OWENS-ILLINOIS

GLASS CONTAINERS
North America

May 5, 2004

RO 289

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

Subject: 2004 Groundwater Monitoring Report
Owens-Brockway Glass Container Facility – Oakland, CA

Dear Mr. Gholami:

Enclosed is the 2004 Groundwater Monitoring Report prepared by CKG Environmental. If there are questions regarding its content, please give Chris Kennedy a call at 707-967-8080.

Sincerely,

Robert C. Neal

Robert C. Neal, P.E.
Environmental Administrator

2004 GROUNDWATER MONITORING REPORT

OWENS-BROCKWAY GLASS CONTAINER FACILITY OAKLAND, CALIFORNIA

CKG Environmental, Inc.
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A Report Prepared for:

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2004 GROUNDWATER MONITORING REPORT

OWENS-BROCKWAY GLASS CONTAINER FACILITY, OAKLAND, CALIFORNIA

April 29, 2004,

Prepared by:

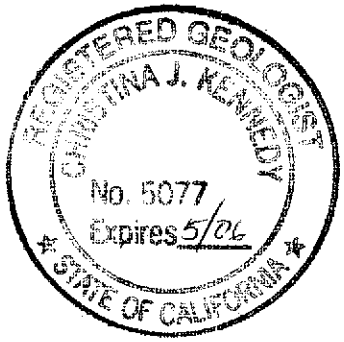

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 2

2.0 INTRODUCTION 3

2.1 SITE DESCRIPTION 3

3.0 GROUNDWATER MONITORING 4

3.1 GROUNDWATER GRADIENT 4
3.2 WELL SAMPLING 4
3.3 CHEMICAL ANALYSIS 5
3.4 INVESTIGATION DERIVED WASTES (IDW) 5

4.0 FINDINGS 6

4.1 SUMMARY OF GROUNDWATER RESULTS 6
4.1.1 Fuel Oil Release Area (MW-5, MW-7, MW- 10, MW-19) 6
4.1.2 Gasoline Release Area (MW-13, MW-15, MW- 16, MW17, MW-20) 7

5.0 CONCLUSIONS AND RECOMMENDATIONS 8

5.1 CONCLUSIONS 8
5.2 RECOMMENDATIONS 8

6.0 REFERENCES 9

7.0 LIMITATIONS 10

TABLES

Table 1 Monitoring Well Construction Details
Table 2 Groundwater Elevations
Table 3 Summary of Groundwater Analytical Results.

PLATES

Plate 1 Site Location Map
Plate 2 Groundwater Elevation Contour Map
Plate 3 Fuel Oil Distribution Map
Plate 4 Gasoline Distribution Map

APPENDICES

Appendix A Well Sampling Logs
Appendix B Analytical Laboratory Report

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

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. A round of groundwater monitoring also was completed to comply with regulatory requirements and to evaluate the existence and distribution of the various types of petroleum hydrocarbons potentially present on and off site.

The recent groundwater monitoring, as well as a review of historic data, shows that the petroleum hydrocarbon plumes at the site are stable and have attenuated substantially over time. The fuel oil release appears to extend only slightly off site. Offsite petroleum hydrocarbon detections are characterized by other types of fuel products, which were not used at the Owens-Brockway facility.

CKG recommends that Owens-Brockway submit this report to the Alameda County Health Agency and respectfully request case closure. A full description of the rationale for closure is described in CKG's Data Compilation and Closure Report Underground Fuel Storage Tank Locations, Owens-Brockway Glass Container Facility, Oakland, California, November 4, 2003.

2.0 INTRODUCTION

The following report presents the results and conclusions of the annual of groundwater monitoring in 2004. The work was performed in general accordance with CKG's proposal dated November 15, 2002.

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. This petroleum hydrocarbon was identified to be Stoddard solvent and not fuel oil.

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.

3.0 GROUNDWATER MONITORING

3.1 GROUNDWATER GRADIENT

Depth to groundwater measurements were made on March 15, 2004, before the monitoring wells were sampled. Depth to static ground water was measured from a marked location at the top of the PVC casing. The depth of water was then subtracted from the elevation of the top of the well casing to provide a ground water elevation for each monitoring well. Plate 2 shows groundwater elevations and the interpreted groundwater flow direction. Based on the data measured on March 15 the groundwater flow direction is generally to the south. This groundwater flow direction has been observed in past monitoring events. Monitoring well construction details are presented in Table 1. Depth to water measurements and groundwater elevations are summarized in Table 2. Well sampling and purge logs are contained in Appendix A.

3.2 WELL SAMPLING

On March 15, 2004 a round of groundwater sampling in the monitoring wells was performed. Floating product was observed in MW-2, and MW-6 so they were not sampled. The product appeared as globules so a thickness could not be measured. MW-1 was covered with glass and was not accessible. MW-9, which is located in the middle of the loading ramp, also could not be safely accessed. The remaining wells were sampled using the following protocol.

- The depth-to-water was measured using a conductivity-based water level indicator.
- The volume of water standing in each 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 each well using a centrifugal pump. The pump was decontaminated prior to use in each well by washing with TSP and rinsing with distilled water. Fresh tubing was used for each well
- 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

Groundwater samples were 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 analytical program was completed in general accordance with CKG's proposal dated November 15, 2002. The chemical analyses performed include the following:

- Total Petroleum Hydrocarbons quantified as diesel, (TPHd,) and gasoline (TPHg) by Modified EPA Method 8015 and;
- Benzene, Toluene, Ethylbenzene, xylenes, and MTBE by EPA Method 8020

3.4 INVESTIGATION DERIVED WASTES (IDW)

Investigation derived wastes (IDW) were generated during the investigation and included purge water. Purge water was placed into the on-site oil/water separator system.

4.0 FINDINGS

The following describes the results of the annual groundwater monitoring at the Owens-Brockway Glass Container facility in Oakland, California. Comparisons are made between the data and appropriate regulatory standards and risk based screening levels where they are available. Groundwater sample results are presented in Table 3. Analytical laboratory reports are included in Appendix B. Sample locations and pertinent data are presented on Plates 3 and 4.

4.1 SUMMARY OF GROUNDWATER RESULTS

4.1.1 Fuel Oil Release Area (MW-5, MW-7, MW- 10, MW-19)

Petroleum hydrocarbons quantified as diesel/fuel oil, were detected in all of the water samples collected as summarized in Table 3. Although petroleum hydrocarbons were detected in MW-7 at 170 mg/l diesel and 890 µg/l gasoline, the laboratory footnotes state that there is a strongly aged "gasoline" present as well as mainly fuel oil. CKG spoke to the lead chemist at McCampbell Analytical and she thought that there was a mixture of petroleum hydrocarbons present including the fuel oil but also something much lighter. This observation is consistent with the petroleum hydrocarbons detection from the December 2002 monitoring event where it was interpreted that there was stoddard solvent present in the groundwater at MW-7. This finding was discussed in CKG's Data Compilation and Closure Report dated November 4, 2003. The analytical laboratory described the petroleum hydrocarbon detected in MW-19 as being in the gasoline range but did not match the gasoline pattern. The lead chemist explained that the petroleum hydrocarbon appeared to be more similar to stoddard solvent than gasoline, diesel, or fuel oil. Diesel concentrations are shown and contoured on Plate 3. Detected TPHd concentrations in groundwater range from 0.063 to 170,000 mg/l. The highest concentrations were detected in MW-7.

Separate phase floating product was observed in MW-2, and MW-6. The estimated outline of the product plume is illustrated on Plate 3. In general the overall size of the product plume is the same as has been observed over the last 18 years of monitoring.

4.1.2 Gasoline Release Area (MW-13, MW-15, MW- 16, MW17, MW-20)

Petroleum hydrocarbons quantified as gasoline, were detected in one of the water samples collected as summarized in Table 3. TPHg was detected in MW-17 at 1400 µg/l. This detection illustrates the very limited area where gasoline remains in the subsurface at the site. The extent of the gasoline plume is illustrated on Plate 4.

5.0 CONCLUSIONS AND RECOMMENDATIONS

On the basis of the annual monitoring the following conclusions and recommendations can be made:

5.1 CONCLUSIONS

The recent groundwater monitoring, as well as a review of historic data, shows that the petroleum hydrocarbon plumes at the site are stable and have attenuated substantially over time. The fuel oil release appears to extend only slightly off site. Offsite petroleum hydrocarbon detections are characterized by other types of fuel products, which were not used at the Owens-Brockway facility.

5.2 RECOMMENDATIONS

CKG recommends that Owens-Brockway submit this report to the Alameda County Health Agency and respectfully request case closure. A full description of the rationale for closure is described in CKG's Data Compilation and Closure Report Underground Fuel Storage Tank Locations, Owens-Brockway Glass Container Facility, Oakland, California, November 4, 2003.

6.0 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.

CKG Environmental, Inc. Data Compilation and Closure Report Underground Fuel Storage Tank Locations, Owens-Brockway Glass Container Facility, Oakland, California, November 4, 2003.

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

Exeltech, Soil and Groundwater Contamination Investigation for Owens-Illinois 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.

7.0 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 proposal dated November 15, 2002. This scope of work includes groundwater sampling at total of 10 wells, and quantitative analysis of groundwater samples conducted by McCampbell Analytical. 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.

Table 1 Summary of Well Construction Details

Well Number	Date Installed	Top of Casing Elelvation[a]	Top of Screen[b]	Screen Length	Well Depth[c]	Casing Diameter (inches)	Comments
MW-1	9/12/1986	16.02	8	21	29	2	
MW-2	12-Sep-86	17.11	10	20	30	2	
MW-3	12-Sep-86	15.46	10	20	39	2	Destroyed
MW-4	12-Sep-86	16.02	8.5	20	28.5	2	
MW-5	12-Sep-86	16.19	8.5	20	28.5	2	
MW-6	12-Sep-86	17.48	12.5	16	28.5	2	
MW-7	12-Sep-86	16.11	12.5	11	23.5	2	
MW-8	12-Sep-86	16.57	15	13.5	28.5	2	
MW-9	12-Sep-86	7.33[d]	5	10	20	2	
MW-10	12-Sep-86	15.96	10	15	25	2	
MW-11	12-Sep-86	13.99	10	20	30	2	
MW-12	12-Sep-86	13.83	11	15	26	2	
MW-13	12-Sep-86	13.98	9.5	15	24.5	2	
MW-14	12-Sep-86	14.78	10	15	25	2	Destroyed
MW-15	12-Sep-86	15.16	9.5	20	29.5	2	
MW-16	12-Sep-86	13.48	10	14.5	24.5	2	
MW-17	12-Sep-86	14.17	9.5	15	24.5	2	
MW-18	12-Sep-86	14.89	9	15	24	2	Destroyed
MW-19	01-May-03	NA	10	15	25	2	
MW-20	01-Dec-00	12.74	6.9	15	21.9	2	
R-1	1987	NM[e]	NA[f]	NA	24	36	Destroyed
R-2	1989	NM	NA	NA	NA	12	Destroyed

(a) Top of casing elevation (TOCE) except where noted;measured in feet above US Coast and Geodetic Datum (mean sea level). Elevations measured by Exceltech in 1986, and by PLS Surveys for MW-20 in 2000.

(b) Depth to top of screened interval (feet below top of casing)

(c) Depth to bottom of screened interval (feet below top of casing)

(d) Well casing was not measured for this well; well is located beneath forklift ramp and this measurement is the ground surface elevation in MSL.

(e) NM = Not measured

(f) NA = Not available

Table 2 Groundwater Depths and Elevation March 15, 2004

Well Number	Date Installed	Top of Casing Elelvation[a]	Depth to Water	Groundwater Elevation
MW-1	9/12/1986	16.02	NM	
MW-2	12-Sep-86	17.11	NM	
MW-4	12-Sep-86	16.02	NM	
MW-5	12-Sep-86	16.19	10.74	5.45
MW-6	12-Sep-86	17.48	NM	
MW-7	12-Sep-86	16.11	11.64	4.47
MW-8	12-Sep-86	16.57	8.34	8.23
MW-9	12-Sep-86	7.33[d]	NM	
MW-10	12-Sep-86	15.96	9.34	6.62
MW-11	12-Sep-86	13.99	NM	
MW-12	12-Sep-86	13.83	NM	
MW-13	12-Sep-86	13.98	9.66	4.32
MW-15	12-Sep-86	15.16	11.33	3.83
MW-16	12-Sep-86	13.48	8.5	4.98
MW-17	12-Sep-86	14.17	8.34	5.83
MW-19	01-May-03	NA	11.06	
MW-20	01-Dec-00	12.74	8.69	4.05

(a) Top of casing elevation (TOCE) except where noted;measured in feet above US Coast and Geodetic Datum (mean sea level). Elevations measured by Exceltech in 1986, and by PLS Surveys for MW-20 in 2000.

(d) Well casing was not measured for this well; well is located beneath forklift ramp and this measurement is the ground surface elevation in MSL.

(e) NM = Not measured

(f) NA = Not available

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-1	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[a]	<50	NA
	11/2/1998	<.5	<.5	<.5	<.5	0.16[a]	<50	NA
	12/11/2001	not accessible						
	12/6/2002	<.5	<.5	<.5	<.5	0.069[a]	<50	NA
	3/15/2004	not accessible						
MW-2	4/9/1987	floating product						
	9/16/1987	floating product						
	12/1/1987	floating product						
	3/7/1988	floating product						
	6/8/1988	floating product						
	9/14/1988	floating product						
	9/16/1997	floating product						
	11/2/1998	floating product						
	12/11/2001	floating product						
	12/6/2002	floating product						
	3/15/2004	floating product						
MW-3	9/23/1986	<10	<10	NA	<10	NA	<10	18
	4/9/1987	BDL	BDL	NA	BDL	NA	370	NA
	9/16/1987	floating product						
	12/1/1987	floating product						
	3/7/1988	NA	NA	NA	NA	190	NA	NA
	6/8/1988	NA	NA	NA	NA	16	NA	NA
	9/14/1988	floating product						
MW-4	9/23/1986	<5	<5	NA	<5	NA	20	7.2
	4/9/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	9/16/1987	BDL	BDL	NA	BDL	0.66	1.3	NA
	12/1/1987	BDL	BDL	NA	8.9	0.1	BDL	NA
	3/7/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	6/8/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	9/14/1988	BDL	BDL	NA	BDL	0.1	BDL	NA

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l

TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l

TOG - Total Oil and Grease in mg/l

B - Benzene in ug/l

T - Toluene in ug/l

X - Xylenes in ug/l

E - Thylbenzene in ug/l

BDL - Below detection limit

NA - Not analyzed

(a) - Quantified as diesel but chromatogram did not match diesel pattern

(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-5	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[a]	<50	NA
	11/2/1998	floating product						
	12/6/2000	<.5	<.5	<.5	<.5	11.7[a]	1000	NA
	12/12/2001	<.5	<.5	<.5	<.5	10[a]	360[b]	NA
	12/6/2002	<.5	<.5	<.5	<.5	5.2[a]	150[b]	NA
	3/15/2004	<0.5	<0.5	<0.5	<0.5	46[a]	180[b]	NA
MW-6	4/9/1987	floating product						
	9/16/1987	NA	NA	NA	NA	400	NA	NA
	12/1/1987	NA	NA	NA	NA	30	NA	NA
	3/7/1988	NA	NA	NA	NA	9.8	NA	NA
	6/8/1988	NA	NA	NA	NA	63	NA	NA
	9/14/1988	NA	NA	NA	NA	140	NA	NA
	9/16/1997	floating product						
	11/2/1998	floating product						
	12/11/2001	floating product						
	12/6/2002	floating product						
	3/15/2004	floating product						
MW-7	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[a]	850	NA
	11/2/1998	floating product						
	12/6/2000	<5	<.5	<.5	1.90	3.58[a]	540	NA
	12/12/2001	<1	<1	<1	<1	12.6[a]	1200[b]	NA
	12/6/2002	<.5	<.5	<.5	<.5	27.6[a]	480[b]	NA
	3/15/2004	<0.5	<0.5	0.57	1.10	170[a]	890[b]	NA

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l

TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l

TOG - Total Oil and Grease in mg/l

B - Benzene in ug/l

T - Toluene in ug/l

X - Xylenes in ug/l

E - Thylbenzene in ug/l

BDL - Below detection limit

NA - Not analyzed

(a) - Quantified as diesel but chromatogram did not match diesel pattern

(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-8	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[a]	<50	NA
	11/2/1998	<.5	<.5	<.5	<.5	1.3[a]	<50	NA
	12/6/2000	<.5	<.5	<.5	<.5	0.16[a]	<50	NA
	12/12/2001	<.5	<.5	<.5	<.5	<.05	<50	NA
	12/5/2002	<.5	<.5	<.5	<.5	0.17[a]	55[b]	NA
	3/15/2004	<.5	<.5	<.5	<.5	3[a]	320[b]	NA
MW-9	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[a]	6000	NA
	11/2/1998	floating product						
	12/6/2000	<5	<.5	<.5	<.5	102[a]	790	NA
	12/12/2001	innaccessible						
	12/5/2002	innaccessible						
	3/15/2004	innaccessible						
MW-10	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[a]	<50	NA
	11/2/1998	<.5	<.5	<.5	<.5	1.4[a]	<50	NA
	12/6/2000	<.5	<.5	<.5	0.70	0.73[a]	150	NA
	12/11/2001	<.5	<.5	<.5	<.5	0.63[a]	210[b]	NA
	12/5/2002	<.5	<.5	<.5	<.5	0.84[a]	210[b]	NA
	3/15/2004	<.5	<.5	<.5	0.8	2.5[a]	160[b]	NA

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l

TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l

TOG - Total Oil and Grease in mg/l

B - Benzene in ug/l

T - Toluene in ug/l

X - Xylenes in ug/l

E - Thylbenzene in ug/l

BDL - Below detection limit

NA - Not analyzed

(a) - Quantified as diesel but chromatogram did not match diesel pattern

(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-11	9/23/1986	<0.4	<0.4	NA	1.4	NA	<8	1.2
	4/9/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	9/16/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	12/1/1987	0.8	BDL	NA	10	NA	BDL	NA
	3/7/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	6/8/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	9/14/1988	BDL	BDL	NA	BDL	100	BDL	NA
MW-12	9/23/1986	0.49	1	NA	1.3	NA	100	2.5
	4/9/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	9/16/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	12/1/1987	BDL	BDL	NA	13	NA	BDL	NA
	3/7/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	6/8/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	9/14/1988	BDL	BDL	NA	BDL	0.12	BDL	NA
MW-13	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[a]	<50	NA
	11/2/1998	<5	<5	<5	<5	0.12[a]	<50	NA
	12/6/2000	<5	<.5	<.5	<.5	0.2[a]	<50	NA
	12/11/2001	<.5	<.5	<.5	<.5	0.091[a]	<50	NA
	12/5/2002	<.5	<.5	<.5	<.5	0.19[a]	<50	NA
	3/15/2004	<.5	<.5	<.5	<.5	<0.05	<50	NA
MW-14	9/23/1986	<0.4	<0.2	NA	<0.2	NA	<8	3.2
	4/9/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	9/16/1987	BDL	BDL	NA	BDL	0.056	1.7	NA
	12/1/1987	1.2	4	NA	10	0.066	BDL	NA
	3/7/1988	BDL	BDL	NA	BDL	BDL	20	NA
	6/8/1988	inaccessible						
	9/14/1988	inaccessible						

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l
B - Benzene in ug/l
X - Xylenes in ug/l
TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l
T - Toluene in ug/l
E - Thylbenzene in ug/l
TOG - Total Oil and Grease in mg/l
BDL - Below detection limit
NA - Not analyzed
(a) - Quantified as diesel but chromatogram did not match diesel pattern
(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-15	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[a]	<50	NA
	11/2/1998	<.5	<.5	<.5	<.5	0.34[a]	<50	NA
	12/6/2000	<.5	<.5	<.5	<.5	0.4[a]	<50	NA
	12/11/2001	<.5	<.5	<.5	<.5	0.29[a]	<50	NA
	12/5/2002	<.5	<.5	<.5	<.5	0.44[a]	<50	NA
	3/15/2004	<.5	<.5	<.5	<.5	<0.05	<50	NA
MW-16	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[a]	<50	NA
	12/11/2001	<.5	<.5	<.5	<.5	<0.05	<50	NA
	12/5/2002	<.5	<.5	<.5	<.5	0.051[a]	<50	NA
	3/15/2004	<.5	<.5	<.5	<.5	63	<50	NA
MW-17	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	innaccessible						
	9/14/1988	<.5	<.5	<.5	<.5	64	54000	NA
	9/16/1997	<.5	<.5	<.5	<.5	119.6[a]	1900	NA
	11/2/1998	<.5	<.5	<.5	0.60	16[a]	<50	NA
	12/6/2000	<5	<.5	<.5	<.5	47.8[a]	340	NA
	12/11/2001	<10	<10	<10	<10	101[a]	5300[b]	NA
	12/5/2002	<.5	<.5	<.5	<.5	71[a]	700[b]	NA
	3/15/2004	2.1	0.71	<.5	1.5	660[a]	1400[b]	NA

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l
TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l
TOG - Total Oil and Grease in mg/l
BDL - Below detection limit
NA - Not analyzed
B - Benzene in ug/l
T - Toluene in ug/l
X - Xylenes in ug/l
E - Thylbenzene in ug/l
(a) - Quantified as diesel but chromatogram did not match diesel pattern
(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

Table 3 Summary of Groundwater Analytical Results
Owens-Brockway Glass Container Facility, Oakland, CA

	Date	B	T	E	X	TPHd	TPHg	TOG
MW-18	9/23/1986	<0.3	<0.3	NA	0.99	NA	<20	1.6
	4/9/1987	BDL	BDL	NA	BDL	NA	BDL	NA
	9/16/1987	BDL	BDL	NA	BDL	0.48	BDL	NA
	12/1/1987	BDL	BDL	NA	6.6	0.18	BDL	NA
	3/7/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	6/8/1988	BDL	BDL	NA	BDL	BDL	BDL	NA
	9/14/1988	BDL	BDL	NA	BDL	0.19	BDL	NA
MW-19	6/23/2004	<0.5	<0.5	<0.5	<0.5	1.1	480	NA
	3/15/2004	<0.5	<0.5	<0.5	<0.5	1.1[a]	330[b]	NA
MW-20	12/11/2000	<0.5	<0.5	<0.5	<0.5	0.11[a]	<50	NA
	4/6/2001	<0.5	<0.5	<0.5	<0.5	0.057[a]	<50	NA
	7/6/2001	<0.5	<0.5	<0.5	<0.5	0.12[a]	<50	NA
	9/19/2001	<0.5	<0.5	<0.5	<0.5	0.16[a]	<50	NA
	12/11/2001	<0.5	<0.5	<0.5	<0.5	0.082[a]	86[b]	NA
	2/6/2002	<0.5	<0.5	<0.5	<0.5	0.085[a]	<50	NA
	3/15/2004	<0.5	<0.5	<0.5	<0.5	<0.5	<50	NA

NOTES:

TPH-g - Total Petroleum Hydrocarbons as Gasoline in ug/l

TPH-d - Total Petroleum Hydrocarbons as Diesel in mg/l

TOG - Total Oil and Grease in mg/l

B - Benzene in ug/l

T - Toluene in ug/l

X - Xylenes in ug/l

E - Thylbenzene in ug/l

BDL - Below detection limit

NA - Not analyzed

(a) - Quantified as diesel but chromatogram did not match diesel pattern

(b) - Quantified as gasoline but chromatogram did not match gasoline pattern

WELL GAUGING DATA

Project # 040315-DA1 Date 3/15/04 Client CKG

Site 3600 Alameda Ave. Oakland, CA
Owens Brockway Glass Plant

	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-1	2	—	Covered by large pile of glass			—	—	TOC	
*	MW-5	2	S/O	—	—	—	10.74	22.75		
*	MW-7	2	S/O	—	—	—	11.54	22.30		
o	MW-8	2					8.34	20.30		
	MW-10	2					~~10.74~~ 9.34 OA	~~22.75~~ 19.66 OA		
	MW-13	2					9.66	20.39		
	MW-15	2					11.33	29.05		
*	MW-16	2		—	—	—	8.50	20.45		
*	MW-17	2	O/S	—	—	—	8.34	19.63		
	MW-19	2					11.06	25.16		
	MW-20	2					8.69	21.88		

* Socks present in well; removed to gauge

o cap was off: powder from surrounding area entered casing

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-1	Well Diameter: 2 3 4 6 8 ____
Total Well Depth: —	Depth to Water: —
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
- Other ____

Sampling Method:
- Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: ____

____ (Gals.) X ____ = ____ Gals.
1 Case Volume Specified Volumes Calculated Volume

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

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
		Unable to gauge or sample. Covered by				
		large glass pile. Too large to move				
		per Bill Boscascci				

Did well dewater? Yes No Gallons actually evacuated:

Sampling Time: Sampling Date:

Sample I.D.: Laboratory: STL

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 22.75	Depth to Water: 10.74
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
- Other_____

Sampling Method:

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

1.9 (Gals.) X 3 = 5.7 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

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

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1115	66.7	6.8	1130	720	2	orange tint, cloudy, heavy sheen
1118	65.4	7.0	1119	7200	4	"
1121	66.2	7.0	1120	7200	5.75	"
Socks moderately contaminated w/ SPH (orange film)						

Did well dewater? Yes (No) Gallons actually evacuated: 5.75

Sampling Time: 1125 Sampling Date: 3/15/04

Sample I.D.: MW-5 Laboratory: STL McCampbell

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 22.30	Depth to Water: 11.54
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
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

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

1.7 (Gals.) X 3 = 5.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1041	67.3	6.6	1531	7200	1.75	grey, turbid, heavy sheen
1044	67.2	6.6	1327	7200	3.5	"
1047	67.0	6.7	1296	7200	5.25	"
Socks had slight SPH film						

Did well dewater? Yes (No) Gallons actually evacuated: 5.25

Sampling Time: 1050 Sampling Date: 3/15/04

Sample I.D.: MW-7 Laboratory: STL Mc Campbell

Analyzed for: (TPH-G) ~~BTEX~~ MTBE (TPH-D) Other:

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-8	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 20.30	Depth to Water: 8.34
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
- Other_____

Sampling Method:

- Bailer
- ✓ 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

1.9 (Gals.) X 3 = 5.7 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1224	67.4	6.6	7920	71000	2	grey, milky, turbid
1226	66.1	6.6	10960	71000	4	"
1228	65.4	6.6	11750	71000	5.75	"
No lid on wellbox. Cap was off upon initial arrival - Evidence						
of white powdery compound in area entering casing.						

Did well dewater? Yes (No) Gallons actually evacuated: 5.75

Sampling Time: 1231 Sampling Date: 3/15/04

Sample I.D.: MW-8 Laboratory: STL McCampbell

Analyzed for: (TPH-G) ~~BTEX~~ MTBE (TPH-D) Other:

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 19.66	Depth to Water: 9.34
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
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

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

1.7 (Gals.) X 3 = 5.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1100	70.4	6.7	1374	720	1.75	grey, fuel odor, turbid
1102	67.4	6.8	1512	>200	3.5	"
1104	67.1	6.8	1561	>200	5.25	"

Did well dewater? Yes (No) Gallons actually evacuated: 5.25

Sampling Time: 1107 Sampling Date: 3/15/04

Sample I.D.: MW-10 Laboratory: STL McCampbell

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-13	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 20.39	Depth to Water: 9.66
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
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

1.7 (Gals.) X 3 = 5.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

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

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1311	68.3	7.9	1242	7200	1.75	tan, turbid
1313	67.2	7.7	1147	7200	3.5	"
1315	67.7	7.5	1107	7200	5.25	"

Did well dewater? Yes (No) Gallons actually evacuated: 5.25

Sampling Time: 1318 Sampling Date: 3/15/04

Sample I.D.: MW-13 Laboratory: STL McCampbell

Analyzed for: ~~TPH-G~~ ~~BTEX~~ MTBE (TPH-D) Other:

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-15	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 29.05	Depth to Water: 11.33
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
- Other_____

Sampling Method:

- Bailer
- × 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

2.5 (Gals.) X 3 = 8.4 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1255	71.1	7.0	2100	71000	3	tan, cloudy
1300	70.7	7.0	2070	71000	6	"
1305	69.9	7.2	2071	71000	8.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 8.5

Sampling Time: 1308 Sampling Date: 3/15/04

Sample I.D.: MW-15 Laboratory: STL McCampbell

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-16	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 20.45	Depth to Water: 8.50
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
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

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	radius^2 * 0.163

1.9 (Gals.) X 3 = 5.7 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1346	67.5	7.8	844	>200	2	tan, cloudy
1349	66.9	7.4	822	>200	4	"
1352	66.7	7.3	813	>200	5.5	"
	No SPH on sorbs					

Did well dewater? Yes (No) Gallons actually evacuated: 5.5

Sampling Time: 1355 Sampling Date: 3/15/04

Sample I.D.: MW-16 Laboratory: STL McCampbell

Analyzed for: (TPH-G) ~~BTEX~~ MTBE (TPH-D) Other:

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-17	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 19.63	Depth to Water: 8.34
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
- Other____

Sampling Method:
- Bailer
- ✗ Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other:____

1.8 (Gals.) X 3 = 5.4 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

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

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1407	71.5	6.8	1243	7200	2	grey, turb.d heavy sheen
1410	68.6	6.9	1234	7200	4	"
1413	68.1	6.9	1221	7200	5.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 5.5

Sampling Time: 1416 Sampling Date: 3/15/04

Sample I.D.: MW-17 Laboratory: STL Mc Campbell

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-19	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 25.16	Depth to Water: 11.06
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
- Other_____

Sampling Method:

- Bailer
- ✓ 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

2.2 (Gals.) X 3 = 6.6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1007	65.4	6.6	1004	71000	2.25	grey, turbid fuel odor?
1011	65.2	6.6	826	71000	2.5	"
1015	65.2	6.7	801	71000	6.75	"

Did well dewater? Yes (No) Gallons actually evacuated: 6.75

Sampling Time: 1017 Sampling Date: 3/15/04

Sample I.D.: MW-19 Laboratory: (STL)

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

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

WELL MONITORING DATA SHEET

Project #: 040315-DA1	Client: CKG
Sampler: DA	Start Date: 3/15/04
Well I.D.: MW-20	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 21.88	Depth to Water: 8.69
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
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

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

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

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1329	67.9	7.8	1164	7200	2.25	tan, turbid
1331	67.2	7.4	1097	7200	2.5	"
1333	67.6	7.3	1091	7200	6.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 6.5

Sampling Time: 1336 Sampling Date: 3/15/04

Sample I.D.: MW-20 Laboratory: STL McCampbell

Analyzed for: ~~TPH-G~~ ~~BTEX~~ MTBE (TPH-D) Other:

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.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: Owens Brockway Glass Plant	Date Sampled: 03/15/04
		Date Received: 03/16/04
	Client Contact: Chris Kennedy	Date Extracted: 03/19/04-03/21/04
	Client P.O.:	Date Analyzed: 03/19/04-03/21/04

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

Extraction method: SW5030B | Analytical methods: SW8021B/8015Cm | Work Order: 0403257

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-5	W	180,g,h	—	ND	ND	ND	ND	1	101
002A	MW-7	W	890,g,h	---	ND	ND	0.57	1.1	1	81.8
003A	MW-8	W	320,g,i	—	ND	ND	ND	ND	1	106
004A	MW-10	W	160,g,h	---	ND	ND	ND	0.80	1	98.4
005A	MW-13	W	ND,i	---	ND	ND	ND	ND	1	84.4
006A	MW-15	W	ND	—	ND	ND	ND	ND	1	85.3
007A	MW-16	W	ND	---	ND	ND	ND	ND	1	105
008A	MW-17	W	1400,g,m,h	—	2.1	0.71	ND	1.5	1	---#
009A	MW-19	W	330,b	---	ND	ND	ND	ND	1	93.8
010A	MW-20	W	ND	—	ND	ND	ND	ND	1	86.4

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 ug/L, soil/sludge/solid samples in mg/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

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Website: www.mccampbell.com E-mail: main@mccampbell.com

CKG Environmental 808 Zinfandel Lane St. Helena, CA 94574	Client Project ID: Owens Brockway Glass Plant	Date Sampled: 03/15/04
		Date Received: 03/16/04
	Client Contact: Chris Kennedy	Date Extracted: 03/16/04
	Client P.O.:	Date Analyzed: 03/18/04-03/22/04

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0403257

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0403257-001A	MW-5	W	46,000,m,h	10	95.9
0403257-002A	MW-7	W	170,000,m,h	100	—#
0403257-003A	MW-8	W	3000,d,g,b,i	10	91.7
0403257-004A	MW-10	W	2500,m,h	1	91.2
0403257-005A	MW-13	W	ND,i	1	90.5
0403257-006A	MW-15	W	ND	1	89.1
0403257-007A	MW-16	W	63,b	1	89.2
0403257-008A	MW-17	W	660,000,a,g,h	200	---#
0403257-009A	MW-19	W	1100,d,b,h	1	91.1
0403257-010A	MW-20	W	ND	1	91.3

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

* 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

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0403257

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 10775 Spiked Sample ID: 0403257-010A

	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)£	ND	60	101	104	2.99	99.7	98.9	0.784	70	130
MTBE	ND	10	97.4	111	13.1	106	101	4.72	70	130
Benzene	ND	10	110	111	0.954	110	108	1.73	70	130
Toluene	ND	10	102	102	0	102	100	2.13	70	130
Ethylbenzene	ND	10	107	107	0	108	107	0.813	70	130
Xylenes	ND	30	96	96	0	99.7	96	3.75	70	130
%SS:	86.4	10	106	104	1.97	104	104	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.

£ 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.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0403257

EPA Method: SW8015C	Extraction: SW3510C		BatchID: 10774			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	112	113	0.697	70	130
%SS:	N/A	2500	N/A	N/A	N/A	98.4	99.2	0.780	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.

DHS Certification No. 1644

QA/QC Officer

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0403257

Report to:
Chris Kennedy
CKG Environmental
808 Zinfandel Lane
St. Helena, CA 94574

TEL: (707) 967-8022
FAX: (707) 967-8080
ProjectNo: Owens Brockway Glass Plant
PO:

Bill to:
Accounts Payable
CKG Environmental
808 Zinfandel Lane
St. Helena, CA 94574

Requested TAT: 5 days
Date Received: 3/16/04
Date Printed: 3/16/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0403257-001	MW-5	Water	3/15/04 11:25:00	☐	A	A													
0403257-002	MW-7	Water	3/15/04 10:50:00	☐	A	A													
0403257-003	MW-8	Water	3/15/04 12:31:00	☐	A	A													
0403257-004	MW-10	Water	3/15/04 11:07:00	☐	A	A													
0403257-005	MW-13	Water	3/15/04 1:18:00 PM	☐	A	A													
0403257-006	MW-15	Water	3/15/04 1:08:00 PM	☐	A	A													
0403257-007	MW-16	Water	3/15/04 1:55:00 PM	☐	A	A													
0403257-008	MW-17	Water	3/15/04 2:16:00 PM	☐	A	A													
0403257-009	MW-19	Water	3/15/04 10:17:00	☐	A	A													
0403257-010	MW-20	Water	3/15/04 1:36:00 PM	☐	A	A													

Test Legend:

1	G-MBTEX_W	2	TPH(D)WSG_W	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

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.

040325T

BLAINE TECH SERVICES INC.

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

CHAIN OF CUSTODY

CONDUCT ANALYSIS TO DETECT

LAB McCAMPBELL | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

CLIENT: CK G ENVIRONMENTAL

SITE: OWENS BROCKWAY GLASS PLANT
3600 ALAMEDA AVE.
OAKLAND, CA

SPECIAL INSTRUCTIONS

INVOICE AND REPORT TO:
CHRIS KENNEDY
CKG ENVIRONMENTAL

C = COMPOSITE ALL CONTAINERS

SAMPLE I.D.	date	time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	CONTAINERS # amber	C	TPH-G	BTEX	TPH-D w/ SILICA GEL	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
~~MW-4~~ OA	3/15/04	—	W	5	x		OA						
MW-5		1125					x	x	x				
MW-7		1050					x	x	x				
MW-8		1231					x	x	x				
MW-10		1102					x	x	x				
MW-13		1318					x	x	x				
MW-15		1368					x	x	x				
MW-16	3/15 OA	1355					x	x	x				
MW-17		1416					x	x	x				
MW-19		1017					x	x	x				
MW-20	↓	1336	↓	↓	↓		x	x	x				

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB ____
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB ____

PRESERVATION: VOAS ✓ | O&G | METALS | OTHER

SAMPLING COMPLETED: DATE 3/15/04 | TIME

SAMPLING PERFORMED BY: David Allbut

RESULTS NEEDED NO LATER THAN

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
David Allbut	3/16/04	9:45		3/16	9:45
	3/16	11:30		3/16	11:30

SHIPPED VIA | DATE SENT | TIME SENT | COOLER #