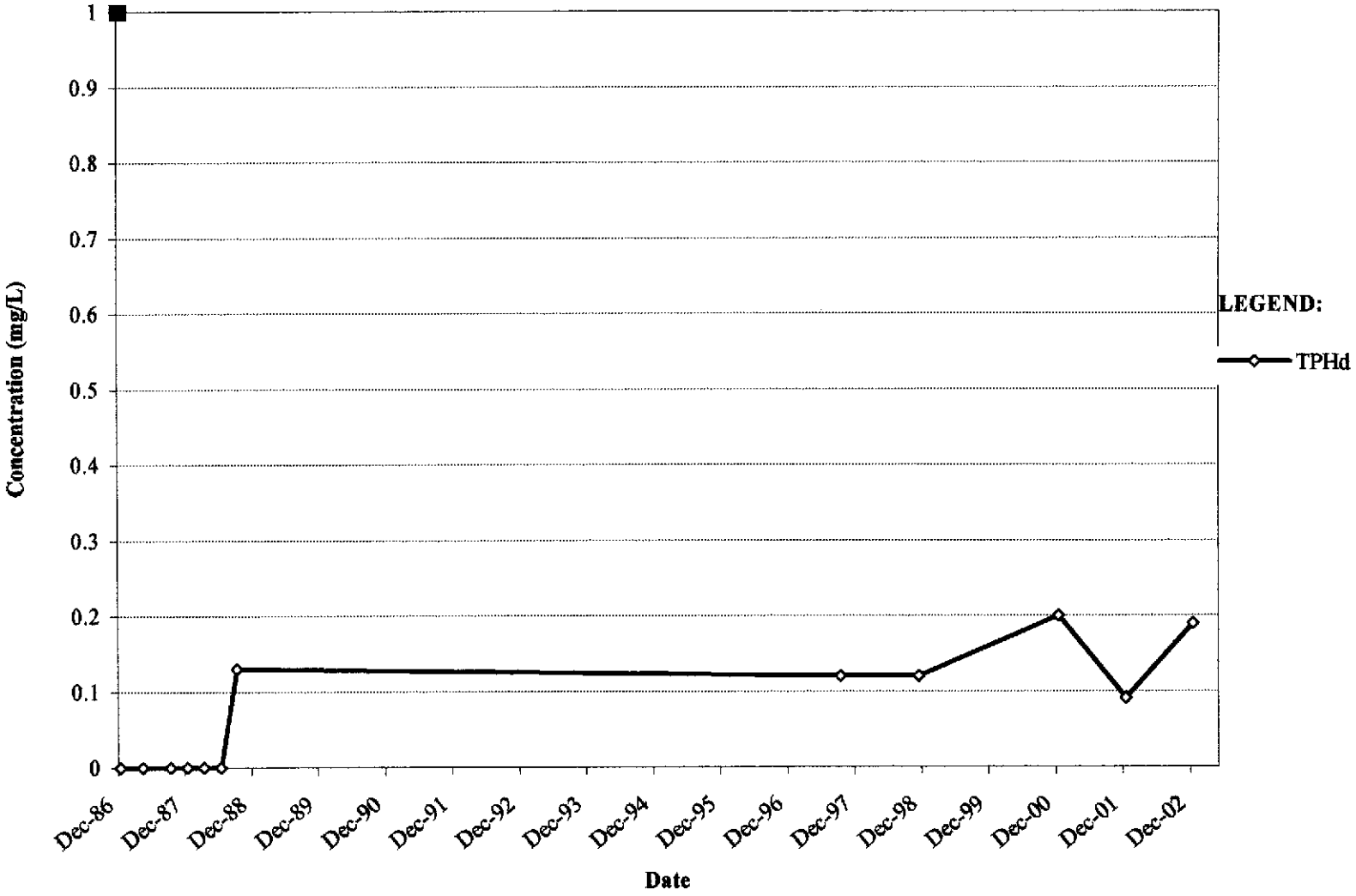
CKG Environmental, Inc.



File:Mw-13 Sheet: Xylenes

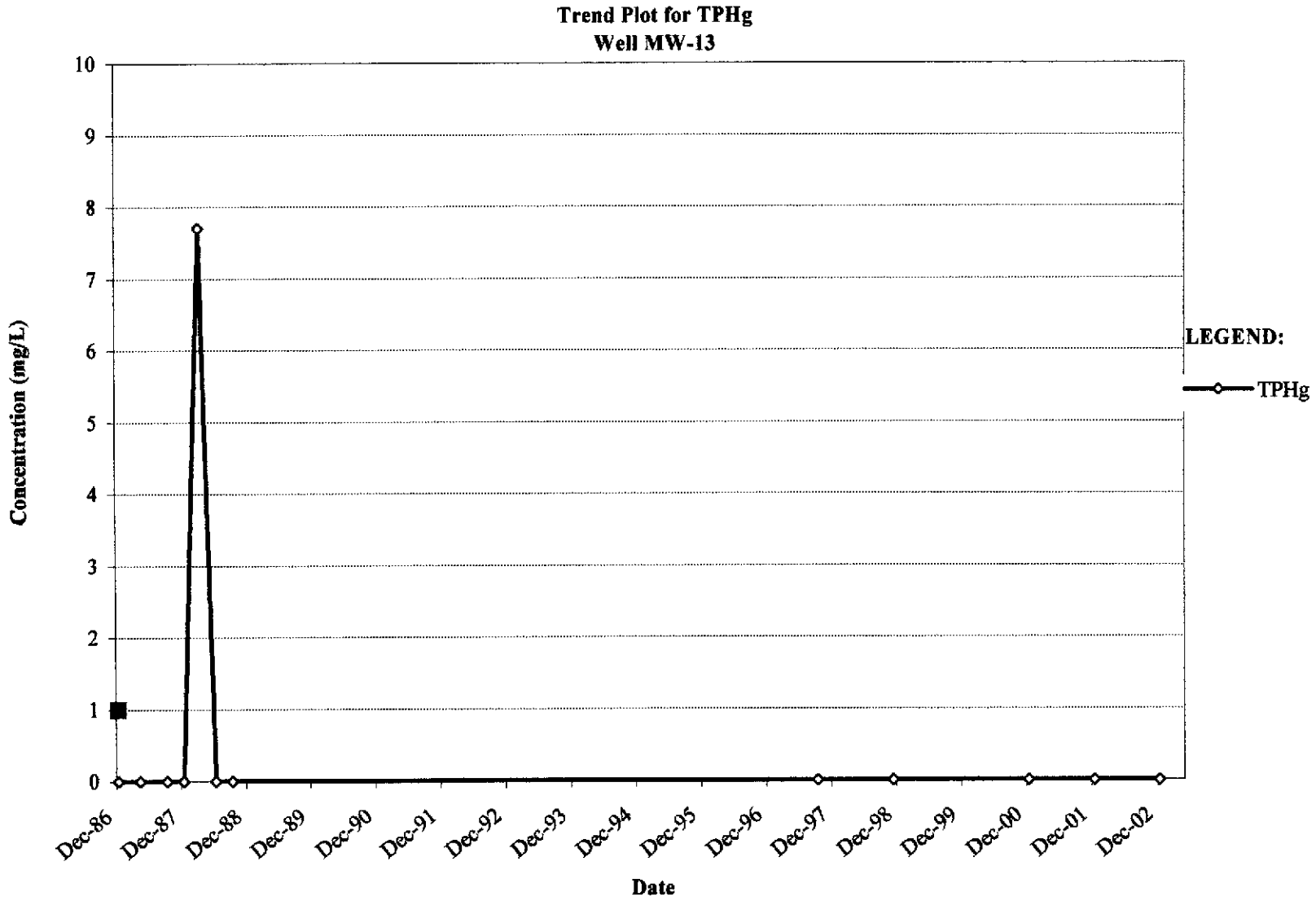
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-13



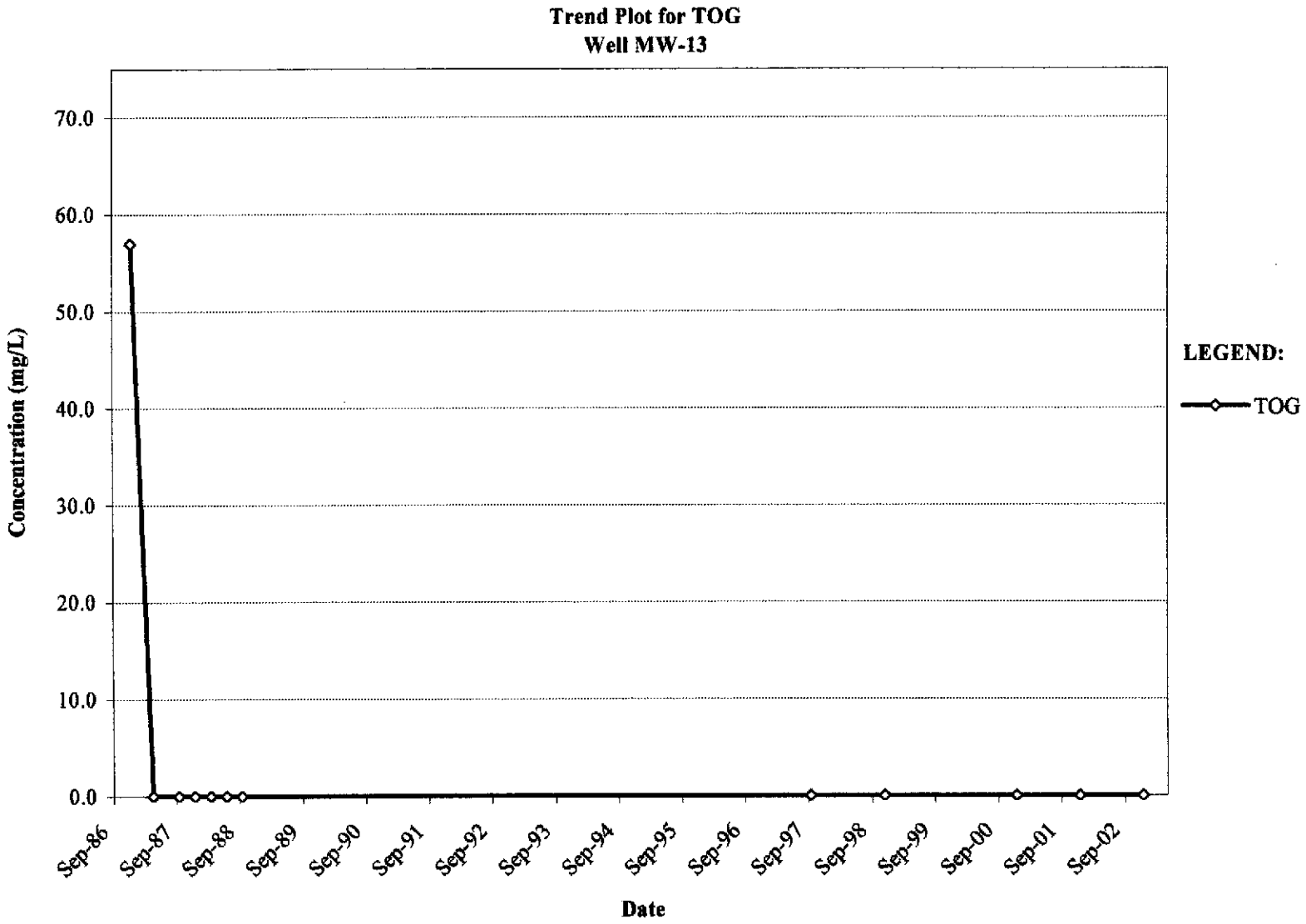
File:Mw-13 Sheet: TPHd

CKG Environmental, Inc.



File:Mw-13 Sheet: TPHg

CKG Environmental, Inc.



File:Mw-13 Sheet: TOG

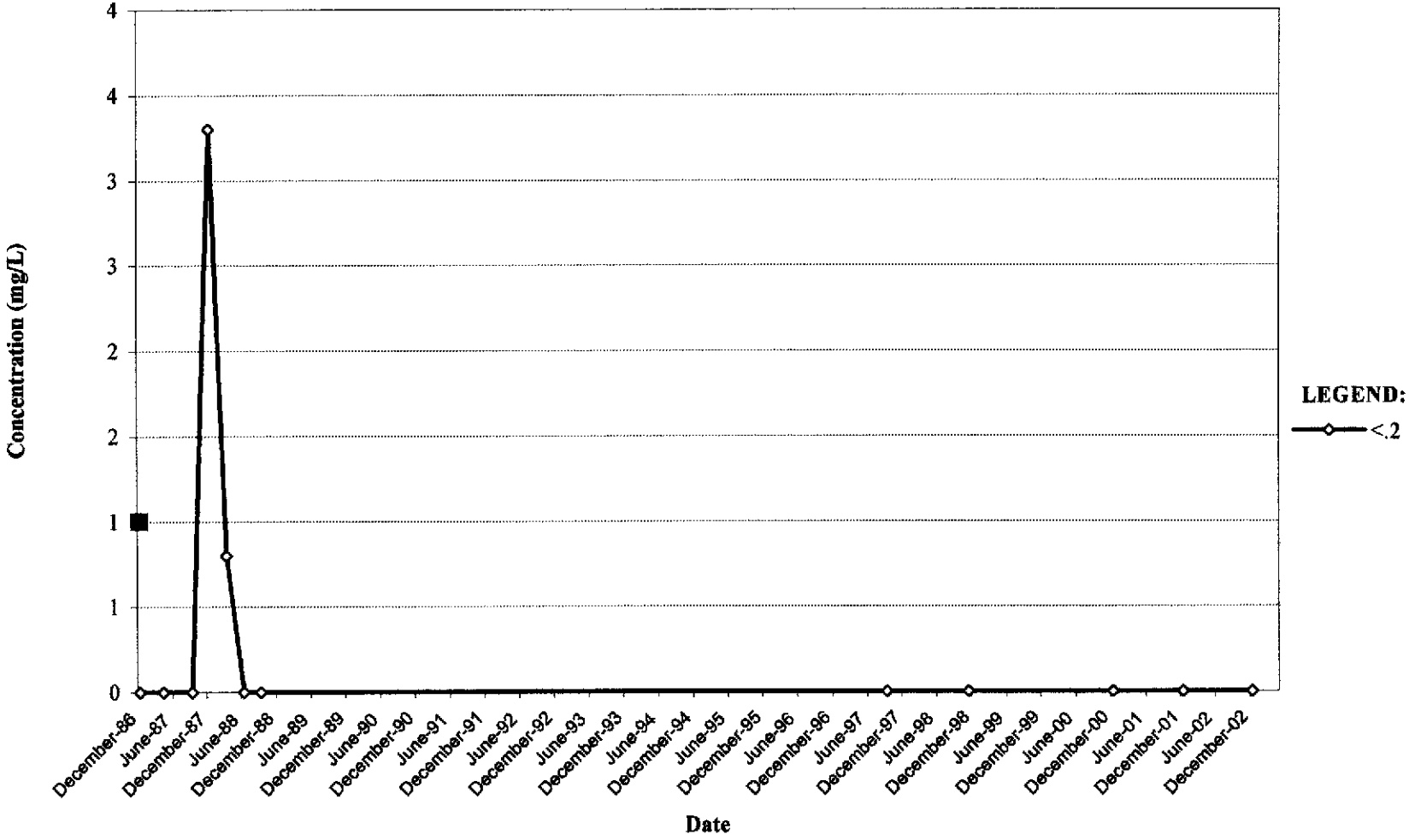
CKG Environmental, Inc.

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"

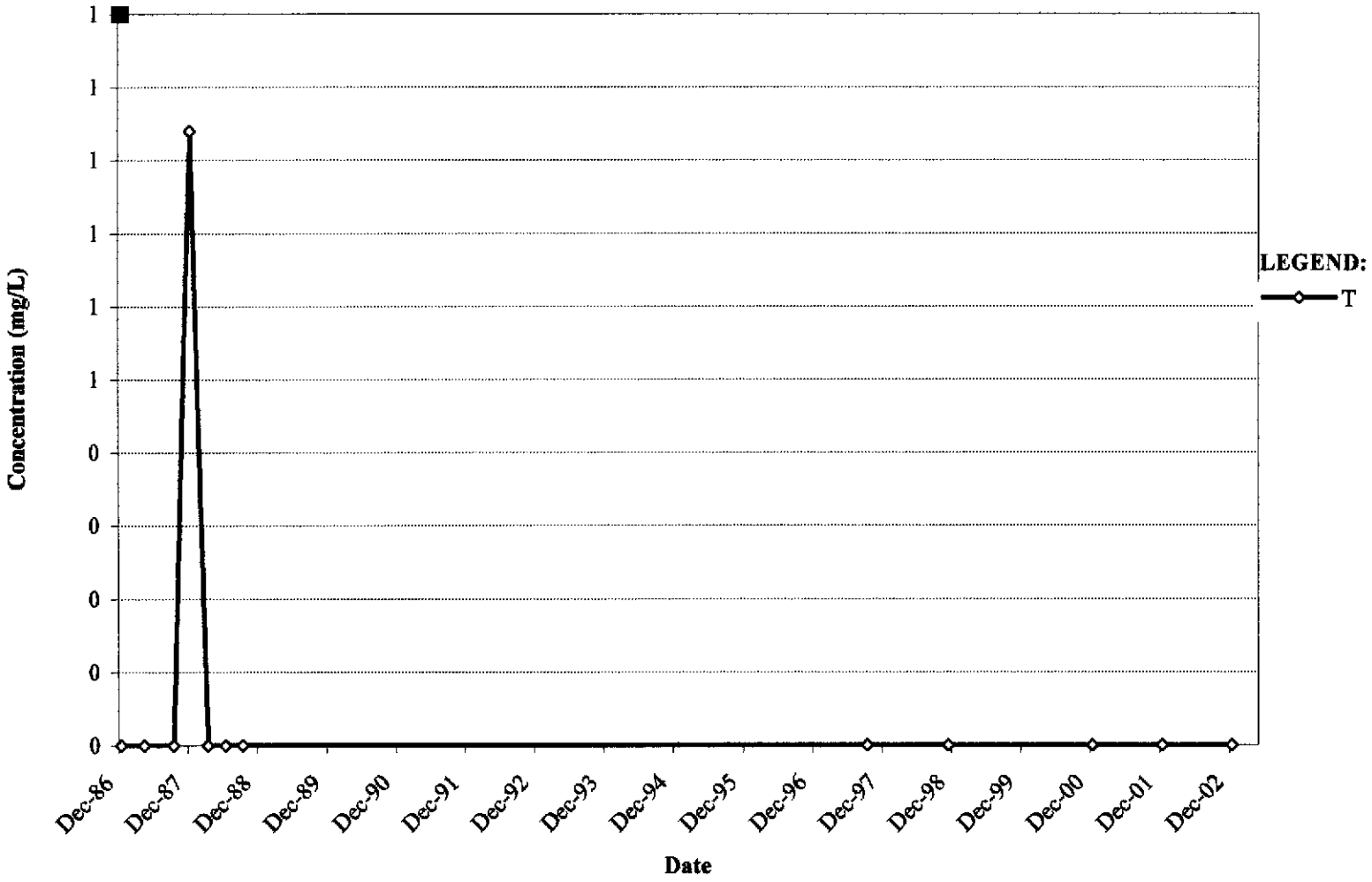
Trend Plot for Benzene
Well MW-15



File:Mw-15 Sheet: Benzene

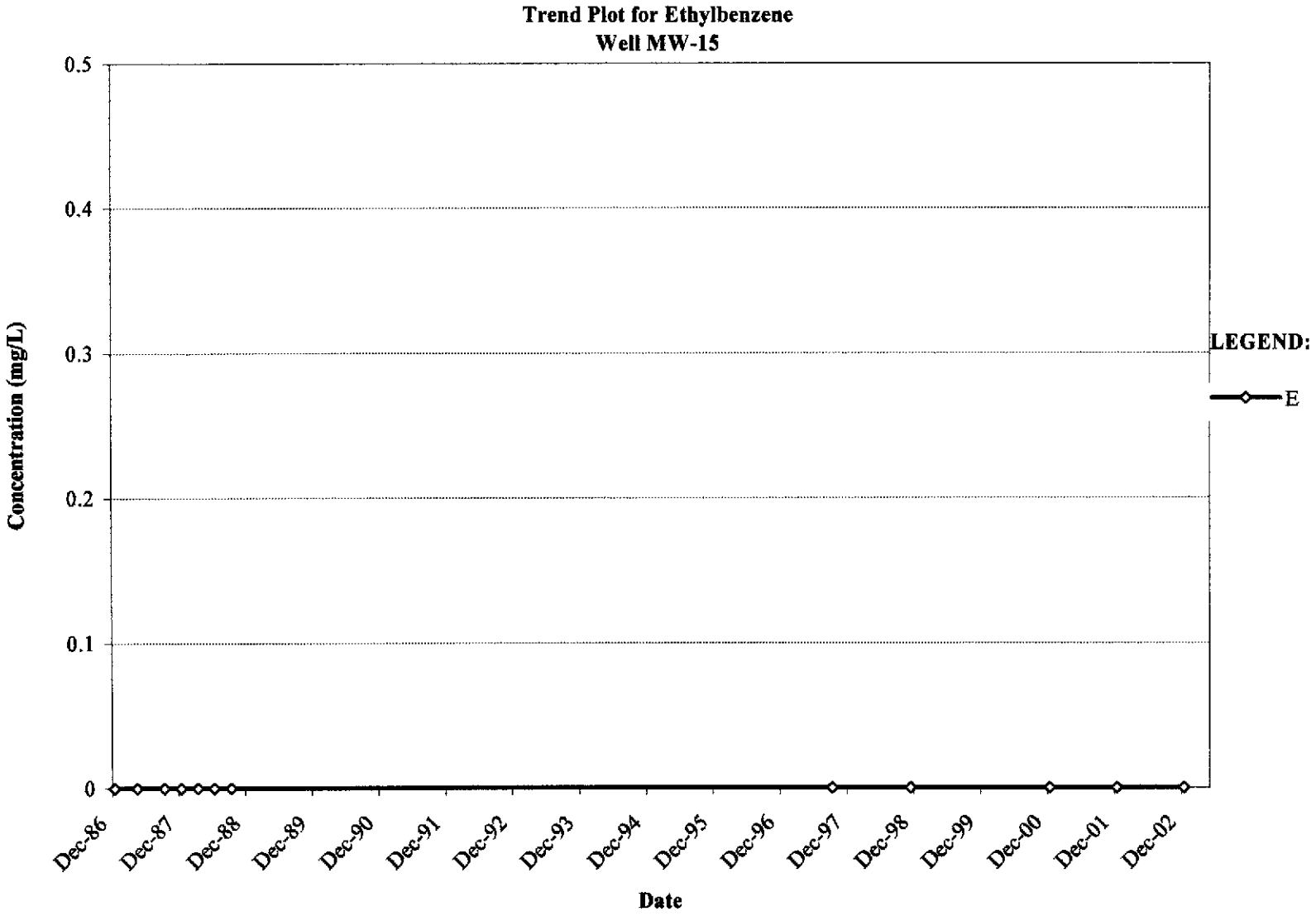
CKG Environmental, Inc.

Trend Plot for Toluene
Well MW-15



File:Mw-15 Sheet: Toluene

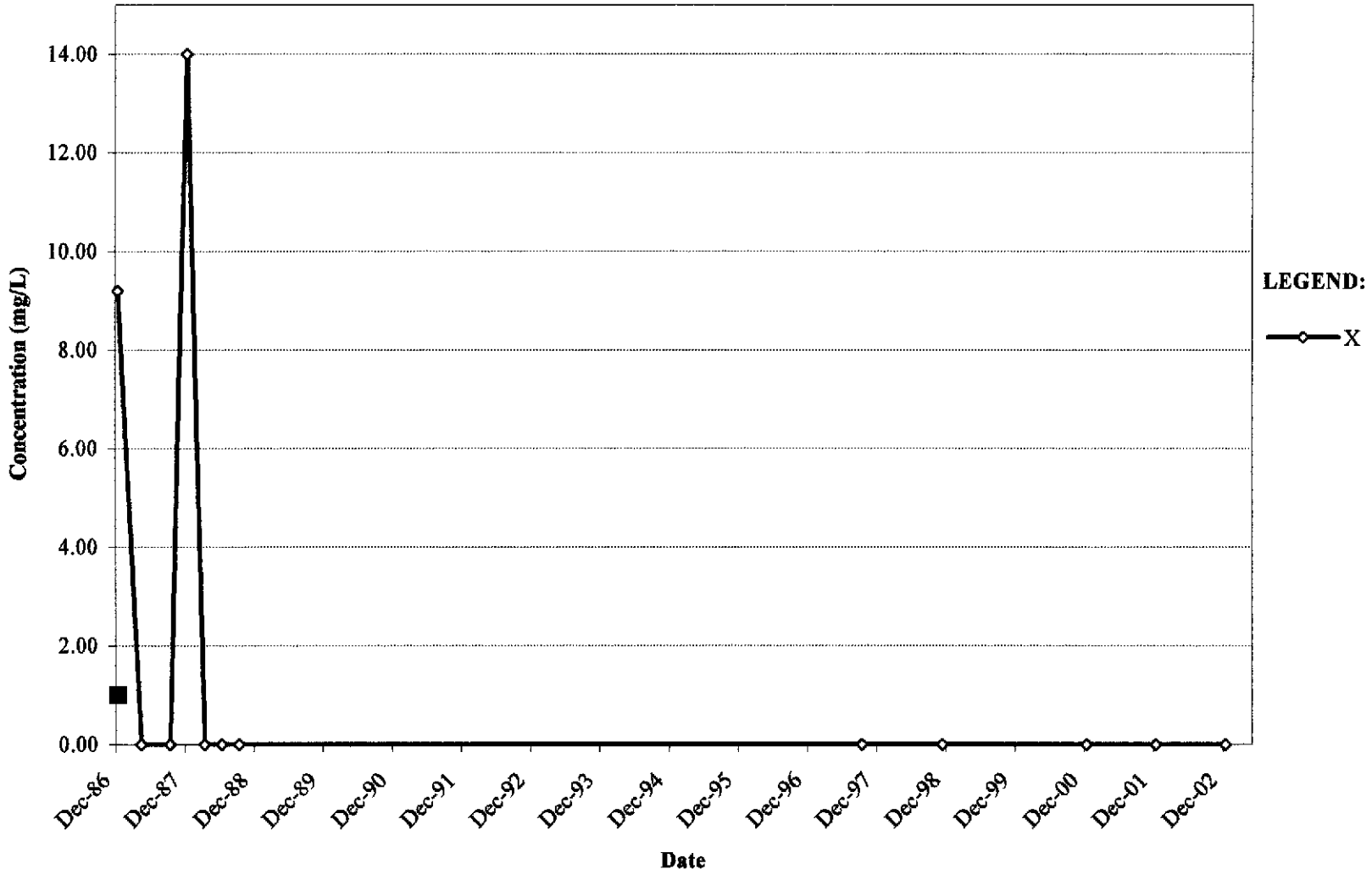
CKG Environmental, Inc.



File:Mw-15 Sheet: Ethylbenzene

CKG Environmental, Inc.

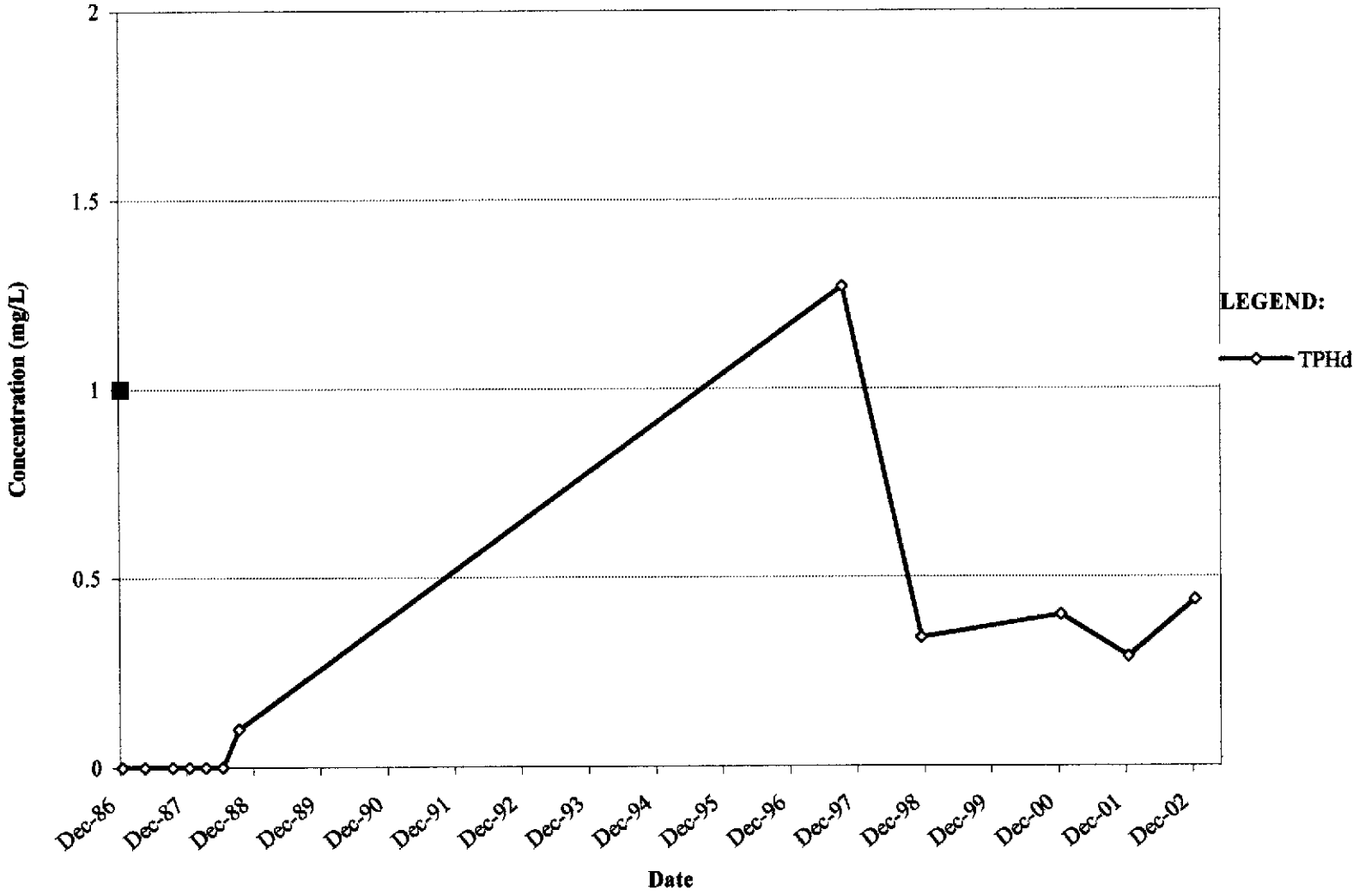
Trend Plot for Xylenes
Well MW-15



File:Mw-15 Sheet: Xylenes

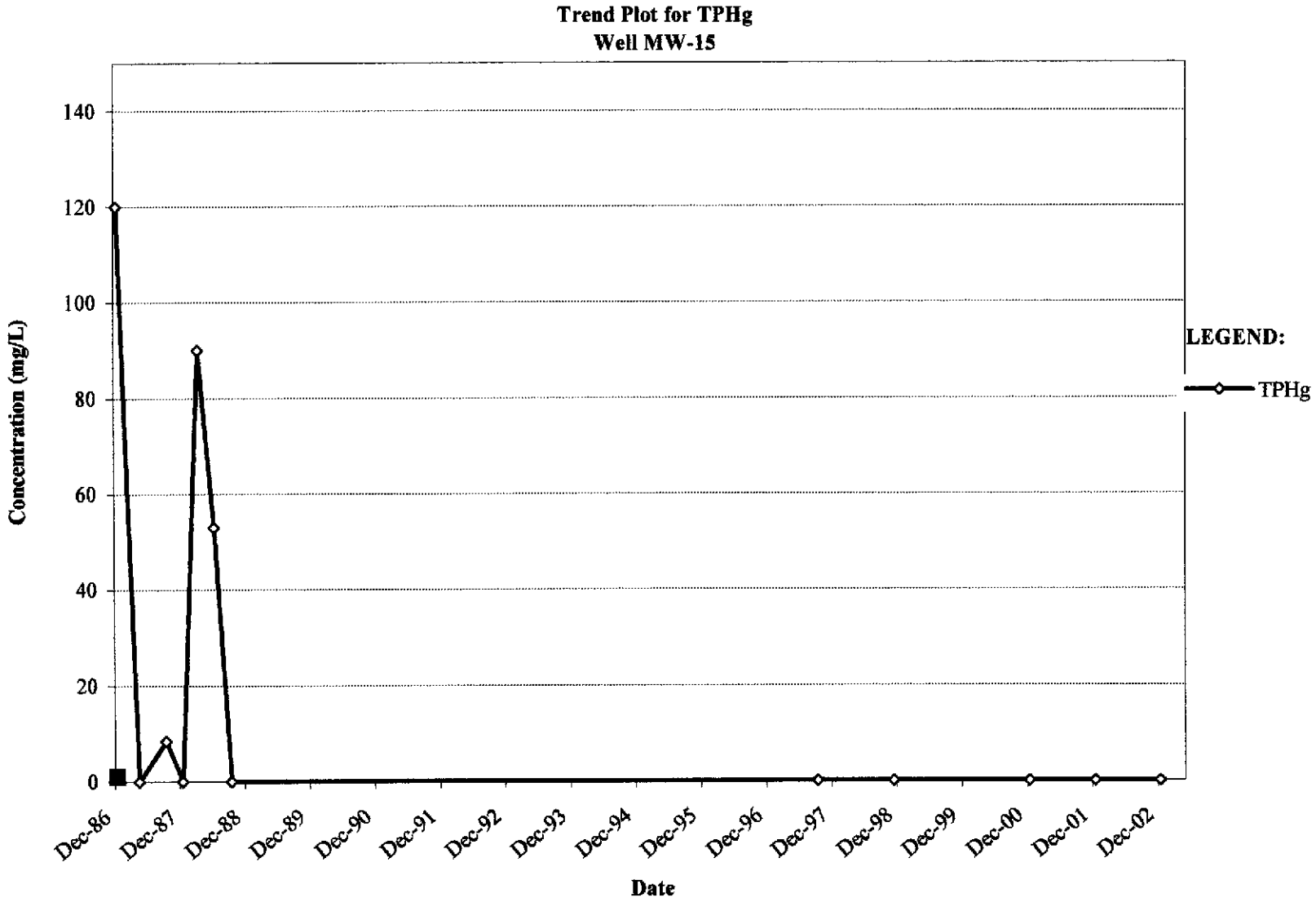
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-15



File:Mw-15 Sheet: TPHd

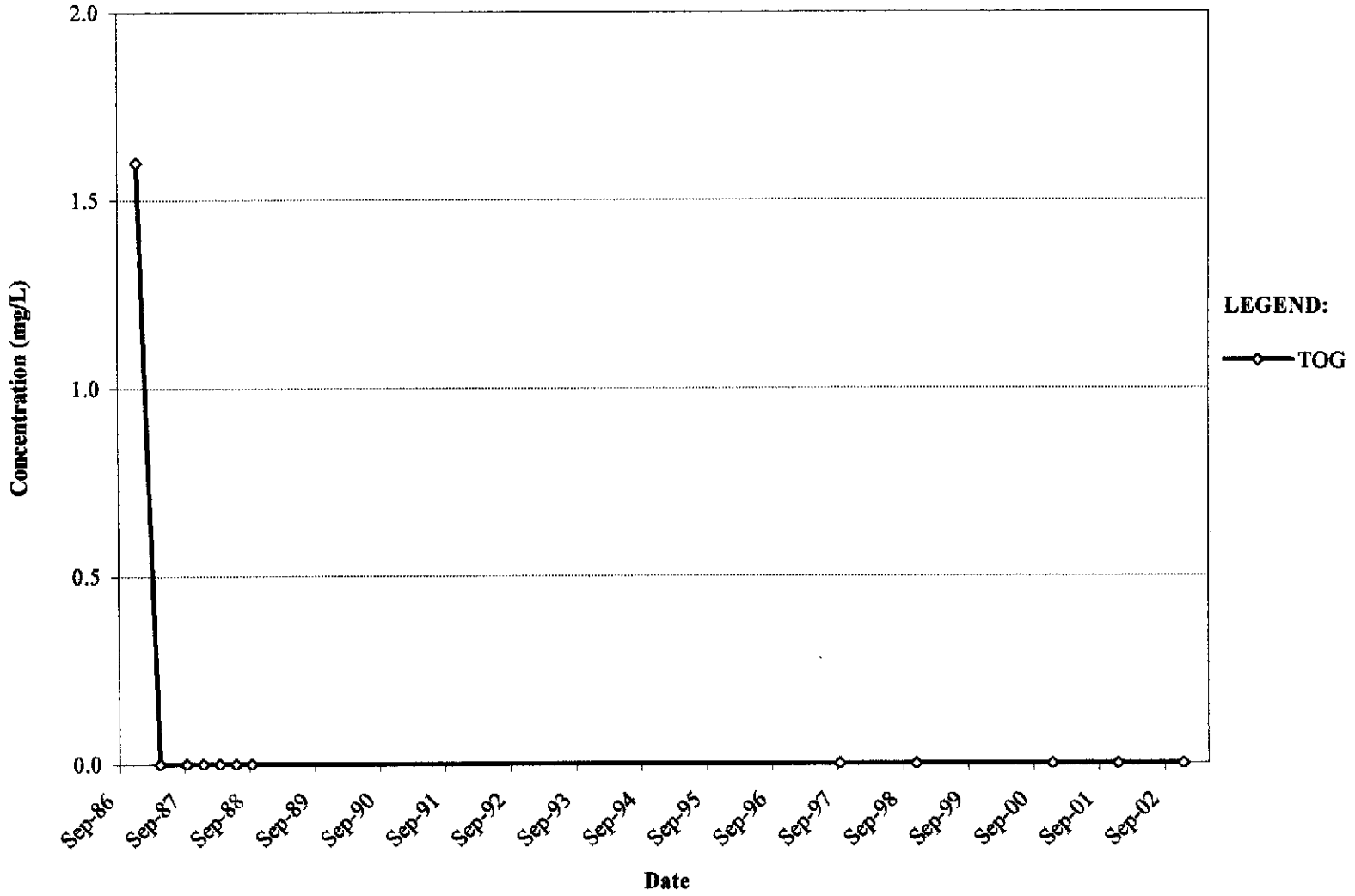
CKG Environmental, Inc.



File:Mw-15 Sheet: TPHg

CKG Environmental, Inc.

Trend Plot for TOG
Well MW-15



File:Mw-15 Sheet: TOG

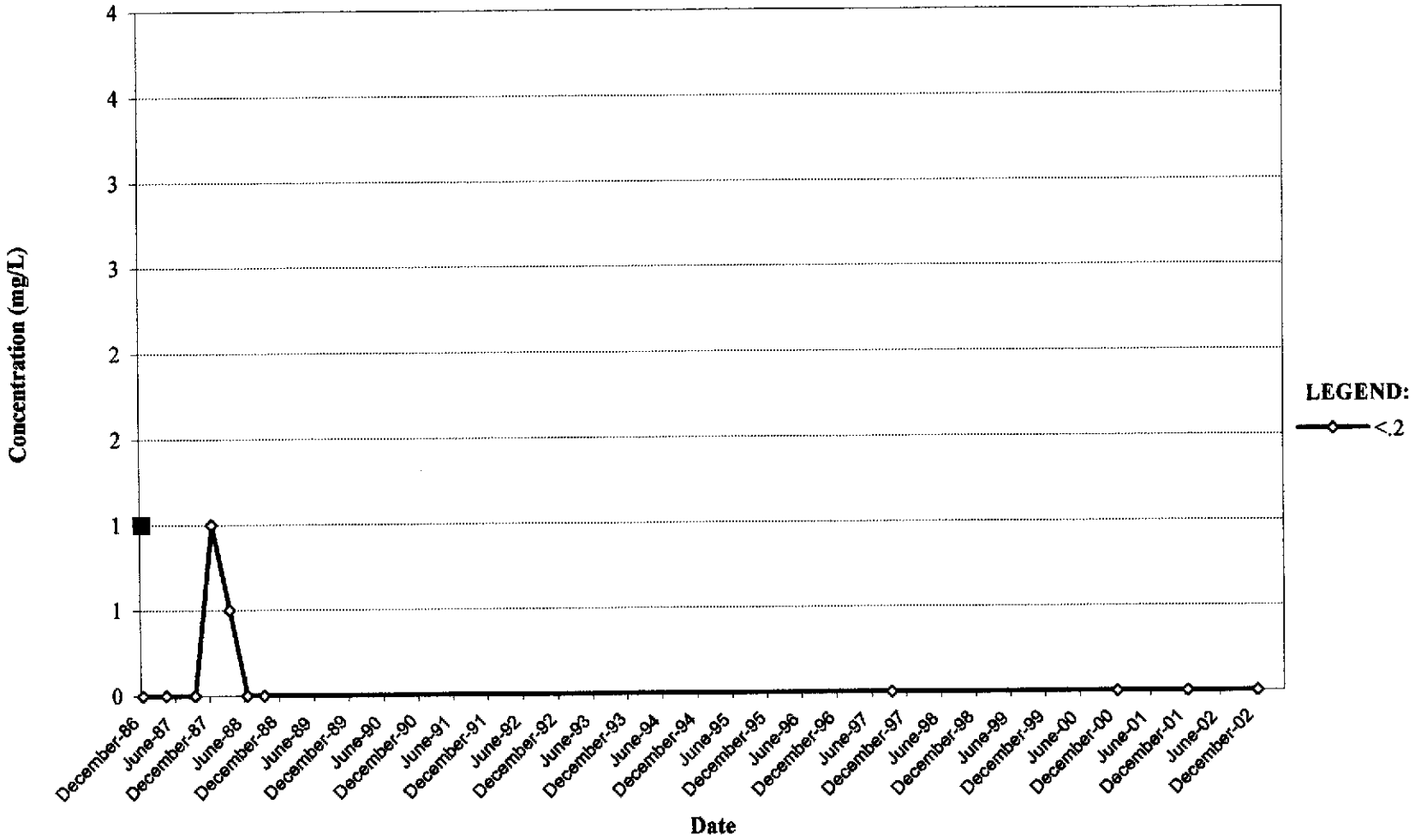
CKG Environmental, Inc.

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"

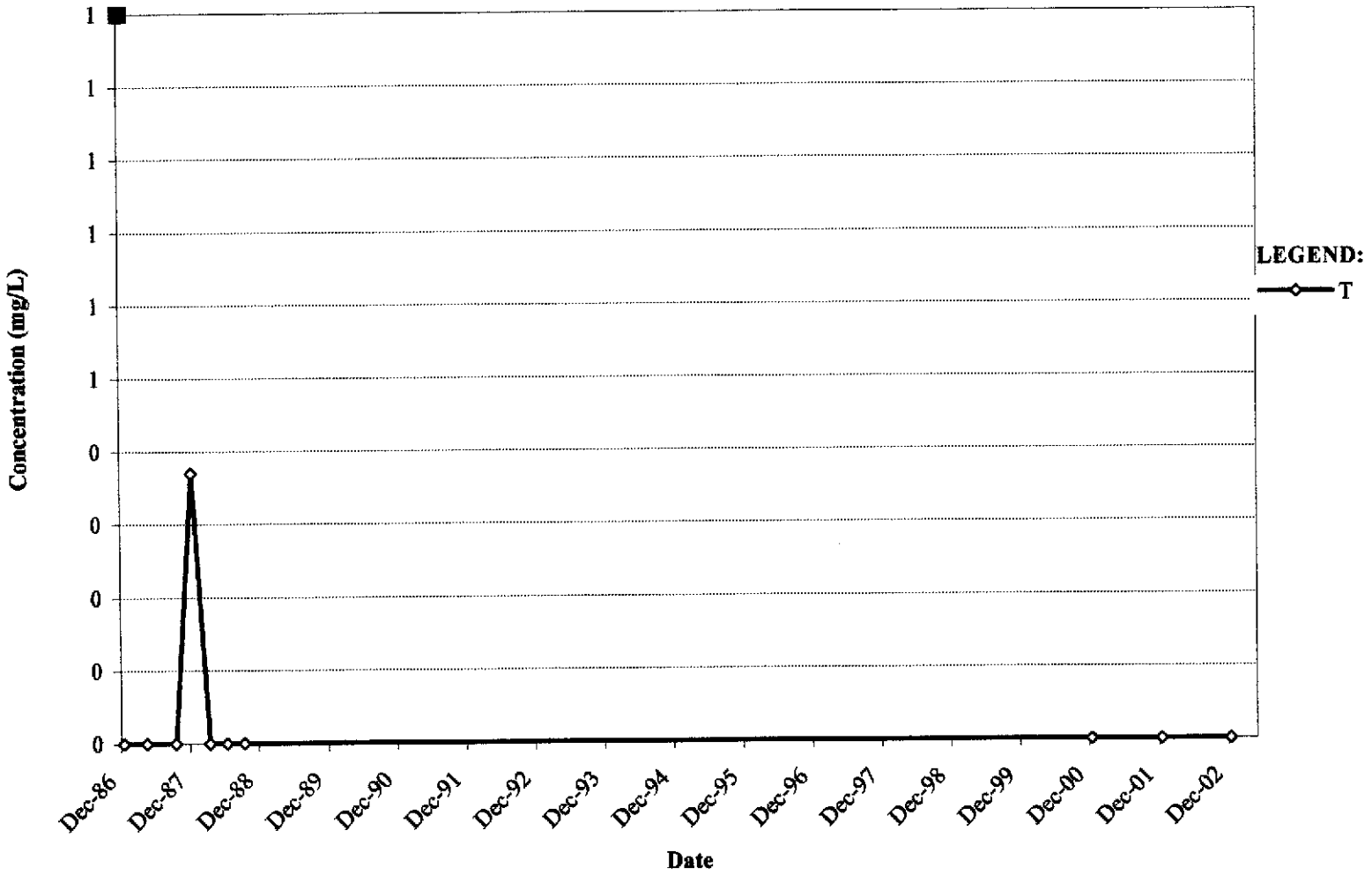
Trend Plot for Benzene
Well MW-16



File:Mw-16 Sheet: Benzene

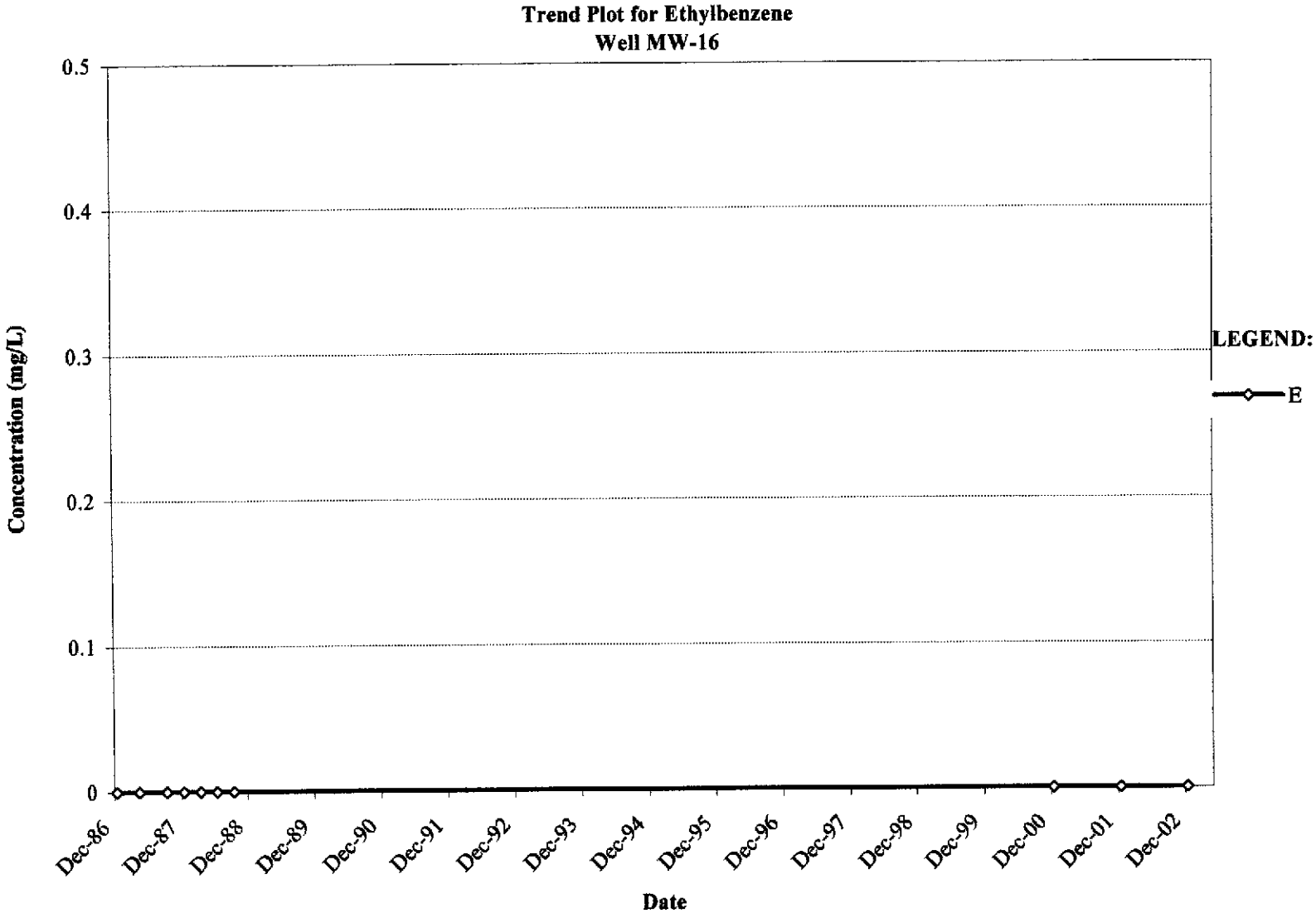
CKG Environmental, Inc.

Trend Plot for Toluene
Well MW-16



File:Mw-16 Sheet: Toluene

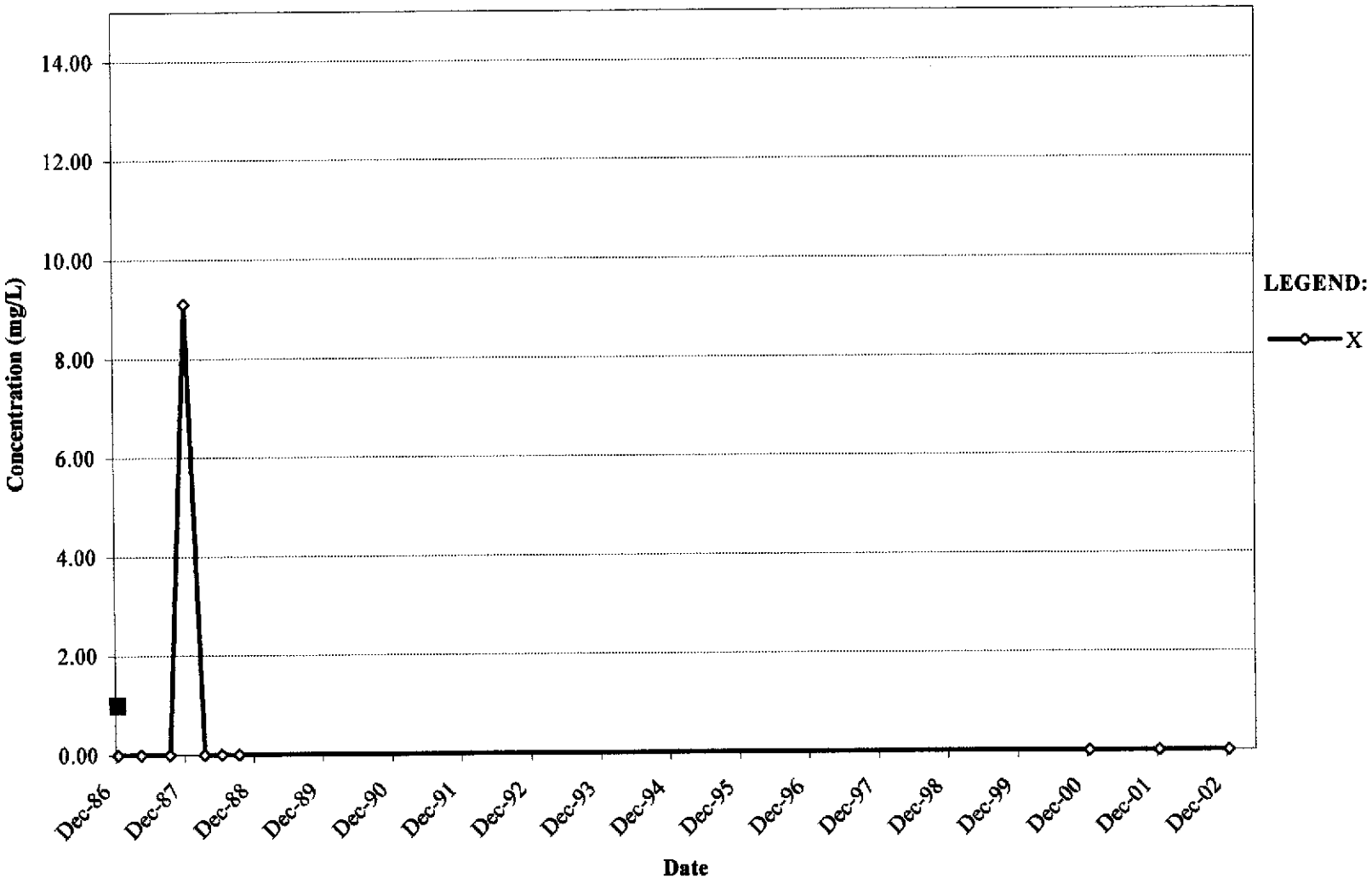
CKG Environmental, Inc.



File:Mw-16 Sheet: Ethylbenzene

CKG Environmental, Inc.

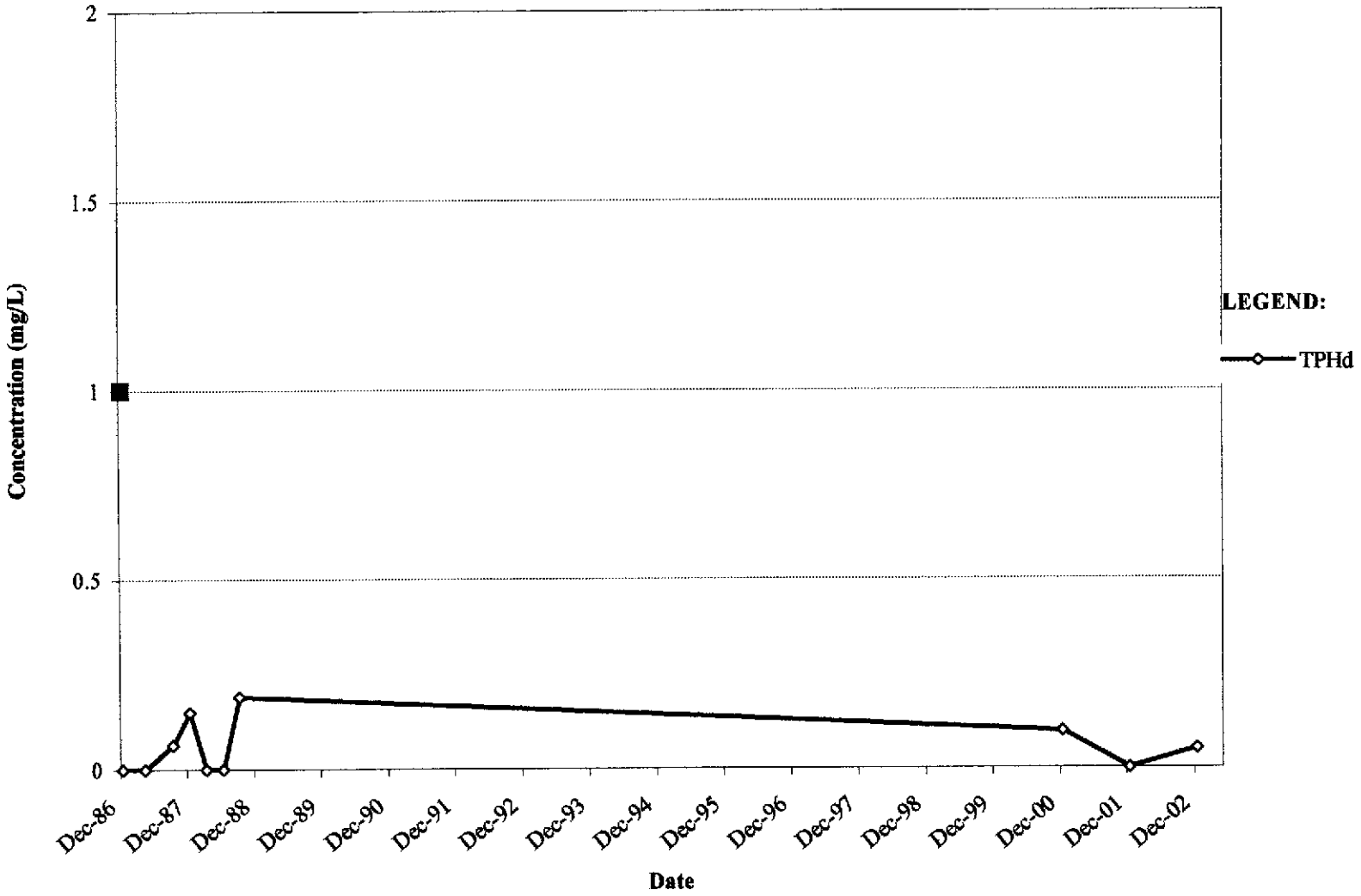
Trend Plot for Xylenes
Well MW-16



File:Mw-16 Sheet: Xylenes

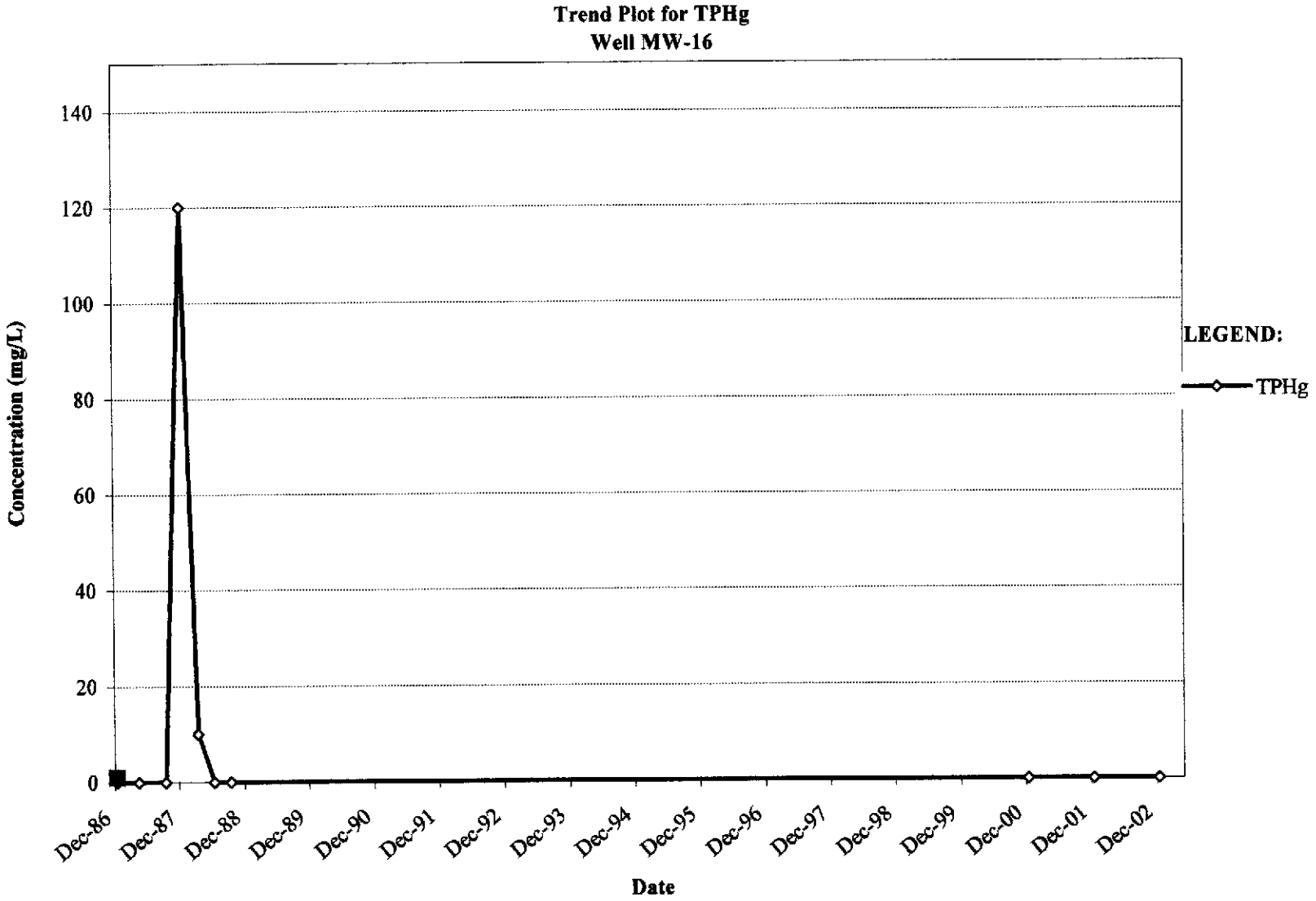
CKG Environmental, Inc.

Trend Plot for TPHd
Well MW-16



File:Mw-16 Sheet: TPHd

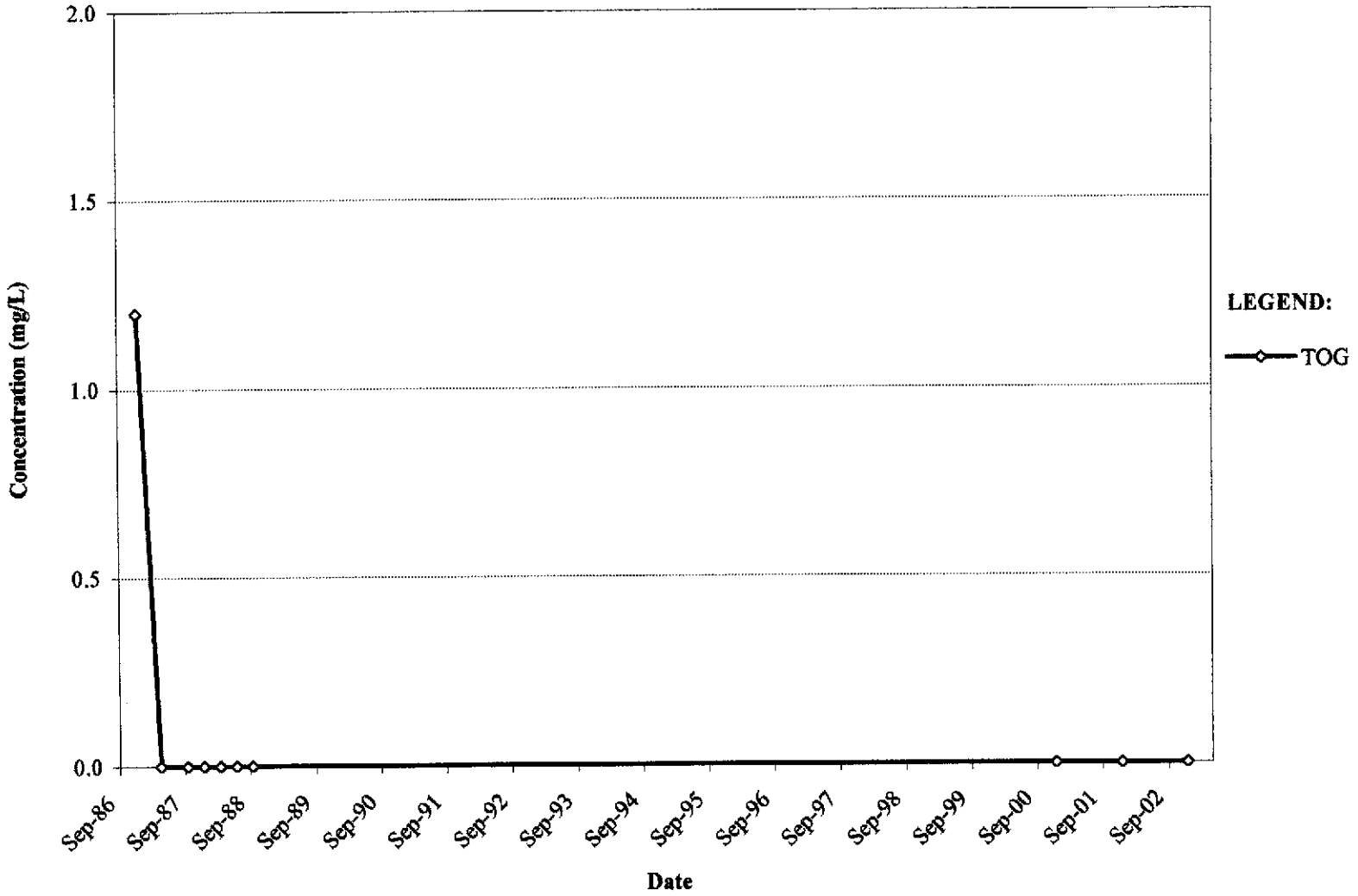
CKG Environmental, Inc.



File:Mw-16 Sheet: TPHg

CKG Environmental, Inc.

Trend Plot for TOG
Well MW-16



File:Mw-16 Sheet: TOG

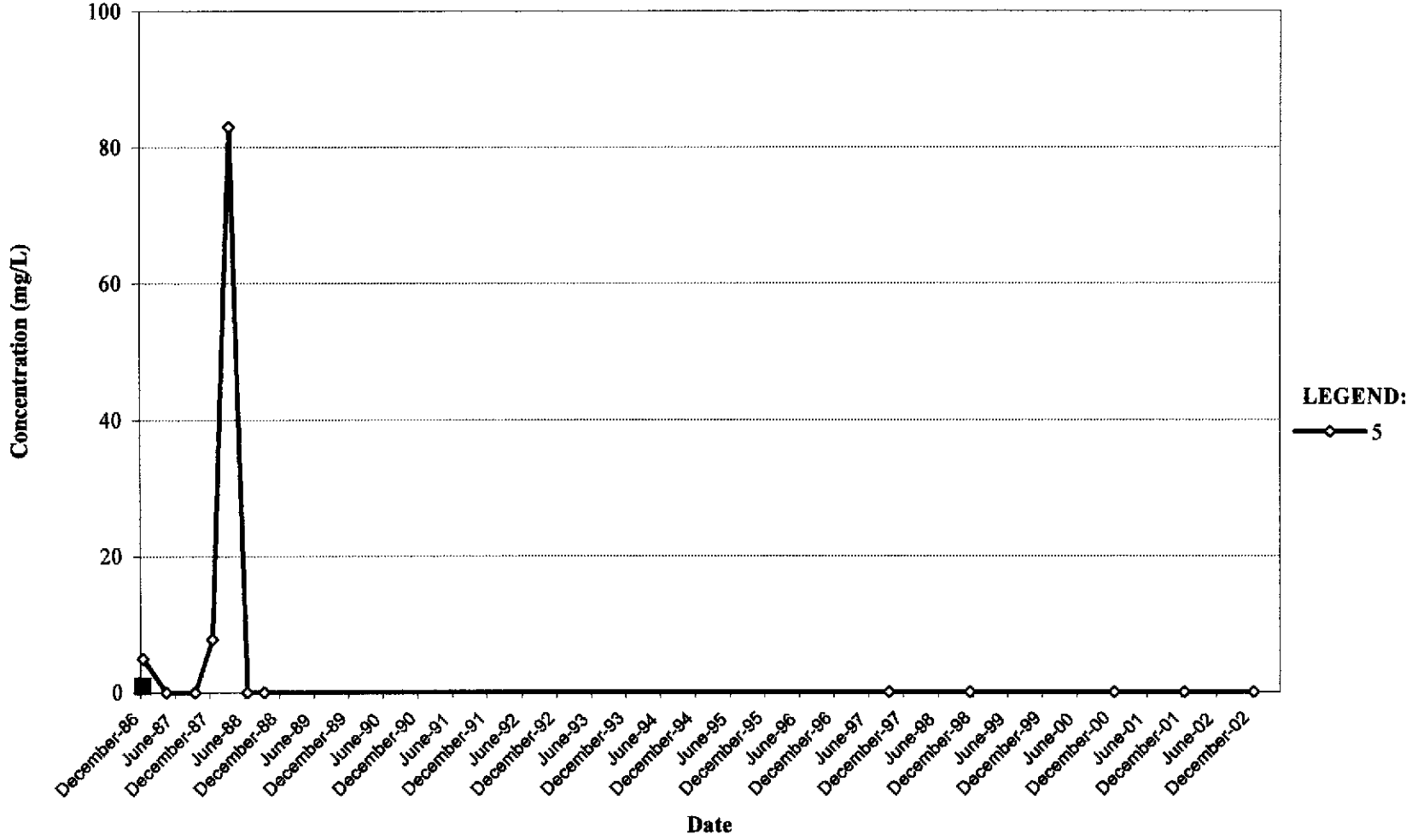
CKG Environmental, Inc.

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

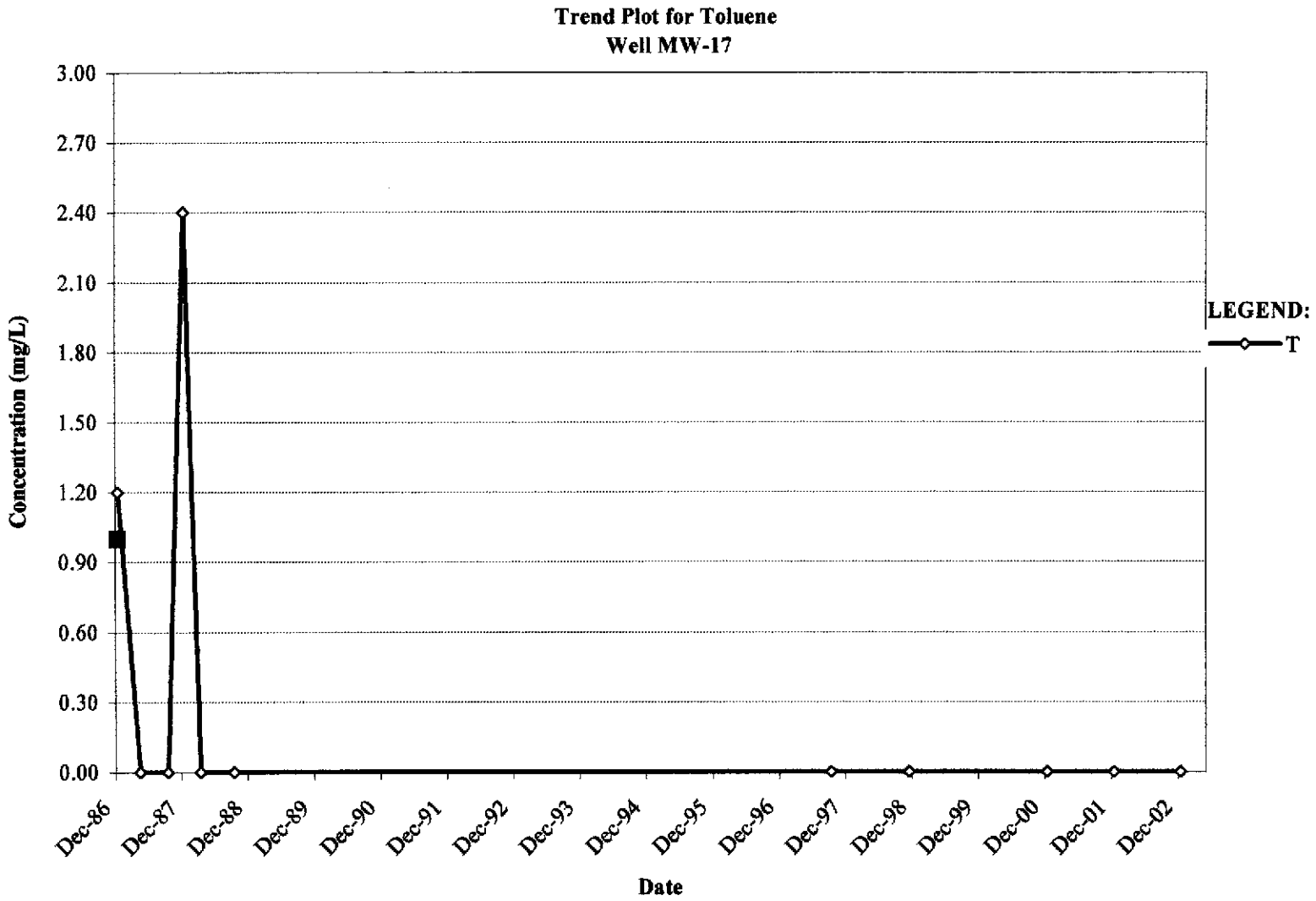
Results for TPHd are in milligrams per liter (mg/l) or parts per million (ppm)
All other results are in micrograms per litre (ug/l)
For the purposes of plotting values reported as < the reporting limit are treated as "0"

Trend Plot for Benzene
Well MW-17



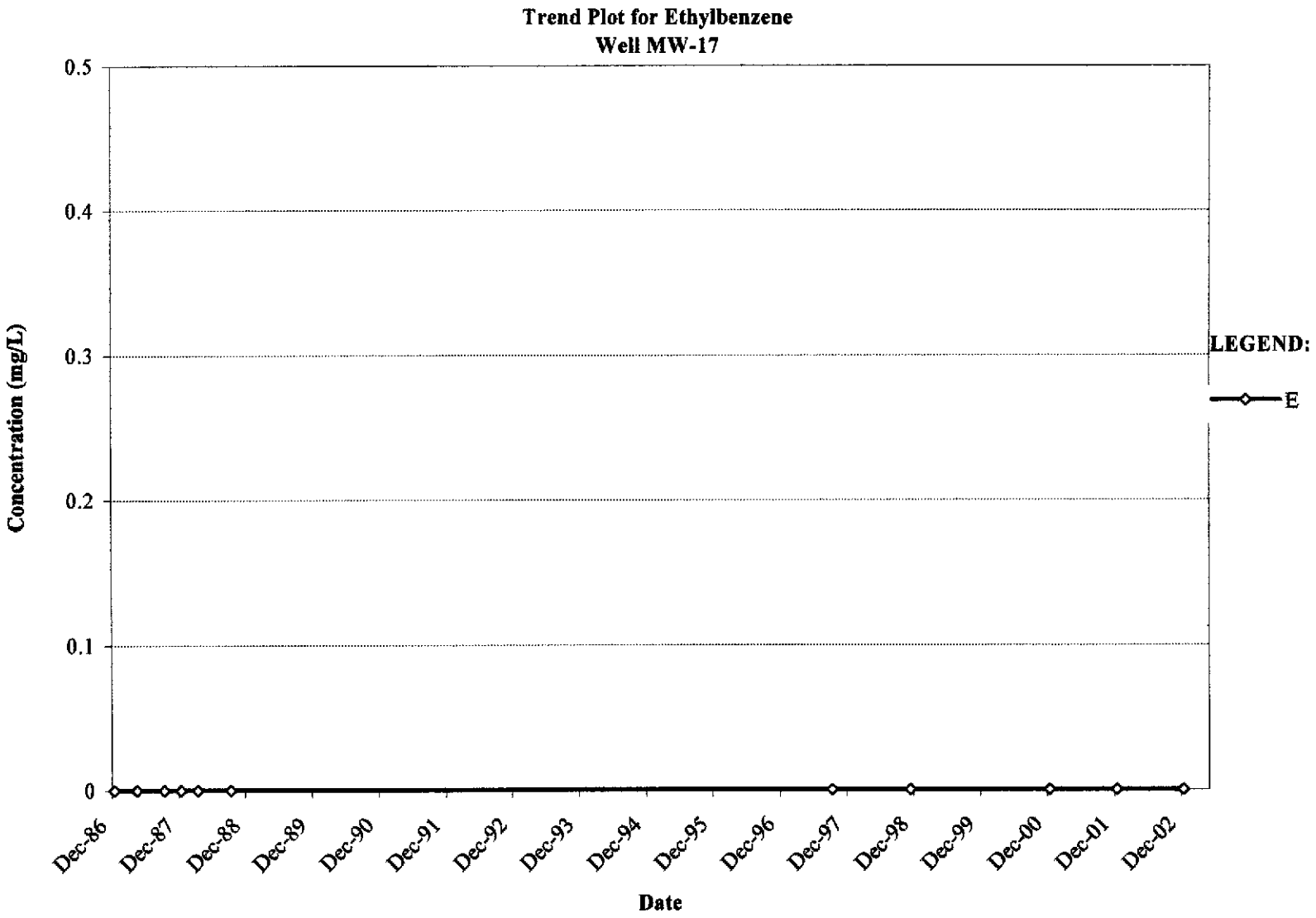
File:Mw-17 Sheet: Benzene

CKG Environmental, Inc.



File:Mw-17 Sheet: Toluene

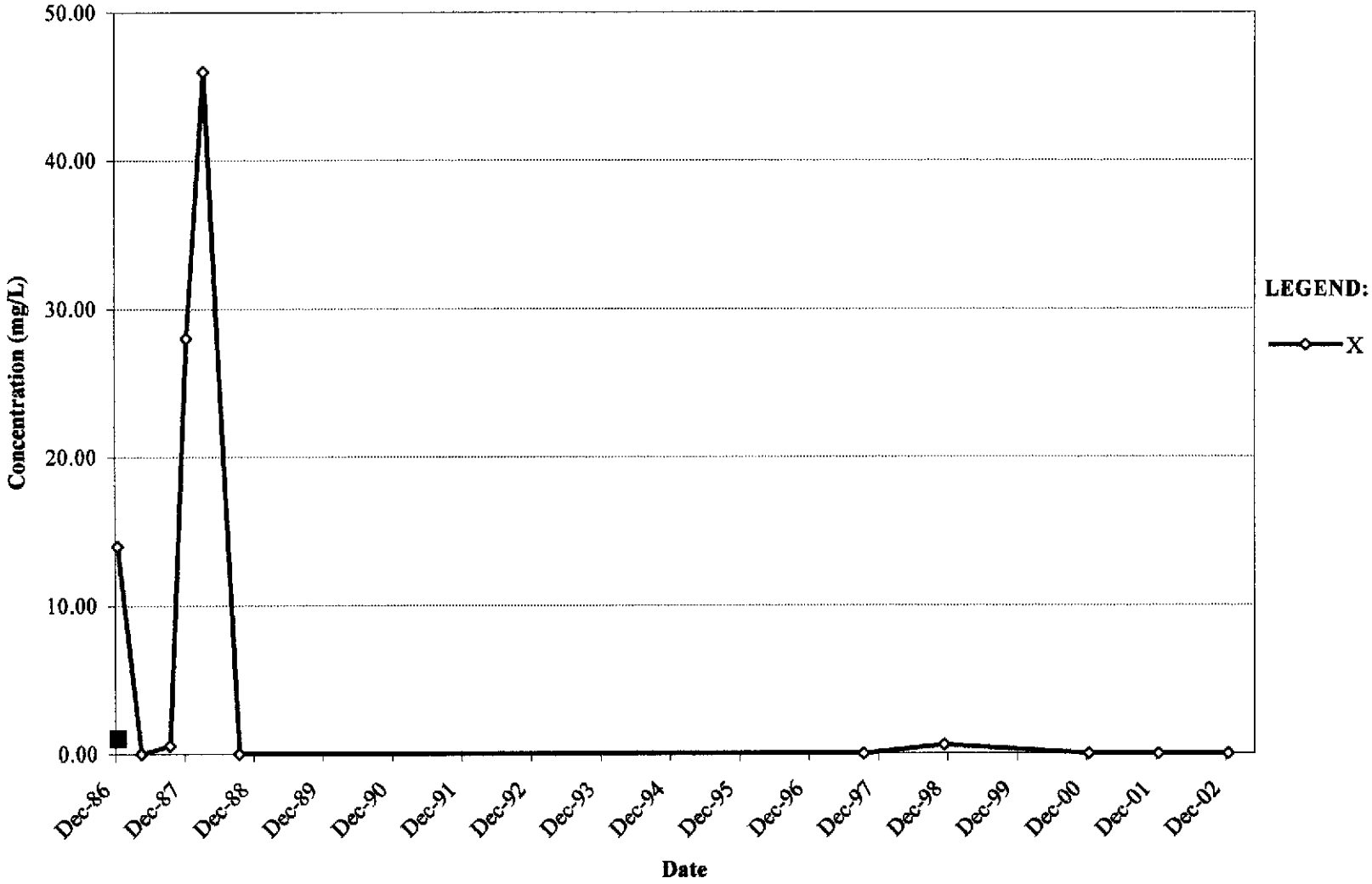
CKG Environmental, Inc.



File:Mw-17 Sheet: Ethylbenzene

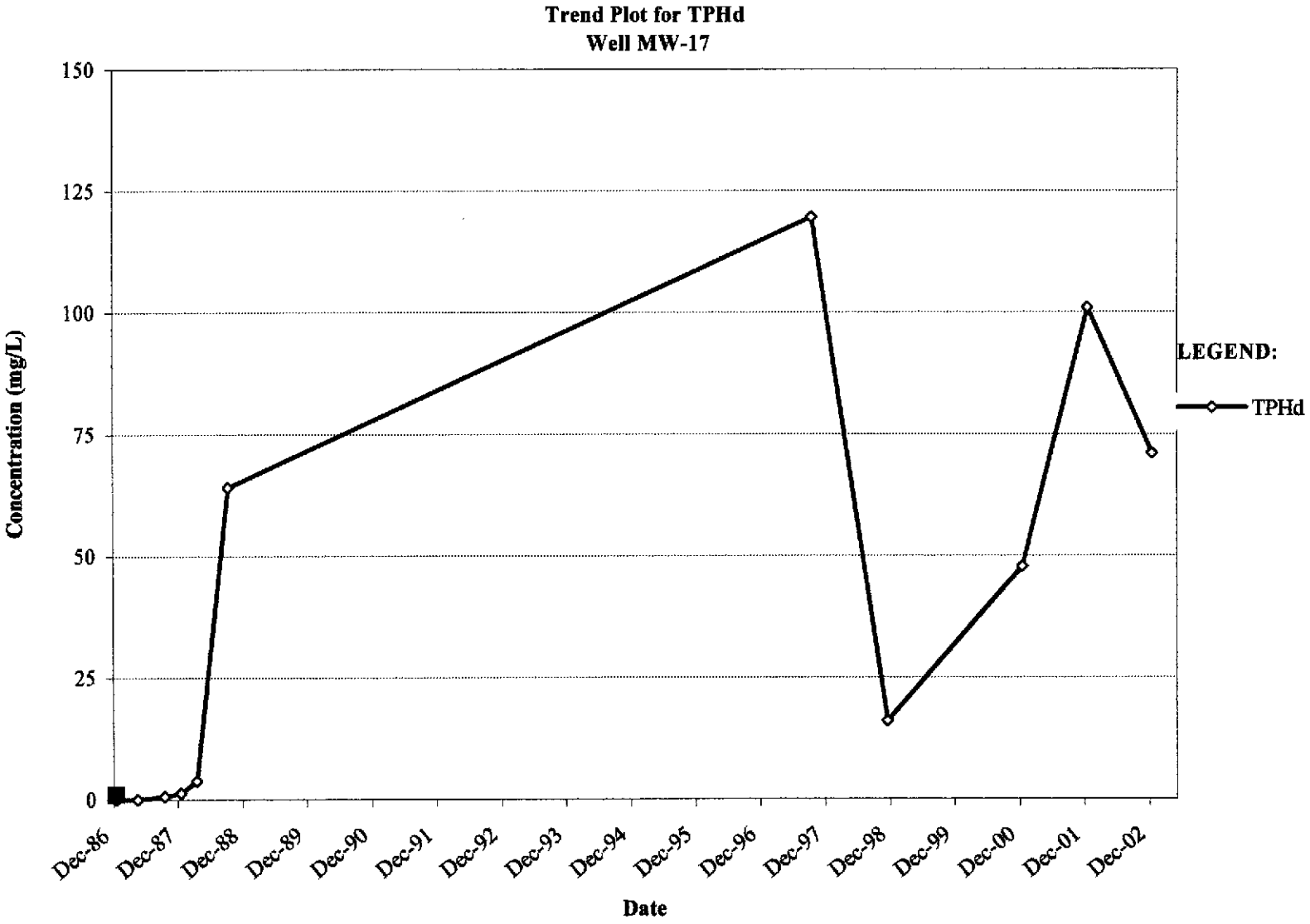
CKG Environmental, Inc.

Trend Plot for Xylenes
Well MW-17



File:Mw-17 Sheet: Xylenes

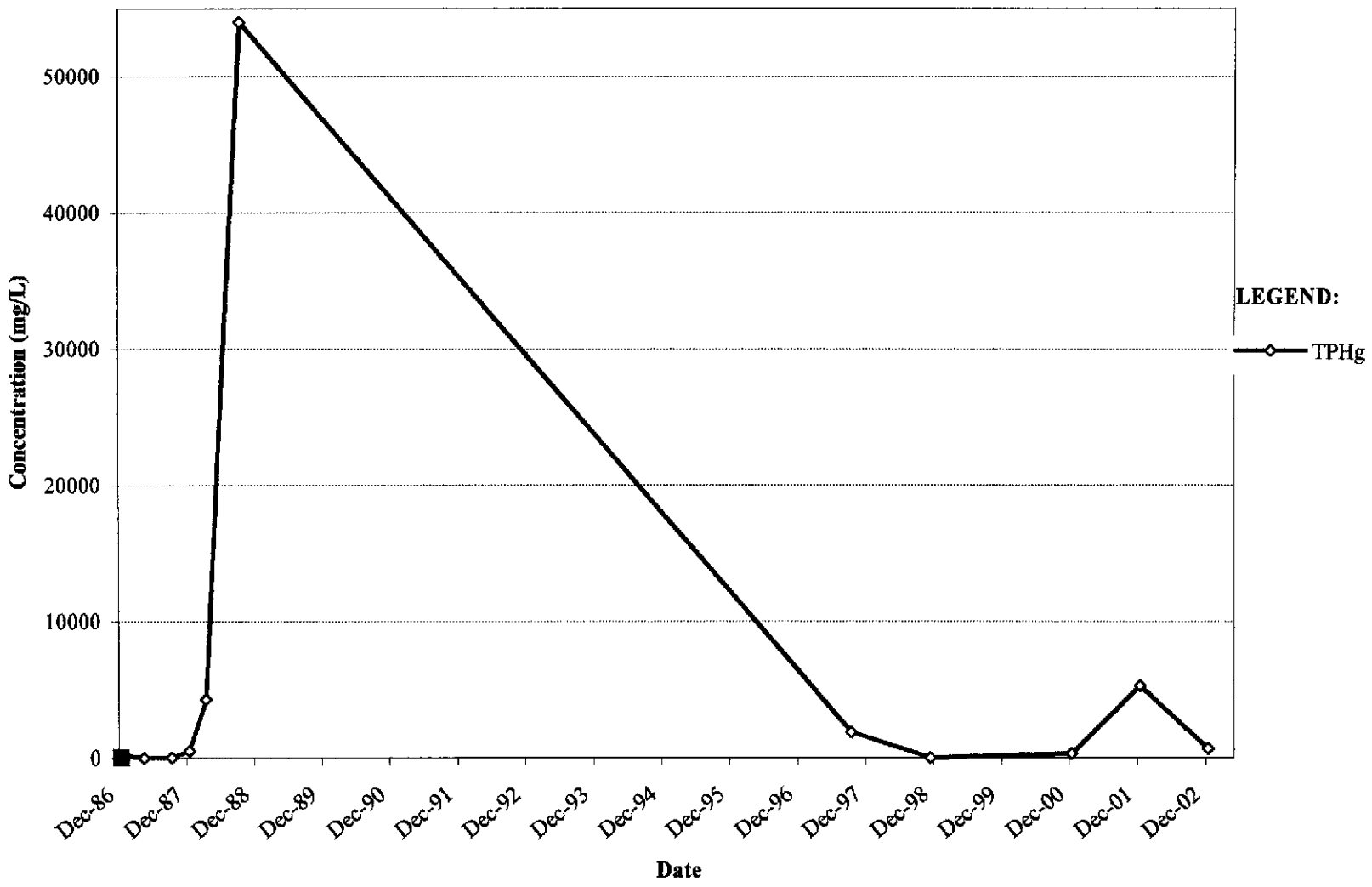
CKG Environmental, Inc.



File:Mw-17 Sheet: TPHd

CKG Environmental, Inc.

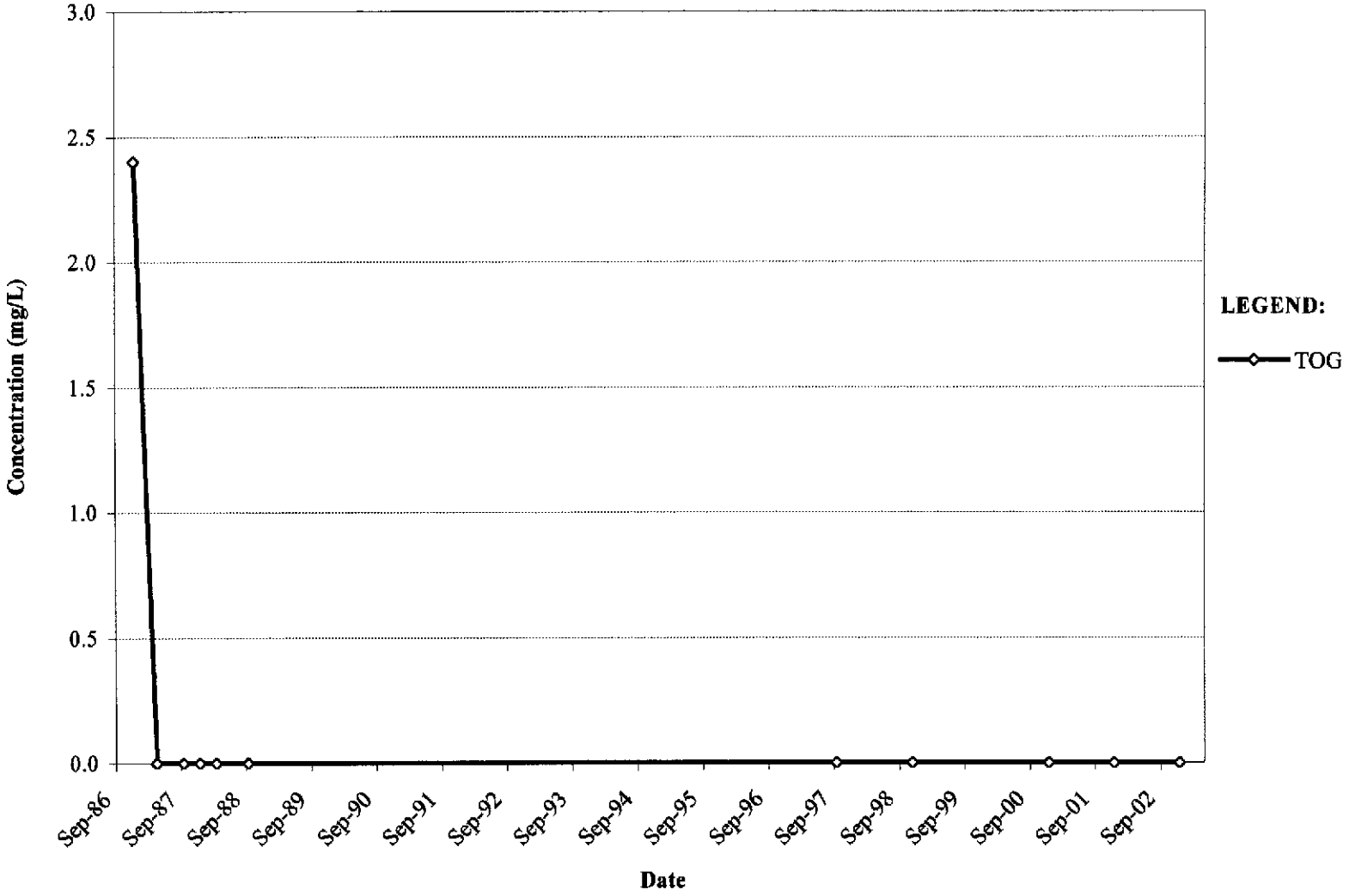
Trend Plot for TPHg
Well MW-17



File:Mw-17 Sheet: TPHg

CKG Environmental, Inc.

Trend Plot for TOG
Well MW-17



File:Mw-17 Sheet: TOG

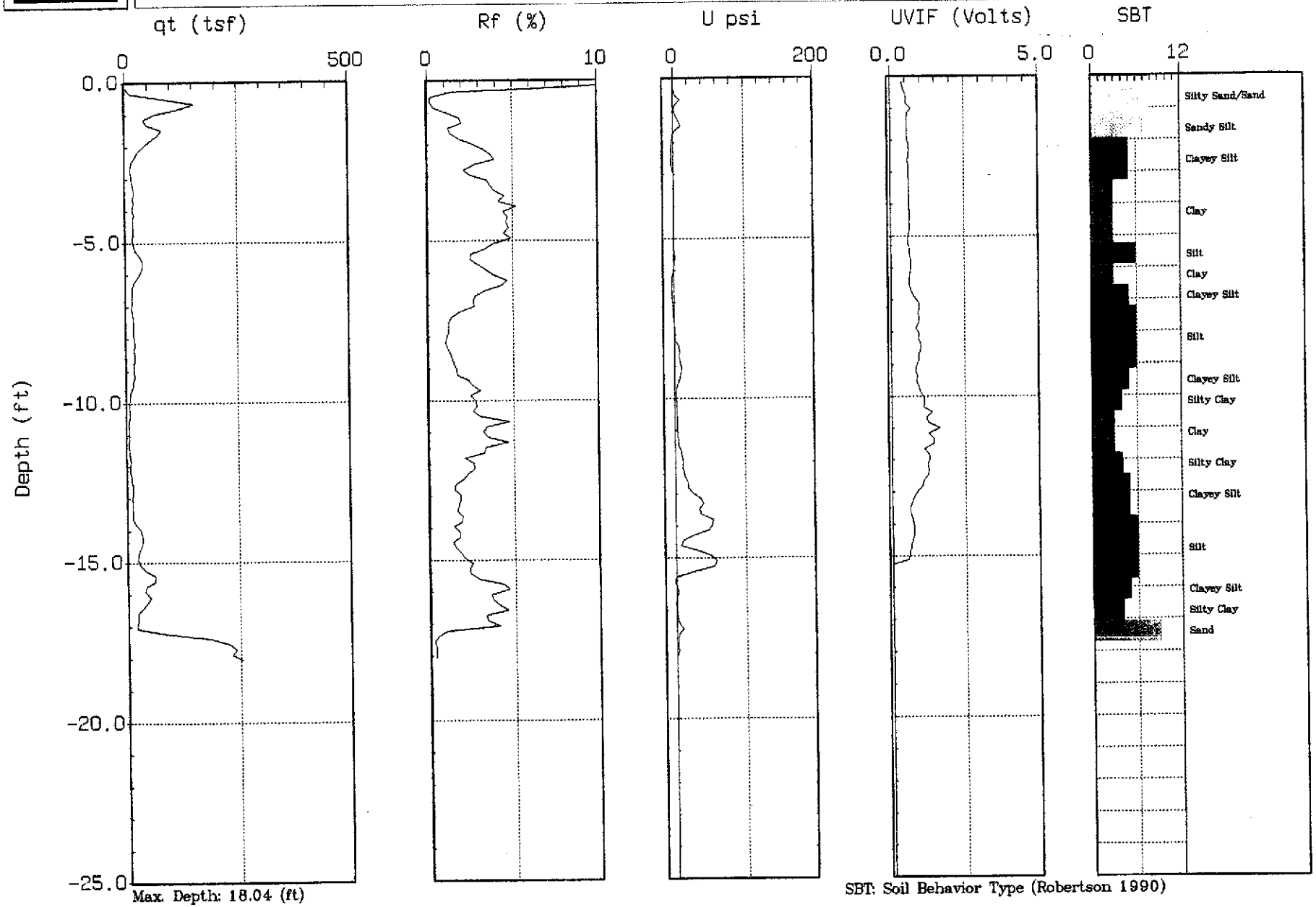
CKG Environmental, Inc.

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-01

Geologist : C. KENNEDY
Date : 05:28:103 10:04



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

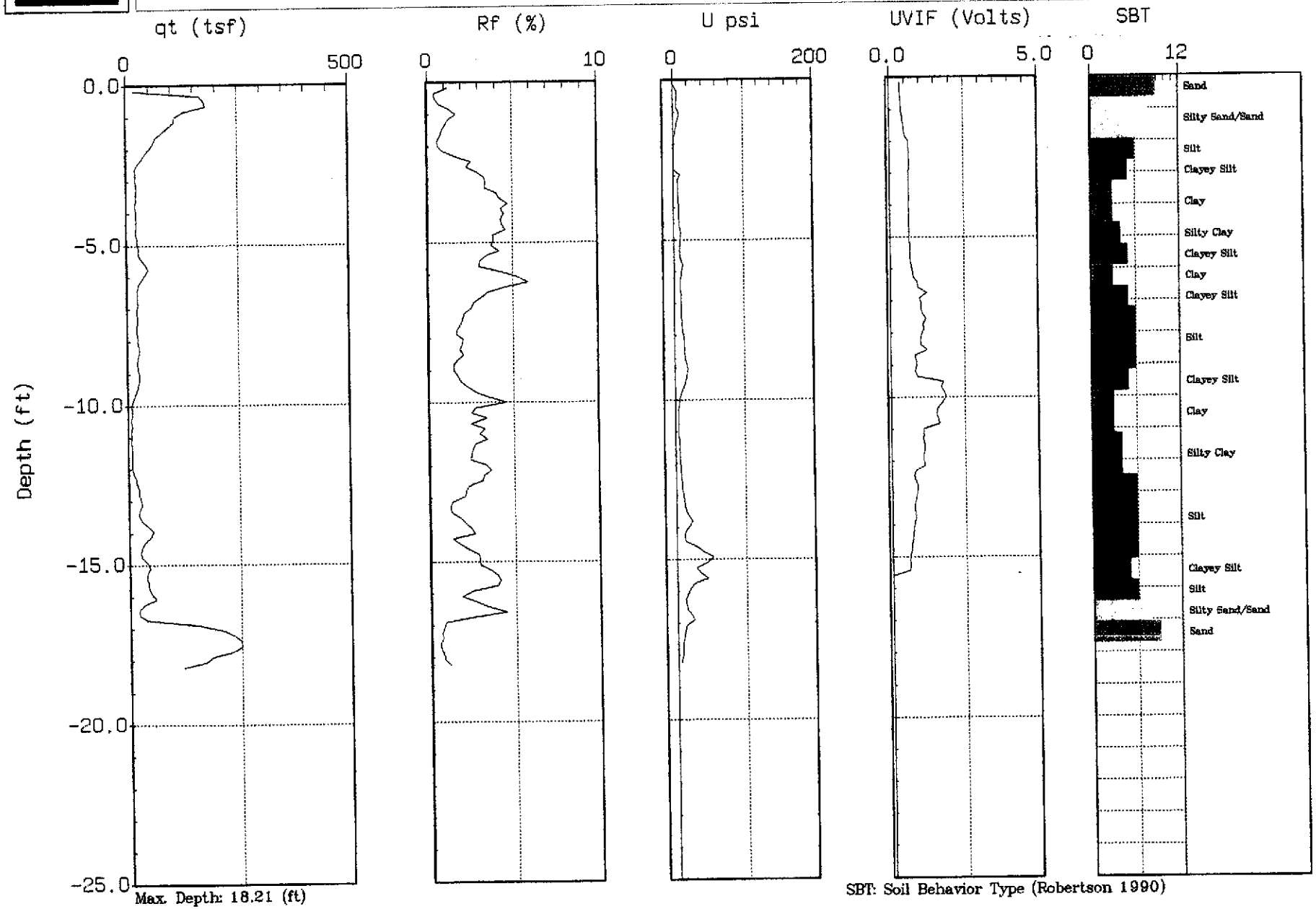
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-02

Geologist : C. KENNEDY
Date : 05:28:103 10:47



Max. Depth: 18.21 (ft)

Depth Inc.: 0.164 (ft)

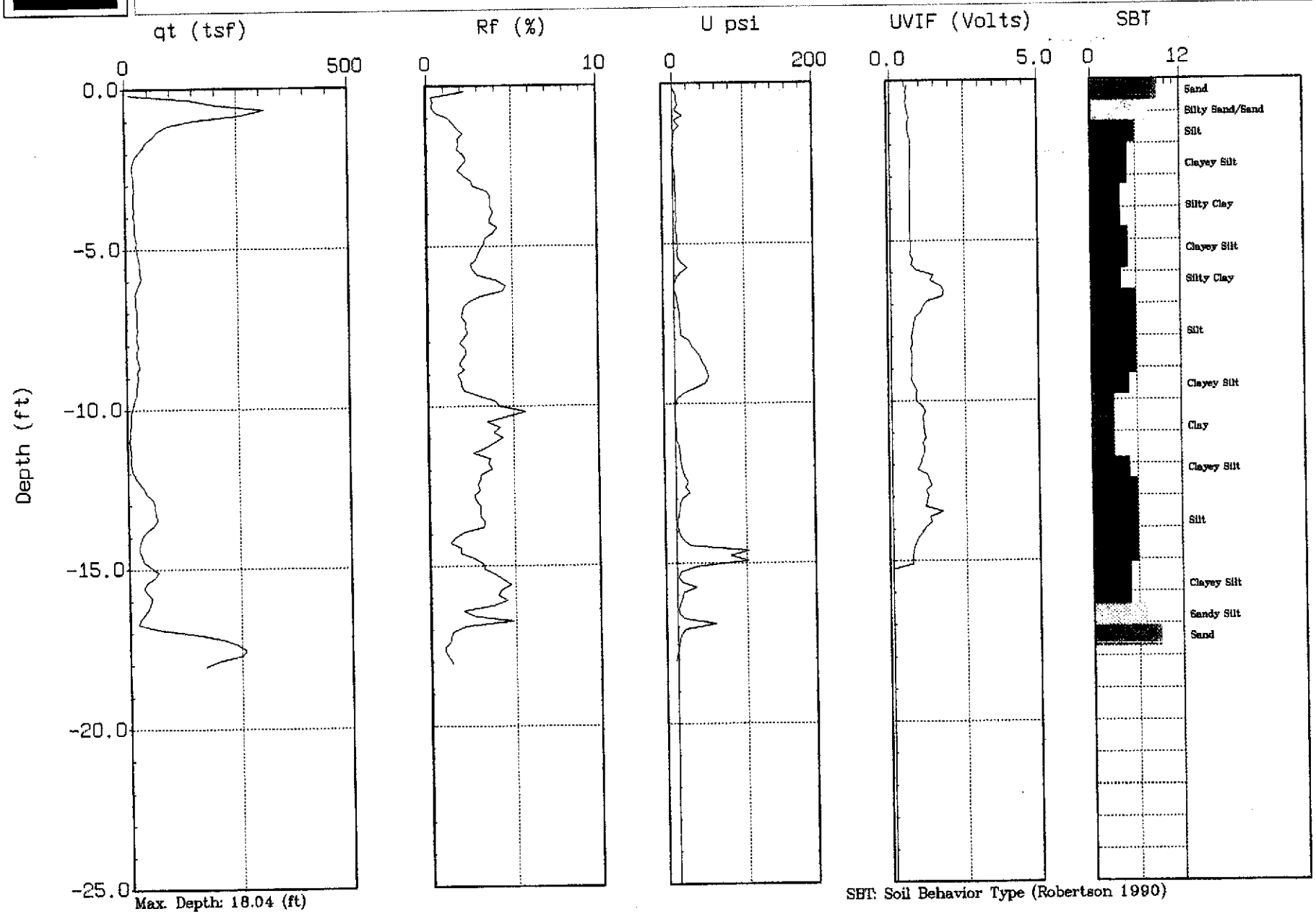
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-03

Geologist : C. KENNEDY
Date : 05:28:103 11:14



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

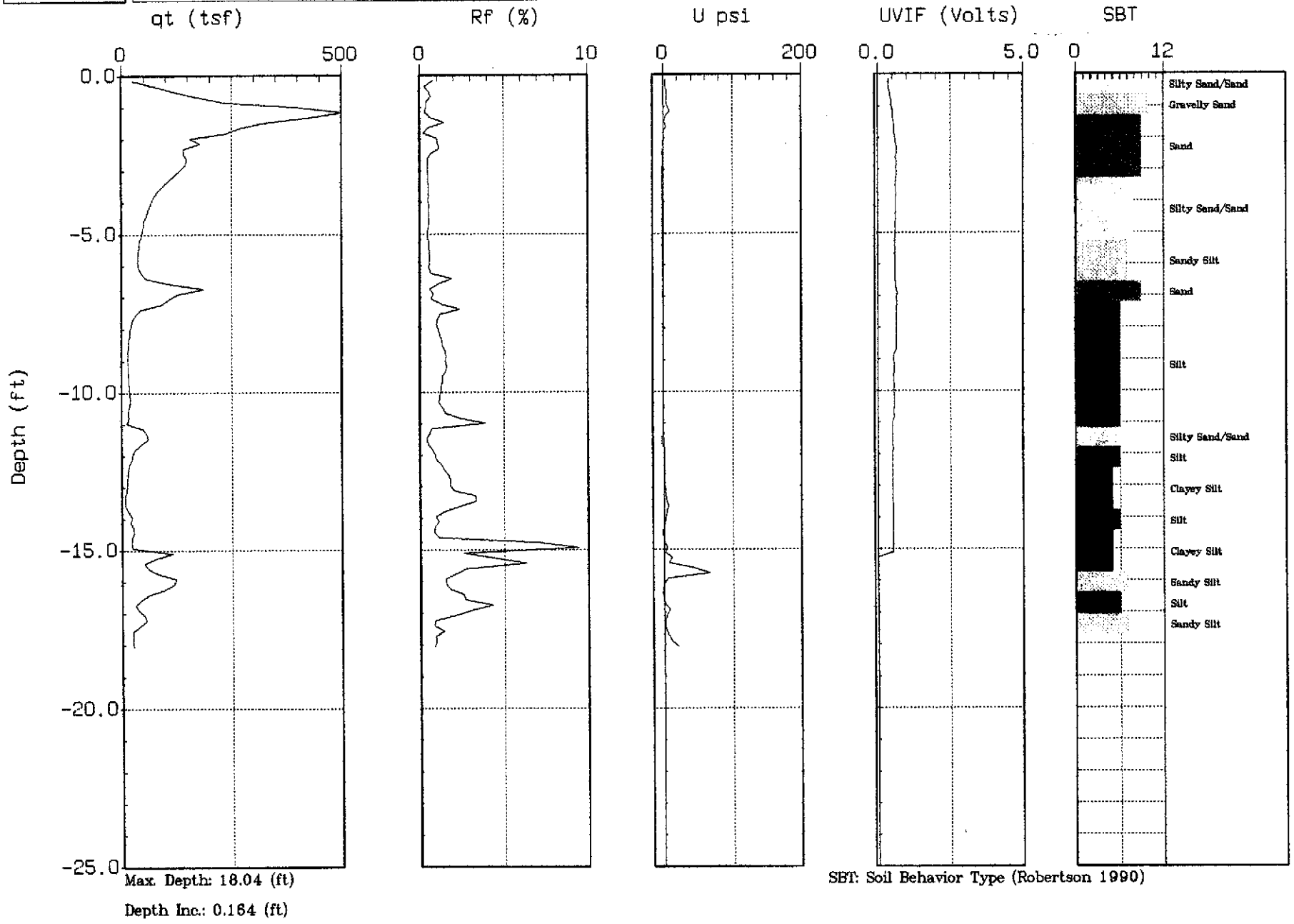
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-04

Geologist : C. KENNEDY
Date : 05:28:103 11:56



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

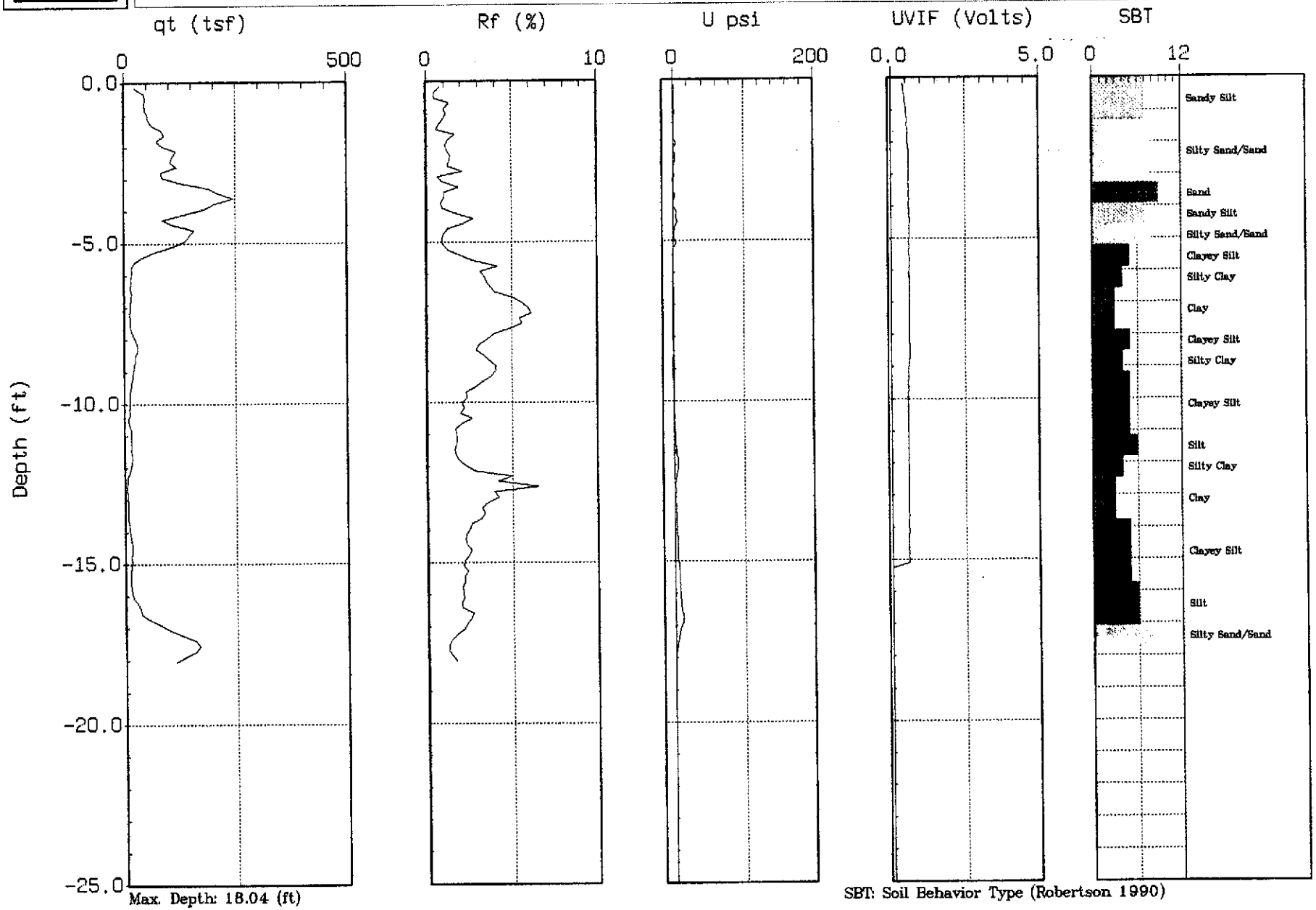
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-05

Geologist : C. KENNEDY
Date : 05:28:103 13:02



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

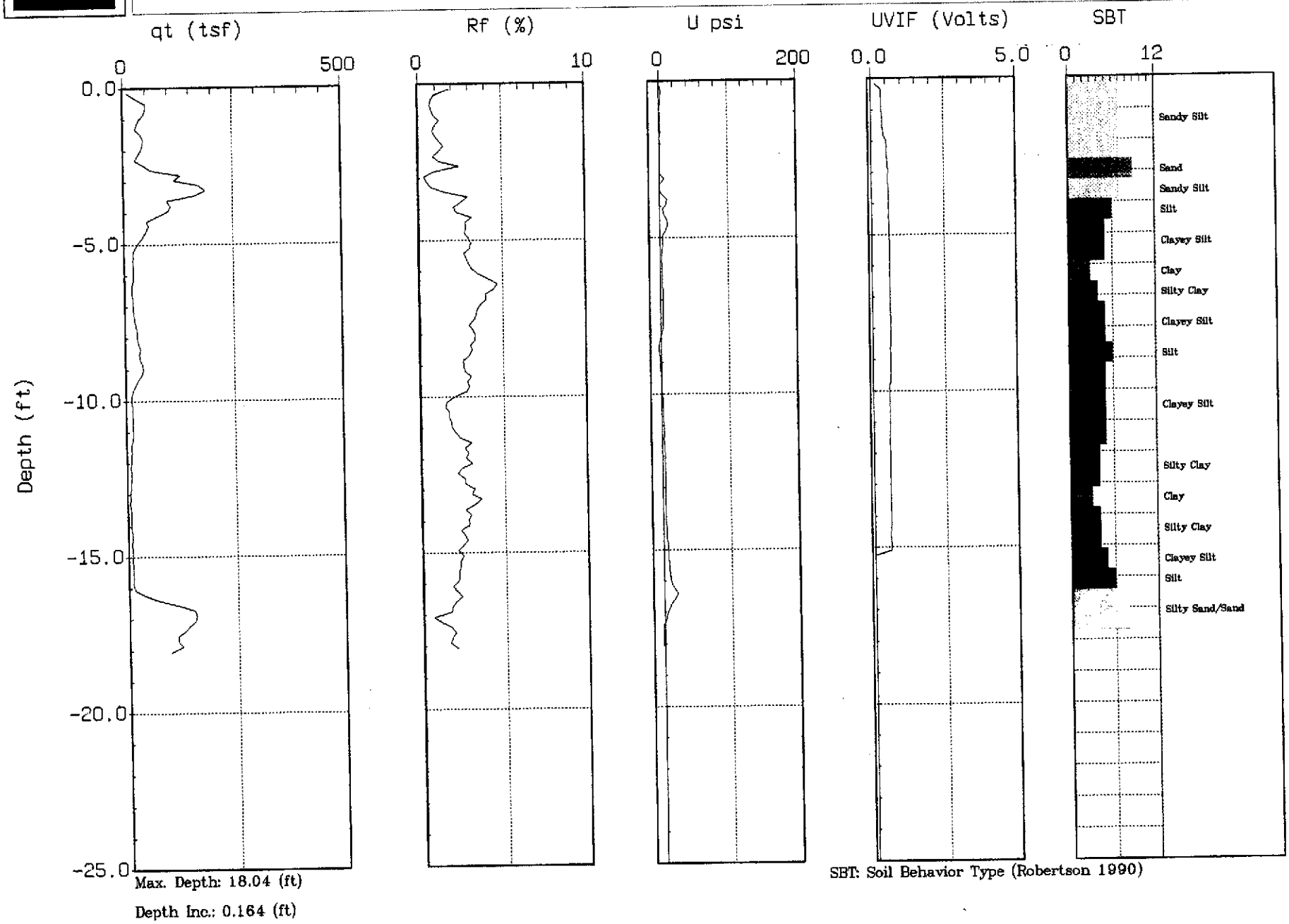
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-06

Geologist : C. KENNEDY
Date : 05:28:103 13:52



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

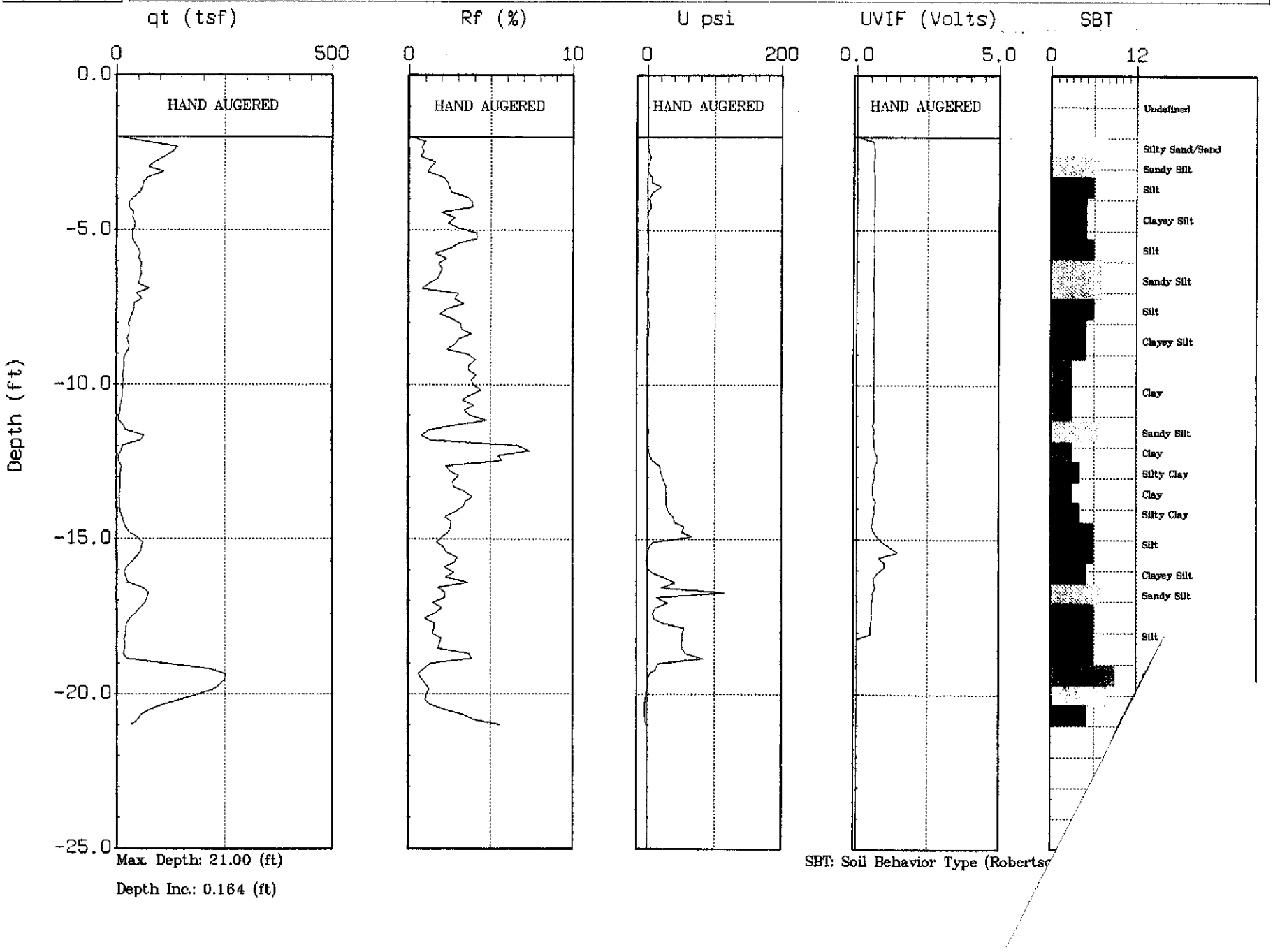
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-07

Geologist : C. KENNEDY
Date : 05:28:103 15:08



Max. Depth: 21.00 (ft)

Depth Inc.: 0.164 (ft)

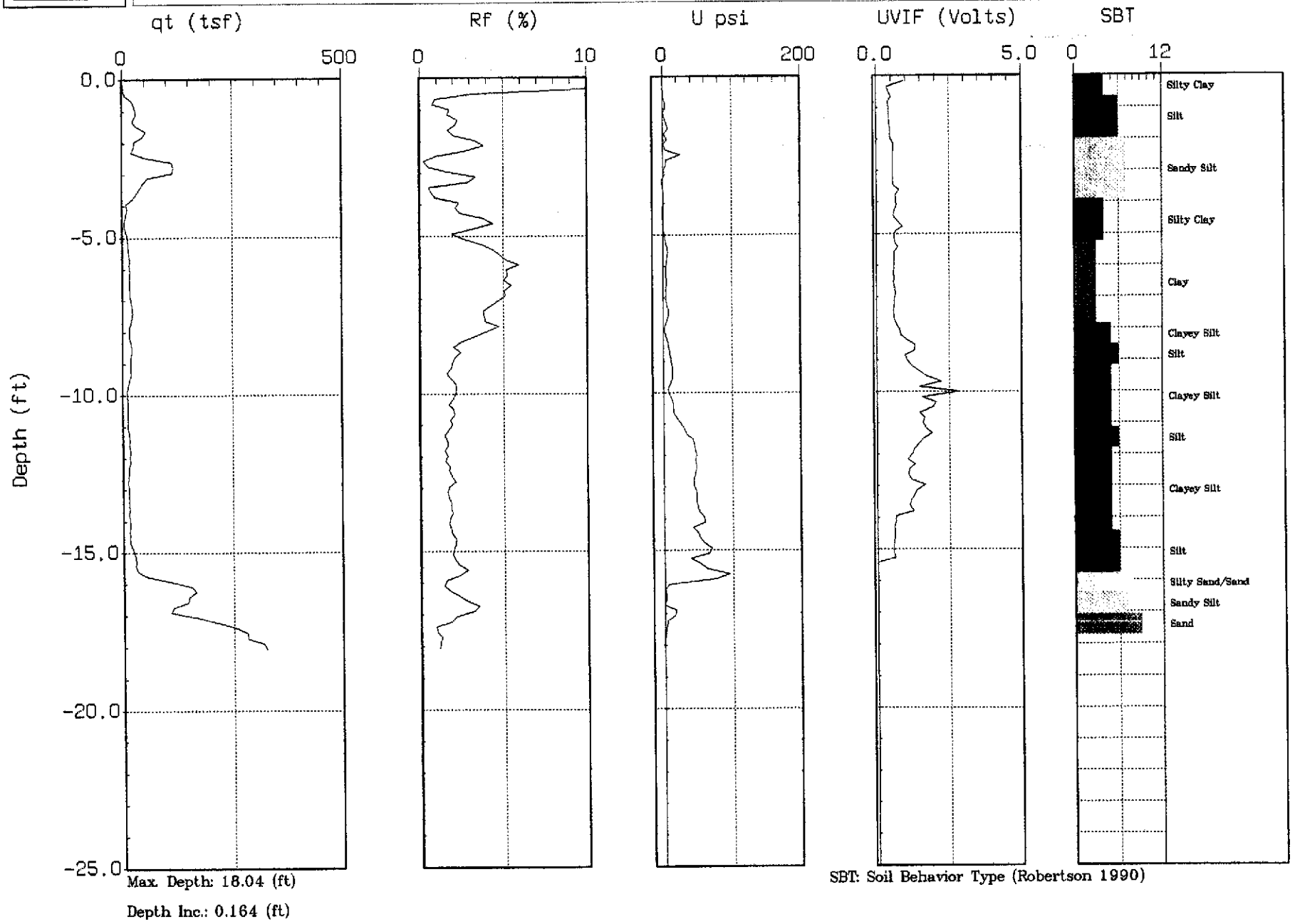
SBT: Soil Behavior Type (Roberts

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-08

Geologist : C. KENNEDY
Date : 05:28:103 16:03



Max. Depth: 18.04 (ft)

Depth Inc.: 0.164 (ft)

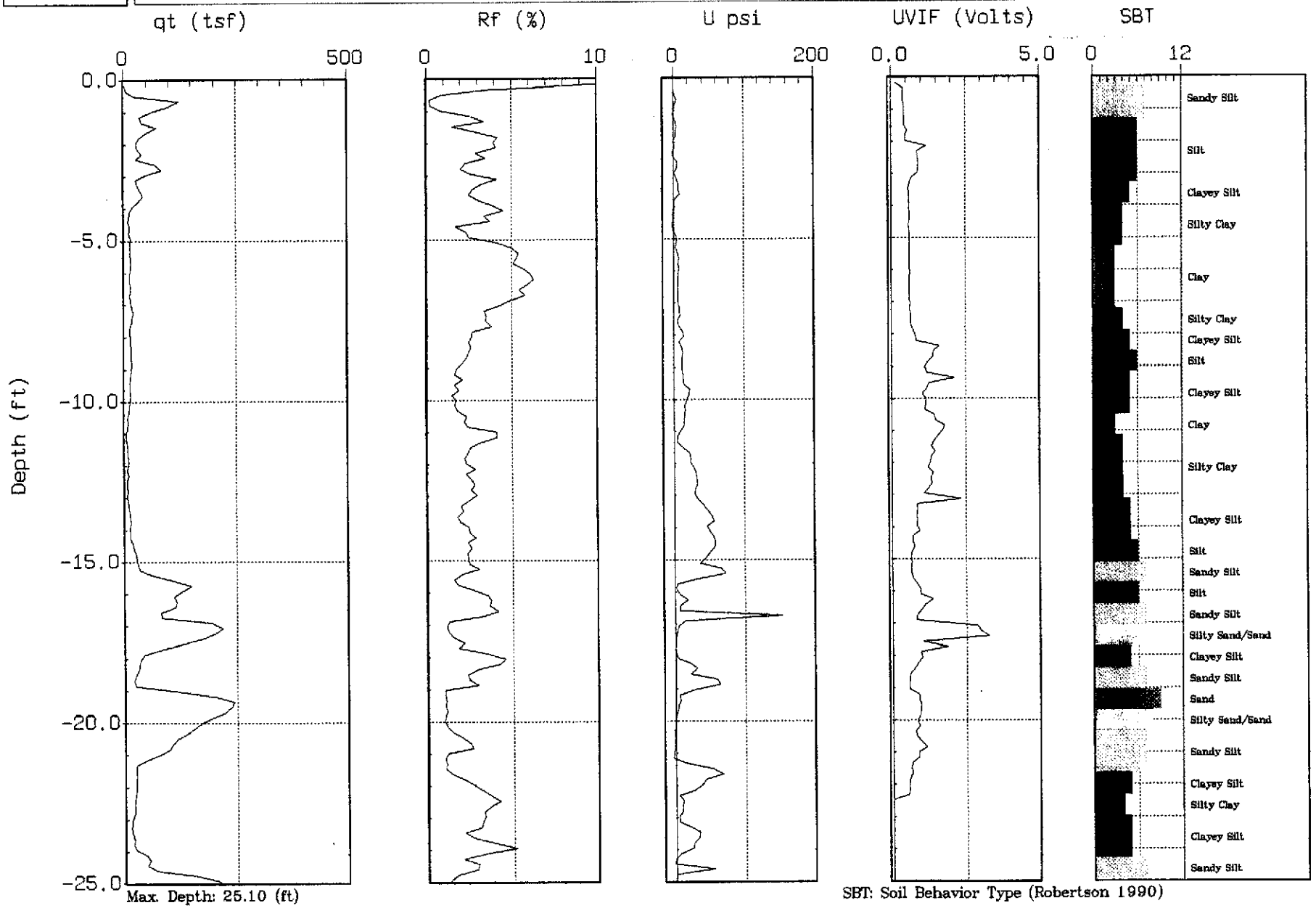
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-09

Geologist : C. KENNEDY
Date : 05:28:103 16:40



Max. Depth: 25.10 (ft)

Depth Inc.: 0.164 (ft)

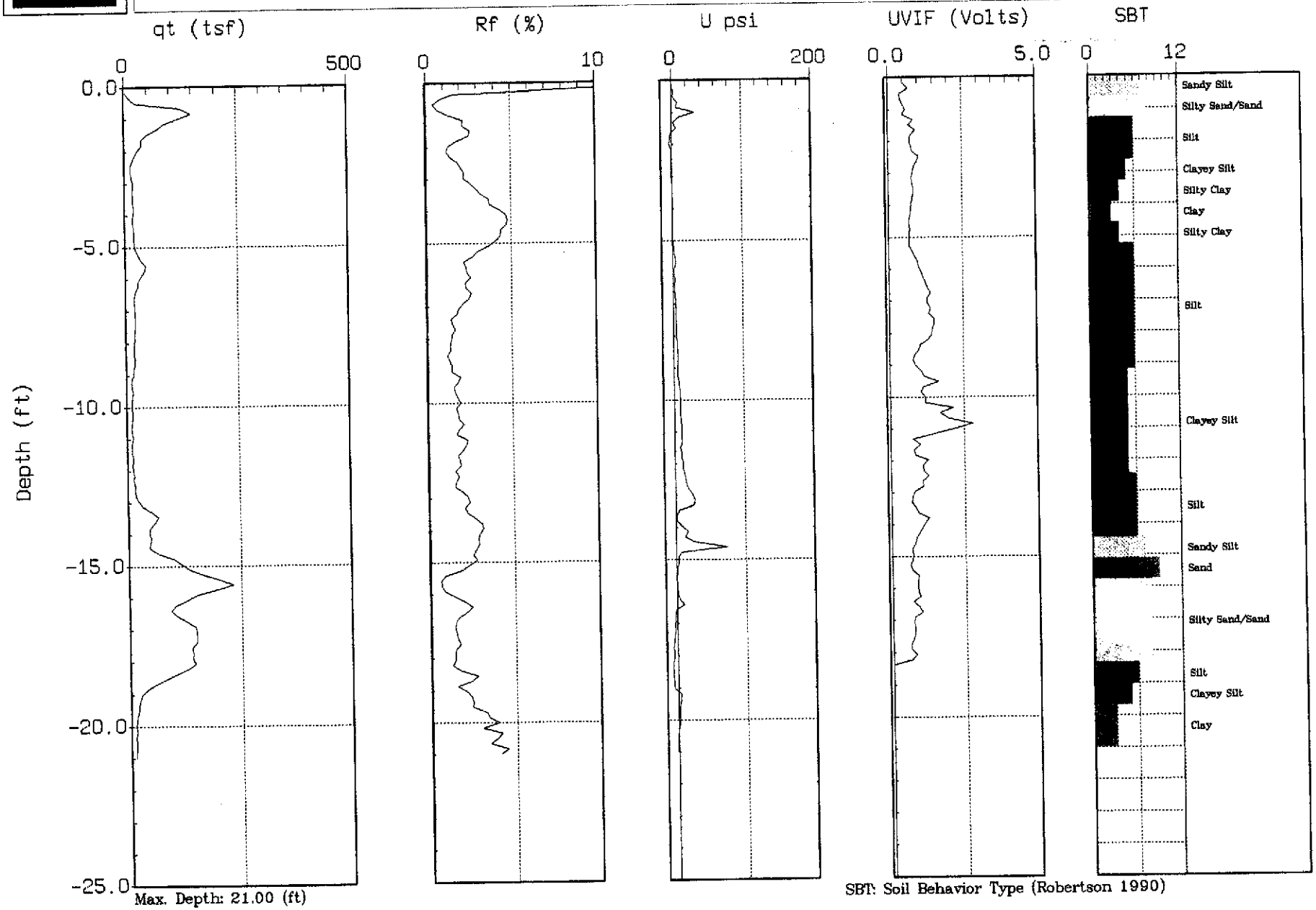
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-10

Geologist : C. KENNEDY
Date : 05:29:103 08:38



Max. Depth: 21.00 (ft)

Depth Inc.: 0.164 (ft)

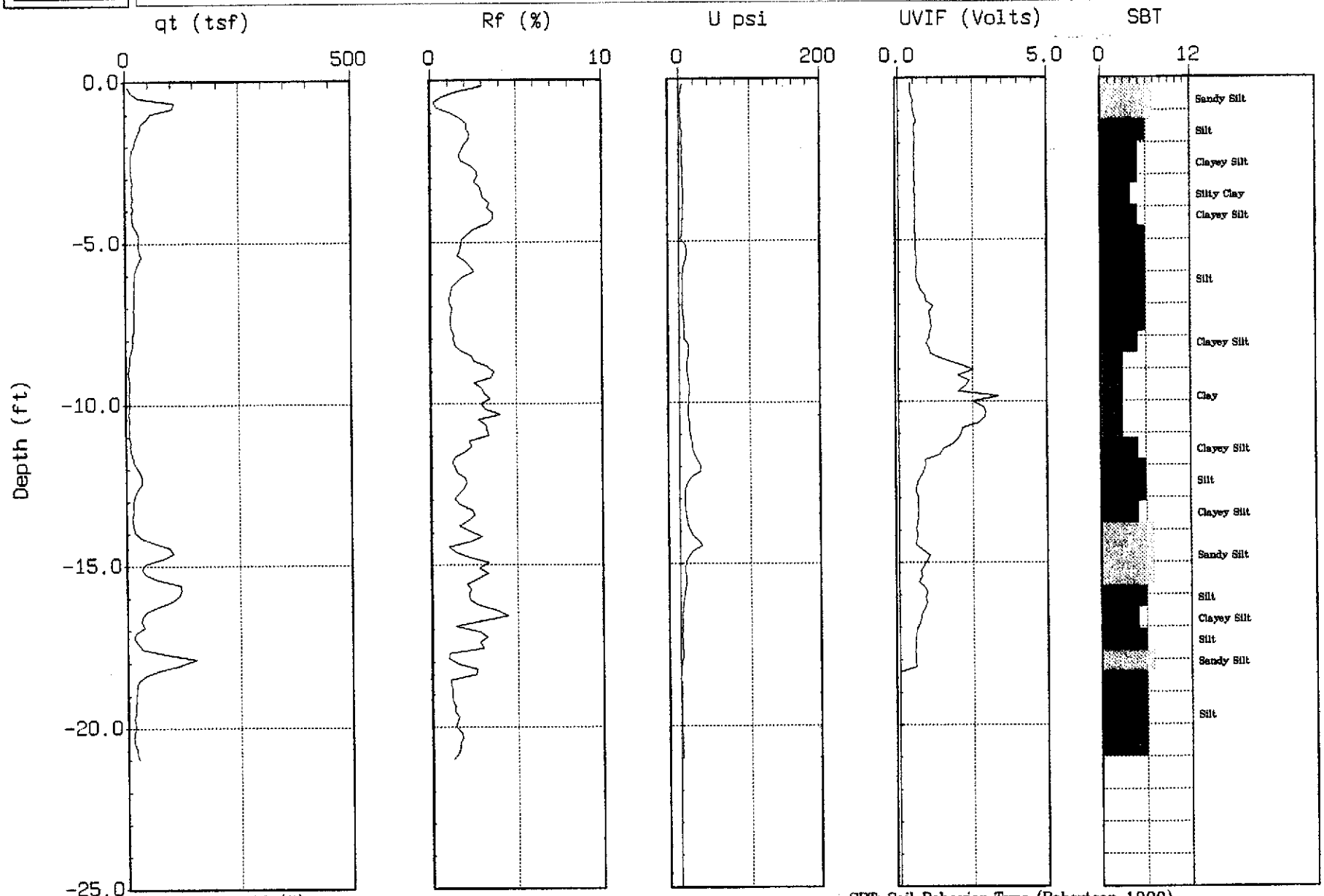
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-11

Geologist : C. KENNEDY
Date : 05:29:103 09:07



Max. Depth: 21.00 (ft)

Depth Inc.: 0.164 (ft)

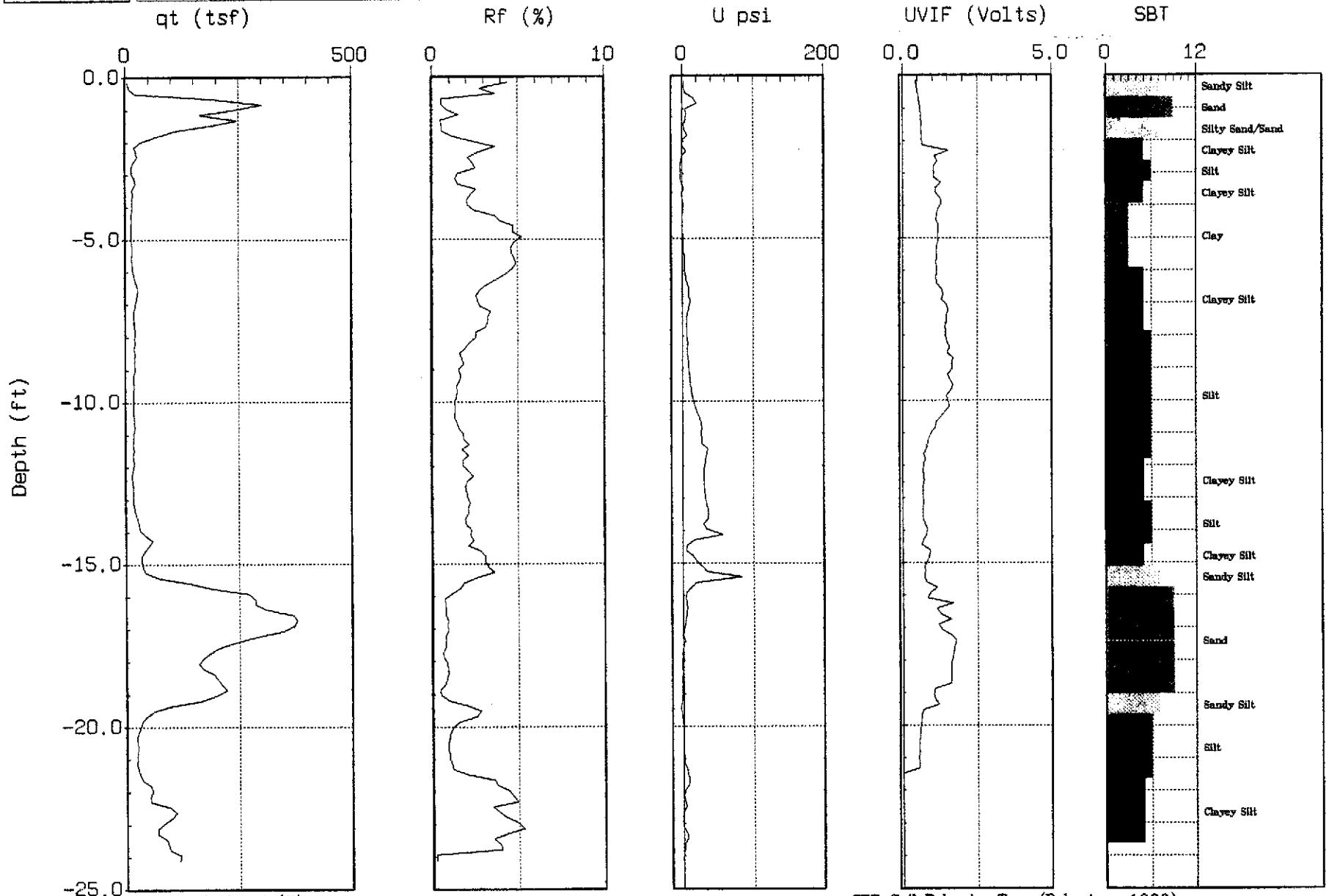
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-12

Geologist : C. KENNEDY
Date : 05:29:103 09:49



Max. Depth: 24.11 (ft)

Depth Inc.: 0.164 (ft)

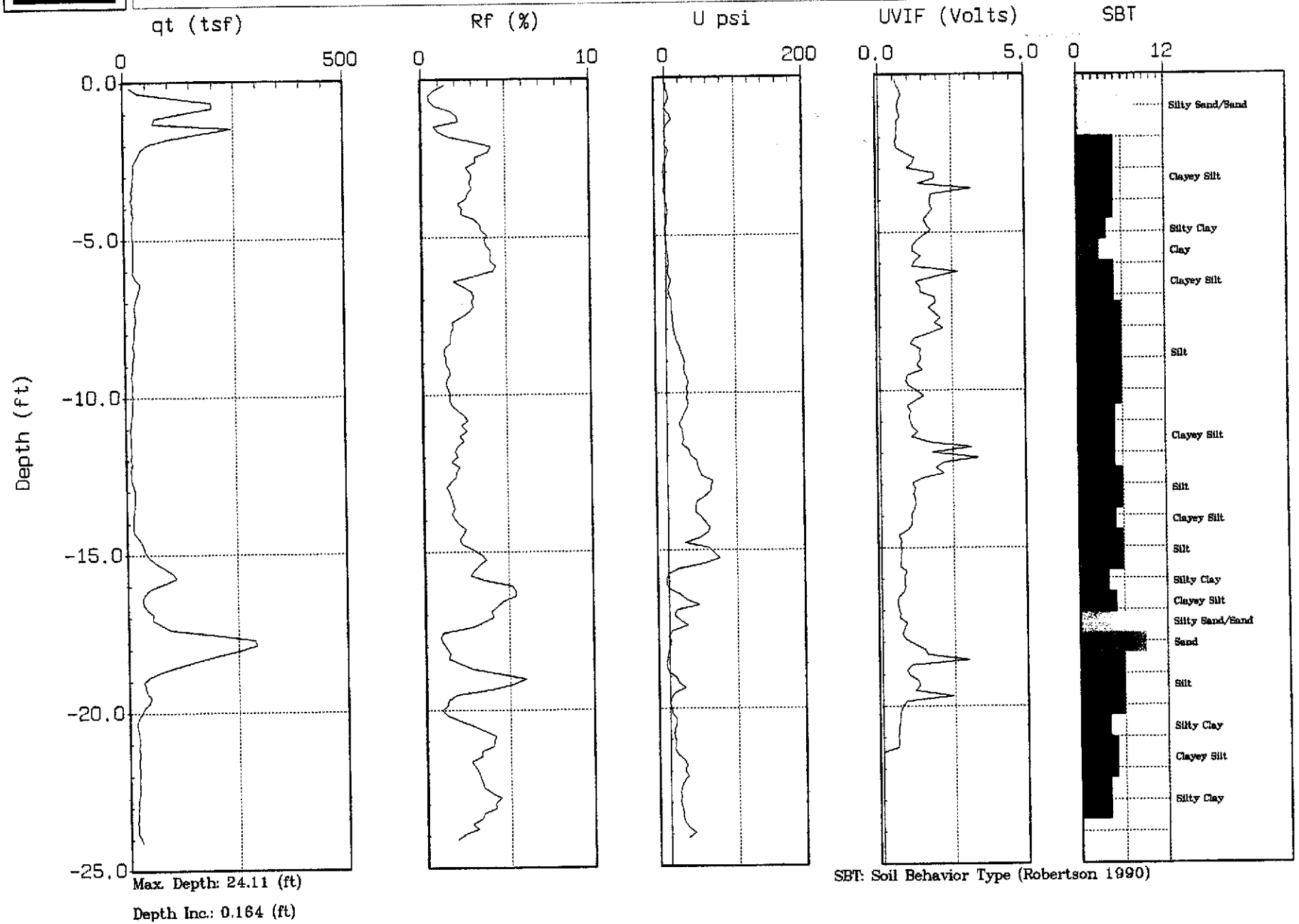
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-13

Geologist : C. KENNEDY
Date : 05:29:103 10:31



Max. Depth: 24.11 (ft)

Depth Inc.: 0.164 (ft)

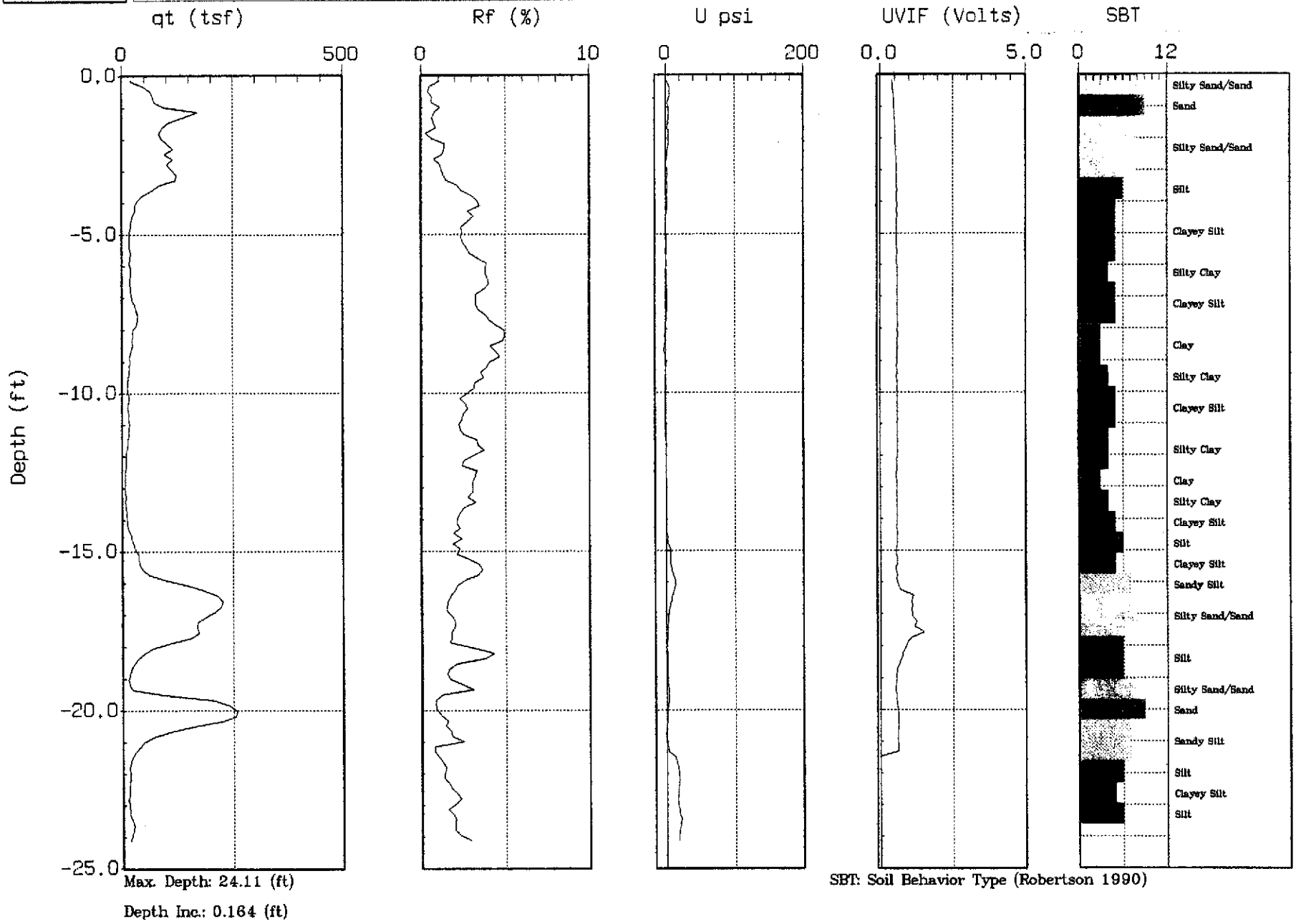
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-14

Geologist : C. KENNEDY
Date : 05:29:103 11:13



Max. Depth: 24.11 (ft)

Depth Inc.: 0.164 (ft)

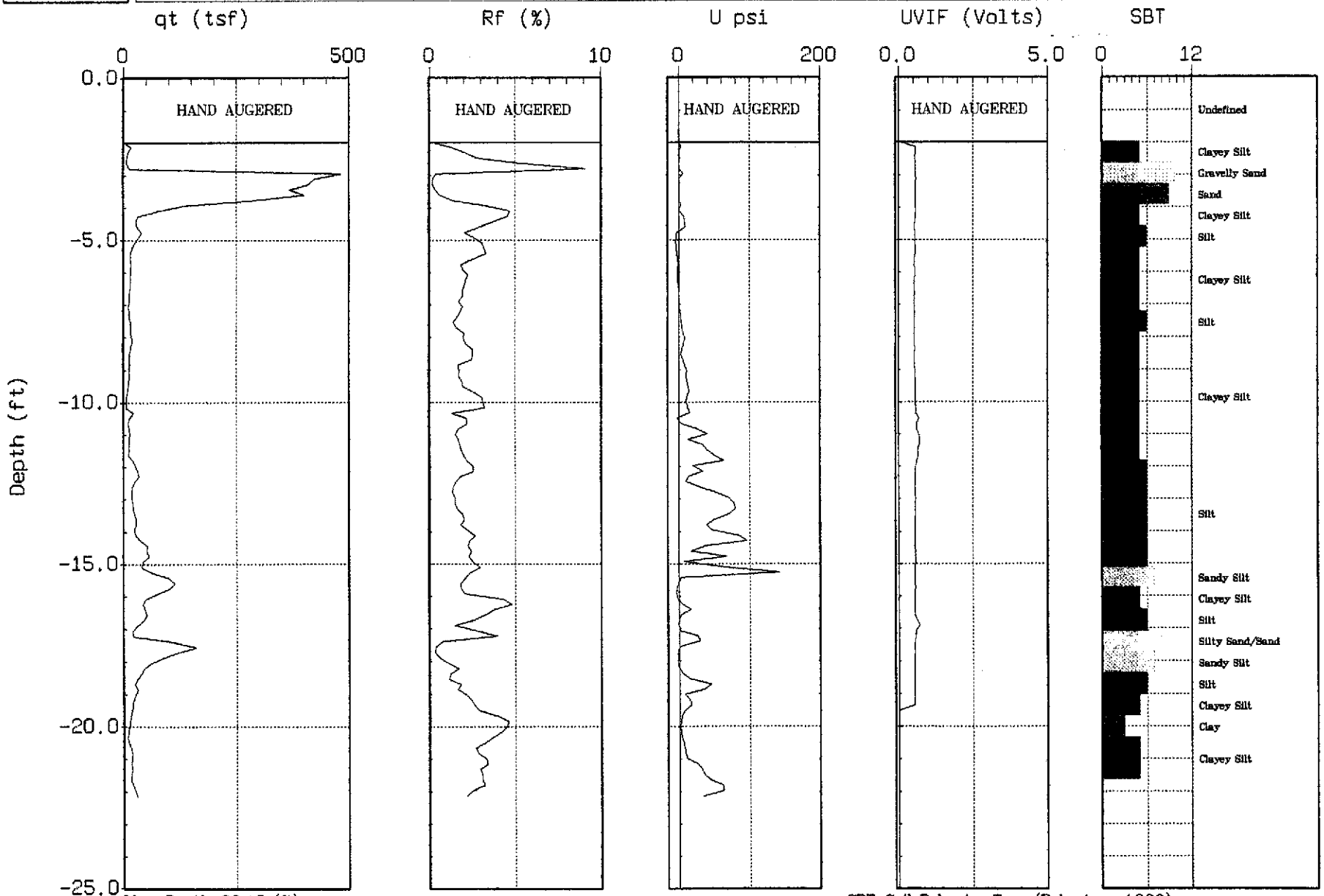
SBT: Soil Behavior Type (Robertson 1990)

GREGG

CKG

Site : OWENS BROCKWAY
Location : CPT-15

Geologist : C. KENNEDY
Date : 05:29:103 11:51



Max. Depth: 22.15 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

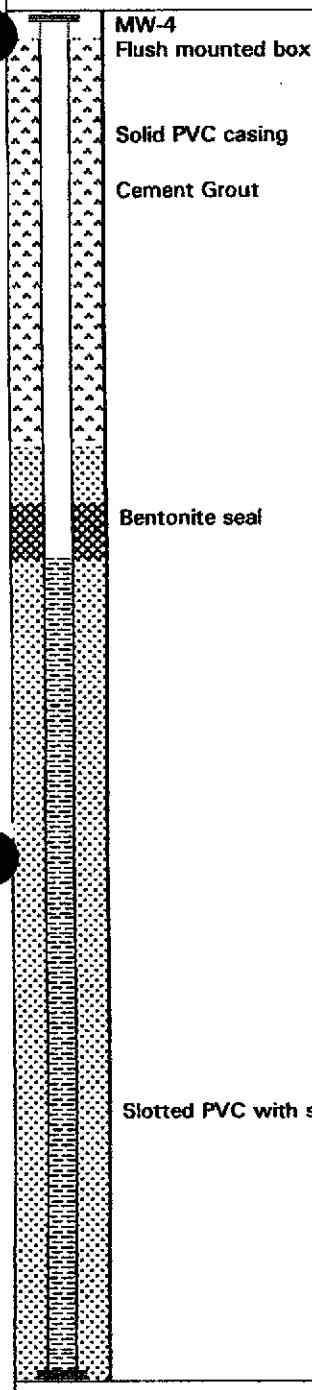
MONITORING WELL CONSTRUCTION DETAILS

TOC El. = ft.**

Equipment: Hollow Auger | Elevation:

Logged By: CLK | Start Date:

Drilled By: | Finish Date:



PID (ppm)	Blows/Ft.	SAMPLE	Depth (feet)	
			0	BROWN SANDY SILTS with 2: rocks (or smaller) mostly in backfill to 5'
5	17		5	BROWNISH ORANGE SANDY SILT WITH SOME CLAYS at 6', 2" rock present along with old clay brick (red) - possibly and old pipe?
	17			BROWNISH YELLOW SANDY SILTS - no odor, slightly moist and densely packed, low plasticity
10			10	strong petroleum hydrocarbon odor, silty sands with some lean clay
	35			SILTY SANDS (coarse sand, strong petroleum odor-not as much as above, very moist and greenish gray, groundwater possibly at 13-14', not ML but maybe SC, low plasticity - high permeability
15			15	
				gasoline odor
	70			SILTY SANDS (more coarse sands) with small gravel, slight petroleum odor, moist and greenish-gray, SC classification, low plasticity - high permeability
20			20	
	27			Brown Clay begins at 23', very distinct layer LIGHT TAN-BROWN LAYER with no odor - high plasticity, slight moist and very dense, low permeability silty clays with some fine sands
25			25	BOTTOM OF BORING MW-19 @ 25'4" Hole Converted to Monitoring Well

CKG Environmental Inc.

Job No: 123.04

Appr:

Drwn: LPDD

Date: AUG 2003

Log of Boring MW-19 and Well Details

Owens-Brockway Glass Container, Inc.

Oakland, California

PLATE 3

WELL GAUGING DATA

Project # 030623-DW-2 Date 6/23/03 Client CKG

Site Owens Brockway 3600 Alameda Ave.

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or (TOC)	
MW-19	2					12.18	25.08		

WELL DEVELOPMENT DATA SHEET

Project #: 030620-DW-3	Client: CKG @ Queens Parkway Oakland
Developer: Dave Walters	Date Developed: 6-20-03
Well I.D. MW-19	Well Diameter: (circle one) 2 3 4 6
Total Well Depth: 25.19	Depth to Water: 13.54
Before 25.10 After 25.08	Before 13.54 After 20.88
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1.9	X	10	=	19
1 Case Volume		Specified Volumes		gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☒ Middleburg Pump
- ☐ Electric Submersible
- ☐ Positive Air Displacement

Type of Installed Pump _____

Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
13:50	69.5	6.9	749	>200	1.9	Swabbed well = 15 min Agitated bottom w/ pump
13:54	68.2	6.9	761	>200	3.8	gray / silty
13:58	67.7	6.9	763	>200	5.7	Some sheen / odor
14:02	67.9	6.9	746	>200	7.6	Hard bottom
14:06	67.5	6.9	756	>200	9.5	Still gray
	well	dewatered	@ 10 gl.	DTW = 23.25		Recharging Q.K.
14:35	DTW =	15.21	swabbed for 5 minutes			
14:44	68.8	7.3	762	>200	11.4	Gray
14:48	68.5	7.2	751	>200	13.3	
14:52	68.0	7.1	740	>200	15.2	
14:56	67.7	7.1	756	>200	17.1	
15:00	67.7	7.0	763	>200	19.0	Hard bottom

Did Well Dewater? yes	If yes, note above.	Gallons Actually Evacuated:	19

WELL MONITORING DATA SHEET

Project #: 030623-DW-2	Client: CKE @ Owens Brockway
Sampler: Dave Walter	Start Date: 6-23-03
Well I.D.: MW-19	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 25.08	Depth to Water: 12.18
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- X Other Middleburg pump

Sampling Method:

- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

2.1 (Gals.) X 3 = 6.3 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
11:33	67.0	7.6	792	>200	2.1	cloudy/odor
11:36	66.4	7.5	743	>200	4.2	
11:39	66.1	7.4	715	>200	6.3	

Did well dewater? Yes (No)
Gallons actually evacuated: 6.3

Sampling Time: 11:45
Sampling Date:

Sample I.D.: MW-19
Laboratory: McCampbell

Analyzed for: (TPH-G) (BTEX) (MTBE) (TPH-D)
Other: Motor Oil, EPA 8270, TDS + Conductivity

Equipment Blank I.D.: @ Time
Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D
Other:

D.O. (if req'd): Pre-purge: mg/L
Post-purge: mg/L

ORP (if req'd): Pre-purge: mV
Post-purge: mV

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

CKG Environmental	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
808 Zinfandel Lane		Date Received: 06/25/03
St. Helena, CA 94574	Client Contact: Chris Kennedy	Date Extracted: 06/28/03
	Client P.O.:	Date Analyzed: 06/28/03

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0306556

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-19	W	480,g	---	ND	ND	ND	ND	1	95.3
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
		Date Received: 06/25/03
	Client Contact: Chris Kennedy	Date Extracted: 06/25/03
	Client P.O.:	Date Analyzed: 07/02/03

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0306556

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0306556-001B	MW-19	W	1100,k	ND	1	99.1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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CKG Environmental	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
808 Zinfandel Lane		Date Received: 06/25/03
St. Helena, CA 94574	Client Contact: Chris Kennedy	Date Extracted: 07/01/03
	Client P.O.:	Date Analyzed: 07/01/03

Methyl tert-Butyl Ether*

Extraction method: SW5030B Analytical methods: SW8260B Work Order: 0306556

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
001E	MW-19	W	ND	1	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

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CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
		Date Received: 06/25/03
	Client Contact: Chris Kennedy	Date Extracted: 06/25/03
	Client P.O.:	Date Analyzed: 06/26/03

Semi-Volatile Organics by GC/MS (Basic Target List)*

Extraction Method: SW3510C | Analytical Method: SW8270D | Work Order: 0306556

Lab ID	0306556-001C
Client ID	MW-19
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	10	Acenaphthylene	ND	1.0	10
Anthracene	ND	1.0	10	Benzidine	ND	1.0	50
Benzoic Acid	ND	1.0	50	Benz(a)anthracene	ND	1.0	10
Benzo(b)fluoranthene	ND	1.0	10	Benzo(k)fluoranthene	ND	1.0	10
Benzo(g,h,i)perylene	ND	1.0	10	Benzo(a)pyrene	ND	1.0	10
Benzyl Alcohol	ND	1.0	20	Bis (2-chloroethoxy) Methane	ND	1.0	10
Bis (2-chloroethyl) Ether	ND	1.0	10	Bis (2-chloroisopropyl) Ether	ND	1.0	10
Bis (2-ethylhexyl) Phthalate	ND	1.0	10	4-Bromophenyl Phenyl Ether	ND	1.0	10
Butylbenzyl Phthalate	ND	1.0	10	4-Chloroaniline	ND	1.0	20
4-Chloro-3-methylphenol	ND	1.0	10	2-Chloronaphthalene	ND	1.0	10
2-Chlorophenol	ND	1.0	10	4-Chlorophenyl Phenyl Ether	ND	1.0	10
Chrysene	ND	1.0	10	Dibenzo(a,h)anthracene	ND	1.0	10
Dibenzofuran	ND	1.0	10	Di-n-butyl Phthalate	ND	1.0	10
1,2-Dichlorobenzene	ND	1.0	10	1,3-Dichlorobenzene	ND	1.0	10
1,4-Dichlorobenzene	ND	1.0	10	3,3-Dichlorobenzidine	ND	1.0	20
2,4-Dichlorophenol	ND	1.0	10	Diethyl Phthalate	ND	1.0	10
2,4-Dimethylphenol	ND	1.0	10	Dimethyl Phthalate	ND	1.0	10
4,6-Dinitro-2-methylphenol	ND	1.0	50	2,4-Dinitrophenol	ND	1.0	50
2,4-Dinitrotoluene	ND	1.0	10	2,6-Dinitrotoluene	ND	1.0	10
Di-n-octyl Phthalate	ND	1.0	10	1,2-Diphenylhydrazine	ND	1.0	10
Fluoranthene	ND	1.0	10	Fluorene	ND	1.0	10
Hexachlorobenzene	ND	1.0	10	Hexachlorobutadiene	ND	1.0	10
Hexachlorocyclopentadiene	ND	1.0	50	Hexachloroethane	ND	1.0	10
Indeno (1,2,3-cd) pyrene	ND	1.0	10	Isophorone	ND	1.0	10
2-Methylnaphthalene	ND	1.0	10	2-Methylphenol (o-Cresol)	ND	1.0	10
3 &/or 4-Methylphenol (m,p-Cresol)	ND	1.0	10	Naphthalene	ND	1.0	10
2-Nitroaniline	ND	1.0	50	3-Nitroaniline	ND	1.0	50
4-Nitroaniline	ND	1.0	50	2-Nitrophenol	ND	1.0	50
4-Nitrophenol	ND	1.0	50	Nitrobenzene	ND	1.0	10
N-Nitrosodiphenylamine	ND	1.0	10	N-Nitrosodi-n-propylamine	ND	1.0	10
Pentachlorophenol	ND	1.0	50	Phenanthrene	ND	1.0	10
Phenol	ND	1.0	10	Pyrene	ND	1.0	10
1,2,4-Trichlorobenzene	ND	1.0	10	2,4,5-Trichlorophenol	ND	1.0	10
2,4,6-Trichlorophenol	ND	1.0	10				

Surrogate Recoveries (%)

%SS1:	46.4	%SS2:	50.3
%SS3:	50.9	%SS4:	51.8
%SS5:	60.1	%SS6:	58.5

Comments:

* water samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

#) surrogate diluted out of range; &) low or no surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

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CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
		Date Received: 06/25/03
	Client Contact: Chris Kennedy	Date Extracted: 06/25/03
	Client P.O.:	Date Analyzed: 06/26/03

Total Dissolved Solids

Analytical Method: SM2540C

Work Order: 0306556

Lab ID	Client ID	Matrix	Total Dissolved Solids	DF
0306556-001D	MW-19	W	490	1

Method Accuracy and Reporting Units	W	10 mg/L	
	S	NA	

DHS Certification No. 1644

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CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: #030623-DW-2	Date Sampled: 06/23/03
		Date Received: 06/25/03
	Client Contact: Chris Kennedy	Date Extracted: 06/25/03
	Client P.O.:	Date Analyzed: 06/25/03

Specific Conductivity

Analytical Method: SM2510B — Work Order: 0306556

Lab ID	Client ID	Matrix	Specific Conductance	DF
0306556-001D	MW-19	W	790 @ 25.0°C	1

Method Accuracy and Reporting Units	W	10 µmhos/cm @ 25°C	
	S	NA	

DHS Certification No. 1644

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0306556

EPA Method: SW8021B/8015Cm	Extraction: SW5030B	BatchID: 7529	Spiked Sample ID: 0306555-001A

	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	19.86	60	104	106	1.52	109	110	1.41	70	130
MTBE	244.3	10	NR	NR	NR	89.1	86.5	2.95	70	130
Benzene	3.823	10	92	88.7	2.56	101	96.3	4.34	70	130
Toluene	6.155	10	86.9	81.4	3.73	99.3	96.5	2.86	70	130
Ethylbenzene	1.274	10	108	103	4.28	112	108	3.51	70	130
Xylenes	5.1	30	99.7	99.7	0	107	100	6.45	70	130
%SS:	106	100	101	100	1.39	105	100	5.11	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8015C

Matrix: W WorkOrder: 0306556

EPA Method: SW8015C	Extraction: SW3510C			BatchID: 7530		Spiked Sample ID: N/A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	109	108	0.468	70	130
%SS:	N/A	100	N/A	N/A	N/A	98.6	98.2	0.480	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8260B

Matrix: W WorkOrder: 0306556

EPA Method: SW8260B	Extraction: SW5030B			BatchID: 7552			Spiked Sample ID: 0306567-017B			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Methyl-t-butyl ether (MTBE)	ND	10	115	115	0	109	111	2.08	70	130
%SS1:	116	100	113	113	0	108	108	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QC SUMMARY REPORT FOR SW8270D

Matrix: W WorkOrder: 0306556

EPA Method: SW8270D	Extraction: SW3510C				BatchID: 7526			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Acenaphthene	N/A	50	N/A	N/A	N/A	59.2	64	7.84	30	130
4-Chloro-3-methylphenol	N/A	100	N/A	N/A	N/A	70.3	71.9	2.17	30	130
2-Chlorophenol	N/A	100	N/A	N/A	N/A	64.3	65.9	2.49	30	130
1,4-Dichlorobenzene	N/A	50	N/A	N/A	N/A	58.3	64.3	9.77	30	130
2,4-Dinitrotoluene	N/A	50	N/A	N/A	N/A	68.7	70.8	3.04	30	130
4-Nitrophenol	N/A	100	N/A	N/A	N/A	51	51.5	0.975	30	130
N-Nitrosodi-n-propylamine	N/A	50	N/A	N/A	N/A	70.1	74.3	5.83	30	130
Pentachlorophenol	N/A	100	N/A	N/A	N/A	51.8	51.9	0.174	30	130
Phenol	N/A	100	N/A	N/A	N/A	57.3	57	0.402	30	130
Pyrene	N/A	50	N/A	N/A	N/A	62.5	68.6	9.22	30	130
1,2,4-Trichlorobenzene	N/A	50	N/A	N/A	N/A	59	63	6.46	30	130
%SS1:	N/A	100	N/A	N/A	N/A	51.2	57.9	12.4	30	130
%SS2:	N/A	100	N/A	N/A	N/A	59.6	67.7	12.7	30	130
%SS3:	N/A	100	N/A	N/A	N/A	66.9	74.4	10.7	30	130
%SS4:	N/A	100	N/A	N/A	N/A	60.6	69.7	14.0	30	130
%SS5:	N/A	100	N/A	N/A	N/A	59	67.9	14.0	30	130
%SS6:	N/A	100	N/A	N/A	N/A	62.5	70.7	12.2	30	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: Specific Conductance **Matrix:** W **WorkOrder:** 0306556

Method Name: SM2510B			Units: µmhos/cm			BatchID: 7534
SampleID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
0306556-001D	790	1	790	1	0	±25

Test Method: Total Dissolved Solids **Matrix:** W **WorkOrder:** 0306556

Method Name: SM2540C			Units: mg/L			BatchID: 7533
SampleID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
0306556-001D	490	1	480	10	2.06	±30

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

RD = Absolute Value (Sample - Duplicate); RPD = 100 * (Sample - Duplicate) / (Sample + Duplicate) * 2.

25 030655

BLAINE TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY

BTS # 030623-DW-2

CLIENT: CKG Environmental

SITE: Owens Brockway Glass Plant
3600 Alameda Avenue
Oakland, CA

LAB: McCampbell | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION ______
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Invoice and Report to : CKG Environmental
808 Zinfindel Lane, St Helena, CA 94574
Attn: Christina Kennedy

Lab to provide a copy of chromatograph

CONDUCT ANALYSIS TO DETECT

SAMPLE I.D.	DATE	TIME	MATRIX (S= SOIL W=H2O)	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	TPH - D (8015)	Motor Oil	TPH-G	BTEX	EPA 8270	MTBE by 8260 per C.K.	TDS	CONDUCTIVITY	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-19	6-23	11:45	W	11	HCL		X	X	X	X	X	X	X	X				

ICE ✓ — GOOD CONDITION ✓ — HEAD SPACE ABSENT ✓ — DECHLORINATED IN LAB ____

PRESERVATION (VOAS ✓ | O&G | METALS | OTHER) — APPROPRIATE CONTAINERS ✓ — PRESERVED IN LAB ____

SAMPLING COMPLETED — DATE: 6-23-03 — TIME: 12:00 — SAMPLING PERFORMED BY: Dave Walter

RESULTS NEEDED NO LATER THAN: Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
David C. Walter	6/25/03	0930	RC Grandst	0625-03	0930
RC Grandst	6/25/03	0955	[signature]	6/25	
[signature]	6/25/03	15:20	V. Lopez	6/25/03	3:20

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

McCampbell Analytical Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0306556

Client:
CKG Environmental
808 Zinfandel Lane
St. Helena, CA 94574

TEL: (707) 967-8022
FAX: (707) 967-8080
ProjectNo: #030623-DW-2
PO:

Date Received: 6/25/03
Date Printed: 6/26/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					SM2510B	SM2540C	SW8015C	V8021B/8015C	SW8260B	SW8270D	
0306556-001	MW-19	Water	6/23/03 11:45:00 AM	☐	D	D	B	A	E	C	

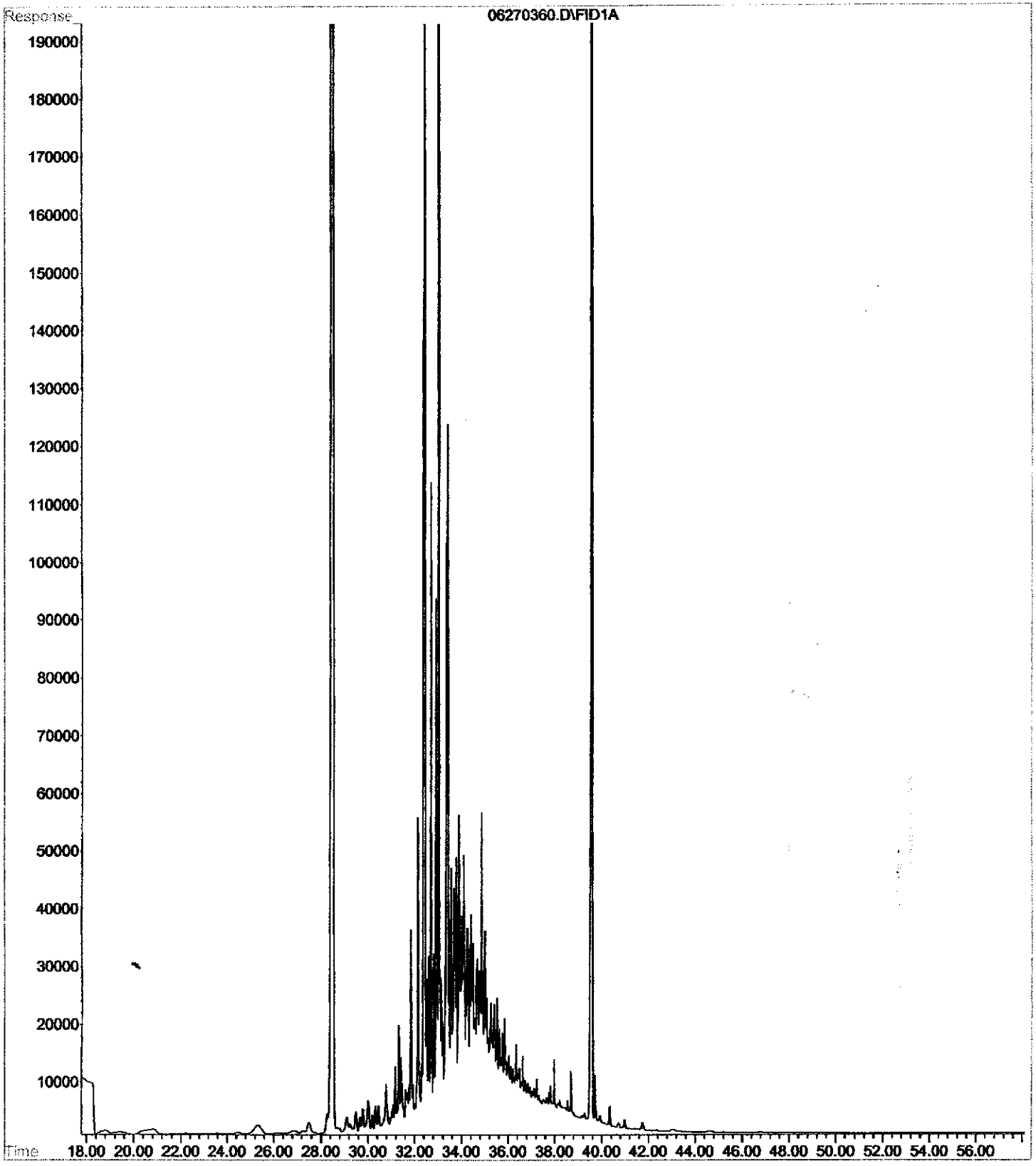
Prepared by: Michelle Miller

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

File : D:\HPCHEM\GC6\DATAA\06270360.D
Operator : Thu
Acquired : 29 Jun 2003 4:21 pm using AcqMethod GC6ANEWK.M
Instrument : GC-6
Sample Name: 0306556-001B W
Misc Info : TPH(DMO)_W
Vial Number: 30

MW-19

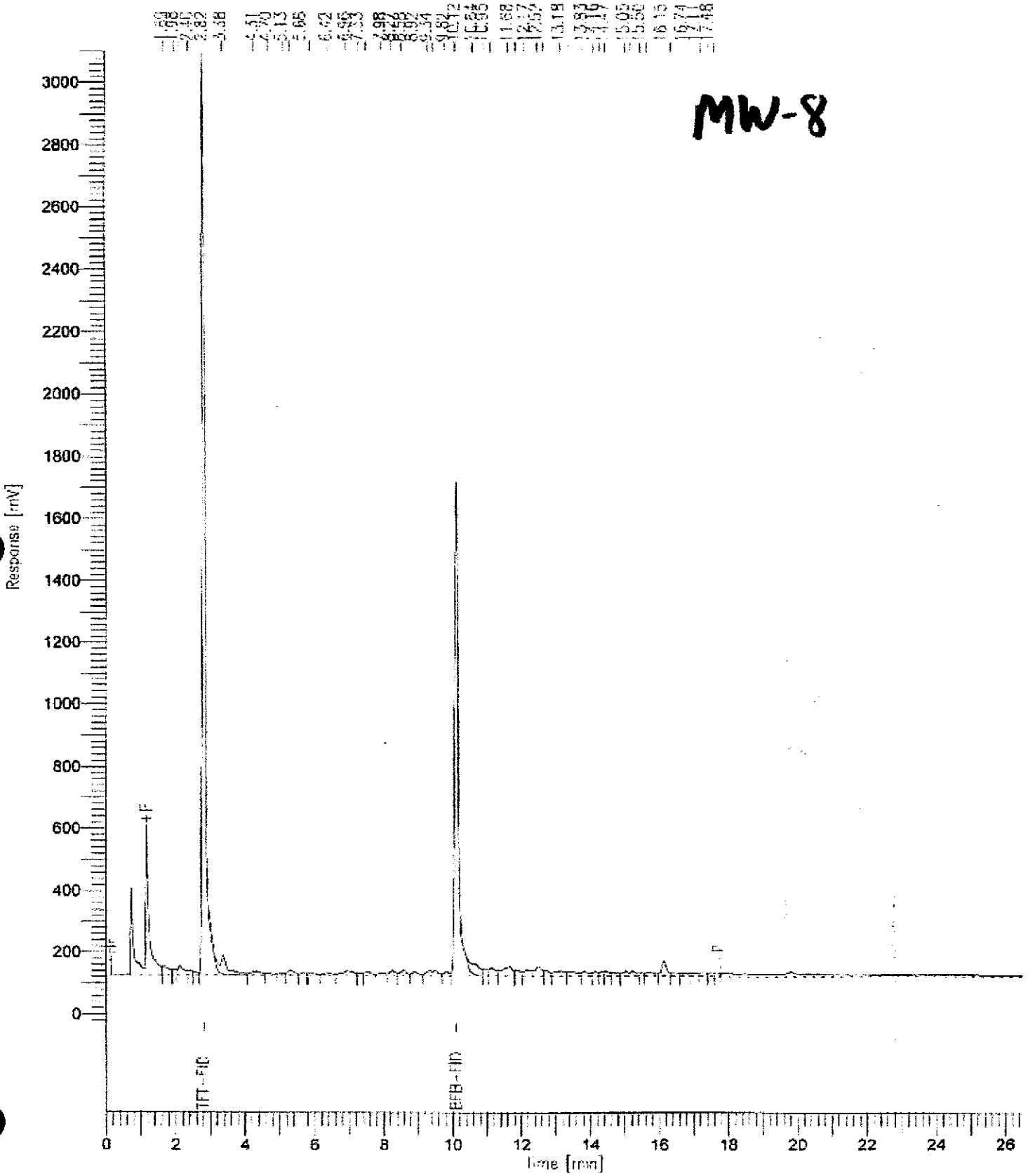


Gasoline Chromatogram

Sample Name : SA-WA-2002-12-0123-000 -> MW-8
FileName : J:\2002\D\DATA\5G111208.raw
Method : 5G100902
Start Time : 0.00 min End Time : 26.50 min
Scale Factor: 1.0 Plot Offset: -24 mV

Sample #:
Date : 12/12/2002 14:49
Time of Injection: 12/12/2002 10:58
Low Point : -23.71 mV High Point : 3101.01 mV
Plot Scale: 3125.5 mV

MW-8

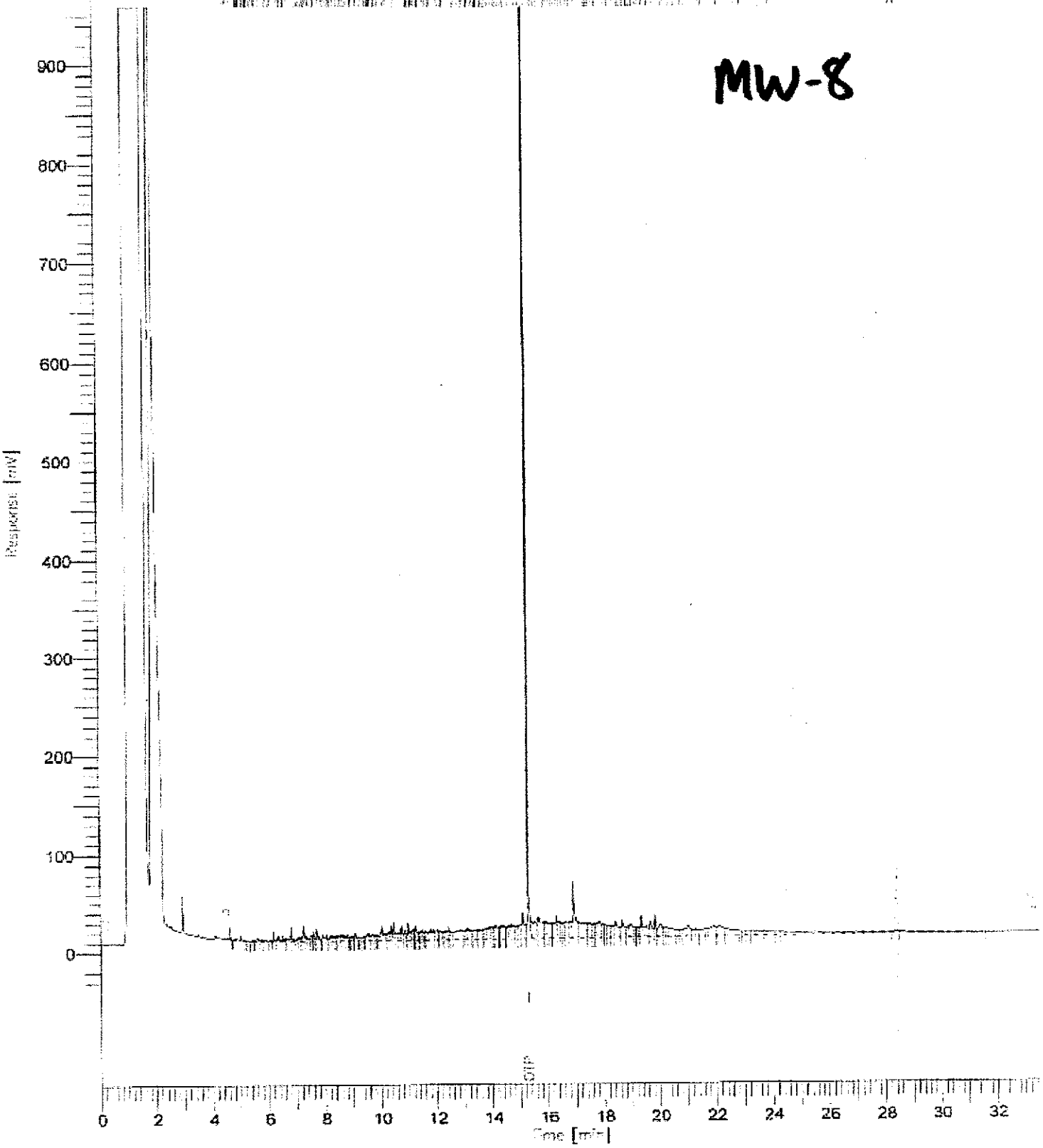


Chromatogram

Sample Name : 120113-008
FileName : N:\120112\DATA\6B07013.raw
Method : 418e1003
Start Time : 9.00 min End Time : 33.50 min
Scale Factor: +1.0 Plot Offset: +41 mV

Sample #: 120601 Page: 1 of 1
Date : 12/08/2012 03:?w
Time of Injection: 12/07/2012 ??:??
Low Point : +49.05 mV High Point : 969.05 mV
Plot Scale: 1000.0 mV

MW-8



Gasoline Chromatogram

Sample Name : SA-MA-0000-12-0164-102 => MW-7
FileName : d:\200212\DATA\021113.raw
Method : 5G100302
Start Time : 0.00 min End Time : 26.50 min
Scale Factor: 1.0 Plot Offset: 26 mV

Sample #:
Date : 12/12/02 06:00 AM
Time of Injection: 12/11/02 08:03 PM
Low Point : 26.98 mV High Point : 1171.75 mV
Plot Scale: 2005.2 mV

MW-7

Response [mV]

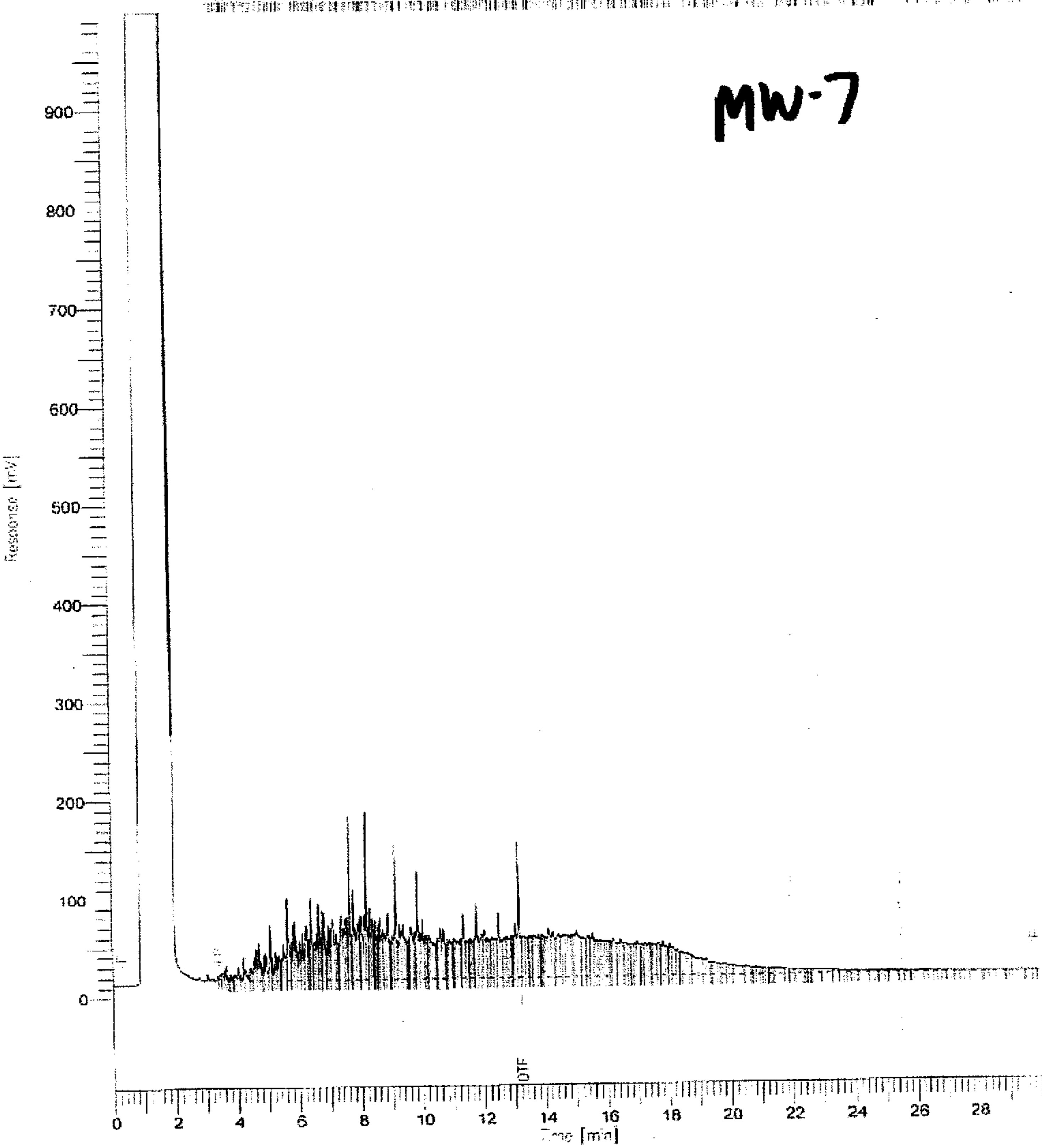
Time [min]

Chromatogram

Sample Name : 120164-002 5x
FileName : G:\200212\DATA\B012003.raw
Method : DTEH1016
Start Time : 0.00 min
End Time : [illegible] min
Scale Factor: [illegible]
Plot Offset: 0 mV

Sample #: 120001
Date : 12/12/2002 16:5[illegible]
Time of Injection: 12/12/2002 16:22
Low Point : 0.00 mV
High Point : 1000.00 mV
Plot Scale: 1000.0 mV

MW-7

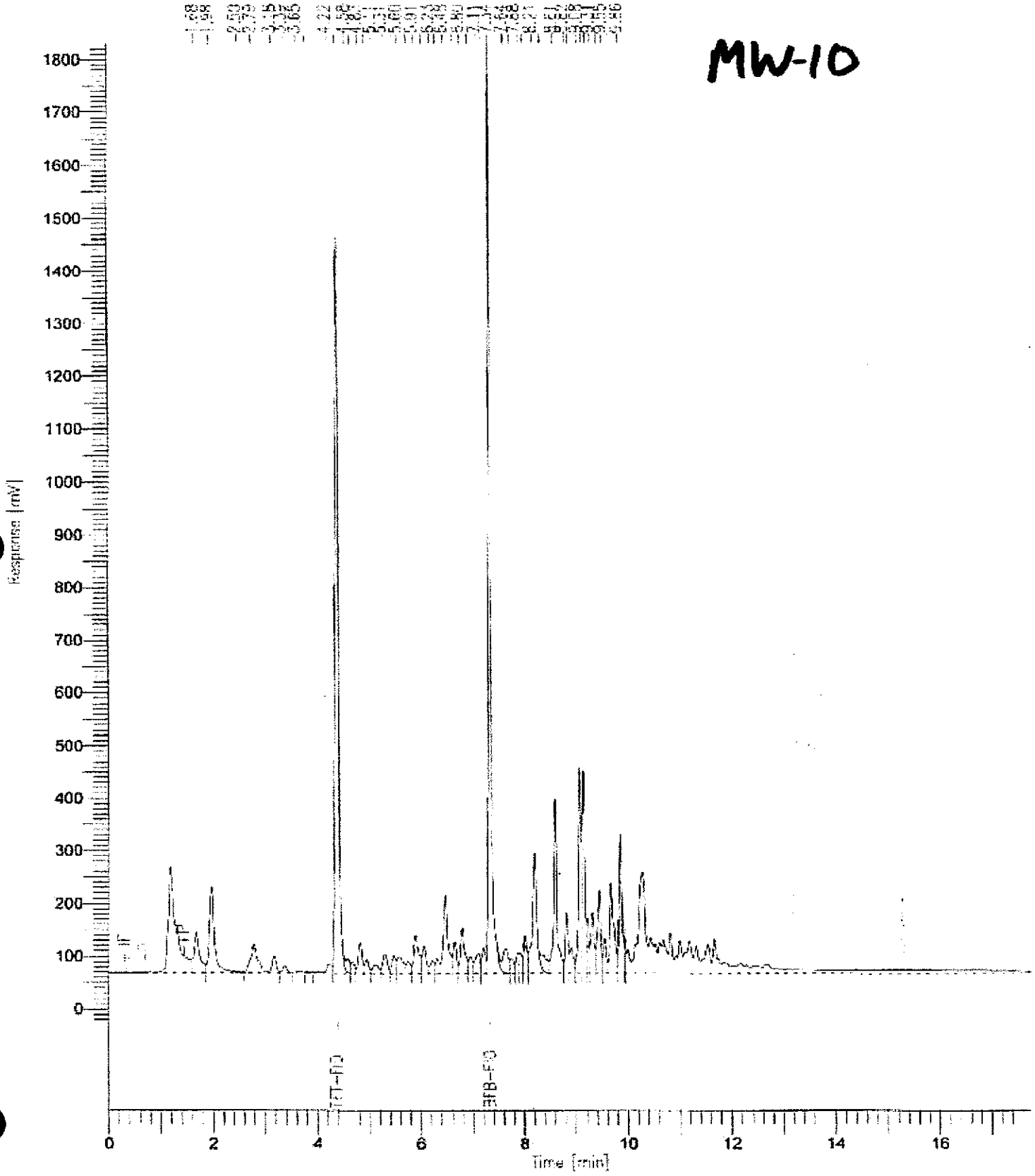


Gasoline Chromatogram

Sample Name : 3A-MA-2002-12-0136-001 => MW-10
FileName : T:\200212\DATA\4P1204S1.raw
Method : 40WD030D
Start Time : 0.00 min End Time : 17.75 min
Scale Factor: 1.0 Plot Offset: -21 mV

Sample #: Page 1 of 1
Date : 12/10/2002 09:44
Time of Injection: 12/10/2002 09:40
Low Point : -70.58 mV High Point : 1819.06 mV
Plot Scale: 1856.2 mV

MW-10



Chromatogram

Sample Name : 120125-10
FileName : N:\GC21\DATA\2012015.raw
Method : TPH8090
Start Time : 0.00 min
Scale Factor: 1.0

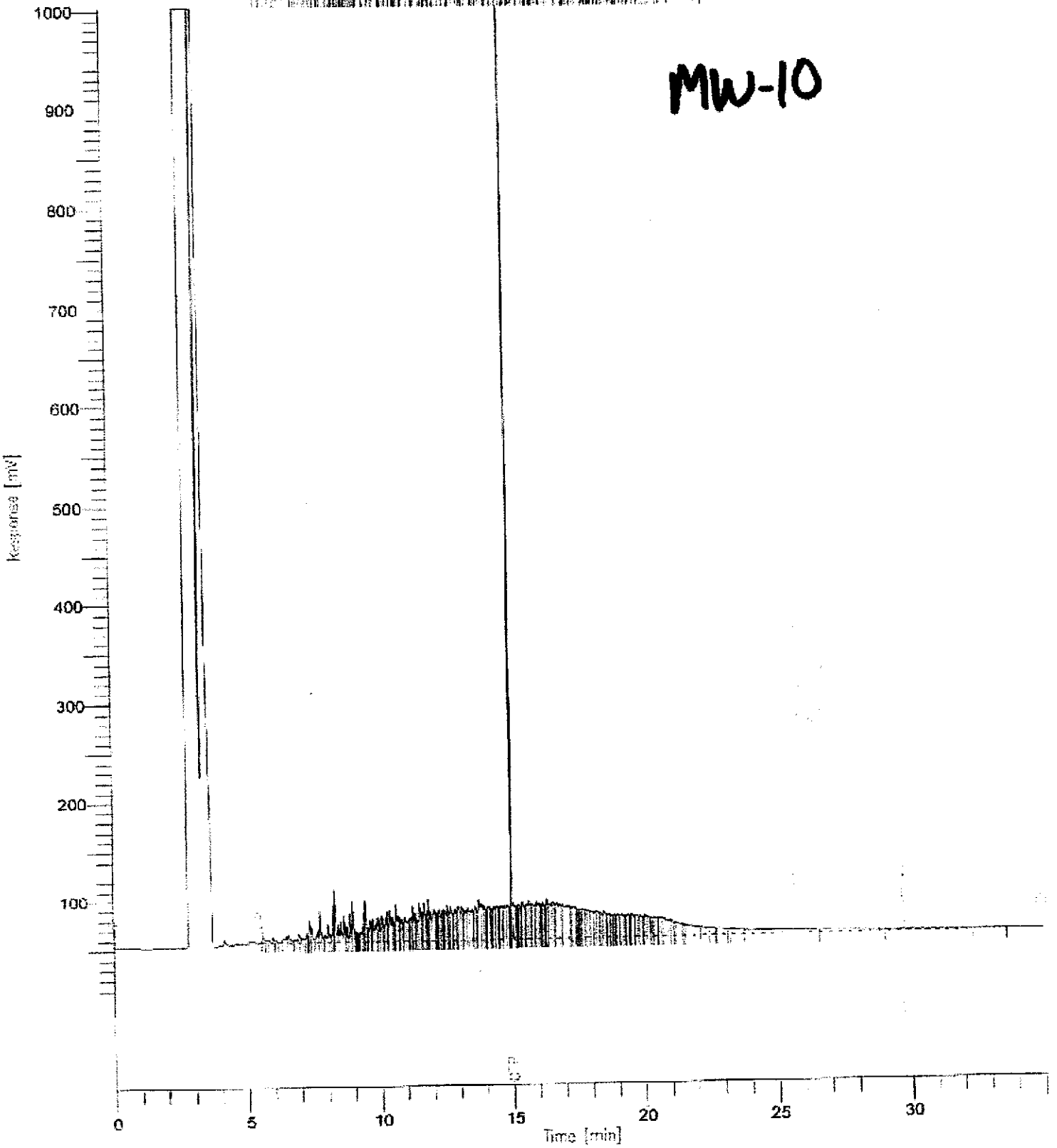
End Time : 35.02 min
Plot Offset: 3 mV

Sample #: 103901
Date : 1/19/2012 03:04
Time of Injection: 1/19/2012 19:28
Low Point : 2.70 mV
Plot Scale: 1000.0 mV

High Point : 1032.70 mV

Page 1 of 1

MW-10

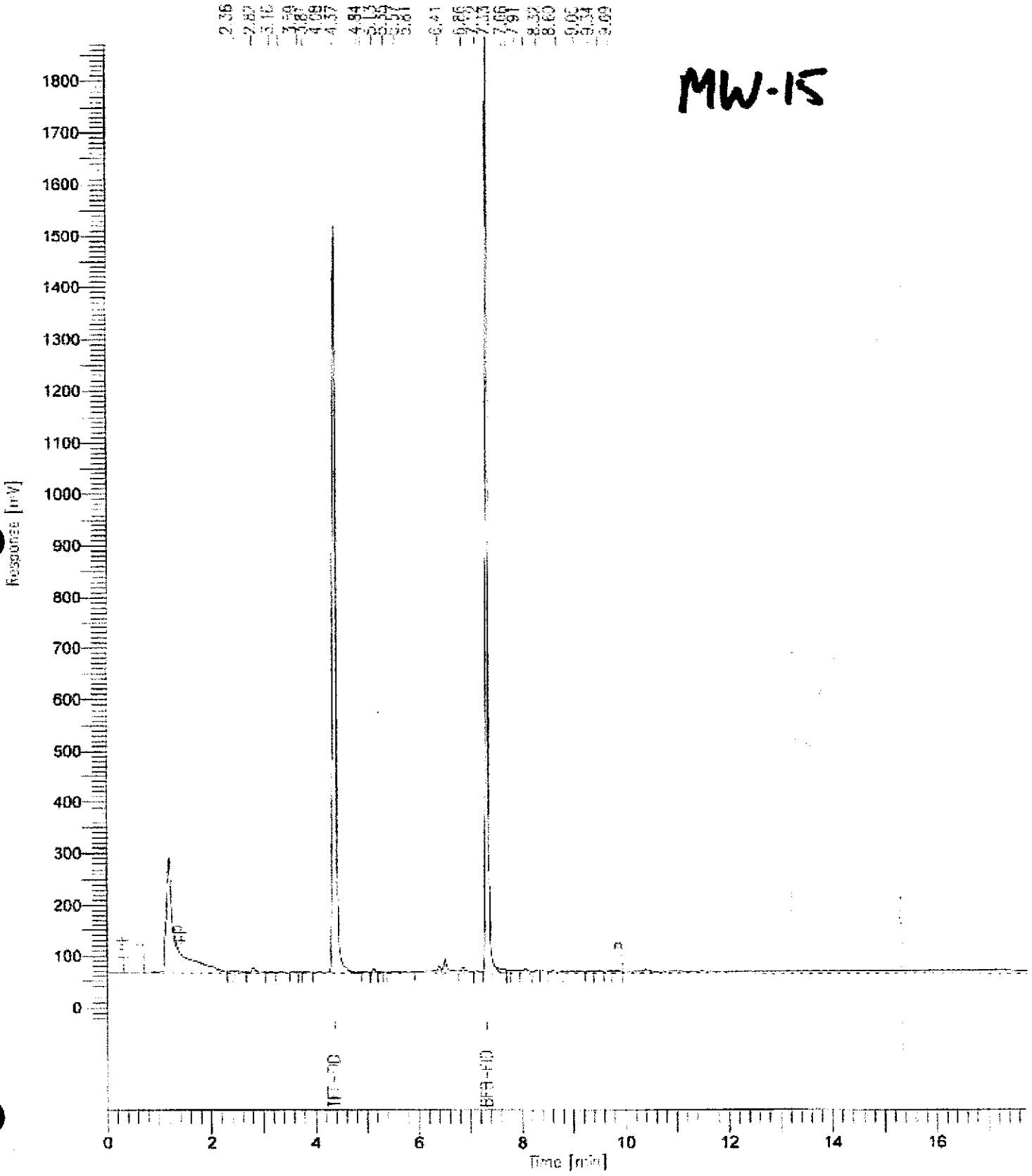


Gasoline Chromatogram

Sample Name : SA-WA-2002-12-0128-002 mw mw-15
FileName : C:\CHEM\1\DATA\401280002.raw
Method : GRO.MTH
Start Time : 0.00 min End Time : 17.75 min
Scale Factor: 1.0 Plot Offset: -23 mV

Sample #: Page 1 of 1
Date : 12/18/2002 06:45
Time of Injection: 12/09/2002 23:30
Low Point : 23.26 mV High Point : 1871.42 mV
Plot Scale: 1894.7 mV

MW-15



Chromatogram

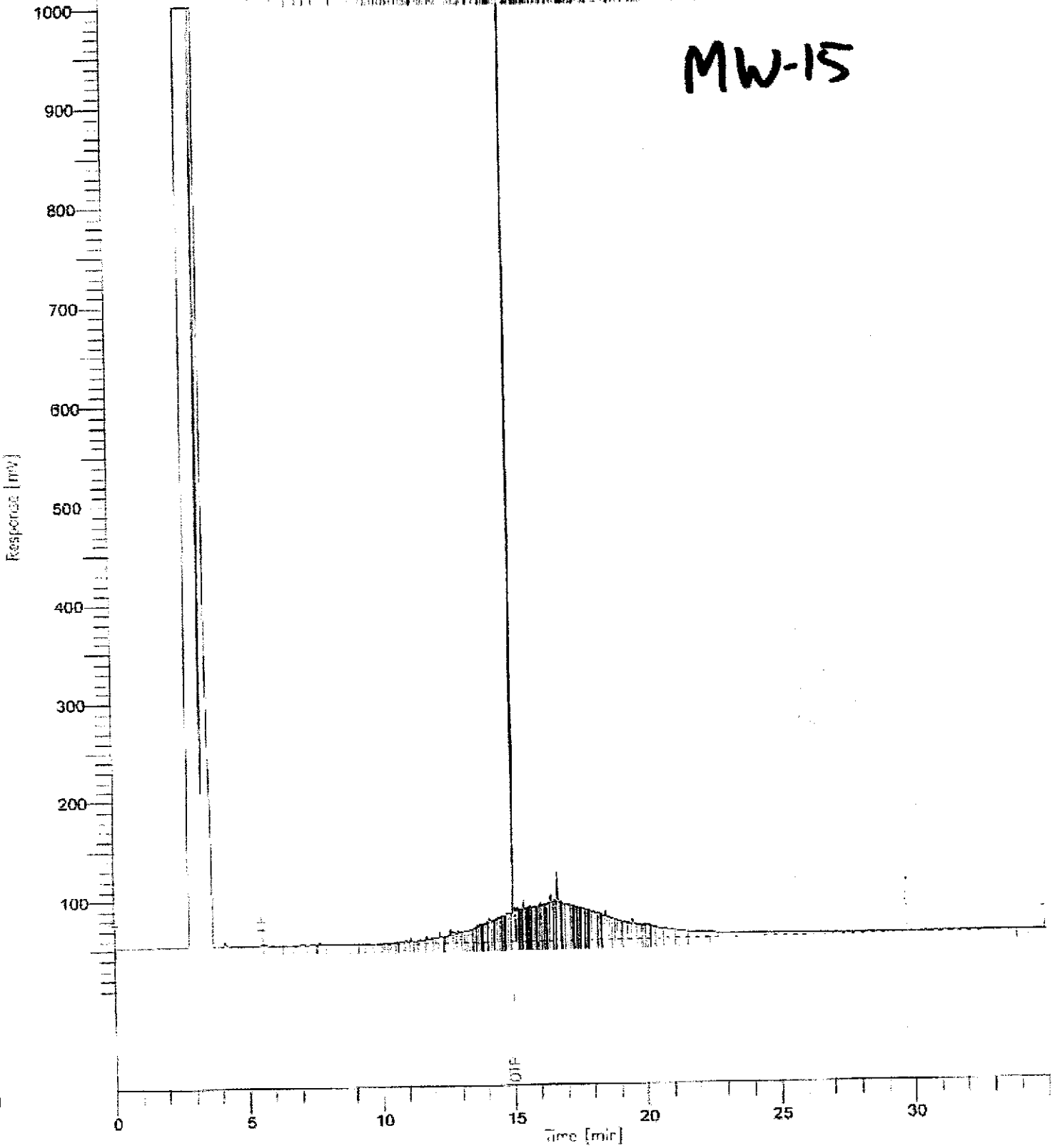
Sample Name : 120126-002
Filename : M:\2012\12\DATA\2012DEC13.raw
Method : 1TPH1020
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 35.00 min
Plot Offset: 2 mV

Sample #: 120960
Date : 12/[illegible]/2012 16:44
Time of Injection: 12/30/2012 16:09
Low Point : 2.74 mV
High Point : 1002.74 mV
Plot Scale: 1000.0 mV

Page 1 of 1

MW-15

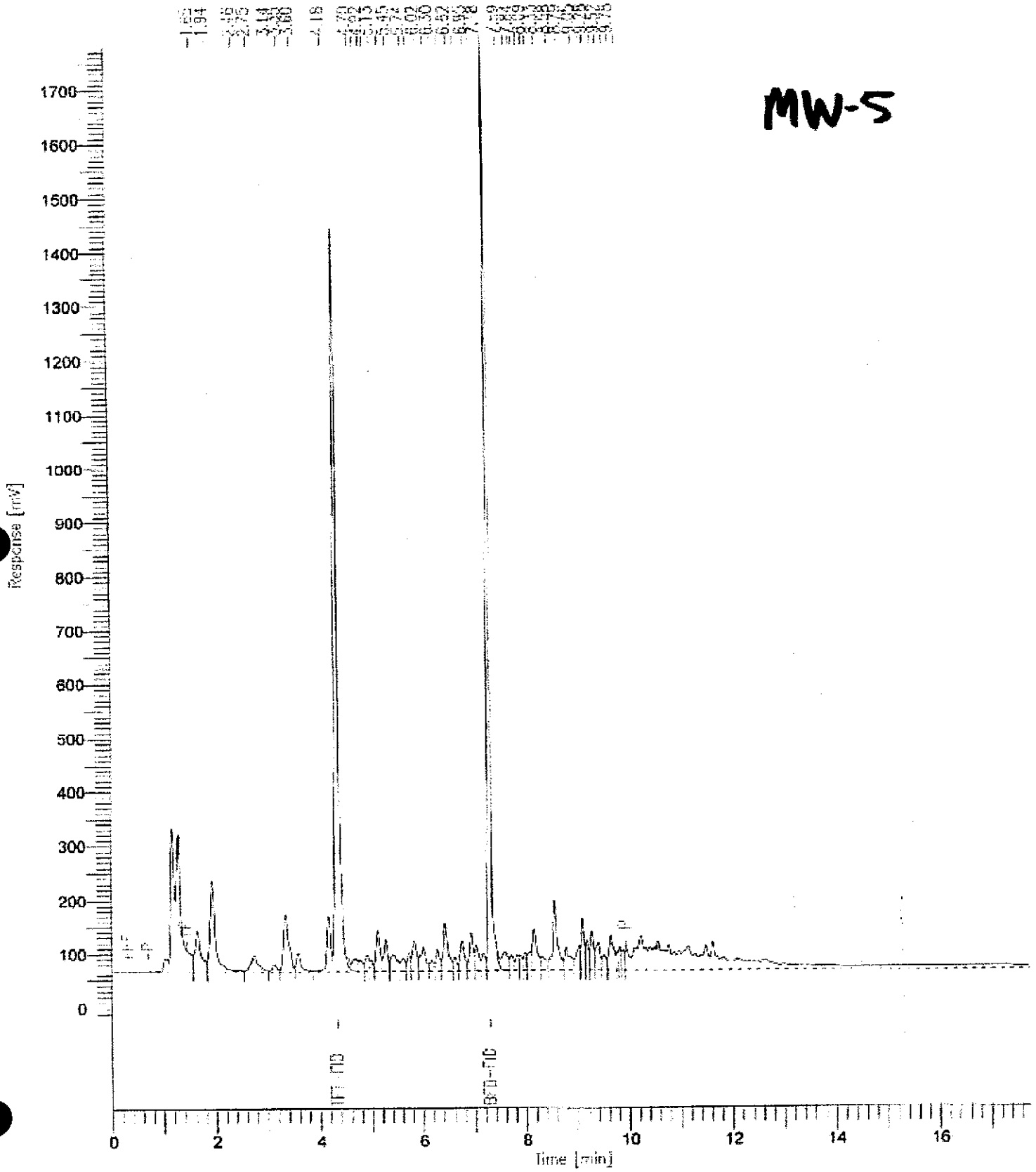


Gasoline Chromatogram

Sample Name : 9A-WA-1330-ID-0164-002 => MW-5
FileName : I:\1001C\DATA\4G121035.raw
Method : 4GWD050C
Start Time : 0.00 min End Time : 17.77 min
Shift Factor: 1.0 Plot Offset: -20 mV

Sample 1:
Date : 12/11/02 08:37 AM
Time of Injection: 12/11/02 02:03 AM
Low Point : -19.54 mV High Point : 1778.10 mV
Plot Scale: 1798.6 mV

MW-5

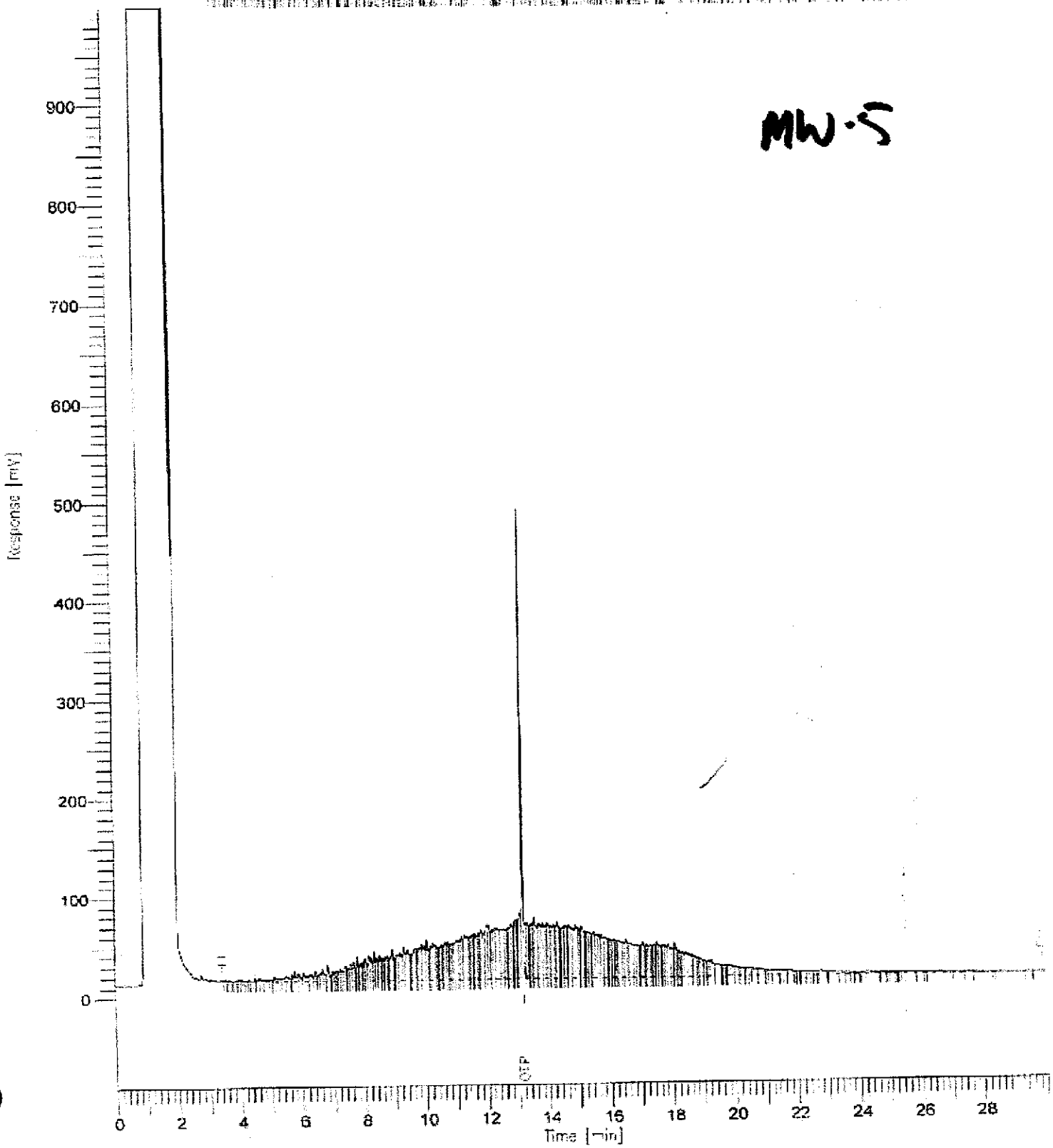


Chromatogram

Sample Name : [illegible]
FileName : d:\[illegible]\DATA\[illegible].RAW
Method : [illegible].MTH
Start Time : 0.00 min End Time : 30.00 min
Stop Factor: 0.0 Plot Offset: 0 mV

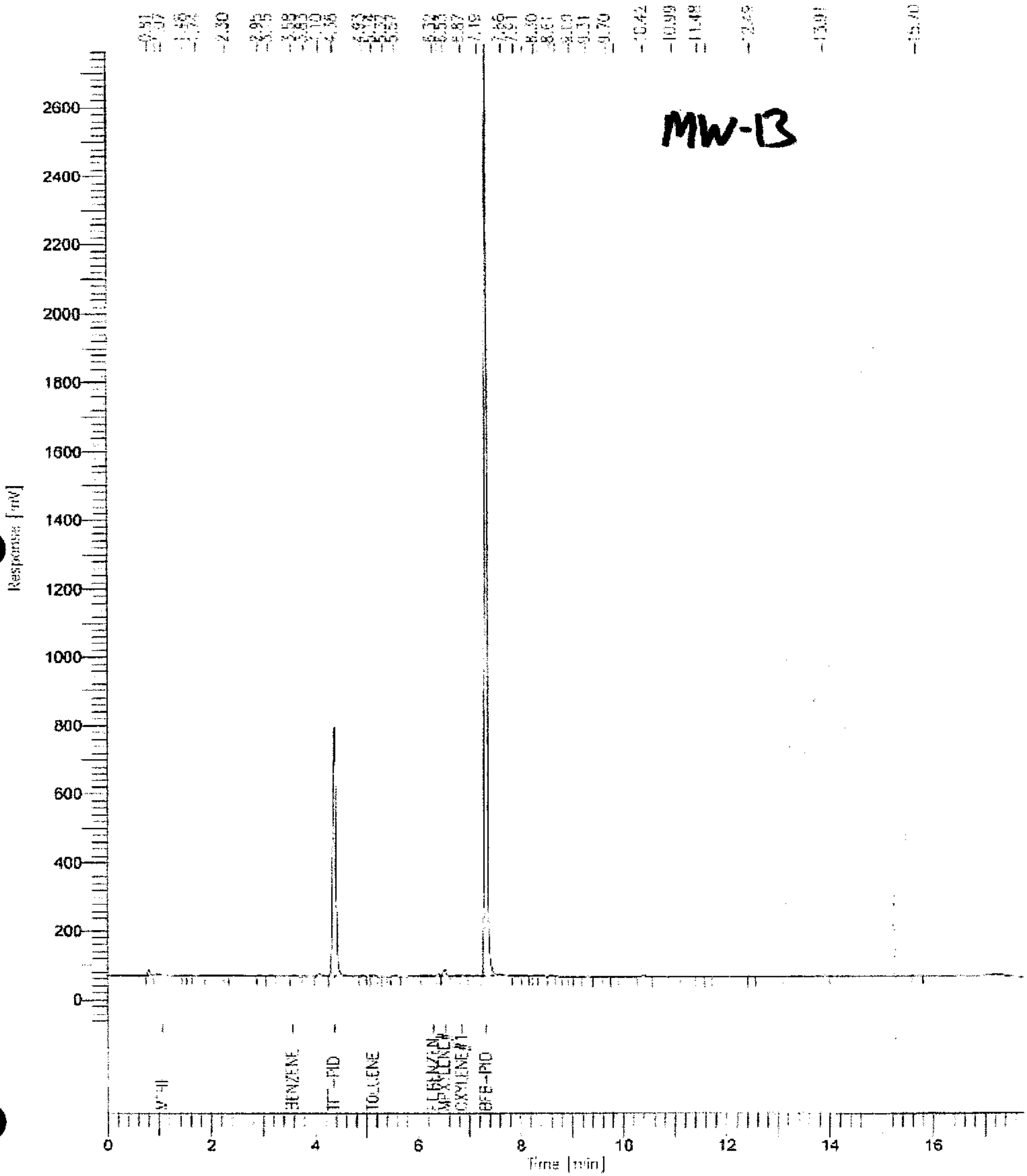
Sample #: [illegible] Page 1 of 1
Date : 12/[illegible]/[illegible] 10:06
Time of Injection: 12/09/[illegible] 10:12
Low Point : 9.00 mV High Point : 1000.00 mV
Plot Scale: 1000.0 mV

MW-5



BTEX Chromatogram

Sample Name : SA-WA-2002-12-0104-001 => MW-13
FileName : J:\200212\DATA\4B120931.raw
Method : 4BNDC602
Start Time : 0.00 min
Scale Factor: 1.0
End Time : 17.75 min
Plot Offset: -66 mV
Sample #:
Date : 12/10/2002 06:44
Time of Injection: 12/09/2002 23:26
Low Point : -65.61 mV
High Point : 2760.11 mV
Plot Scale: 2825.7 mV



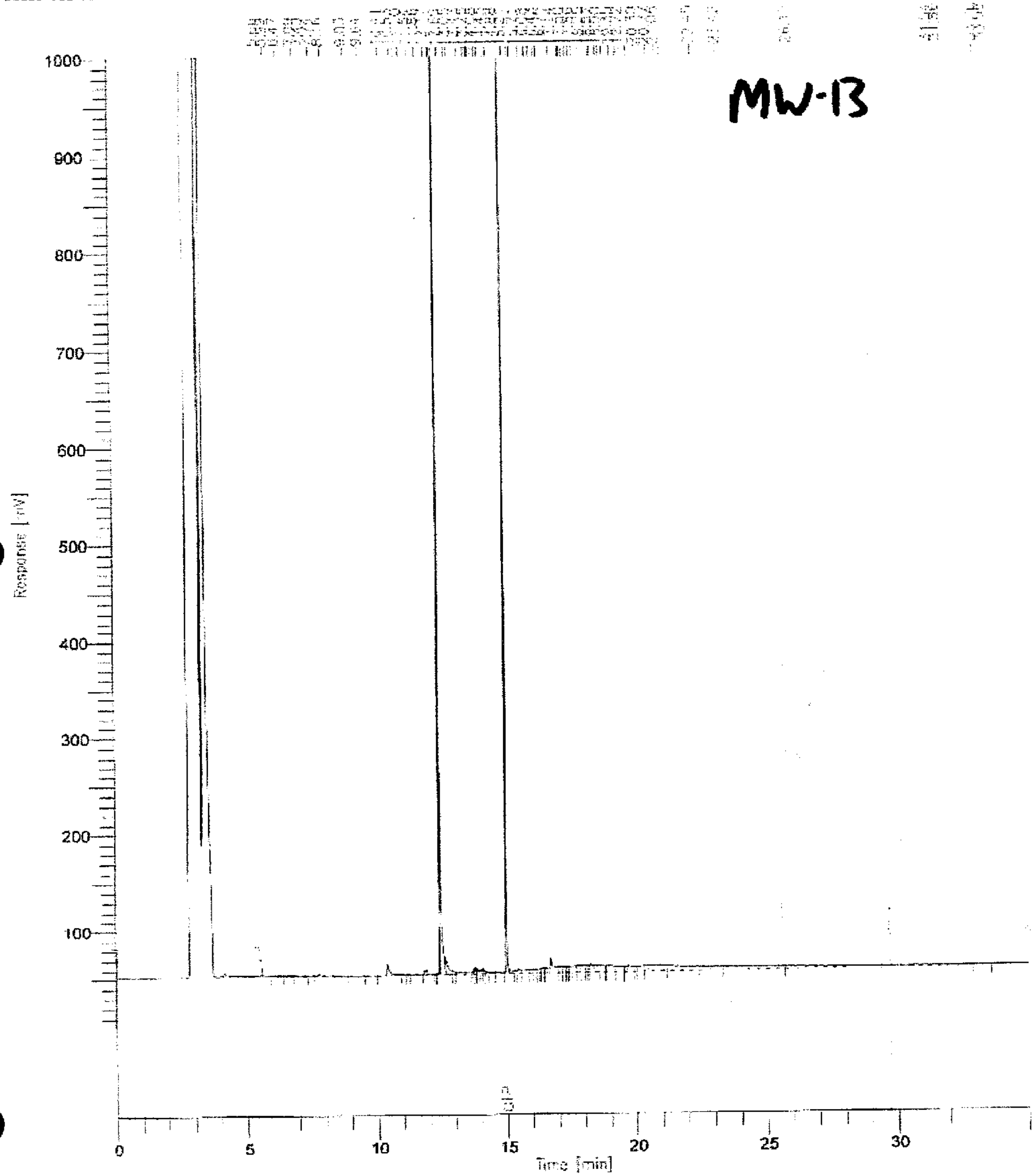
Chromatogram

Sample Name : [illegible]-001
FileName : [illegible]\DATA\[illegible].raw
Method : [illegible]
Start Time : [illegible] min
Scale Factor: -1.0

End Time : 35.00 min
Plot Offset: [illegible] mV

Sample #: [illegible]
Date : [illegible]/2002 [illegible]
Time of Injection: 12/10/2002 17:29
Low Point : [illegible] mV
Plot Scale: [illegible] mV

High Point : [illegible] mV

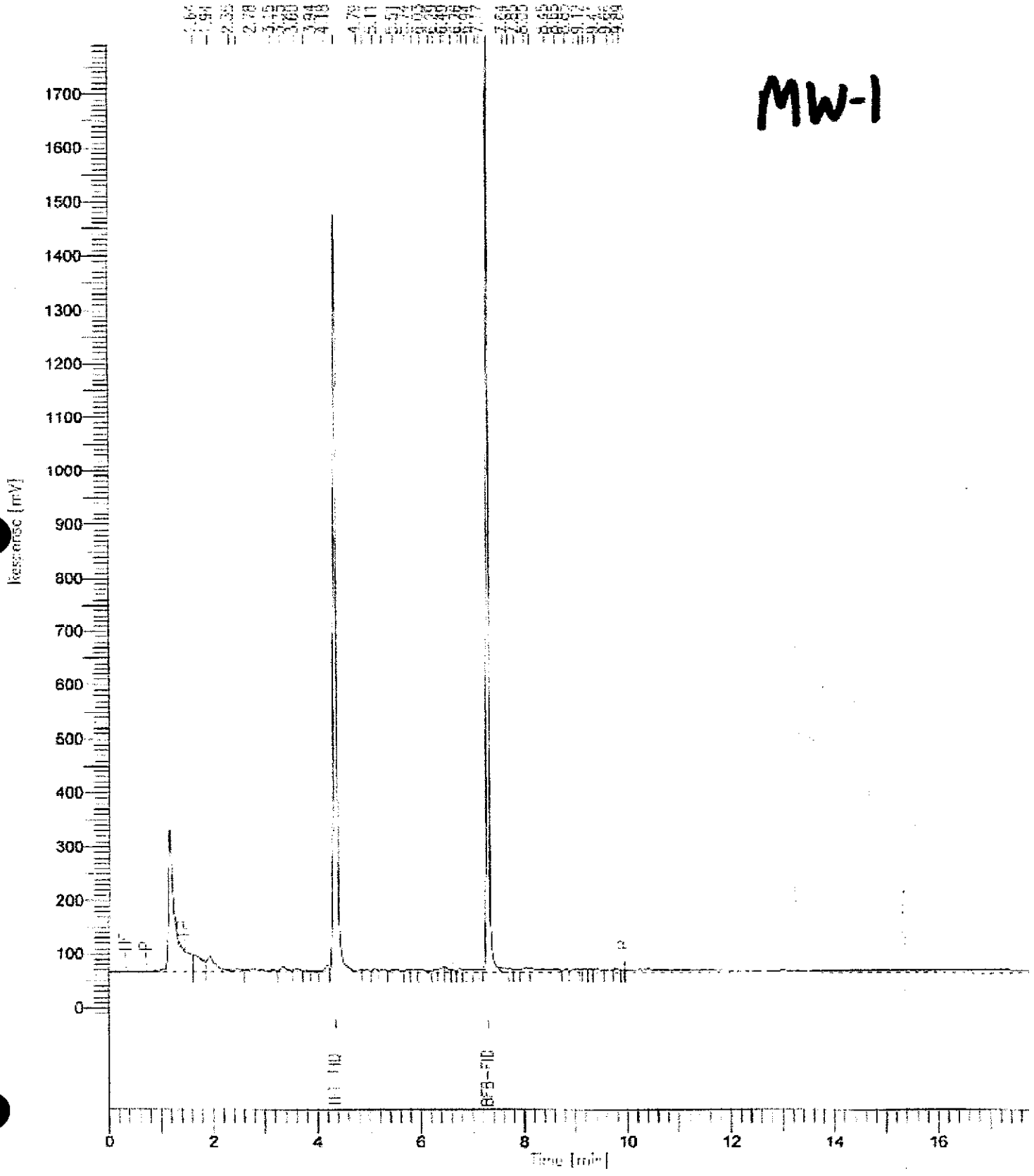


Gasoline Chromatogram

Sample Name : EA-NA-0037-12-0164-001 # MW-1
FileName : C:\Chem32\1\DATA\4012I933.raw
Method : 4GW70302
Start Time : 0.00 min End Time : 17.75 min
Scale Factor: 1.0 Plot Offset: -20 mV

Sample #: Page 1 of 1
Date : 12/11/12 06:36 AM
Time of Injection: 12/11/12 04:20 AM
Low Point : -19.82 mV High Point : 1790.91 mV
Plot Scale: 1810.6 mV

MW-1



Chromatogram

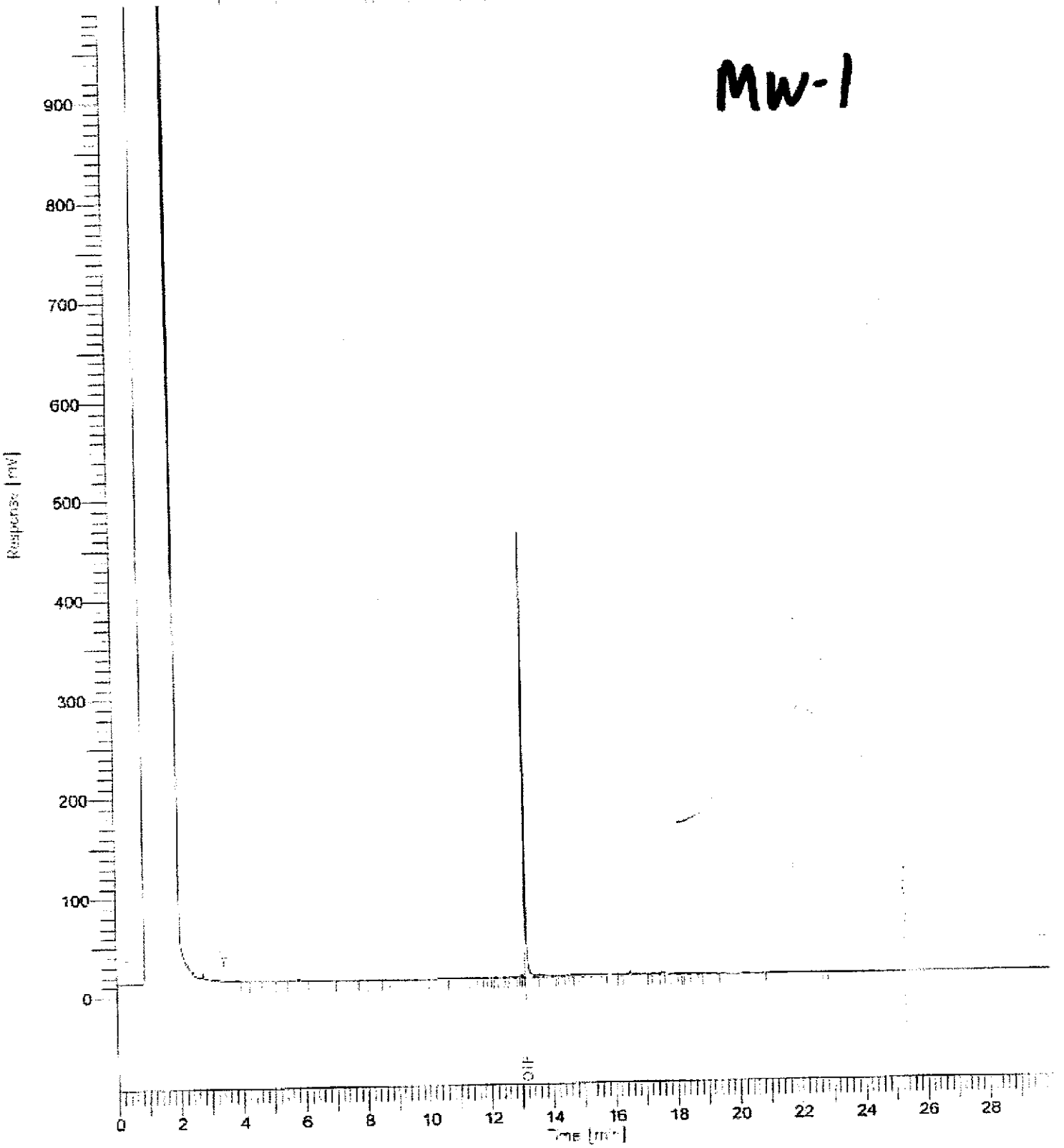
Sample Name : 120104-001
File Name : D:\200212\DATA\2D020213.raw
Method : 3TP81016
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 30.00 min
Plot Offset: 0 mV

Sample #: 120901
Date : 12/09/2002 19:05
Time of Injection: 12/09/2002 18:33
Low Point : 0.00 mV
Plot Scale: 1000.0 mV

High Point : 1000.00 mV

MW-1

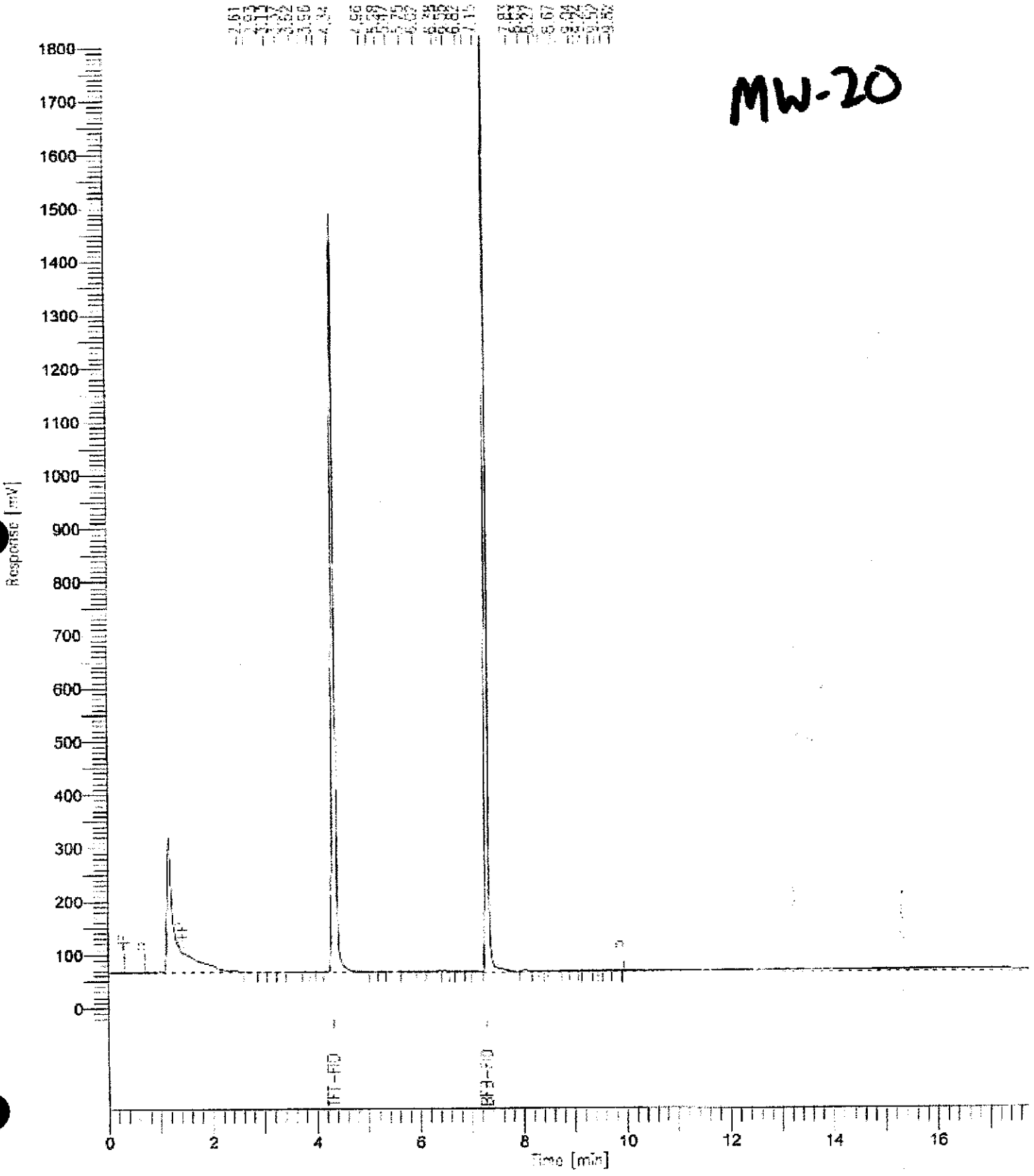


Gasoline Chromatogram

Sample Name : SA-WA-3000-12-0164-004 => MW-20
FileName : I:\100212\DATA\4G1_1036.raw
Method : 4GN20302
Start Time : 0.00 min End Time : 17.05 min
Scale Factor: 1.0 Plot Offset: -20 mV

Sample #: Page: 1 of 1
Date : 10/11/00 08:37 AM
Time of Injection: 10/11/01 08:37 AM
Low Point : -20.26 mV High Point : 1805.40 mV
Plot Scale: 1825.7 mV

MW-20



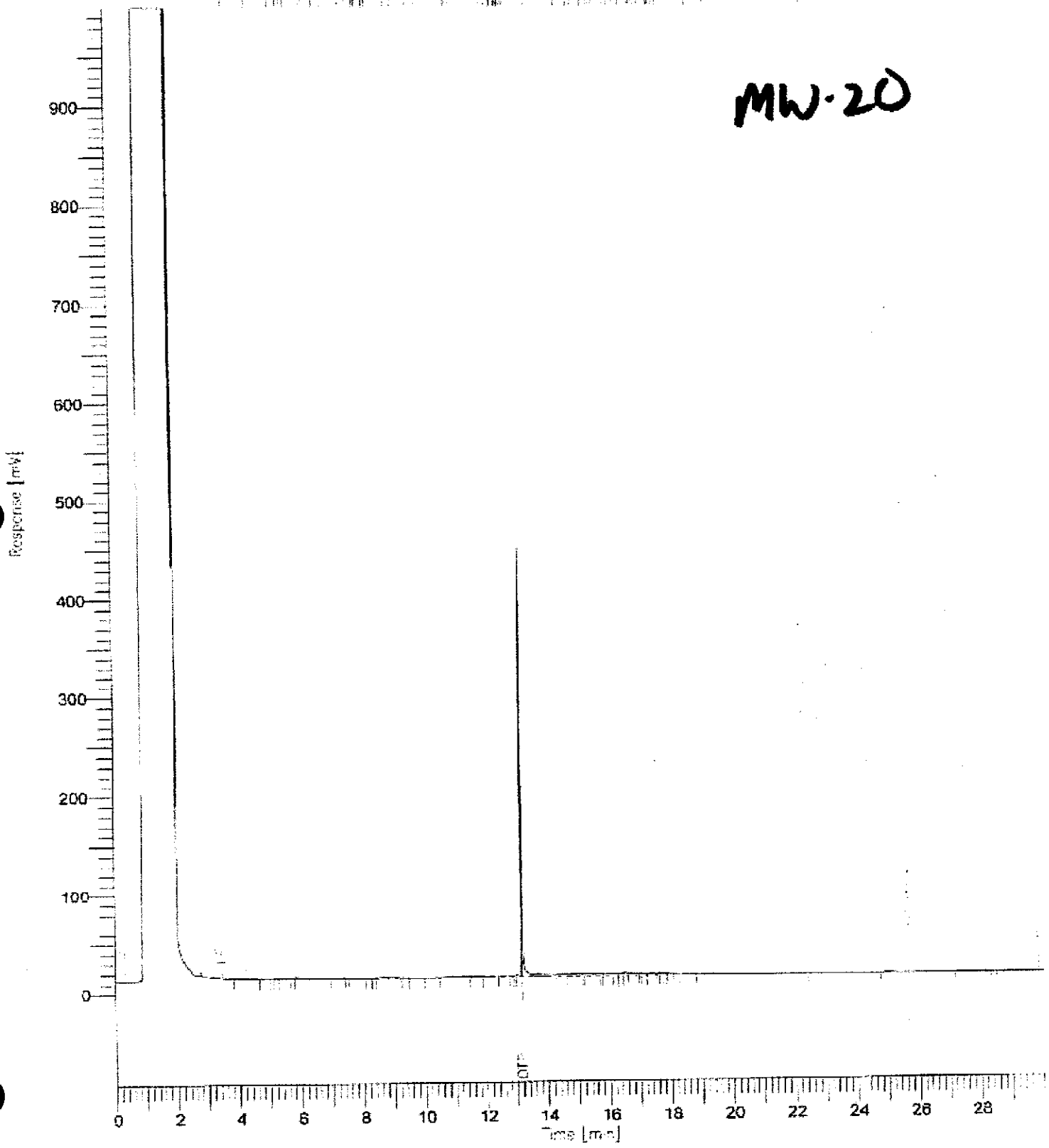
Chromatogram

Sample Name : 120164-004
Filename : d:\2003\1\DATA\3009022.raw
Method : STPH1C14
Inject Time : 1.0 min
Scale Factor: 0.0

Run Time : 30.00 min
Plot Offset: 0 mV

Sample #: 120901
Date : 12/09/2003 16:16
Time of Injection: 12/09/2003 17:34
Low Point : 0.00 mV
Plot Scale: 1000.0 mV

MW-20



Chromatogram

Sample Name : 10F124-007 30x
FileName : G:\2002\2\DATA\2B19021.raw
Method : 3550A1016
Start Time : 0.00 min
Scale Factor: 0.0
Max Time : 30.00 min
Plot Offset: 0 mV
Sample #: 100601
Date : 12/19/2002 00:27
Time of Injection: 12/18/2002 19:57
Low Point : 0.00 mV
High Point : 1000.00 mV
Plot Scale: 1000.0 mV
Page 1 of 1

MW-17

Response [mV]

900
800
700
600
500
400
300
200
100
0

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28

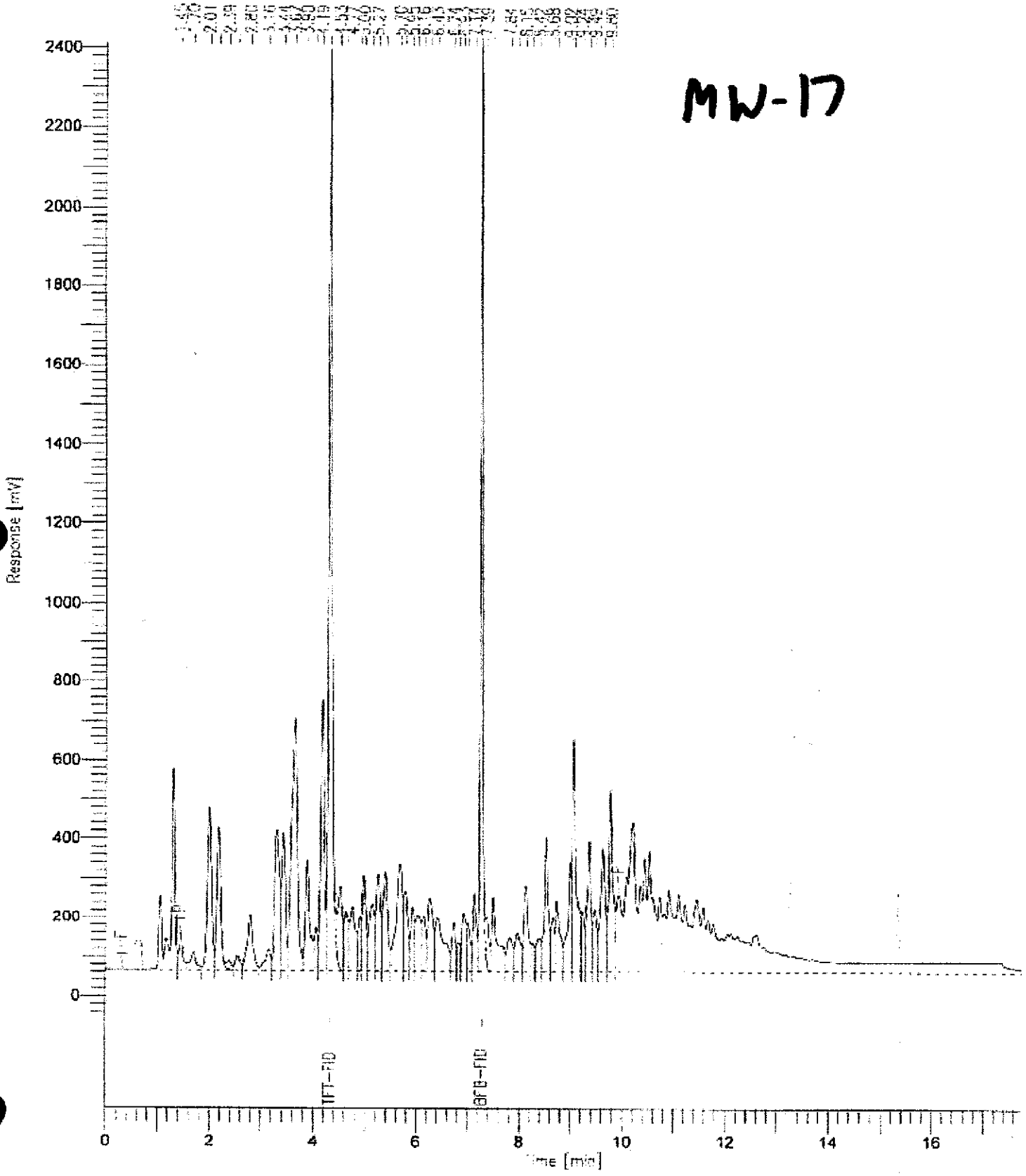
Time [min]

Gasoline Chromatogram

Sample Name : RA-WA-2002-11-0115-007 ex MW-17
Filename : T:\200213\DATA\4B121313.raw
Method : ASWA7902
Start Time : 0.00 min End Time : 17.75 min
Scale Factor: 1.0 Plot Offset: -53 mV

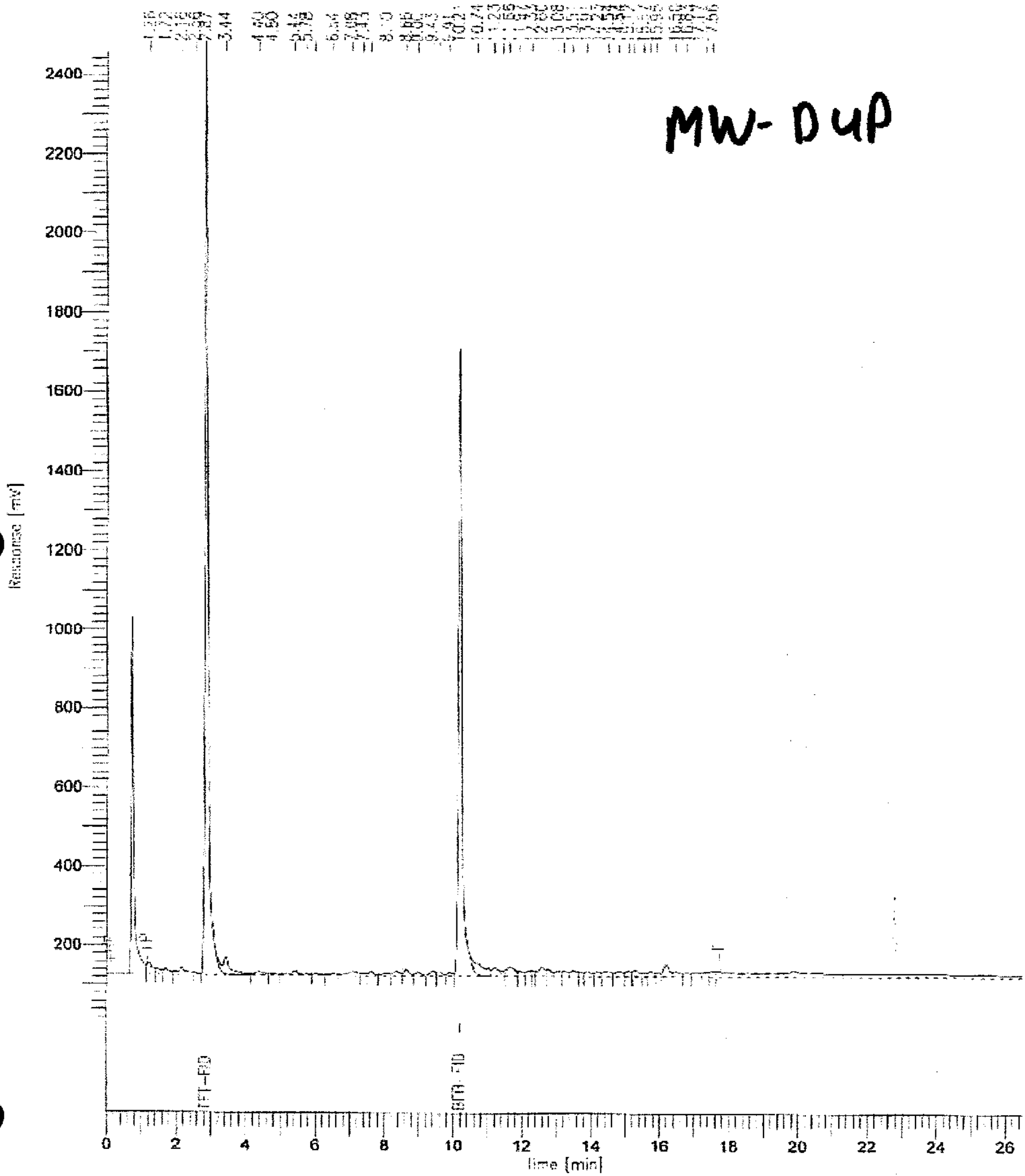
Sample #:
Date : 12/13/02 03:04 PM
Time of Injection: 12/13/02 02:48 PM
Low Point : -53.60 mV High Point : 2411.36 mV
Plot Scale: 2464.2 mV

MW-17



Gasoline Chromatogram

Sample Name : SA-MA-2002-12-0125-308 -- MW-DUP
FileName : J:\200212\DATA\5G121012.raw
Method : 5G100902
Start Time : 0.00 min
Scale Factor: 1.0
End Time : 26.50 min
Plot Offset: 0 mV
Sample #:
Date : 12/10/02 03:05 PM
Time of Injection: 12/10/02 01:41 PM
Low Point : 9.47 mV
Plot Scale: 2446.0 mV
Page 1 of 1
High Point : 2456.44 mV



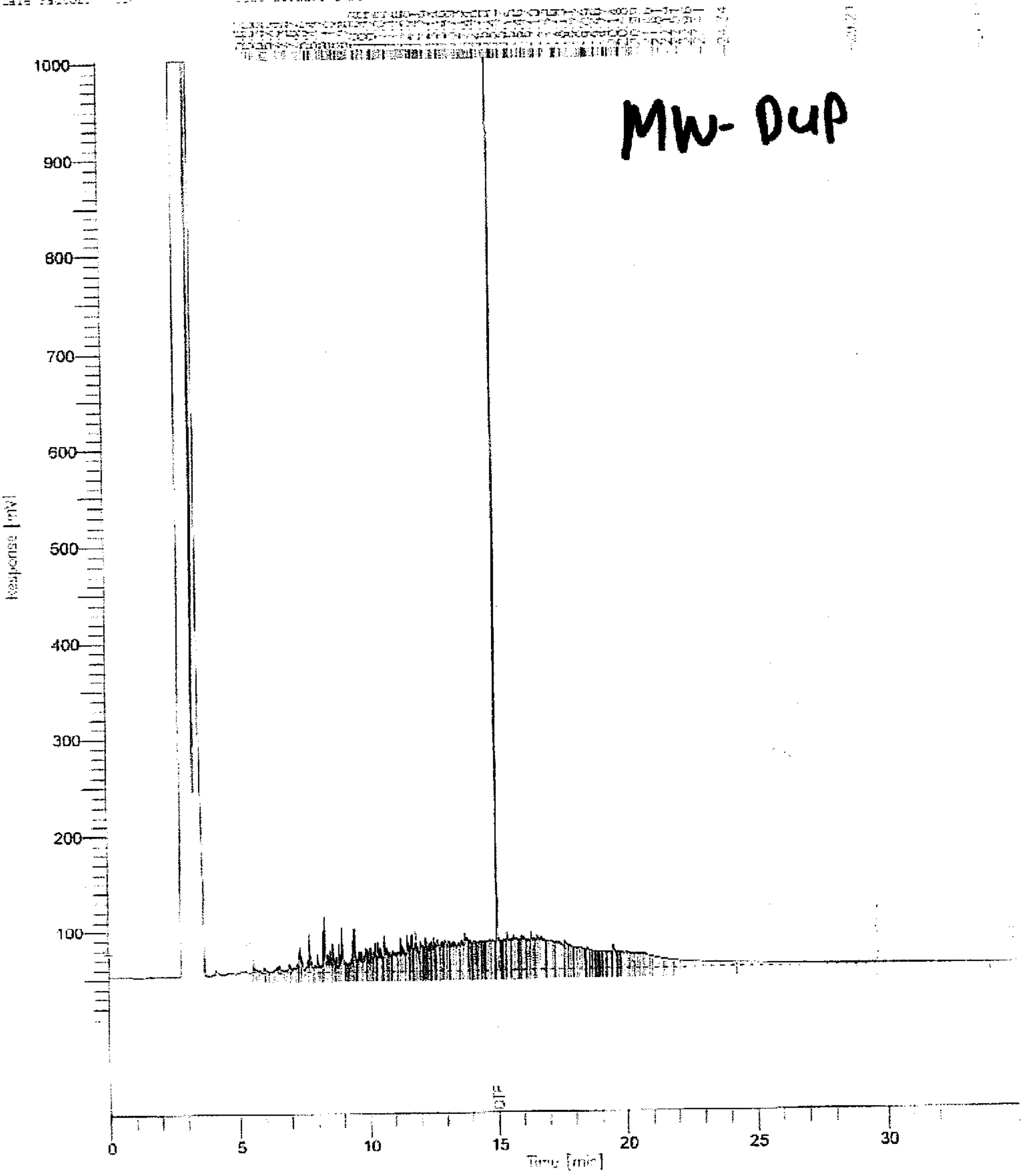
Chromatogram

Sample Name : 120325-005
FileName : [illegible]\DATA\2D10016.raw
Method : [illegible]
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 35.00 min
Plot Offset: 3 mV

Sample #: 120021
Date : 12/10/2002 20:43
Time of Injection: 12/10/2002 20:08
Low Point : 1.74 mV
Plot Scale: 1000.0 mV

High Point : 1002.74 mV



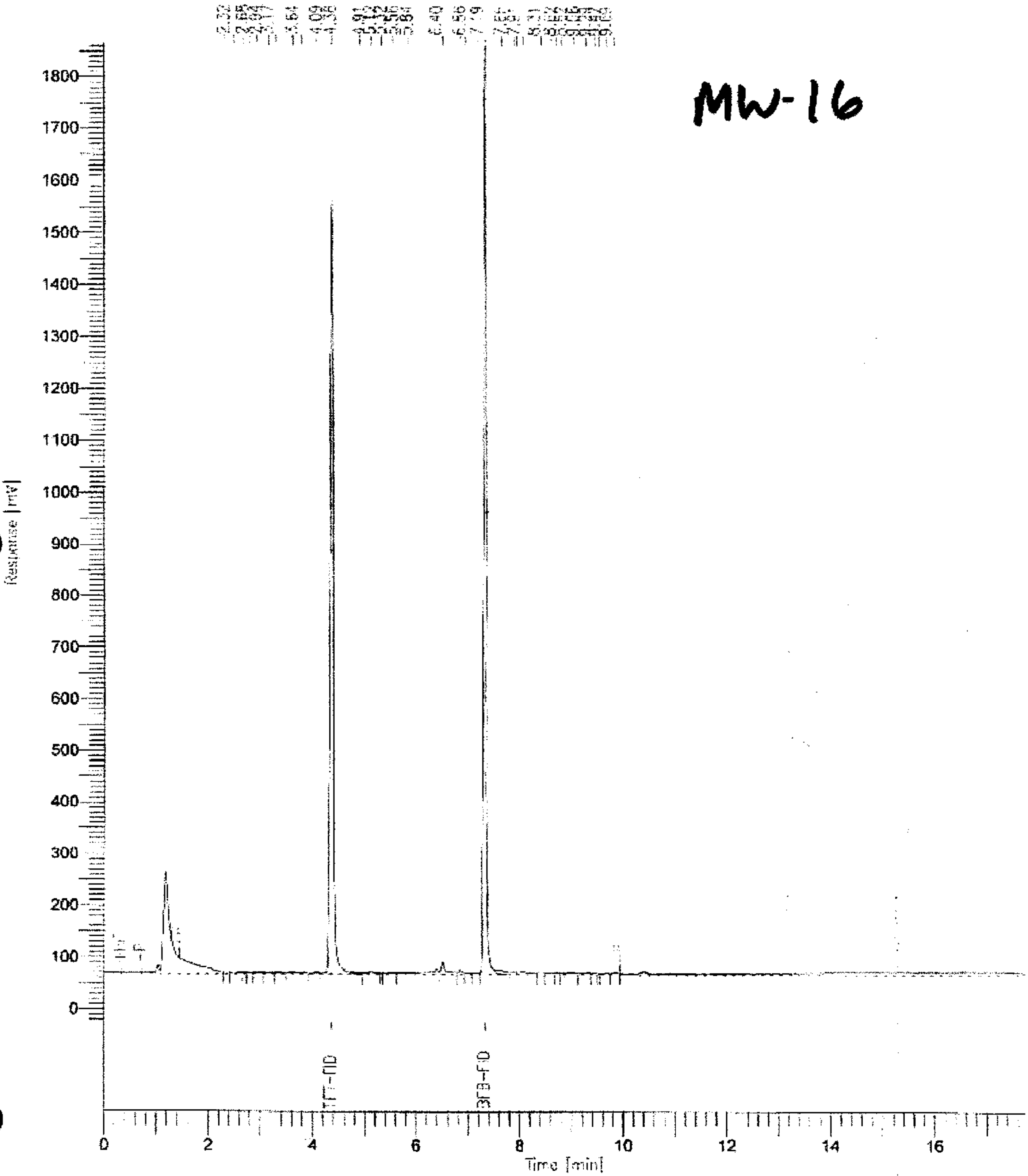
Gasoline Chromatogram

Sample Name : SA-NA-2002-12-0125-002 => MW-16
FileName : I:\200113\DATA\[illegible].raw
Method : [illegible]
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 17.75 min
Plot Offset: -22 mV

Sample #:
Date : 12/10/2002 06:45
Time of Injection: 12/10/2002 [illegible]
Low Point : -22.24 mV
Plot Scale: 1556.9 mV

Page 1 of 1
High Point : 1564.64 mV



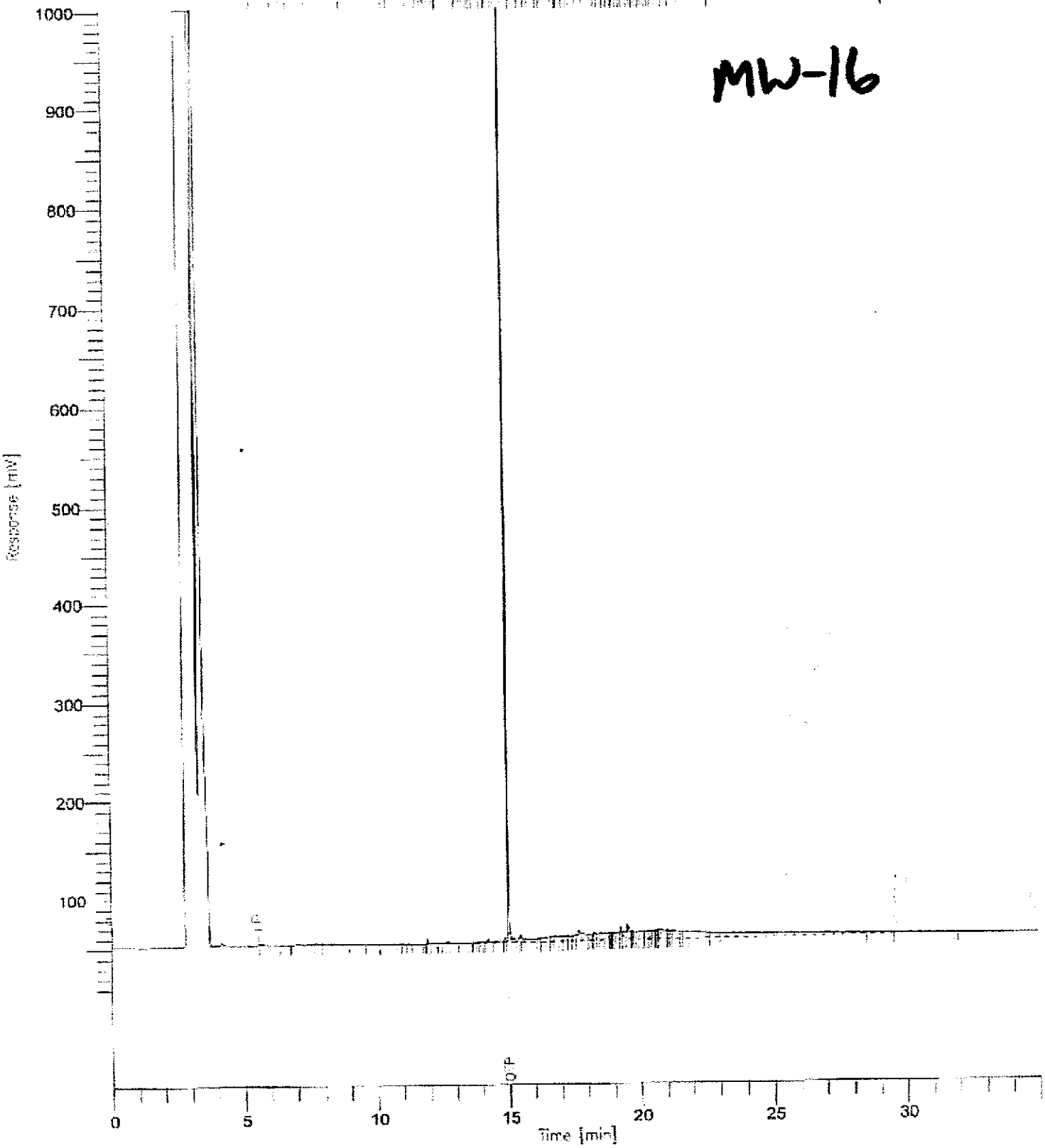
Chromatogram

Sample Name : [illegible]
FileName : D:\2005\1\DATA\[illegible]014.raw
Method : ITPH1950
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 35.00 min
Plot Offset: 2 mV

Sample #: 120901
Date : 12/10/2005 19:24
Time of Injection: 12/10/2005 19:49
Low Point : 2.70 mV
Plot Scale: 1000.0 mV

MW-16



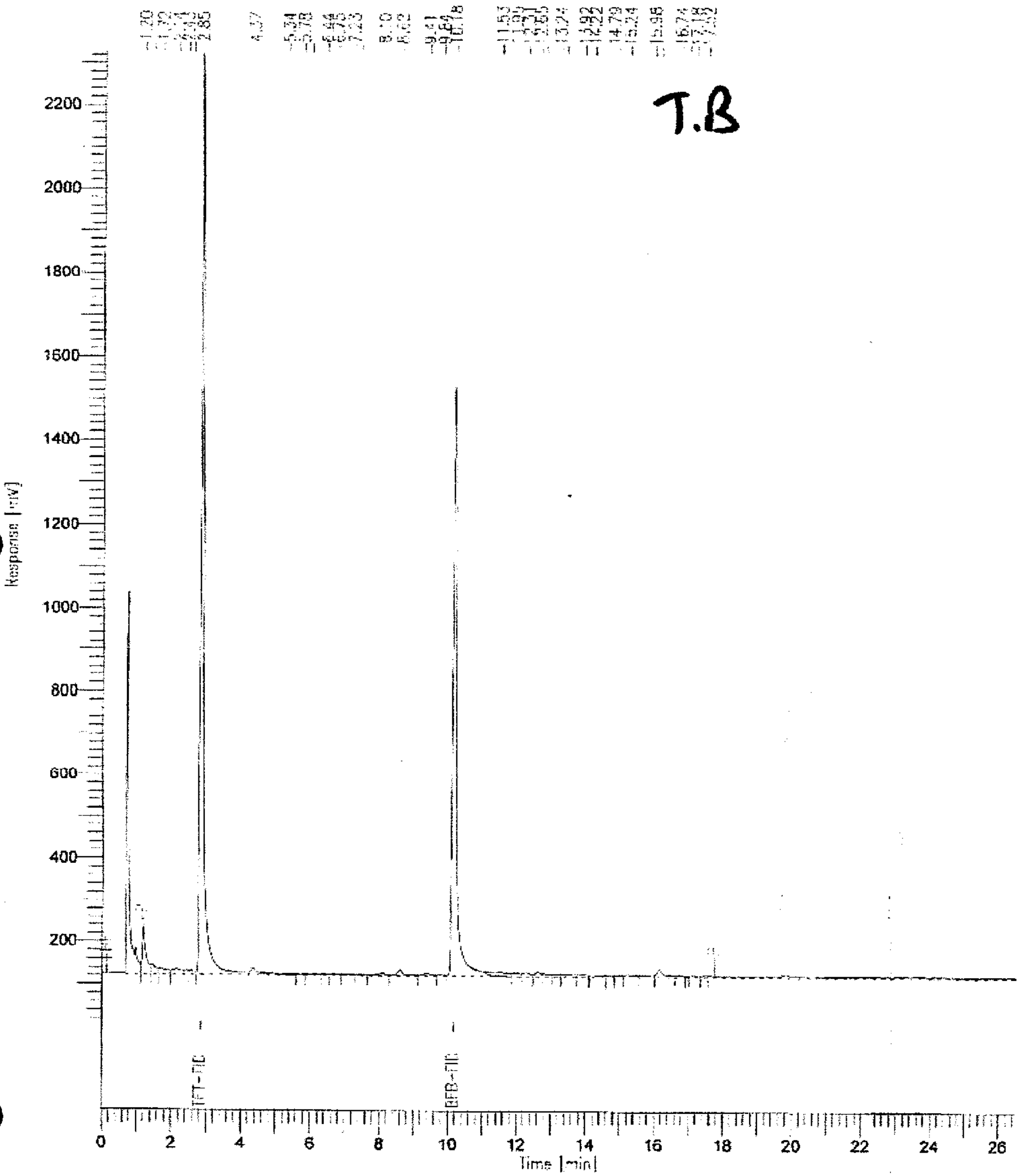
Gasoline Chromatogram

Sample Name : SA-MA-2001-11-0105-005 -> TRIP BLANK
FileName : J:\200212\DATA\5G121005.raw
Method : 5G100302
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 26.80 min
Plot Offset: 12 mV

Sample #:
Date : 12/10/01 03:08 PM
Time of Injection: 12/10/01 10:55 AM
Low Point : 12.43 mV
Plot Scale: 2316.1 mV

High Point : 2328.51 mV



Gasoline Chromatogram

Sample Name : SA-WA-1002-12-0164-07A -> TRIP BLANK
FileName : I:\2002\12\DATA\6G121037.raw
Method : 43B00911
Start Time : 0.00 min End Time : 17.79 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: Page 1 of 1
Date : 12/11/02 04:37 AM
Time of Injection: 12/11/02 02:59 AM
Low Point : 7.24 mV High Point : 1251.90 mV
Plot Scale: 1244.7 mV

T.B