BP Amoco

Scott T. Hooton
Team Leader

BP Amoco Oil Corporation
295 SW 41st Street
Bldg 13, Suite N
Renton, WA 98055
425/251-0689
425/251-0736 FAX

3960

00 AUG 29 PM 4:18

August 25, 2000

Alameda County Health Care Services Department
Attention Mr. Scott Seery
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

RE: BP Oil Site No. 11117
7210 Bancroft Avenue (at 73rd)
Oakland, CA

Dear Mr. Seery:

This letter transmits the *Well Installation, Interim Remedial Action and Recovery Testing Report* prepared by Cambria Environmental Technology on behalf of BP.

Please give me a call at (425) 251-0689 if you have any comments or questions.

Sincerely,

Scott Hooton

attachment

cc: site file
D. Camille - Tosco (w/attachment)
Bancroft Oakland Investment Company, c/o SB Management Corporation, Attention Ms. K. R. Stimson, 422 North Camden Drive, STE#1070, Beverly Hills, CA 90210 (w/attachment)
Khaled Rahman - Cambria

CAMBRIA

WELL INSTALLATION, INTERIM REMEDIAL ACTION AND RECOVERY TESTING REPORT

Former BP Oil Site No. 11117
7210 Bancroft Avenue
Oakland, California
Cambria Project No. 852-1546-4

August 15, 2000

Prepared for:

BP Oil Company
Environmental Resources Management
295 SW 41st Street
Bldg. 13 STE N.
Renton, Washington 98055-4931

Prepared by:

Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, California 94608

REGISTERED GEOLOGIST
KHALED B. RAHMAN
No. 0261
CERTIFIED
HYDROGEOLOGIST
Exp. 7/31/01
STATE OF CALIFORNIA

Jacquelyn L. Jones
Senior Staff Geologist

Khaled B. Rahman, R.G., C.H.G
Senior Geologist

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

CAMBRIA

WELL INSTALLATION, INTERIM REMEDIAL ACTION AND RECOVERY TESTING REPORT

BP Oil Site No. 11117
7210 Bancroft Avenue
Oakland, California
Cambria Project No. 852-1546-4

August 15, 2000

INTRODUCTION

Cambria Environmental Technology, Inc. (Cambria) has prepared this *Well Installation, Interim Remedial Action and Recovery Testing Report* for the above-referenced BP Oil Company (BP) site. Presented below are the site background, the well installation activities, the interim remedial action activities, recovery testing activities, and our conclusions and recommendations.

SITE BACKGROUND

Site Description: The site is an active 76-branded gasoline retail outlet located at the north corner of Bancroft Avenue and 73rd Avenue in Oakland, California (see Figure 1). BP acquired the facility from Mobil Oil Corporation in 1989. In January 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

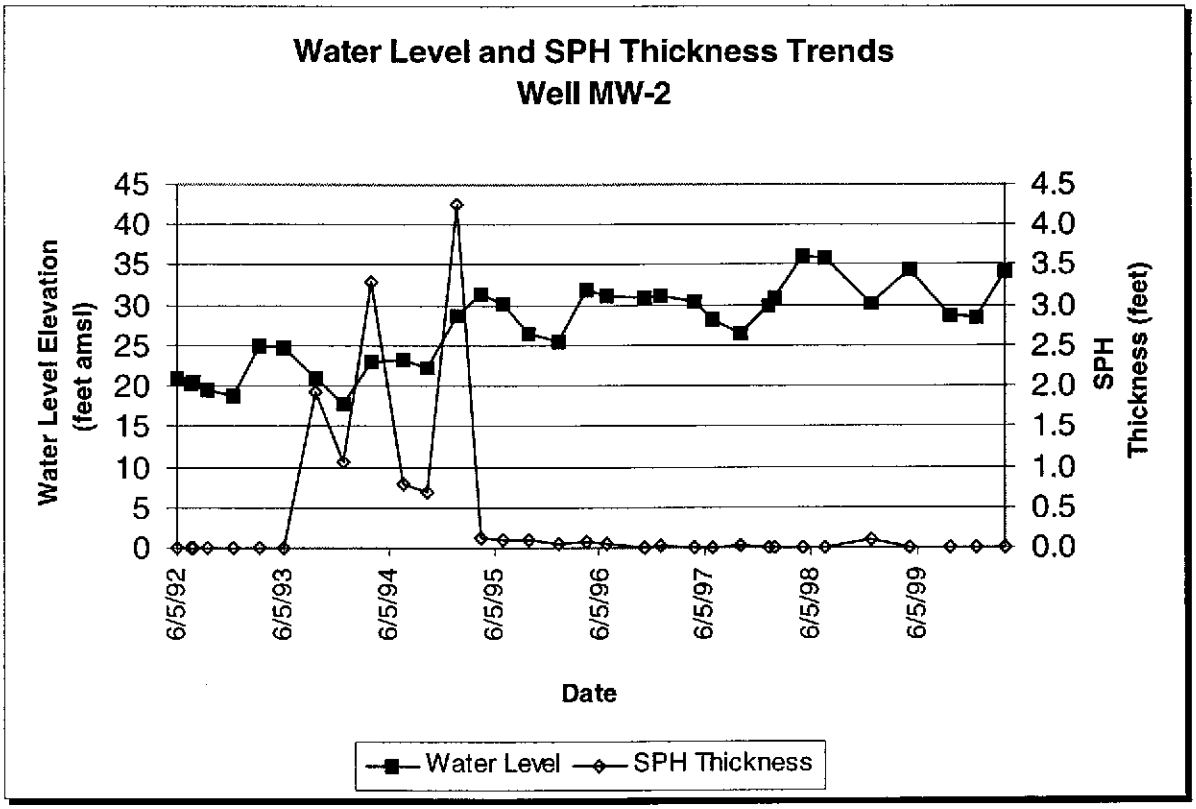
The site consists of a service station building and three 12,000-gallon gasoline underground storage tanks and one 10,000-gallon diesel underground storage tank with associated piping and dispensers. The site is covered with asphalt or concrete surfacing except for planters along the southeastern and southwestern property boundaries and at the north corner of the property (see Figure 2).

Previous Work: Prior to this investigation, nine monitoring wells were installed at the site: wells MW-1 through MW-4 and MW-6 through MW-10 (see Figure 2). Available information indicates that wells MW-1 and MW-2 were installed in 1991 and screen from approximately 20 to 40 feet below ground surface (bgs); well MW-3 was installed in 1989 and screens from 30 to 45 feet bgs; wells MW-4 and MW-6 were installed in 1992 and screen from approximately 20 to 40 feet bgs; and wells MW-7 through MW-9 were installed in 1994 and screen from approximately 25 to 40 or 45 feet bgs. One diesel and three gasoline underground storage tanks and associated dispensers and piping were removed and replaced by TOSCO in 1998.

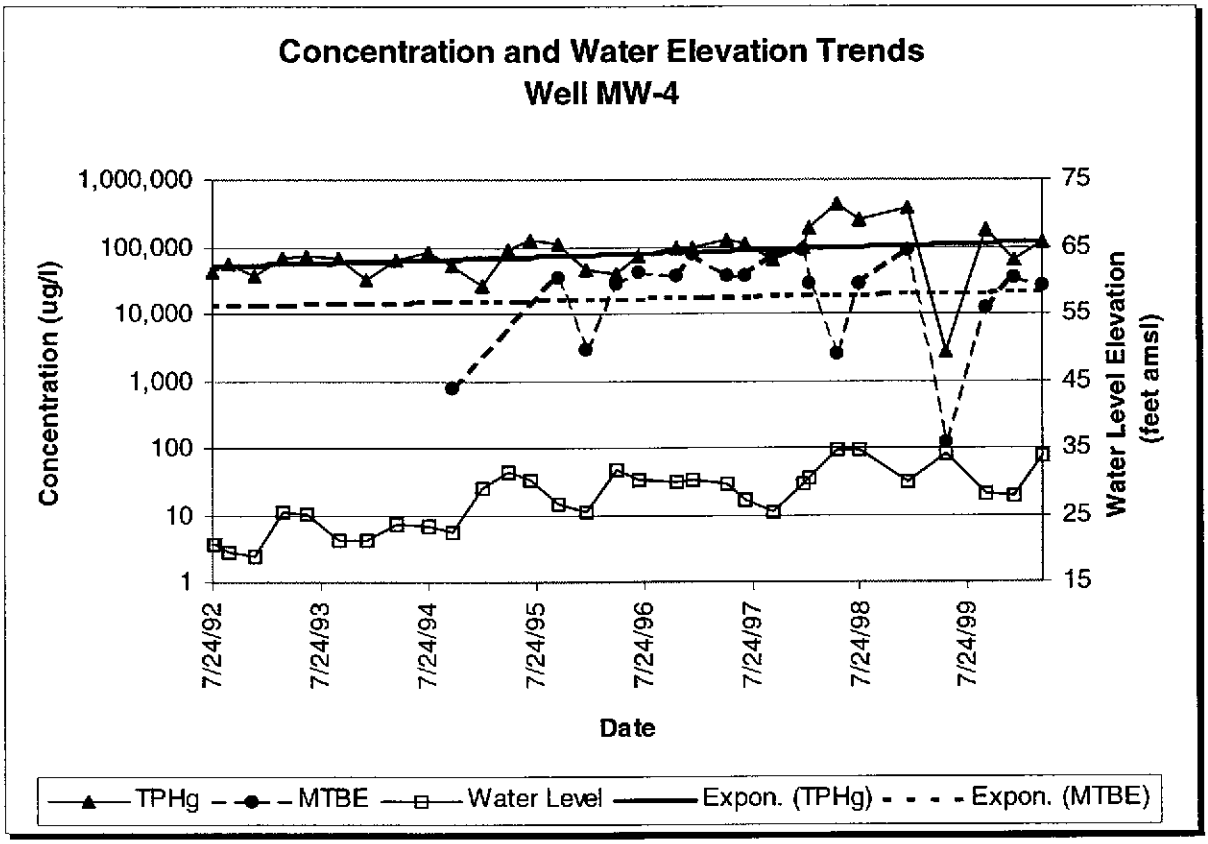
Site Hydrogeology: The site is typically underlain by clays with 1 to 4 foot thick intervals of sands and gravels to a total explored depth of approximately 45 feet bgs. Boring logs for wells MW-1, MW-2, MW-6 and MW-7 indicate less than 5 feet of sand and/or gravel encountered, while those for wells MW-3, MW-8 and MW-9 indicate more than 10 feet of sand and/or gravel encountered.

The water table has risen about 10 feet since 1992. On March 27, 2000, the depth to water in the site wells ranged from 15 to 19 feet bgs. Slug tests performed on wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-7 and MW-10 in 1999 indicate that the hydraulic conductivity ranges from 4.5×10^{-5} centimeters per second (cm/sec) in well MW-10 to 1.3×10^{-2} cm/sec in well MW-1 with a geometric mean value of 4.2×10^{-4} cm/sec.

SPH Distribution: As shown on the graph below, separate phase hydrocarbons (SPHs) were measured in well MW-2, located immediately south of the former underground storage tanks and approximately 20 feet southwest of the current underground storage tanks, between 1993 and 1998. SPH was not measured in the other site wells.



Hydrocarbon and MTBE Distribution: Samples collected by Blaine Tech Services (Blaine) of San Jose, California during the first quarter 2000 monitoring event from wells MW-2 and MW-4 are reported to contain more than 10,000 micrograms per liter (µg/L) of total petroleum hydrocarbons as gasoline (TPHg) and more than 1,000 µg/L of benzene. In addition, samples from wells MW-2, MW-4, MW-6 and MW-10 are reported to contain more than 10,000 µg/L of methyl tert-butyl ether (MTBE). As shown on the graph below, well MW-4 data exhibits slightly increasing concentration trends and generally rising water levels.



WELL INSTALLATION ACTIVITIES

Two 4-inch diameter wells were installed to facilitate potential remedial activities at the site. Cambria's Standard Field Procedures for Monitoring Wells is included in Appendix A.

Personnel Present: Jacquelyn Jones, Cambria Geologist, working under the supervision of Khaled Rahman, California Registered Geologist.

Permits: Alameda County Public Works Agency Permit No. 99WR666 (see Appendix B).

Drilling Company: V&W Drilling of Rio Vista, California (C-57 License # 720904).

Drilling Date: November 30, 1999.

Number of Wells: Two (EX-1 and EX-2).

Drilling Method: Drill rig equipped with ten-inch diameter hollow stem augers.

Sampling Method: Wells EX-1 and EX-2 were sampled at 5-foot intervals using a modified California split spoon sampler.

Boring Depths: Well EX-1 was drilled to 39.5 feet bgs. Well EX-2 was drilled to 36.5 feet bgs.

Ground Water Depths: Groundwater was first-encountered at 26 feet bgs in each boring.

Soil Types Encountered: Soils consisted of fill to approximately 8 to 13 feet bgs, underlain by sands and gravels to an approximate depth of 30 feet bgs. Sandy silty clays were encountered at approximately 30 to 33 feet bgs (see Appendix C).

Well Construction: The wells were constructed with a four-inch diameter schedule 40 PVC casing, and screened with a 0.010-inch slot. Well EX-1 was screened from 18 to 38 feet bgs, and well EX-2 was screened from 15 to 35 feet bgs (see Appendix C).

Well Development: Monitoring wells EX-1 and EX-2 were developed during installation by purging ten casing volumes and surging each well. The wells were re-developed on March 30, 2000 during subsequent interim remedial activities by surging and swabbing each well and purging with a vacuum truck.

Chemical Analysis: Selected soil samples were analyzed for TPHg by modified EPA Method 8015, and benzene, toluene, ethylbenzene, xylenes (BTEX) and MTBE by EPA Method 8260 by Pace Analytical Services Inc. of Long Beach, California (Pace) (see Table 1). Soil sample analytical reports are presented in Appendix D.

Soil Handling: Soil cuttings produced during drilling activities were stored temporarily on visqueen. The soil was transported by Denbeste Transportation, Inc. of Windsor, California to the Forward Landfill in Manteca, California.

Drilling Results: Wells EX-1 and EX-2 encountered more than 10 feet of sand and/or gravel (including fill material). Although located adjacent to wells MW-2 and MW-7, the soil types encountered were more similar to wells MW-3, MW-8 and MW-9.

No TPHg or BTEX were reported in analyzed soil samples from the two borings (see Table 1). Except for 0.012 milligrams per kilogram (mg/kg) in well EX-2 (11 feet bgs), no MTBE was reported in the analyzed soil samples.

INTERIM REMEDIAL ACTION ACTIVITIES

Interim groundwater extraction was performed to remove groundwater containing MTBE from the wells.

TOSCO Profiling: On January 4, 2000, Blaine collected grab water samples from wells EX-1 and EX-2. The samples were submitted to Pace. Additional grab samples were submitted to Block Environmental of Pleasant Hill, California for bioassay analysis. The samples were analyzed for parameters required to profile the water for recovery at the TOSCO refinery in Rodeo, California (see Appendix E). On January 31, 2000, TOSCO accepted up to 5,000 gallons of water from the site per week through April 30, 2000.

Personnel Present: Mark Erickson, Cambria Engineer, Tony Perini, Cambria Engineer, Greg Bentley, Cambria Technician, and Brian Busch, Cambria Environmental Scientist were onsite during one or more vacuum extraction events.

Extraction Dates: Onyx Industrial Services (Onyx) of Benicia, California conducted weekly vacuum extraction events between March 16, 2000 and April 30, 2000. Cambria observed extraction activities and collected samples on March 16, 2000, March 23, 2000, March 30, 2000, April 6, 2000, April 27, 2000 and April 28, 2000.

Extraction Wells: Wells EX-1, EX-2 and MW-2.

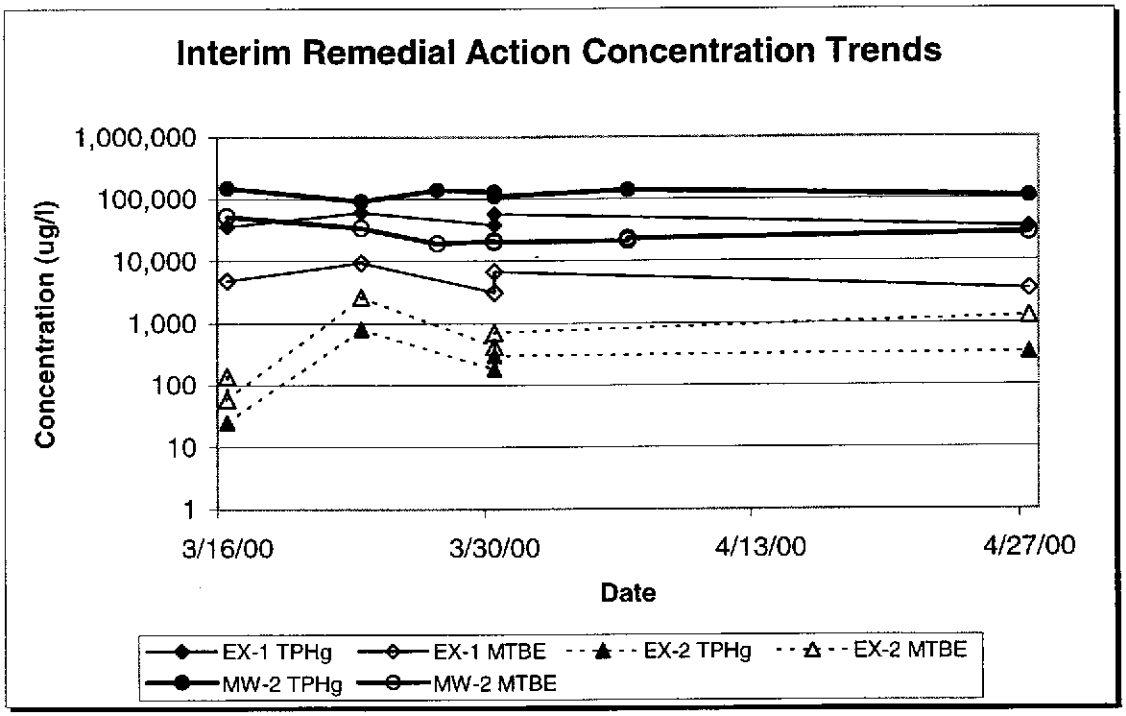
Extraction Procedures: Groundwater was extracted from wells EX-1 and EX-2 during each extraction event, and well MW-2 after the first event. Water was extracted using a vacuum truck and immediately off-hauled to the TOSCO refinery in Rodeo, California for recovery. The volumes of water extracted were estimated using the capacity gauge on the vacuum truck during each site visit.

Extracted Volumes: Between 900 gallons and 1,700 gallons were extracted from the wells during each site visit, for a total of approximately 10,900 gallons extracted.

Groundwater Sampling: To assess concentration trends, groundwater samples were collected using a disposable bailer. Samples were collected before and after pumping, except on March 23, 2000 when samples were collected after pumping only. The samples collected after pumping on April 28, 2000 were not received by the analytical laboratory and were not analyzed.

Chemical Analysis: Samples were analyzed for TPHg using modified EPA Method 8015, and BTEX and MTBE using EPA Method 8260 (see Table 2). Groundwater sample analytical reports are included as Appendix F.

Short-Term Groundwater Extraction Results: Approximately 10,900 gallons were extracted from three site wells during the eight events. As shown on the graph below, wells MW-2 and EX-1 show stable to slightly decreasing concentration trends while well EX-2 shows stable to slightly increasing concentration trends.



RECOVERY TEST ACTIVITIES

Recovery Testing: Recovery tests were completed on wells EX-1, EX-2 and MW-2 during the April 27 and 28, 2000 extraction events. The recovery tests consisted of measuring water level immediately after the vacuum was shut off and as the well recovered. Measurements continued until water level recovered to approximately 80% of the initial water level.

Recovery Test Data Analysis: The recovery test data was analyzed by the Bouwer and Rice Method and Horslev Method for slug tests using Aquifer Test for Windows, Version 2.56. The calculations assume that the wells are fully penetrating, and consist of a 4-inch diameter casing installed in a 10-inch diameter borehole for wells EX-1 and EX-2, and a 2-inch diameter casing installed in a 8-inch diameter borehole for well MW-2. Measurements and data plots are presented in Appendix F. Calculated hydraulic conductivity values are summarized on Table 3.

Recovery Testing Results: Based on the recovery test measurements, the calculated hydraulic conductivity values ranged from 1.7×10^{-4} cm/sec to 9.4×10^{-5} cm/sec for well MW-2, 1.0×10^{-5} cm/sec to 2.0×10^{-5} cm/sec for well EX-1, and 1.1×10^{-3} cm/sec to 5.4×10^{-4} cm/sec for well EX-2 (see Table 3). The geometric mean of these values is 1.5×10^{-4} cm/sec. The calculated hydraulic conductivity values are consistent with those mentioned previously and with published values for the soil types described on the boring logs for the screened depths. Measurements and data plots are presented in Appendix E.

Based on this range of hydraulic conductivity values, and the assumptions and equation mentioned above, groundwater flow velocities of 2 to 190 feet per year can be calculated (see Table 3). These values are within the range of groundwater flow velocities mentioned previously.

CONCLUSIONS AND RECOMMENDATIONS

Groundwater monitoring results indicate that SPH was present in well MW-2 between 1993 and 1998, hydrocarbon and MTBE concentration trends are slightly increasing near the underground storage tanks, and the water table has risen more than 10 feet since 1992. Two 4-inch diameter groundwater wells were installed near the underground storage tanks for potential remedial activities. Recovery tests conducted on these new wells indicated hydraulic conductivity values of 1.0×10^{-5} to 1.1×10^{-3} cm/sec, which are consistent with previous hydraulic testing at the site. Interim remedial activities were conducted to evaluate the effectiveness of hydrocarbon and MTBE reduction using short-term groundwater extraction. Approximately 11,000 gallons of water were extracted from three wells during eight site visits using a vacuum truck. During the extraction events, stable to slightly decreasing concentration trends were exhibited in samples collected from wells MW-2 and EX-1, located immediately southwest of the underground storage tanks. Well EX-2, which is located north of the underground storage tanks, exhibited lower concentrations than wells MW-2 and EX-1.

To evaluate potential water uses within ½-mile radius of the site, the Alameda County Department of Public Works will be requested to provide information on water supply wells, and topographic maps will be reviewed for surface water bodies. In the interim, groundwater monitoring at the site will be continued.

ATTACHMENTS

Figure 1 –Vicinity Map
Figure 2 – Site Plan

Table 1 – Soil Analytical Data
Table 2 – Groundwater Analytical Data
Table 3 – Recovery Test Summary

Appendix A – Standard Field Procedures for Monitoring Wells
Appendix B –Well Construction Permits
Appendix C – Boring Logs, Well Details, and Well Driller's Report Forms
Appendix D – Soil Analytical Report
Appendix E – Groundwater Analytical Reports
Appendix F – Recovery Test Data

CAMBRIA

Figures

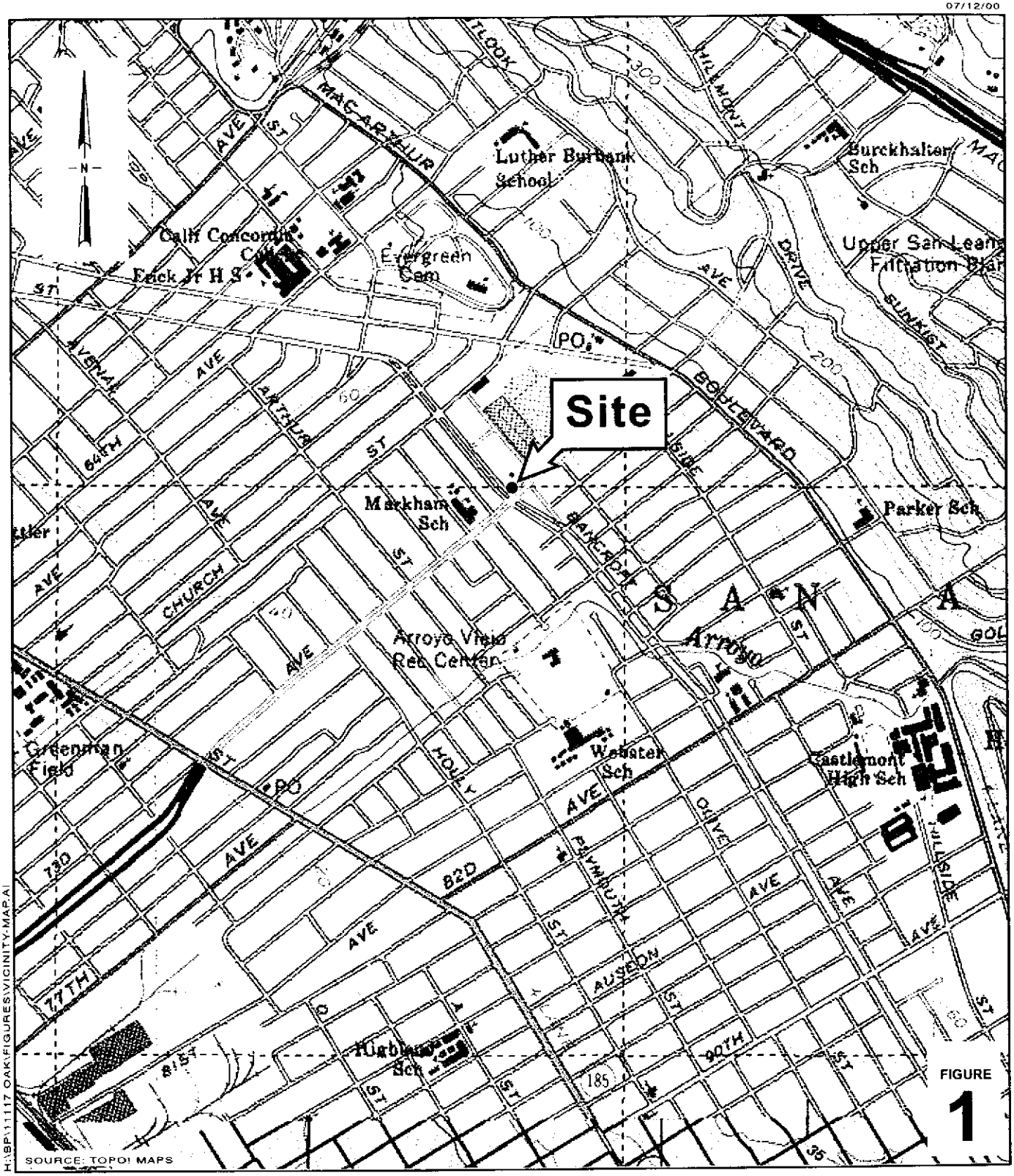


FIGURE 1

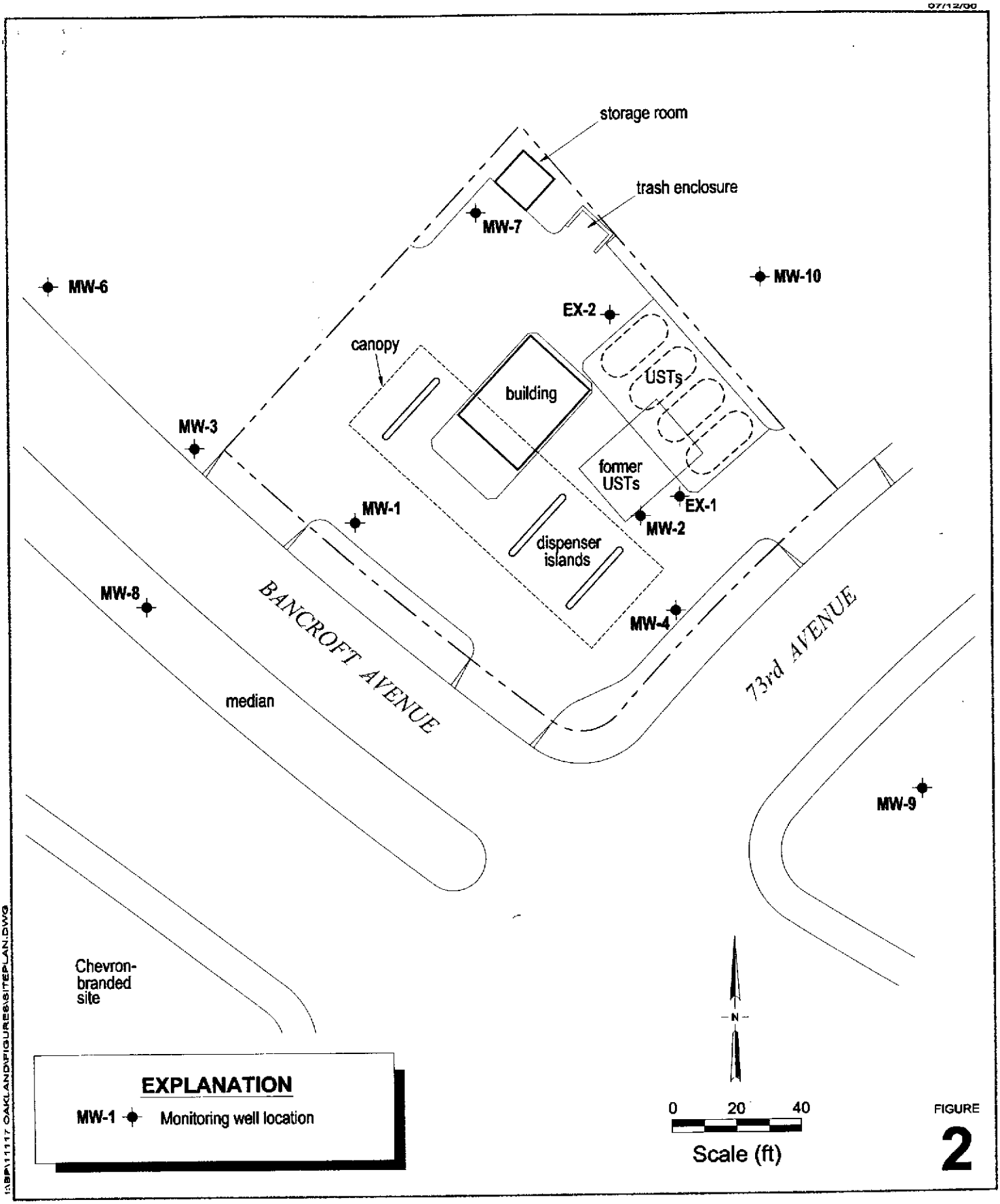
BP Oil Site No. 11117

7210 Bancroft Avenue

Oakland, California

CAMBRIA

Vicinity Map



I:\BP\11117 OAKLAND\FIGURES\SITEPLAN.DWG

FIGURE **2**

BP Oil Site No. 11117

7210 Bancroft Avenue

Oakland, California

CAMBRIA

Site Plan

CAMBRIA

Tables

CAMBRIA

Table 1. **Soil Analytical Data** - BP Oil Site No. 11117,
7210 Bancroft Avenue, Oakland, California

Sample ID (Depth - ft bgs)	Date Sampled	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	Total Lead (mg/kg)	TOC (% w/w)
	EPA Method:	**8015m**	**8260**	**8260**	**8260**	**8260**	**8260**	**6010**	**Walkley-Black**
EX-1-15.5	11/30/99	<1.0	<0.005	<0.005	<0.005	<0.005	**0.011**	-	-
EX-1-21	11/30/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
EX-1-25.5	11/30/99	-	-	-	-	-	-	-	<0.318
EX-1-36	11/30/99	-	-	-	-	-	-	-	<0.318
EX-2-11	11/30/99	<1.0	<0.005	<0.005	<0.005	<0.005	**0.012**	-	-
EX-2-15.5	11/30/99	-	-	-	-	-	-	-	<0.318
EX-2-20.5	11/30/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	-	-
COMP	11/30/99	**1.0**	**0.016**	**0.096**	**0.042**	**0.236**	**0.17**	**5.85**	-

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
TOC = Total organic carbon
mg/kg = Milligrams per kilogram

CAMBRIA

Table 2. **Groundwater Analytical Data** - BP Oil Company Site No. 11117, 7210 Bancroft Avenue, Oakland, California

Well	Sample ID	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
		EPA Method:	**8015m**	**8260**	**8260**	**8260**	**8260**	**8260**
EX-1	B	1/4/00	-	**9,400**	**23,000**	**3,900**	**21,000**	**21,000**
	EX-1BEF	3/16/00	**36,000**	**4,700**	**13,000**	**1,100**	**9,800**	**4,800**
	EX-1BEF	3/23/00	**61,000**	**9,800**	**21,000**	**1,600**	**24,000**	**9,300**
	EX-1BEF	3/30/00	**38,000**	**3,500**	**5,800**	**620**	**6,500**	**3,100**
	EX-1AFT	3/30/00	**57,000**	**4,500**	**8,000**	**960**	**10,000**	**6,700**
	EX-1 PRE	4/27/00	**35,000**	**3,500**	**9,900**	**600**	**7,600**	**3,500**
EX-2	A	1/4/00	-	**1.2**	<1	<1	<2	**420**
	EX-2BEF	3/16/00	<50	<0.5	<0.5	<0.5	<0.5	**140**
	EX-2AFT	3/16/00	<50	<0.5	<0.5	<0.5	**0.55**	**59**
	EX-2	3/23/00	**800**	<0.5	<0.5	<0.5	**0.54**	**2,600**
	EX-2BEF	3/30/00	**180**	<0.5	<0.5	<0.5	<0.5	**420**
	EX-2AFT	3/30/00	**300**	<0.5	<0.5	<0.5	<0.5	**710**
	EX-2 PRE	4/27/00	**340**	**0.53**	<0.5	<0.5	<0.5	**1,300**
MW-2	MW-2AFT	3/16/00	**150,000**	**20,000**	**37,000**	**3,900**	**25,000**	**52,000**
	MW-2	3/23/00	**92,000**	**13,000**	**27,000**	**2,900**	**19,000**	**34,000**
	Blaine	3/27/00	**140,000**	**15,000**	**25,000**	**3,400**	**21,000**	**19,000**
	MW-2BEF	3/30/00	**130,000**	**14,000**	**28,000**	**30,000**	**19,000**	**21,000**
	MW-2AFT	3/30/00	**110,000**	**12,000**	**24,000**	**2,600**	**15,000**	**20,000**
	MW-2A	4/6/00	**140,000**	**14,000**	**27,000**	**2,900**	**19,000**	**21,000**
	MW-2B	4/6/00	**140,000**	**15,000**	**28,000**	**3,300**	**19,000**	**23,000**
	MW-2 PRE	4/27/00	**110,000**	**14,000**	**26,000**	**2,600**	**17,000**	**28,000**

Abbreviations and Notes:

GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether
µg/L = Micrograms per liter

CAMBRIA

Table 3. Recovery Test Summary - BP Oil Site No. 11117
7210 Bancroft Avenue, Oakland, California

Well ID	Date	Analytical Method	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (ft/min)	Effective Porosity	Hydraulic Gradient	Flow Velocity (ft/year)
MW-2	4/27/00	Bouwer-Rice	4.23E-04	8.33E-04	0.3	0.05	73
	4/27/00	Horslev	9.40E-05	1.85E-04	0.3	0.05	16
	4/28/00	Bouwer-Rice	1.72E-04	3.39E-04	0.3	0.05	30
	4/28/00	Horslev	2.21E-04	4.36E-04	0.3	0.05	38
EX-1	4/27/00	Bouwer-Rice	1.96E-05	3.85E-05	0.3	0.05	3.4
	4/27/00	Horslev	1.03E-05	2.02E-05	0.3	0.05	1.8
EX-2	4/27/00	Bouwer-Rice	2.61E-04	5.13E-04	0.3	0.05	45
	4/27/00	Horslev	1.54E-04	3.04E-04	0.3	0.05	27
	4/28/00	Bouwer-Rice	1.08E-03	2.13E-03	0.3	0.05	187
	4/28/00	Horslev	5.38E-04	1.06E-03	0.3	0.05	93
	GEOMETRIC MEAN		**1.5E-04**	**3.0E-04**			**26**

Abbreviations and Notes:

cm/sec = centimeters per second
ft/min = feet per minute
ft/year = feet per year

CAMBRIA

Appendix A

Standard Field Procedures for Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Ground water monitoring wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

F:\TEMPLATE\SOPs\WELLS-GW.WPD

CAMBRIA

Appendix B

Well Construction Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-6575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT BP Site # 11117
7210 Bancroft
Oakland, CA

California Coordinates Source ____ ft. Accuracy ± ____ ft.
CCN ____ ft. CCE ____ ft.
APN ____

CLIENT
Name Scott Hoston, BP Oil Company
Address 295 SW 41st Street Phone 425-351-0187
City Building B, Suite N Zip 98055-4931
Renton, WA

APPLICANT
Name Jacquelyn Jones
Company Cambria Env. Tech. Inc. Fax 510 420-9170
Address 1144-65th Street, Ste B Phone 510 420-3315
City Oakland, CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57-720904
V+W Drilling

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 40 ft.
Surface Seal Depth 8 ft. Number 2

~~GEOTECHNICAL PROJECTS~~
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE December 6, 1999 pending
ESTIMATED COMPLETION DATE December 6, 1999 subcontractor scheduling

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 11/12/99

FOR OFFICE USE

PERMIT NUMBER 99WR666
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED Frank L Codel DATE 11/15/99

Post-it® Fax Note 7671	Date 11/12/99	# of pages ▶ 2
To Cindy Hutchinson	From Jacquelyn Jones	
Co./Dept. Alameda County	Co. Cambria Env. Tech	
Phone #	Phone # 510 420 3315	
Fax # 510 670 5262	Fax # 5104209170	

CAMBRIA

Appendix C

Boring Logs, Well Details, Well Driller's Report Forms

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	EX-1
JOB/SITE NAME	BP-11117	**DRILLING STARTED**	30-Nov-99
LOCATION	7210 Bancroft Avenue, Oakland, California	**DRILLING COMPLETED**	30-Nov-99
PROJECT NUMBER	852-1546	**WELL DEVELOPMENT DATE (YIELD)**	30-Nov-99
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	10"	**SCREENED INTERVAL**	18 to 38 ft bgs
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	26.0 ft (30-Nov-99) ▽
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	20.55 ft (30-Nov-99) ▼
REMARKS	Hand augered to 5' bgs; located 5' from well MW-2.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	DEPTH (ft bgs)	U.S.C.S.	CONTACT DEPTH (ft bgs)	LITHOLOGIC DESCRIPTION
					1.0	**ASPHALT.**
						Silty GRAVEL; (FILL); light brown; dry; 5% clay, 35% silt, 20% sand, 40% gravel; low plasticity; moderate to high estimated permeability.
	4 7 7	EX-1@6'	5			@ 5' - medium dense.
						SAND; (SW); tan; loose; moist; 10% silt, 85% medium grained sand, 5% gravel; high estimated permeability.
	4 4 5	EX-1@11'	10			
					13.0	**Sandy Silty GRAVEL**; (GM); brown; dense; moist; 5% clay, 35% silt, 15% medium grained sand, 45% angular gravel up to 2"; high estimated permeability.
<1.0	20 50	EX-1@15.5'	15	GM		
	14 17 20	EX-1@21'	20			@ 20' - olive brown; damp; 10% medium grained sand, 50% angular gravel up to 0.5". ▼
<1.0					23.0	**Gravelly Silty SAND**; (SM); brown; dense; wet; 5% clay, 35% sill, 40% coarse grained sand, 20% gravel; high estimated permeability.
	20 50	EX-1@25.5'	25	SM		▽
					28.0	**Sandy Silty GRAVEL**; (GM); olive; dense; wet; 20% silt, 35% sand, 45% gravel; high estimated permeability.
	20 50	EX-1@30.5'	30	GM		
					33.0	**Sandy Silty CLAY**; (CL); see next page.
			35			

WELL DIAGRAM:
- Portland Type I/II
- 4" diam., Schedule 40 PVC
- Bentonite Seal
- Lonestar Sand #2/12
- 4"-diam., 0.010" Slotted Schedule 40 PVC

WELL LOG (TPH-G) H:\BRITIS~1\111117~1\GINT\BP-11117.GPJ DEFAULT GDT 4/24/00

Continued Next Page

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	EX-1
JOB/SITE NAME	BP-11117	**DRILLING STARTED**	30-Nov-99
LOCATION	7210 Bancroft Avenue, Oakland, California	**DRILLING COMPLETED**	30-Nov-99

Continued from Previous Page

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
	17 23 33	EX-1@36'			CL		**Sandy Silty CLAY**; (CL); brown mottled with black; hard; damp; 45% clay, 35% silt, 20% very fine grained sand; low plasticity; low estimated permeability.		
	12 60/6	EX-1@39'						39.5	Bottom of Boring @ 39.5 ft

WELL LOG (TPH-G) H:\BRITIS~1\11117~1\GINT\BP-11117.GPJ DEFAULT.GDT 4/24/00

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	EX-2
JOB/SITE NAME	BP-11117	**DRILLING STARTED**	30-Nov-99
LOCATION	7210 Bancroft Avenue, Oakland, California	**DRILLING COMPLETED**	30-Nov-99
PROJECT NUMBER	852-1546	**WELL DEVELOPMENT DATE (YIELD)**	30-Nov-99
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	10"	**SCREENED INTERVAL**	15 to 35 ft bgs
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	26.0 ft (30-Nov-99) ▽
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	22.64 ft (30-Nov-99) ▼
REMARKS	Hand augered to 5' bgs; located between trash enclosure and UST slab.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
							ASPHALT.	1.0
							Silty Sandy GRAVEL; (FILL); brown; dry; 5% clay, 15% silt, 20% sand, 50% gravel; high estimated permeability.	4.0
	10 12 14	EX-2@6'		5	ML		**Sandy SILT**; (ML); orange brown; very stiff; dry; 5% clay, 55% silt, 30% sand, 10% gravel; low plasticity; moderate estimated permeability.	8.0
<1.0	13 15 19	EX-2@11'		10	GM		**Sandy Silty GRAVEL**; (GM); brown; dense; dry; 5% clay, 20% silt, 25% sand, 50% gravel; high estimated permeability.	
	20 50	EX-2@15.5'		15				18.0
<1.0	26 55	EX-2@20.5'		20	SM		**Silty SAND**; (SM); brown; dense; damp; 25% silt, 70% medium grained sand, 5% gravel; high estimated permeability.	23.0
	18 26 30	EX-2@26'		25	GP		**Silty Sandy GRAVEL**; (GP); brown; dense; wet; 15% silt, 20% medium to coarse grained sand, 65% gravel; high estimated permeability.	
	10 13 26	EX-2@31'		30	CL		**Sandy Silty CLAY**; (CL); light brown; hard; damp; 45% clay, 35% silt, 20% very fine grained sand; low plasticity; low estimated permeability.	30.5
				35				

WELL DIAGRAM

- Portland Type I/II
- 4" diam., Schedule 40 PVC
- Bentonite Seal
- Lonestar Sand #2/12
- 4"-diam., 0.010" Slotted Schedule 40 PVC

WELL LOG (TPH-G) H:\BRITIS~1\11117~1\GINT\BP-11117.GPJ DEFAULT.GDT 4/24/00

Continued Next Page

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	EX-2
JOB/SITE NAME	BP-11117	**DRILLING STARTED**	30-Nov-99
LOCATION	7210 Bancroft Avenue, Oakland, California	**DRILLING COMPLETED**	30-Nov-99

Continued from Previous Page

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
	10 13 32	EX-2@36'						36.5	Bottom of Boring @ 36.5 ft

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CAMBRIA

Appendix D

Soil Analytical Report

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

December 28, 1999

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

RE: Pace Project Number: 6036495
Client Project ID: BP 11117

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on December 2, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

DATE: 12/28/99
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6036495
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

Solid results are reported on a wet weight basis

Pace Sample No: 603080946 Date Collected: 11/30/99 Matrix: Soil
Client Sample ID: EX1@15.5' Date Received: 12/02/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/kg	1000	12/03/99	VN		
a,a,a-Trifluorotoluene (S)	102	%		12/03/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	12/04/99	RG	71-43-2	
Toluene	ND	ug/kg	5	12/04/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	12/04/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	12/04/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	12/04/99	RG	95-47-6	
Methyl-tert-butyl Ether	11	ug/kg	5	12/04/99	RG	1634-04-4	
Dibromofluoromethane (S)	104	%		12/04/99	RG	1868-53-7	
Toluene-d8 (S)	97	%		12/04/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	107	%		12/04/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

Pace Sample No: 603080979 Date Collected: 11/30/99 Matrix: Soil
Client Sample ID: EX1@21' Date Received: 12/02/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/kg	1000	12/03/99	VN		
a,a,a-Trifluorotoluene (S)	99	%		12/03/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	12/04/99	RG	71-43-2	
Toluene	ND	ug/kg	5	12/04/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	12/04/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	12/04/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	12/04/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	12/04/99	RG	1634-04-4	
Dibromofluoromethane (S)	105	%		12/04/99	RG	1868-53-7	
Toluene-d8 (S)	95	%		12/04/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	105	%		12/04/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

Pace Sample No: 603080987 Date Collected: 11/30/99 Matrix: Soil
Client Sample ID: EX2@11' Date Received: 12/02/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/kg	1000	12/03/99	VN		
a,a,a-Trifluorotoluene (S)	94	%		12/03/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	12/04/99	RG	71-43-2	
Toluene	ND	ug/kg	5	12/04/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	12/04/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	12/04/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	12/04/99	RG	95-47-6	
Methyl-tert-butyl Ether	12	ug/kg	5	12/04/99	RG	1634-04-4	
Dibromofluoromethane (S)	110	%		12/04/99	RG	1868-53-7	
Toluene-d8 (S)	95	%		12/04/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	104	%		12/04/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

Pace Sample No: 603080995 Date Collected: 11/30/99 Matrix: Soil
Client Sample ID: EX2@20.5' Date Received: 12/02/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/kg	1000	12/03/99	VN		
a,a,a-Trifluorotoluene (S)	98	%		12/03/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	12/04/99	RG	71-43-2	
Toluene	ND	ug/kg	5	12/04/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	12/04/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	12/04/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	12/04/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	12/04/99	RG	1634-04-4	
Dibromofluoromethane (S)	103	%		12/04/99	RG	1868-53-7	
Toluene-d8 (S)	95	%		12/04/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	104	%		12/04/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

Pace Sample No: 603081001 Date Collected: 11/30/99 Matrix: Soil
Client Sample ID: COMP Date Received: 12/02/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
Metals, ICP		Method: EPA 6010			Prep Method: EPA 3050		
Lead	5.85	mg/kg	0.99	12/06/99	SC	7439-92-1	
Date Digested				12/04/99			
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	1000	ug/kg	740	12/03/99	VN		
a,a,a-Trifluorotoluene (S)	101	%		12/03/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	16	ug/kg	5	12/04/99	RG	71-43-2	
Toluene	96	ug/kg	5	12/04/99	RG	108-88-3	
Ethylbenzene	42	ug/kg	5	12/04/99	RG	100-41-4	
M&P-Xylene	170	ug/kg	5	12/04/99	RG		
O-Xylene (1,2-Dimethylbenzene)	66	ug/kg	5	12/04/99	RG	95-47-6	
Methyl-tert-butyl Ether	170	ug/kg	5	12/04/99	RG	1634-04-4	
Dibromofluoromethane (S)	102	%		12/04/99	RG	1868-53-7	
Toluene-d8 (S)	96	%		12/04/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	105	%		12/04/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6036495
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 74465
QC Batch Method: EPA 8015/8020 Modif
Analysis Method: EPA 8015/8020 Modif
Analysis Description: GAS BTEX, Soil by 8015
Associated Pace Samples: 603080946 603080979 603080987 603080995 603081001

METHOD BLANK: 603085044
Associated Pace Samples:
603080946 603080979 603080987 603080995 603081001

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/kg	ND	500	
a,a,a-Trifluorotoluene (S)	%	88		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603085051 603085069

Parameter	Units	603079468	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/kg	0	600	522.0	87.0	554.0	92.3	6	
a,a,a-Trifluorotoluene (S)					96		96		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6036495
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 74497
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260
Associated Pace Samples: 603080946 603080979 603080987 603080995 603081001

METHOD BLANK: 603088154
Associated Pace Samples: 603080946 603080979 603080987 603080995 603081001

Parameter	Units	Method Blank Result	PRL	Footnotes
Benzene	ug/kg	ND	5	
Toluene	ug/kg	ND	5	
Ethylbenzene	ug/kg	ND	5	
M&P-Xylene	ug/kg	ND	5	
O-Xylene (1,2-Dimethylbenzene)	ug/kg	ND	5	
Methyl-tert-butyl Ether	ug/kg	ND	5	
Dibromofluoromethane (S)	%	97		
Toluene-d8 (S)	%	96		
4-Bromofluorobenzene (S)	%	105		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603088170 603088188

Parameter	Units	603079690	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/kg	0	50	57.10	114	59.50	119	4	
Toluene	ug/kg	0	50	59.50	119	63.40	127	6	
Dibromofluoromethane (S)					114		113		
Toluene-d8 (S)					110		112		
4-Bromofluorobenzene (S)					115		118		1,1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6036495
Client Project ID: BP 11117

LABORATORY CONTROL SAMPLE: 603088162

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Benzene	ug/kg	50	50.80	102	
Toluene	ug/kg	50	47.90	95.8	
Dibromofluoromethane (S)				107	
Toluene-d8 (S)				97	
4-Bromofluorobenzene (S)				101	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6036495
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 74733
Analysis Method: EPA 6010
Associated Pace Samples: 603081001

QC Batch Method: EPA 3050
Analysis Description: Metals, ICP

METHOD BLANK: 603097668
Associated Pace Samples:
603081001

Parameter	Units	Method Blank Result	PRL	Footnotes
Lead	mg/kg	ND	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603097692 603097700

Parameter	Units	603080565	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	99.18	46.73	134.2	74.8	164.7	128	53	

LABORATORY CONTROL SAMPLE & LCSD: 603097676 603097684

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	50	47.52	95.0	47.60	95.2	0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6036495
Client Project ID: BP 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	is/ss out of control - QC verified by LCS

REPORT OF LABORATORY ANALYSIS

FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
Pace Analytical-Long Beach
3970 Gilman St.
Long Beach,CA 90815

Date Reported : Dec15 1999
Project Number : AMBP-11117
PO Number : 6036495
FDHRSDW Number : 83139
NYSDOH Number : 11595
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: DRY WT BASIS WB_TOC
Date Sampled:Nov30 1999 Date Received:Dec 7 1999 Lab Numbers: 5510-5512

REPORT OF ANALYSIS

Parameter	Unit	Practical Quantitative Limit	%ACC	%PRC	5510 EX1255	5511 EX136	5512 EX2155
%Moisture	%H2O	.00010			19.6	16.2	14.5
Organic Carbon	%	0.318			<0.318	<0.318	<0.318

Data Release Authorization
Sample integrity certified prior to analysis.Deficiencies are in QA Report Sec.4
Methods of analysis in accordance with FCL QA and EPA approved methodology .
This Report may not be reproduced in part, results relate only to items tested.

Jefferson S. Flowers, Ph.d.
President/Technical Director

Section 1 of 5

481 NEWBURYPORT AV
ALTAMONTE SPRING
FLORIDA 3270
P.O BOX 15055
ALTAMONTE SPRING
FLORIDA 32715-05
BUS (407) 339-59
FAX (407) 260-61
WEB www.flowerslabs.c

FLOWERS CHEMICAL LABORATORIES INCORPORATED

Received From:
Pace Analytical-Long Beach
3970 Gilman St.
Long Beach,CA 90815

Date Reported : Dec15 1999
Project Number : AMBP-11117
PO Number : 6036495
FDHRS Number : 83139
FHRS ENVNumber : E83018
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: DRY WT BASIS WB_TOC
Date Sampled:Nov30 1999 Date Received:Dec 7 1999 Lab Numbers: 5510-5512

REPORT OF INFORMATION

Parameter	Unit	Limit	Expected Value	Range	Correlation
				5510	
%Moisture	%H2O	152.	18.3	19.6	
				5511	
%Moisture	%H2O	152.	18.3	16.2	
				5512	
%Moisture	%H2O	152.	18.3	14.5	

The above information is intended to highlight exceptional data as compared to the upper control limits (Limit) established for each of the parameters. Range exceedances are flagged by integer values in the Range column. The Expected values are derived from historical data. Expected is computed as either the mean or computed directly from another parameter using linear regression. All known correlation rule exceedances are listed as enumerated rule numbers in the Correlation column. Correlation pair rules are defined on the last page.

481 NEWBURYPORT AV
ALTAMONTE SPRING
FLORIDA 327
P O BOX 15059
ALTAMONTE SPRING
FLORIDA 32715-05
BUS (407) 339-59
FAX (407) 260-61
WEB www.flowerslabs.c

4657

FLOWERS CHEMICAL LABORATORIES

ANALYTICAL RESULTS FORM HRS Number 83139

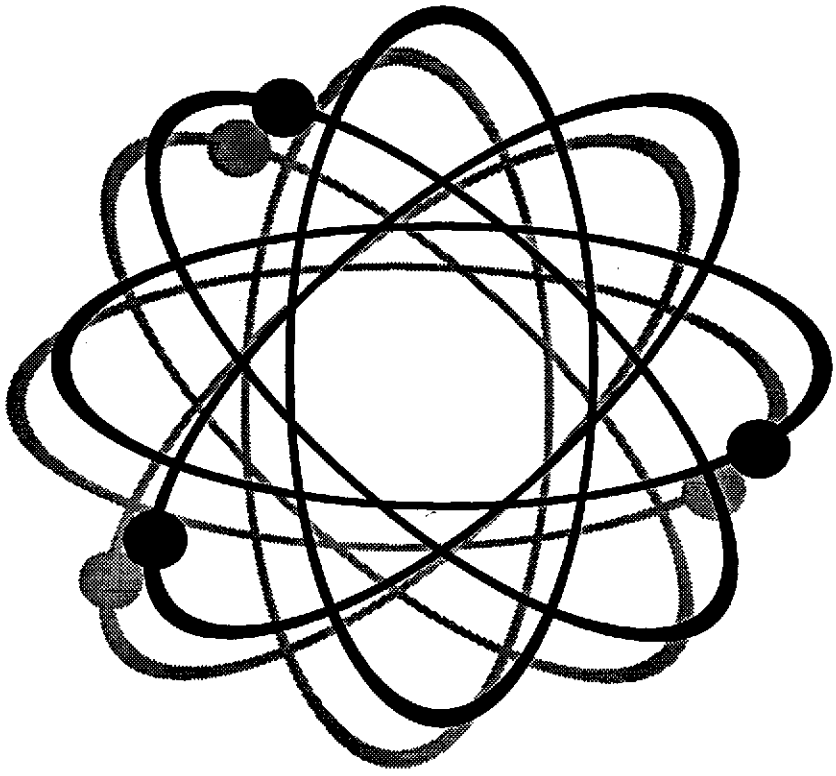
Dry Weight Basis													QA		Section			
Parameter	Symbol	Unit	EX1(25.5) 5510	EX1(36) 5511	EX2(15.5) 5512								Method	MDL	%RSD	%Rec	Analys	Date
%Moisture	*	%H2O	19.6	16.2	14.5								ASTM	0.0001			MAN	12-07-99
Organic Carbon	*	%	<0.1U	<0.1U	<0.1U								Walkley-B	0.1			MAN	12-15-99
			Date Received:		12-07-99		Typed:		12-15-99	Sent:		12-15-99						

Project Number	AMBP-11117	
PO Number	6036495	
Date Sampled	1 11-30-99	*
Date Analyzed	0	
Compacted		
Format	NormRR	
Unit Cost	Exted	
DRY WT BASIS	825	3 *
WB_TOC	7500	3 *

Quality Assurance Report

Prepared for: Pace Analytical-Long Beach
Project Number: AMBP-11117
Lab Numbers: 5510 - 5512

Report date: 15-Dec-99



FLOWERS CHEMICAL LABORATORIES

FLOWERS CHEMICAL LABORATORIES, INC.

QA SDG Narrative Summary

Client:	Pace Analytical-Long Beach
Project Number:	AMBP-11117
P.O. Number:	6036495
Date Sampled:	30-Nov-99
Lab Numbers:	5510 - 5512

Sample Handling

Sample handling and holding time criteria were met for all samples.

Samples Collected by Submitter. No unusual events occured during analysis.

The requested analytes did not require surrogates.

Accuracy / Precision:

Standards Traceability:

FLOWERS

CHEMICAL
LABORATORIES
INCORPORATED

Internal Custody Record Lab Numbers: 5510 - 5512

This form was intentionally left blank.

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489772

Page: 1 of 1

To Be Completed by Pace Analytical and Client **Section C**

Quote Reference:

Project Manager:

Project #: 60364495

Profile #:

Required Client Information: Section A

Company

Address

Phone | Fax

Required Client Information: Section B

Report To: Lily Bayati

Invoice To:

P.O.

Project Name: BP11117

Project Number:

Client Information (Check quote/contract):

Requested Due Date: 12/11/99 | *TAT: 5 DAYS

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) In calender days.

Requested Analysis:

Section D Required Client Information:

SAMPLE ID

One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Total Organic Carbon by Walkley Black Method	Remarks / Lab ID
1	EX1@25.5'	SL	11/30/99									X	5510
2	EX1@36'	SL	↓									X	5511
3	EX2@15.5'	SL	11/30/99									X	5512
4													
5													
6													
7													
8													
9													
10													
11													
12													

4°C

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				NUSA K	12/6/99	14:30			
Received on ICE:	Y / N								
Sealed Cooler:	Y / N						FCL	12/7/99	101
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: | DATE Signed: (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489720

Page: 1 of 2

Required Client Information: **Section A**	Required Client Information: **Section B**	To Be Completed by Pace Analytical and Client **Section C**
Company: Cambria Environmental	Report To: Khaled Rahman	Quote Reference: BP Contract 15655A
Address: 1144 65th Street, Ste B	Invoice To: Scott Horton / BP Oil Company	Project Manager: Lily Bayati
Oakland, CA 94608	P.O.: J076118	Project #: 60 36495
	Project Name: BP-11117	Profile #:
Phone: (510)420-3335 Fax: (510)420-9170	Project Number: 852-1546	

Client Information (Check quote/contract):
Requested Due Date: *TAT: Standard
Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

Section D Required Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPH gasoline 8015M; BTEX/MTBE 8260; Total Organic Carbon by Walkley-Black Method

#	SAMPLE ID	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED mm : hh a/p	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	TPH gasoline 8015M	BTEX/MTBE 8260	Total Organic Carbon by Walkley-Black Method	Remarks / Lab
1	EX1@6'	SL	11/30/99	11:44a	1	X									hold
2	EX1@11'			11:48a											hold
3	EX1@15.5'			11:52a								X	X		
4	EX1@21'			11:56a								X	X		
5	EX1@25.5'			12:02p										X	
6	EX1@30.5'			12:10p											hold
7	EX1@36'			1233p										X	
8	EX1@39'			1250p											hold
9	EX2@6'			1452p											hold
10	EX2@11'			1456p								X	X		
11	EX2@15.5'			15:01p										X	
12	EX2@20.5'			15:06p								X	X		

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:							Nova	12/2	8:3
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jacquelyn Jones

SIGNATURE of SAMPLER: [signature] DATE Signed: (MM / DD / YY) 11/30/99

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489721

Page: 2 of 2

To Be Completed by Pace Analytical and Client — **Section C**

Quote Reference: BP Contract 15655A
Project Manager: Lily Bayati
Project #:
Profile #:

Required Client Information: — **Section A**

Company: Cambria Environmental
Address: 1144 65th Street, Ste B, Oakland CA 94608
Phone: (510)420-3315 Fax: (510)420-9170

Required Client Information: — **Section B**

Report To: Khaled Rahman
Invoice To: Scott Hooton/BP Oil Company
P.O.: 1076118
Project Name: BP11117
Project Number: 852-1546

Client Information (Check quote/contract):
Requested Due Date: *TAT: Standard

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calender days.

Section D — **Required Client Information:**

SAMPLE ID

One character per box.
(A-Z, 0-9 / .-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	TPH Gasoline 8015M	BTEX/MTBE 8260	Total Lead	Remarks / Lab II
1	EX2@26'	SL	11/30/99	15:10p	1	X									hold
2	EX2@31'	SL		15:31p	1										hold
3	EX2@36'	SL		15:37p	1										hold
4	COMP	SL		16:05p	4							X	X	X	
5															
6															
7															
8															
9															
10															
11															
12															

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Tim
Temp in °C:									
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N							12/2	85

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Macquelyn Jones
SIGNATURE of SAMPLER:
DATE Signed: (MM / DD / YY) 11/30/99

SEE REVERSE SIDE FOR INSTRUCTIONS

CAMBRIA

Appendix E

Groundwater Analytical Reports

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

January 18, 2000

Mr. MORGAN HARGRAVE
BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

RE: Pace Project Number: 6037357
Client Project ID: BP 11117

Dear Mr. HARGRAVE:

Enclosed are the results of analyses for sample(s)received by the laboratory on January 6, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

DATE: 01/18/00
PAGE: 1

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

Solid results are reported on a wet weight basis

Pace Sample No: 603162637 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: A Date Received: 01/06/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Wet Chemistry							
Cyanide, Total		Method: EPA 335.3			Prep Method: EPA 335.3		
Cyanide	ND	mg/l	0.01	01/07/00	JKS	57-12-5	
Cyanide, Reactive, Water		Method: SW-846 7.3.3.2 Modi			Prep Method: SW-846 7.3.3.2 Modi		
Cyanide, Reactive	ND	mg/l	0.1	01/11/00	JKS		
Sulfide, Reactive, Water		Method: SW-846 7.3.4.2 Modi			Prep Method: SW-846 7.3.4.2 Modi		
Sulfide, Reactive	2.2	mg/l	0.5	01/11/00	DOC		
Long Beach Laboratory							
pH		Method: EPA 150.1			Prep Method: EPA 150.1		
pH	6.7			01/07/00	SC		
Flash Point		Method: EPA 1010			Prep Method: EPA 1010		
Flash Point	Sample did not ignite @212 degree F			01/11/00	NT		
Total Sulfide		Method: EPA 376.1			Prep method: EPA 376.1		
Total Sulfide	ND	mg/l	0.05	01/13/00	NT		
Metals, ICP		Method: EPA 6010			Prep Method: EPA 3010		
Antimony	ND	mg/l	0.1	01/10/00	SC	7440-36-0	
Arsenic	0.188	mg/l	0.1	01/10/00	SC	7440-38-2	
Barium	1.94	mg/l	0.2	01/10/00	SC	7440-39-3	
Beryllium	ND	mg/l	0.01	01/10/00	SC	7440-41-7	
Cadmium	0.0109	mg/l	0.01	01/10/00	SC	7440-43-9	
Chromium	0.717	mg/l	0.01	01/10/00	SC	7440-47-3	
Cobalt	0.173	mg/l	0.02	01/10/00	SC	7440-48-4	
Copper	0.439	mg/l	0.1	01/10/00	SC	7440-50-8	
Lead	0.213	mg/l	0.02	01/10/00	SC	7439-92-1	
Molybdenum	ND	mg/l	0.05	01/10/00	SC	7439-98-7	
Nickel	0.99	mg/l	0.01	01/10/00	SC	7440-02-0	
Selenium	ND	mg/l	0.1	01/10/00	SC	7782-49-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162637 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: A Date Received: 01/06/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Silver	ND	mg/l	0.01	01/10/00	SC	7440-22-4	
Thallium	ND	mg/l	0.1	01/10/00	SC	7440-28-0	
Vanadium	0.618	mg/l	0.01	01/10/00	SC	7440-62-2	
Zinc	1.19	mg/l	0.2	01/10/00	SC	7440-66-6	
Date Digested				01/13/00			
Mercury, CVAAS	Method: EPA 7470				Prep Method: EPA 7470		
Mercury	1.84	ug/l	0.05	01/07/00	SC	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162645 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: B Date Received: 01/06/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Wet Chemistry							
Cyanide, Total	Method: EPA 335.3				Prep Method: EPA 335.3		
Cyanide	ND	mg/l	0.01	01/07/00	JKS	57-12-5	
Cyanide, Reactive, Water	Method: SW-846 7.3.3.2 Modi				Prep Method: SW-846 7.3.3.2 Modi		
Cyanide, Reactive	ND	mg/l	0.1	01/11/00	JKS		
Sulfide, Reactive, Water	Method: SW-846 7.3.4.2 Modi				Prep Method: SW-846 7.3.4.2 Modi		
Sulfide, Reactive	2	mg/l	0.5	01/11/00	DOC		
Long Beach Laboratory							
pH	Method: EPA 150.1				Prep Method: EPA 150.1		
pH	7.4			01/07/00	SC		
Flash Point	Method: EPA 1010				Prep Method: EPA 1010		
Flash Point	sample did not ignite @212 degree F			01/11/00			
Total Sulfide	Method: EPA 376.1				Prep method: EPA 376.1		
Total Sulfide	ND	mg/l	0.05	01/13/00	NT		
Metals, ICP	Method: EPA 6010				Prep Method: EPA 3010		
Antimony	ND	mg/l	0.1	01/10/00	SC	7440-36-0	
Arsenic	ND	mg/l	0.1	01/10/00	SC	7440-38-2	
Barium	12.7	mg/l	0.2	01/10/00	SC	7440-39-3	
Beryllium	ND	mg/l	0.01	01/10/00	SC	7440-41-7	
Cadmium	ND	mg/l	0.01	01/10/00	SC	7440-43-9	
Chromium	3.58	mg/l	0.01	01/10/00	SC	7440-47-3	
Cobalt	0.873	mg/l	0.02	01/10/00	SC	7440-48-4	
Copper	2.19	mg/l	0.1	01/10/00	SC	7440-50-8	
Lead	1.08	mg/l	0.02	01/10/00	SC	7439-92-1	
Molybdenum	ND	mg/l	0.05	01/10/00	SC	7439-98-7	
Nickel	5.14	mg/l	0.01	01/10/00	SC	7440-02-0	
Selenium	ND	mg/l	0.1	01/10/00	SC	7782-49-2	
Silver	ND	mg/l	0.01	01/10/00	SC	7440-22-4	
Thallium	ND	mg/l	0.1	01/10/00	SC	7440-28-0	
Vanadium	2.36	mg/l	0.01	01/10/00	SC	7440-62-2	
Zinc	6.1	mg/l	0.2	01/10/00	SC	7440-66-6	
Date Digested				01/13/00			
Mercury, CVAAS	Method: EPA 7470				Prep Method: EPA 7470		
Mercury	11.5	ug/l	0.05	01/07/00	SC	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162678 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: A Date Received: 01/06/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GC/MS VOCs by 8260	Method: EPA 8260				Prep Method: EPA 8260		
Dichlorodifluoromethane	ND	ug/l	1	01/09/00	RG	75-71-8	
Chloromethane	ND	ug/l	1	01/09/00	RG	74-87-3	
Vinyl Chloride	ND	ug/l	1	01/09/00	RG	75-01-4	
Chloroethane	ND	ug/l	1	01/09/00	RG	75-00-3	
Trichlorofluoromethane	ND	ug/l	1	01/09/00	RG	75-69-4	
Methylene Chloride	ND	ug/l	1	01/09/00	RG	75-09-2	
1,1-Dichloroethene	ND	ug/l	1	01/09/00	RG	75-35-4	
trans-1,2-Dichloroethene	ND	ug/l	1	01/09/00	RG	156-60-5	
1,1-Dichloroethane	ND	ug/l	1	01/09/00	RG	75-34-3	
2,2-Dichloropropane	ND	ug/l	1	01/09/00	RG	594-20-7	
cis-1,2-Dichloroethene	ND	ug/l	1	01/09/00	RG	156-59-2	
Chloroform	ND	ug/l	1	01/09/00	RG	67-66-3	
Bromochloromethane	ND	ug/l	1	01/09/00	RG	74-97-5	
1,1,1-Trichloroethane	ND	ug/l	1	01/09/00	RG	71-55-6	
Carbon Tetrachloride	ND	ug/l	1	01/09/00	RG	56-23-5	
1,1-Dichloropropene	ND	ug/l	1	01/09/00	RG	563-58-6	
Benzene	1.2	ug/l	1	01/09/00	RG	71-43-2	
1,2-Dichloroethane	ND	ug/l	1	01/09/00	RG	107-06-2	
Trichloroethene	ND	ug/l	1	01/09/00	RG	79-01-6	
1,2-Dichloropropane	ND	ug/l	1	01/09/00	RG	78-87-5	
Bromodichloromethane	ND	ug/l	1	01/09/00	RG	75-27-4	
Dibromomethane	ND	ug/l	1	01/09/00	RG	74-95-3	
Toluene	ND	ug/l	1	01/09/00	RG	108-88-3	
1,1,2-Trichloroethane	ND	ug/l	1	01/09/00	RG	79-00-5	
Tetrachloroethene	ND	ug/l	1	01/09/00	RG	127-18-4	
1,3-Dichloropropane	ND	ug/l	1	01/09/00	RG	142-28-9	
Dibromochloromethane	ND	ug/l	1	01/09/00	RG	124-48-1	
1,2-Dibromoethane	ND	ug/l	1	01/09/00	RG	106-93-4	
Chlorobenzene	ND	ug/l	1	01/09/00	RG	108-90-7	
1,1,1,2-Tetrachloroethane	ND	ug/l	1	01/09/00	RG	630-20-6	
Ethylbenzene	ND	ug/l	1	01/09/00	RG	100-41-4	
Xylenes (Total)	ND	ug/l	2	01/09/00	RG		
Styrene	ND	ug/l	1	01/09/00	RG	100-42-5	
Bromoform	ND	ug/l	1	01/09/00	RG	75-25-2	
Isopropylbenzene (Cumene)	ND	ug/l	1	01/09/00	RG	98-82-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162678 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: A Date Received: 01/06/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
1,1,2,2-Tetrachloroethane	ND	ug/l	1	01/09/00	RG	79-34-5	
Bromobenzene	ND	ug/l	1	01/09/00	RG	108-86-1	
1,2,3-Trichloropropane	ND	ug/l	1	01/09/00	RG	96-18-4	
n-Propylbenzene	ND	ug/l	1	01/09/00	RG	103-65-1	
2-Chlorotoluene	ND	ug/l	1	01/09/00	RG	95-49-8	
1,3,5-Trimethylbenzene	ND	ug/l	1	01/09/00	RG	108-67-8	
4-Chlorotoluene	ND	ug/l	1	01/09/00	RG	106-43-4	
1,2,4-Trimethylbenzene	ND	ug/l	1	01/09/00	RG	95-63-6	
sec-Butylbenzene	ND	ug/l	1	01/09/00	RG	135-98-8	
tert-Butylbenzene	ND	ug/l	1	01/09/00	RG	98-06-6	
p-Isopropyltoluene	ND	ug/l	1	01/09/00	RG	99-87-6	
1,3-Dichlorobenzene	ND	ug/l	1	01/09/00	RG	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	1	01/09/00	RG	106-46-7	
n-Butylbenzene	ND	ug/l	1	01/09/00	RG	104-51-8	
1,2-Dichlorobenzene	ND	ug/l	1	01/09/00	RG	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	1	01/09/00	RG	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	1	01/09/00	RG	120-82-1	
Hexachlorobutadiene	ND	ug/l	1	01/09/00	RG	87-68-3	
Naphthalene	ND	ug/l	1	01/09/00	RG	91-20-3	
1,2,3-Trichlorobenzene	ND	ug/l	1	01/09/00	RG	87-61-6	
Methyl-tert-butyl Ether	420	ug/l	10	01/09/00	RG	1634-04-4	
Dibromofluoromethane (S)	98	%		01/09/00	RG	1868-53-7	
Toluene-d8 (S)	90	%		01/09/00	RG	2037-26-5	
4-Bromofluorobenzene (S)	89	%		01/09/00	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162686 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: B Date Received: 01/06/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GC/MS VOCs by 8260	Method: EPA 8260				Prep Method: EPA 8260		
Dichlorodifluoromethane	ND	ug/l	100	01/09/00	RG	75-71-8	
Chloromethane	ND	ug/l	100	01/09/00	RG	74-87-3	
Vinyl Chloride	ND	ug/l	100	01/09/00	RG	75-01-4	
Chloroethane	ND	ug/l	100	01/09/00	RG	75-00-3	
Trichlorofluoromethane	ND	ug/l	100	01/09/00	RG	75-69-4	
Methylene Chloride	ND	ug/l	100	01/09/00	RG	75-09-2	
1,1-Dichloroethene	ND	ug/l	100	01/09/00	RG	75-35-4	
trans-1,2-Dichloroethene	ND	ug/l	100	01/09/00	RG	156-60-5	
1,1-Dichloroethane	ND	ug/l	100	01/09/00	RG	75-34-3	
2,2-Dichloropropane	ND	ug/l	100	01/09/00	RG	594-20-7	
cis-1,2-Dichloroethene	ND	ug/l	100	01/09/00	RG	156-59-2	
Chloroform	ND	ug/l	100	01/09/00	RG	67-66-3	
Bromochloromethane	ND	ug/l	100	01/09/00	RG	74-97-5	
1,1,1-Trichloroethane	ND	ug/l	100	01/09/00	RG	71-55-6	
Carbon Tetrachloride	ND	ug/l	100	01/09/00	RG	56-23-5	
1,1-Dichloropropene	ND	ug/l	100	01/09/00	RG	563-58-6	
Benzene	9400	ug/l	100	01/09/00	RG	71-43-2	
1,2-Dichloroethane	ND	ug/l	100	01/09/00	RG	107-06-2	
Trichloroethene	ND	ug/l	100	01/09/00	RG	79-01-6	
1,2-Dichloropropane	ND	ug/l	100	01/09/00	RG	78-87-5	
Bromodichloromethane	ND	ug/l	100	01/09/00	RG	75-27-4	
Dibromomethane	ND	ug/l	100	01/09/00	RG	74-95-3	
Toluene	23000	ug/l	1000	01/09/00	RG	108-88-3	
1,1,2-Trichloroethane	ND	ug/l	100	01/09/00	RG	79-00-5	
Tetrachloroethene	ND	ug/l	100	01/09/00	RG	127-18-4	
1,3-Dichloropropane	ND	ug/l	100	01/09/00	RG	142-28-9	
Dibromochloromethane	ND	ug/l	100	01/09/00	RG	124-48-1	
1,2-Dibromoethane	ND	ug/l	100	01/09/00	RG	106-93-4	
Chlorobenzene	ND	ug/l	100	01/09/00	RG	108-90-7	
1,1,1,2-Tetrachloroethane	ND	ug/l	100	01/09/00	RG	630-20-6	
Ethylbenzene	3900	ug/l	100	01/09/00	RG	100-41-4	
Xylenes (Total)	21000	ug/l	200	01/09/00	RG		
Styrene	ND	ug/l	100	01/09/00	RG	100-42-5	
Bromoform	ND	ug/l	100	01/09/00	RG	75-25-2	
Isopropylbenzene (Cumene)	100	ug/l	100	01/09/00	RG	98-82-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

Pace Sample No: 603162686 Date Collected: 01/04/00 Matrix: Water
Client Sample ID: B Date Received: 01/06/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
1,1,2,2-Tetrachloroethane	ND	ug/l	100	01/09/00	RG	79-34-5	
Bromobenzene	ND	ug/l	100	01/09/00	RG	108-86-1	
1,2,3-Trichloropropane	ND	ug/l	100	01/09/00	RG	96-18-4	
n-Propylbenzene	380	ug/l	100	01/09/00	RG	103-65-1	
2-Chlorotoluene	ND	ug/l	100	01/09/00	RG	95-49-8	
1,3,5-Trimethylbenzene	810	ug/l	100	01/09/00	RG	108-67-8	
4-Chlorotoluene	ND	ug/l	100	01/09/00	RG	106-43-4	
1,2,4-Trimethylbenzene	3000	ug/l	100	01/09/00	RG	95-63-6	
sec-Butylbenzene	ND	ug/l	100	01/09/00	RG	135-98-8	
tert-Butylbenzene	ND	ug/l	100	01/09/00	RG	98-06-6	
p-Isopropyltoluene	ND	ug/l	100	01/09/00	RG	99-87-6	
1,3-Dichlorobenzene	ND	ug/l	100	01/09/00	RG	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	100	01/09/00	RG	106-46-7	
n-Butylbenzene	ND	ug/l	100	01/09/00	RG	104-51-8	
1,2-Dichlorobenzene	ND	ug/l	100	01/09/00	RG	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	100	01/09/00	RG	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	100	01/09/00	RG	120-82-1	
Hexachlorobutadiene	ND	ug/l	100	01/09/00	RG	87-68-3	
Naphthalene	740	ug/l	100	01/09/00	RG	91-20-3	
1,2,3-Trichlorobenzene	ND	ug/l	100	01/09/00	RG	87-61-6	
Methyl-tert-butyl Ether	21000	ug/l	1000	01/09/00	RG	1634-04-4	
Dibromofluoromethane (S)	100	%		01/09/00	RG	1868-53-7	
Toluene-d8 (S)	93	%		01/09/00	RG	2037-26-5	
4-Bromofluorobenzene (S)	90	%		01/09/00	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76251
Analysis Method: EPA 335.3
QC Batch Method: EPA 335.3
Analysis Description: Cyanide, Total
Associated Pace Samples: 603162637 603162645

METHOD BLANK: 603163163
Associated Pace Samples: 603162637 603162645

Parameter	Units	Method Blank Result	PRL	Footnotes
Cyanide	mg/l	ND	0.01	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603163171 603163189

Parameter	Units	603160508	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Cyanide	mg/l	0.04800	0.1000	0.09200	44.0	0.1410	93.0	72	1,2

LABORATORY CONTROL SAMPLE: 603163197

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Cyanide	mg/l	0.1000	0.09400	94.0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76298
Analysis Method: EPA 150.1
Associated Pace Samples: 603162637 603162645

QC Batch Method: EPA 150.1
Analysis Description: pH

SAMPLE DUPLICATE: 603166323

Parameter	Units	603162645	Dup. Result	RPD	Footnotes
pH		7.400	7.400	0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76374
Analysis Method: EPA 8260
Associated Pace Samples: 603162678 603162686

QC Batch Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260

METHOD BLANK: 603170119
Associated Pace Samples: 603162678 603162686

Parameter	Units	Method Blank Result	PRL	Footnotes
Dichlorodifluoromethane	ug/l	ND	1	
Chloromethane	ug/l	ND	1	
Vinyl Chloride	ug/l	ND	1	
Chloroethane	ug/l	ND	1	
Trichlorofluoromethane	ug/l	ND	1	
Methylene Chloride	ug/l	ND	1	
1,1-Dichloroethene	ug/l	ND	1	
trans-1,2-Dichloroethene	ug/l	ND	1	
1,1-Dichloroethane	ug/l	ND	1	
2,2-Dichloropropane	ug/l	ND	1	
cis-1,2-Dichloroethene	ug/l	ND	1	
Chloroform	ug/l	ND	1	
Bromochloromethane	ug/l	ND	1	
1,1,1-Trichloroethane	ug/l	ND	1	
Carbon Tetrachloride	ug/l	ND	1	
1,1-Dichloropropene	ug/l	ND	1	
Benzene	ug/l	ND	1	
1,2-Dichloroethane	ug/l	ND	1	
Trichloroethene	ug/l	ND	1	
1,2-Dichloropropane	ug/l	ND	1	
Bromodichloromethane	ug/l	ND	1	
Dibromomethane	ug/l	ND	1	
Toluene	ug/l	ND	1	
1,1,2-Trichloroethane	ug/l	ND	1	
Tetrachloroethene	ug/l	ND	1	

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6037357
Client Project ID: BP 11117

METHOD BLANK: 603170119
Associated Pace Samples: 603162678 603162686

Parameter	Units	Method Blank Result	PRL	Footnotes
1,3-Dichloropropane	ug/l	ND	1	
Dibromochloromethane	ug/l	ND	1	
1,2-Dibromoethane	ug/l	ND	1	
Chlorobenzene	ug/l	ND	1	
1,1,1,2-Tetrachloroethane	ug/l	ND	1	
Ethylbenzene	ug/l	ND	1	
M&P-Xylene	ug/l	ND	2	
O-Xylene (1,2-Dimethylbenzene)	ug/l	ND	1	
Styrene	ug/l	ND	1	
Bromoform	ug/l	ND	1	
Isopropylbenzene (Cumene)	ug/l	ND	1	
1,1,2,2-Tetrachloroethane	ug/l	ND	1	
Bromobenzene	ug/l	ND	1	
1,2,3-Trichloropropane	ug/l	ND	1	
n-Propylbenzene	ug/l	ND	1	
2-Chlorotoluene	ug/l	ND	1	
1,3,5-Trimethylbenzene	ug/l	ND	1	
4-Chlorotoluene	ug/l	ND	1	
1,2,4-Trimethylbenzene	ug/l	ND	1	
sec-Butylbenzene	ug/l	ND	1	
tert-Butylbenzene	ug/l	ND	1	
p-Isopropyltoluene	ug/l	ND	1	
1,3-Dichlorobenzene	ug/l	ND	1	
1,4-Dichlorobenzene	ug/l	ND	1	
n-Butylbenzene	ug/l	ND	1	
1,2-Dichlorobenzene	ug/l	ND	1	
1,2-Dibromo-3-Chloropropane	ug/l	ND	1	
1,2,4-Trichlorobenzene	ug/l	ND	1	
Hexachlorobutadiene	ug/l	ND	1	
Naphthalene	ug/l	ND	1	
1,2,3-Trichlorobenzene	ug/l	ND	1	
Methyl-tert-butyl Ether	ug/l	ND	1	
Dibromofluoromethane (S)	%	98		
Toluene-d8 (S)	%	93		
4-Bromofluorobenzene (S)	%	93		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6037357
Client Project ID: BP 11117

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603170135 603170143

Parameter	Units	603165721	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
1,1-Dichloroethene	ug/l	0	50	58.70	117	59.80	120	2	
Benzene	ug/l	0	50	49.50	99.0	50.60	101	2	
Trichloroethene	ug/l	32.40	50	89.60	114	92.50	120	5	
Toluene	ug/l	0	50	46.30	92.6	47.70	95.4	3	
Chlorobenzene	ug/l	0	50	49.00	98.0	50.70	101	3	
Dibromofluoromethane (S)					106		105		
Toluene-d8 (S)					97		96		
4-Bromofluorobenzene (S)					78		77		

LABORATORY CONTROL SAMPLE: 603170127

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
1,1-Dichloroethene	ug/l	50	57.40	115	
Benzene	ug/l	50	49.40	98.8	
Trichloroethene	ug/l	50	57.60	115	
Toluene	ug/l	50	46.60	93.2	
Chlorobenzene	ug/l	50	49.20	98.4	
Dibromofluoromethane (S)				106	
Toluene-d8 (S)				96	
4-Bromofluorobenzene (S)				76	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76404
Analysis Method: SW-846 7.3.4.2 Modi
Associated Pace Samples: 603162637 603162645

QC Batch Method: SW-846 7.3.4.2 Modi
Analysis Description: Sulfide, Reactive, Water

METHOD BLANK: 603171190
Associated Pace Samples: 603162637 603162645

Parameter	Units	Method Blank Result	PRL	Footnotes
Sulfide, Reactive	mg/l	ND	0.5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76405
Analysis Method: SW-846 7.3.3.2 Modi
Associated Pace Samples: 603162637 603162645

QC Batch Method: SW-846 7.3.3.2 Modi
Analysis Description: Cyanide, Reactive, Water

METHOD BLANK: 603171208
Associated Pace Samples:
603162637 603162645

Parameter	Units	Method Blank Result	PRL	Footnotes
Cyanide, Reactive	mg/l	ND	0.1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76545
Analysis Method: EPA 6010
Associated Pace Samples: 603162637 603162645

QC Batch Method: EPA 3010
Analysis Description: Metals, ICP

METHOD BLANK: 603176736
Associated Pace Samples: 603162637 603162645

Parameter	Units	Method Blank Result	PRL	Footnotes
Antimony	mg/l	ND	0.1	
Arsenic	mg/l	ND	0.1	
Barium	mg/l	ND	0.2	
Beryllium	mg/l	ND	0.01	
Cadmium	mg/l	ND	0.01	
Chromium	mg/l	ND	0.01	
Cobalt	mg/l	ND	0.02	
Copper	mg/l	ND	0.1	
Lead	mg/l	ND	0.02	
Molybdenum	mg/l	ND	0.05	
Nickel	mg/l	ND	0.01	
Selenium	mg/l	ND	0.1	
Silver	mg/l	ND	0.01	
Thallium	mg/l	ND	0.1	
Vanadium	mg/l	ND	0.01	
Zinc	mg/l	ND	0.2	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603176769 603176777

Parameter	Units	603162637	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Antimony	mg/l	0.004900	1.000	0.2223	21.7	0.2047	20.0	8	
Arsenic	mg/l	0.1877	1.000	1.018	83.0	0.9947	80.7	3	
Barium	mg/l	1.936	1.000	2.920	98.4	2.766	83.0	17	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6037357
Client Project ID: BP 11117

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603176769 603176777

Parameter	Units	603162637	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Beryllium	mg/l	0.009700	1.000	0.8724	86.3	0.8449	83.5	3	
Cadmium	mg/l	0.01090	1.000	0.8894	87.9	0.8440	83.3	5	
Chromium	mg/l	0.7171	1.000	1.577	86.0	1.588	87.1	1	
Cobalt	mg/l	0.1732	1.000	1.011	83.8	0.9933	82.0	2	
Copper	mg/l	0.4386	1.000	1.300	86.1	1.290	85.1	1	
Lead	mg/l	0.2130	1.000	1.047	83.4	1.020	80.7	3	
Molybdenum	mg/l	0.009300	1.000	0.6938	68.5	0.7044	69.5	1	
Nickel	mg/l	0.9895	1.000	1.791	80.2	1.775	78.6	2	
Selenium	mg/l	0	1.000	0.7806	78.1	0.7844	78.4	0	
Silver	mg/l	0	1.000	0.7800	78.0	0.7400	74.0	5	
Thallium	mg/l	0.002600	1.000	0.8305	82.8	0.8113	80.9	2	
Vanadium	mg/l	0.6182	1.000	1.458	84.0	1.461	84.3	0	
Zinc	mg/l	1.190	1.000	2.126	93.6	2.219	103	9	

LABORATORY CONTROL SAMPLE & LCSD: 603176744 603176751

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Antimony	mg/l	1.000	0.8713	87.1	0.8807	88.1	1	
Arsenic	mg/l	1.000	0.8790	87.9	0.8867	88.7	1	
Barium	mg/l	1.000	0.08741	8.74	0.8682	86.8	163	
Beryllium	mg/l	1.000	0.8655	86.6	0.8624	86.2	0	
Cadmium	mg/l	1.000	0.8774	87.7	0.8800	88.0	0	
Chromium	mg/l	1.000	0.8639	86.4	0.8643	86.4	0	
Cobalt	mg/l	1.000	0.8852	88.5	0.8837	88.4	0	
Copper	mg/l	1.000	0.8855	88.6	0.8831	88.3	0	
Lead	mg/l	1.000	0.8729	87.3	0.8792	87.9	1	
Molybdenum	mg/l	1.000	0.8771	87.7	0.8827	88.3	1	
Nickel	mg/l	1.000	0.8719	87.2	0.8730	87.3	0	
Selenium	mg/l	1.000	0.8813	88.1	0.8814	88.1	0	
Silver	mg/l	1.000	0.8600	86.0	0.8600	86.0	0	
Thallium	mg/l	1.000	0.8514	85.1	0.8653	86.5	2	
Vanadium	mg/l	1.000	0.8797	88.0	0.8817	88.2	0	
Zinc	mg/l	1.000	0.9089	90.9	0.9059	90.6	0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

BLAINE TECH SERVICES, INC.
1680 ROGERS AVE.
SAN JOSE, CA 95112

Pace Project Number: 6037357
Client Project ID: BP 11117

Attn: Mr. MORGAN HARGRAVE
Phone: (408)573-0555 x218

QC Batch ID: 76550
Analysis Method: EPA 7470
Associated Pace Samples: 603162637 603162645

QC Batch Method: EPA 7470
Analysis Description: Mercury, CVAAS

METHOD BLANK: 603176850
Associated Pace Samples: 603162637 603162645

Parameter	Units	Method Blank Result	PRL	Footnotes
Mercury	ug/l	0.16	0.1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603176884 603176892

Parameter	Units	603162645	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Mercury	ug/l	11.50	4.000	31.20	492	35.00	588	18	

LABORATORY CONTROL SAMPLE & LCSD: 603176868 603176876

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Mercury	ug/l	4.000	3.540	88.5	3.600	90.0	2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6037357
Client Project ID: BP 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Matrix spike outside of control limits,LCS was within control limits, therefore data accepted.
[2]	RPD outlier. LCS was within control limits, therefore data accepted.

REPORT OF LABORATORY ANALYSIS

BP CHAIN OF CUSTODY

6037357

15792 A

Page 1 of 1

CONSULTANT'S NAME	CONSULTANT'S ADDRESS		CONSULTANT PROJECT NUMBER
Blaine Tech Services, Inc.	1680 Rogers Ave., San Jose CA 95112		000104 F1
BP SITE NUMBER	**BP SITE / FACILITY ADDRESS**		**CONSULTANT CONTRACT NUMBER**
11117	7210 Bancroft, Oakland		
CONSULTANT PROJECT MANAGER	**PHONE NUMBER**	**FAX NUMBER**	**FAX NO.**
Morgan Hargrave	(408) 573-0555 x 218	(408) 573-7771	
BP CONTACT	**BP ADDRESS**	**PHONE NUMBER**	**FAX NO.**
Scott Hooton	295 SW 41st Street, Suite N, Renton WA	(425) 251-0689	(425) 251-0736
LAB CONTACT	**LABORATORY ADDRESS**	**PHONE NUMBER**	**FAX NO.**
Pace - Lily Bayati	3970 Gilman Street, Long Beach, CA	(562) 498-9515	(562) 597-0786
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)	**RUSH REQUESTED OF (Print Consultant Contact Name)**	**DATE/TIME** / **SHIPMENT DATE**	**SHIPMENT METHOD** / **AIRBILL NUMBER**

TAT: ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☑ Standard 7 or 14 Days

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL)	PRESERVATIVE LAB SAMPLE #	VOC's, BTEX, MTBE by 8260	CAM 17 Metals (Total)	Total Cyanide	Total Sulfide	Ignitability	Corrosivity	Reactivity*				COMMENTS
A	1-4-00	900	W	9			X	X	X	X	X	X	X				
B	1-4-00	1007	W	9			X	X	X	X	X	X	X				
[illegible]	[illegible]	—	[illegible]	[illegible]			[illegible]										

SAMPLED BY (Please Print Name): MIKE STEWART

SAMPLED BY (Signature):

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
	1/4/00	1400	NOAH TOM	1/5/00	8:45

INCLUDE THE FOLLOWING DILLUTION FACTORS FOR REACTIVITY:

CYANIDE DL<250mg/kg

SULFIDE DL<500 mg/kg

BES

BLOCK E. IRONMENTAL SERVICES

2451 Estand Way
Pleasant Hill, CA 94523-3911
(925) 682-7200 FAX 686-0399

Hazardous Waste Aquatic Toxicity Screening Test Results for Two Liquid Samples (Project: Blaine Tech Services; Project #000104 F1)

Prepared For:
Khaled Rahman
Cambria Environmental
1144 65th Street, Suite B
Oakland, CA 94608

BES Sample #17562-3

Prepared By:
Block Environmental Services, Inc.
2451 Estand Way
Pleasant Hill, CA 94523-3911
(925) 682-7200

January 19, 2000

Toma Flaherty
Laboratory Scientist

Josh Gravenmier
Laboratory Manager

1. INTRODUCTION

The California Department of Substances Control has adopted regulations (R-45-78) which define criteria for the identification of hazardous wastes. These criteria are codified in Chapter 11, Article 3 of Title 22 of the California Code of Regulations. Toxicity to aquatic life, specifically fish, is one of the criteria used to gauge the hazardous potential of a waste. An acute 96-hour bioassay is used to determine the LC50 as defined in Section 66261.24(a)(6) of these regulations. This 96-hour LC50 value serves as the numerical indicator of the toxicity of a waste to aquatic life. The sample is deemed hazardous if the LC50 is less than 500 mg/L.

This report describes the procedures used and the results obtained for the hazardous waste aquatic toxicity screening test(s) performed by Block Environmental Services (BES) for Cambria Environmental.

BES is an Environmental Laboratory Accreditation Program certified laboratory (#1812).

2. MATERIALS AND METHODS

2.1 TEST ORGANISMS

- Fathead Minnow, *Pimephales promelas*, obtained from a commercial supplier.

2.2 TEST PROCEDURES

A detailed procedure for this test is outlined in laboratory standard operating procedures (SOPs) kept at the BES laboratory. These SOPs are based upon the following references:

- California's Title 22 Code, Section #66261.24(a)(6); *Static Acute Bioassay Procedures for Hazardous Waste Samples*, Polisini and Miller, 1988, California Department of Fish and Game
- *Guidelines for Performing Static Acute Toxicity Fish Bioassays in Municipal and Industrial Wastewaters*, Kopperdahl, 1976, California Department of Fish and Game
- *Standard Methods for the Examination of Water and Wastewater*, 19th Edition, American Public Health Association, 1995.

2.3 DATA ANALYSIS

All toxicity testing results will be analyzed using an appropriate statistical method to determine a LC50 and the corresponding 95% confidence limits.

3. RESULTS

3.1 Sample Identification	3.2 BES Sample #	3.3 Sample Collection Date	3.4 Date Received	3.5 Testing Period
A	17562	1/4/00	1/4/00	1/10/00 – 1/14/00
B	17563	1/4/00	1/4/00	1/10/00 – 1/14/00

3.6 *P. promelas* TEST RESULTS

Sample ID (BES Sample #)	Sample 96 Hour Percent Survival			
	Control	250 mg/L	500 mg/L	750 mg/L
17562	95	100	100	95
17563	95	95	100	100

3.7 STATISTICAL ANALYSIS

Sample ID (BES Sample #)	Sample 96 Hour Statistics		
	LC50 (mg/L)	95% Upper Confidence Limit (mg/L)	95% Lower Confidence Limit (mg/L)
17562	>750	NA	NA
17563	>750	NA	NA

NA = Not Available

3.8 NOTES

The photocopied data sheet(s) and chain-of-custody for testing are attached. If you have any questions concerning this report please contact the BES laboratory, (925) 682 - 7200.

Due Date: 1-17

BLOCK ENVIRONMENTAL SERVICES

Hazardous Waste Screening Test Data Sheet

Client: Cambria Client ID #: A BES Sample #: 17562
Sample Matrix: [ ] Solid [x] Liquid Control Water: CF DI
Species: P promelas Common Name: Fathead Stock Date: 12/21/99
Avg. Fish Length (mm): 16.8 Avg. Fish Weight (g): 0.020 Max. > 1.5 times Min. [x] L. [x] W.

Concentration (mg/L)	Survival A	Survival B	D.O. A	D.O. B	pH A	pH B	Temperature A	Temperature B	Technician
Control	10	10	7.7	7.8	7.7	7.7	20.2	20.2	Tech: [illegible]
250	10	10	7.7	7.7	7.7	7.7	20.2	20.2	
500	10	10	7.6	7.6	7.7	7.7	20.1	20.2	Date: 1/10
750	10	10	7.5	7.5	7.7	7.7	20.3	20.3	Time: 13:3[illegible]
Control	10	10	9.8	8.6	7.5	7.5	19.9	20.0	Tech: TF
250	10	10	8.5	7.8	7.5	7.5	19.9	20.0	
500	10	10	8.2	8.8	7.5	7.5	20.0	20.1	Date: 1-11
750	10	10	8.4	8.2	7.5	7.5	20.1	20.2	Time: 18:06
Control	10	10	10.6	11.0	7.5	7.5	18.0	19.0	Tech: [illegible]
250	10	10	9.2	8.5	7.4	7.3	19.0	19.0	
500	10	10	9.5	10.0	7.3	7.4	19.0	19.1	Date: 1-12
750	10	10	9.4	8.3	7.3	7.3	19.0	19.0	Time: 13:[illegible]
Control	10	10	7.6	7.2	7.6	7.6	20.2	20.0	Tech: [illegible]
250	10	10	7.0	6.6	7.4	7.4	19.9	19.8	
500	10	10	7.6	8.0	7.4	7.4	19.8	19.9	Date: 1-13
750	10	10	7.5	7.9	7.3	7.5	19.9	19.9	Time: 14:30
Control	10	9	10.5	9.7	7.7	7.6	20.0	20.0	Tech: MG
250	10	10	9.2	8.5	7.5	7.4	19.9	19.9	
500	10	10	9.8	10.4	7.6	7.7	19.9	20.0	Date: 1-14
750	9	10	9.3	8.5	7.5	7.4	20.0	20.0	Time: 18:20

Chemistries:

	Initial Control	Initial 750 mg/L	Final Control	Final 750 mg/L
Hardness (mg/L as $CaCO_3$)	84	54	60	46
Alkalinity (mg/L as $CaCO_3$)	40	60	64	46
Conductivity (µS/cm)	210	212	223	221

Notes:

96 hour LC50: >750 mg/L LC50 Method: NA
95% Upper Confidence Limit: NA 95% Lower Confidence Limit: NA

Test Supervisor: [signature] QA/QC Check: [signature]

Due Date: 1-17

BLOCK ENVIRONMENTAL SERVICES

Hazardous Waste Screening Test Data Sheet

Client: Cambria | Client ID #: B | BES Sample #: 175163

Sample Matrix: [ ] Solid [X] Liquid | Control Water: CFU / DI

Species: Pimephales | Common Name: Fathead | Stock Date: 12,21,55

Avg. Fish Length (mm): 16.8 | Avg. Fish Weight (g): 0.020 | Max. > 1.5 times Min. [X] L. [X] W.

Concentration (mg/L)	Survival		D.O.		pH		Temperature		Technician
	A	B	A	B	A	B	A	B	
Control	10	10	7.5	7.6	7.7	7.7	20.4	20.2	Tech:
250	10	10	7.5	7.5	7.7	7.7	20.1	20.1	
500	10	10	7.6	7.5	7.7	7.7	20.4	20.1	Date: 1/10/
750	10	10	7.6	7.7	7.7	7.7	20.3	20.2	Time: 13:32
Control	10	10	8.6	8.6	7.5	7.5	19.9	20.0	Tech: TF
250	10	10	8.2	8.4	7.5	7.5	19.9	20.1	
500	10	10	8.1	8.4	7.5	7.5	20.1	20.0	Date: 1-11
750	10	10	8.6	8.6	7.5	7.5	20.2	20.1	Time: 18:05
Control	10	10	10.6	11.0	7.5	7.5	19.0	19.0	Tech:
250	9	10	9.2	9.5	7.3	7.2	19.2	19.1	
500	10	10	8.7	9.0	7.2	7.2	19.1	19.2	Date: 1-12
750	10	10	9.0	9.5	7.2	7.3	19.2	19.3	Time: 13:30
Control	10	10	7.6	7.2	7.6	7.6	20.2	20.0	Tech:
250	9	10	8.0	7.8	7.2	7.2	20.0	20.0	
500	10	10	7.3	7.6	7.2	7.2	20.0	20.0	Date: 1-13
750	10	10	8.0	7.8	7.2	7.2	20.0	20.1	Time: 14:30
Control	10	9	10.5	9.7	7.7	7.6	20.0	20.0	Tech: MG/BC
250	9	10	9.0	9.6	7.5	7.6	20.0	20.1	
500	10	10	9.0	9.7	7.5	7.6	20.2	20.2	Date: 1-14
750	10	10	9.6	9.8	7.5	7.6	20.2	20.2	Time: 18:20

Chemistries:

	Initial		Final	
	Control	750 mg/L	Control	750 mg/L
Hardness (mg/L as $CaCO_3$)	84	54	60	60
Alkalinity (mg/L as $CaCO_3$)	40	60	64	50
Conductivity (µS/cm)	210	213	223	212

Notes: _____

96 hour LC50: > 750 mg/L | LC50 Method: NA

95% Upper Confidence Limit: NA | 95% Lower Confidence Limit: NA

Test Supervisor: [signature] | QA/QC Check: [signature]

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489544

Page: 1 of 1

Required Client Information: **Section A**

Company: Blaine Tech Services
Address: 1680 Rogers Ave.
San Jose Ca. 95112
Phone: (408) 573-0555 Fax:

Required Client Information: **Section B**

Report To:
Invoice To:
P.O.
Project Name:
Project Number: 000104 F1

Client Information (Check quote/contract):
Requested Due Date: *TAT:

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client **Section C**

Quote Reference:
Project Manager:
Project #:
Profile #:
Requested Analysis: Fish Toxicity; Fat head minnow; like Cambria BT 17502; called Morgan @ Blaine tech; Morgan Cambria inv.

Section D **Required** Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — WATER WT, SOIL SL, OIL OL, WIPE WP, AIR AR, TISSUE TS, OTHER OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED mm:hh a/p	# Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Fish Toxicity	Remarks / Lab ID
1	A	WT	1-4-00	9:00	1							X	17562
2	B	WT	1-4-00	1007	1							X	17563
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				[signature] / BTS	1-4	1221	[signature] / BES	1-4	1221
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Mike Stewart
SIGNATURE of SAMPLER: [signature]
DATE Signed: (MM / DD / YY) 1-4-00

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

March 24, 2000

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

RE: Pace Project Number: 6039379
Client Project ID: BP 11117

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on March 17, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 03/24/00
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039379
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

Solid results are reported on a wet weight basis

Pace Sample No: 603324575 Date Collected: 03/16/00 Matrix: Water
Client Sample ID: EX-1BEF Date Received: 03/17/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	36000	ug/l	7500	03/21/00	VN		
Benzene	4700	ug/l	75	03/21/00	VN	71-43-2	
Toluene	13000	ug/l	75	03/21/00	VN	108-88-3	
Ethylbenzene	1100	ug/l	75	03/21/00	VN	100-41-4	
Methyl-tert-butyl Ether	4800	ug/l	75	03/21/00	VN	1634-04-4	
Xylene (Total)	9800	ug/l	75	03/21/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	111	%		03/21/00	VN	2164-17-2	

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039379
Client Project ID: BP 11117

Pace Sample No: 603324583 Date Collected: 03/16/00 Matrix: Water
Client Sample ID: EX-2BEF Date Received: 03/17/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/l	50	03/21/00	VN		1
Benzene	ND	ug/l	0.5	03/21/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	03/21/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	03/21/00	VN	100-41-4	
Methyl-tert-butyl Ether	140	ug/l	75	03/21/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	03/21/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	102	%		03/21/00	VN	2164-17-2	

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039379
Client Project ID: BP 11117

Pace Sample No: 603324591 Date Collected: 03/16/00 Matrix: Water
Client Sample ID: EX-2AFT Date Received: 03/17/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	ND	ug/l	50	03/21/00	VN		
Benzene	ND	ug/l	0.5	03/21/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	03/21/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	03/21/00	VN	100-41-4	
Methyl-tert-butyl Ether	59	ug/l	0.5	03/21/00	VN	1634-04-4	
Xylene (Total)	0.55	ug/l	0.5	03/21/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	103	%		03/21/00	VN	2164-17-2	

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039379
Client Project ID: BP 11117

Pace Sample No: 603324609 Date Collected: 03/16/00 Matrix: Water
Client Sample ID: MW-2AFT Date Received: 03/17/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	150000	ug/l	7500	03/21/00	VN		
Benzene	20000	ug/l	750	03/21/00	VN	71-43-2	
Toluene	37000	ug/l	750	03/21/00	VN	108-88-3	
Ethylbenzene	3900	ug/l	750	03/21/00	VN	100-41-4	
Methyl-tert-butyl Ether	52000	ug/l	750	03/21/00	VN	1634-04-4	
Xylene (Total)	25000	ug/l	750	03/21/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	113	%		03/21/00	VN	2164-17-2	

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039379
Client Project ID: BP 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Solvent Peak Present

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039379
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 79911
QC Batch Method: EPA 8015/8020 Modif
Analysis Method: EPA 8015/8020 Modif
Analysis Description: GAS BTEX by 8015, Water
Associated Pace Samples: 603324575 603324583 603324591 603324609

METHOD BLANK: 603326760
Associated Pace Samples:
603324575 603324583 603324591 603324609

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	12	
Benzene	ug/l	ND	0.05	
Toluene	ug/l	ND	0.05	
Ethylbenzene	ug/l	ND	0.05	
Methyl-tert-butyl Ether	ug/l	ND	0.05	
Xylene (Total)	ug/l	ND	0.05	
a,a,a-Trifluorotoluene (S)	%	102		

LABORATORY CONTROL SAMPLE & LCSD: 603326778 603326786

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	40	39.80	99.5	40.80	102	2	
Benzene	ug/l	6.667	7.030	105	7.080	106	1	
Toluene	ug/l	6.667	7.220	108	7.250	109	1	
Ethylbenzene	ug/l	6.667	7.420	111	7.460	112	1	
Methyl-tert-butyl Ether	ug/l	6.667	6.410	96.2	7.520	113	16	
a,a,a-Trifluorotoluene (S)				104		103		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039379
Client Project ID: BP 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

493775

Page: 1 **of** 1

Section A — Required Client Information:

- Company: CAMBRIA ENV. TECH.
- Address: 1144 65th STREET, EMERYVILLE, CA. 94608
- Phone: (510) 420-0700
- Fax: (510) 420-0701

Section B — Required Client Information:

- Report To: KHALED RAHMAN
- Invoice To: SCOTT HOOTON - BP O/C
- P.O.: J197381
- Project Name: BP - 11117
- Project Number: 852 - 1546

Client Information (Check quote/contract):

- Requested Due Date:
- *TAT: STANDARD

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calender days.

Section C — To Be Completed by Pace Analytical and Client

- Quote Reference: 16162A
- Project Manager:
- Project #: 6039379
- Profile #:
- Requested Analysis: TPHg, MTBE, BTEX

Section D — Required Client Information:

SAMPLE ID

One character per box. (A-Z, 0-9 / .-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — WATER WT; SOIL SL; OIL OL; WIPE WP; AIR AR; TISSUE TS; OTHER OT

ITEM #	Sample ID	Matrix Code	Date Collected (mm/dd/yy)	Time Collected (mm:hh a/p)	# Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	TPHg	MTBE BTEX	Remarks / Lab ID
1	EX-1BEF	WT	03/16/00	7:25a	4				X			X	X	
2	EX-2BEF	WT	↓	7:40a	4				↓			↓	↓	
3	EX-2AFT	WT	↓	12:25p	4				↓			↓	↓	
4	MW-2AFT	WT	↓	1:00p	4				↓			↓	↓	
5														
6														
7														
8														
9														
10														
11														
12														

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:							[signature] Pace	3/17/00	9[illegible]
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

- PRINT Name of SAMPLER: MARK ERICKSON
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM / DD / YY): 03/16/00

SEE REVERSE SIDE FOR INSTRUCTIONS

Pace Analytical Services, Inc. Form COC01.XLS 08/

ORIGINAL

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

March 30, 2000

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

RE: Pace Project Number: 6039504
Client Project ID: BP 11117

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on March 24, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 03/30/00
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039504
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

Solid results are reported on a wet weight basis

Pace Sample No: 603335845 Date Collected: 03/23/00 Matrix: Water
Client Sample ID: MW-2 Date Received: 03/24/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	92000	ug/l	75000	03/29/00	VN		
Benzene	13000	ug/l	750	03/29/00	VN	71-43-2	
Toluene	27000	ug/l	750	03/29/00	VN	108-88-3	
Ethylbenzene	2900	ug/l	750	03/29/00	VN	100-41-4	
Methyl-tert-butyl Ether	34000	ug/l	750	03/29/00	VN	1634-04-4	
Xylene (Total)	19000	ug/l	750	03/29/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	91	%		03/29/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039504
Client Project ID: BP 11117

Pace Sample No: 603335852 Date Collected: 03/23/00 Matrix: Water
Client Sample ID: EX-1 Date Received: 03/24/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	61000	ug/l	7500	03/29/00	VN		
Benzene	9800	ug/l	75	03/29/00	VN	71-43-2	
Toluene	21000	ug/l	75	03/29/00	VN	108-88-3	
Ethylbenzene	1600	ug/l	75	03/29/00	VN	100-41-4	
Methyl-tert-butyl Ether	9300	ug/l	75	03/29/00	VN	1634-04-4	
Xylene (Total)	24000	ug/l	75	03/29/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	109	%		03/29/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039504
Client Project ID: BP 11117

Pace Sample No: 603335860 Date Collected: 03/23/00 Matrix: Water
Client Sample ID: EX-2 Date Received: 03/24/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	800	ug/l	50	03/29/00	VN		1,2
Benzene	ND	ug/l	0.5	03/29/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	03/29/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	03/29/00	VN	100-41-4	
Methyl-tert-butyl Ether	2600	ug/l	75	03/29/00	VN	1634-04-4	
Xylene (Total)	0.54	ug/l	0.5	03/29/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	104	%		03/29/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039504
Client Project ID: BP 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Sample does not fit gasolinne profile.
[2]	Concentration of MTBE in the calculation of TPH-G is an estimate only.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039504
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 80382
QC Batch Method: EPA 8015/8020 Modif
Analysis Method: EPA 8015/8020 Modif
Analysis Description: GAS BTEX by 8015, Water
Associated Pace Samples: 603335845 603335852 603335860

METHOD BLANK: 603346909
Associated Pace Samples:
603335845 603335852 603335860

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	12	
Benzene	ug/l	ND	0.05	
Toluene	ug/l	ND	0.05	
Ethylbenzene	ug/l	ND	0.05	
Methyl-tert-butyl Ether	ug/l	ND	0.05	
Xylene (Total)	ug/l	ND	0.05	
a,a,a-Trifluorotoluene (S)	%	86		

LABORATORY CONTROL SAMPLE & LCSD: 603346917 603346925

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	40	38.60	96.5	38.10	95.3	1	
Benzene	ug/l	6.667	6.380	95.7	6.430	96.5	1	
Toluene	ug/l	6.667	6.780	102	6.800	102	0	
Ethylbenzene	ug/l	6.667	7.000	105	7.200	108	3	
Methyl-tert-butyl Ether	ug/l	6.667	6.850	103	6.280	94.2	9	
a,a,a-Trifluorotoluene (S)				94		97		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039504
Client Project ID: BP 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

493747

Page: 1 of 1

Required Client Information: Section A

Company: CAMBRIA
Address: 2694 Bishop Drive, Suite 105
San Ramon, CA 94583
Phone: 925-973-3125 Fax: 925-275-3204

Required Client Information: Section B

Report To: Clifford Perini
Invoice To:
P.O.
Project Name: BP 11117
Project Number: 852-1546

Client Information (Check quote/contract):
Requested Due Date: *TAT:

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client Section C

Quote Reference: 16192A
Project Manager:
Project #: 6039504
Profile #:

Section D Required Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPH-g EPA 8015 / BTEX EPA 8020 / MTBE EPA 8020

TM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Remarks / Lab
1	MW-2	WT	3/23/00	1245	4				✓			
2	EX-1	WT	3/23/00	1310	4				✓			
3	EX-2	WT	3/23/00	1330	4				✓			
4												
5												
6												
7												
8												
9												
10												
11												
12												

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				×Clifford Perini/CAMBRIA				3/24	10:
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ×Clifford Perini
SIGNATURE of SAMPLER: ×Clifford Perini
DATE Signed: (MM / DD / YY) 3/23/00

SEE REVERSE SIDE FOR INSTRUCTIONS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

April 20, 2000

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

RE: Pace Project Number: 6039719
Client Project ID: BP 11117

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on March 31, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 04/20/00
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039719
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

Solid results are reported on a wet weight basis

Pace Sample No: 603353335 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: EX-2 BEF Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	180	ug/l	50	04/03/00	VN		1,2
Benzene	ND	ug/l	0.5	04/03/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	04/03/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	420	ug/l	38	04/03/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	94	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

Pace Sample No: 603353343 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: EX-1 BEF Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	38000	ug/l	7500	04/03/00	VN		
Benzene	3500	ug/l	75	04/03/00	VN	71-43-2	
Toluene	5800	ug/l	75	04/03/00	VN	108-88-3	
Ethylbenzene	620	ug/l	75	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	3100	ug/l	75	04/03/00	VN	1634-04-4	
Xylene (Total)	6500	ug/l	75	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	99	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

Pace Sample No: 603353350 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: MW-2 BEF Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	130000	ug/l	7500	04/03/00	VN		
Benzene	14000	ug/l	75	04/03/00	VN	71-43-2	
Toluene	28000	ug/l	75	04/03/00	VN	108-88-3	
Ethylbenzene	3000	ug/l	75	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	21000	ug/l	75	04/03/00	VN	1634-04-4	
Xylene (Total)	19000	ug/l	75	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	100	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

Pace Sample No: 603353368 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: EX-1 AFT Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	57000	ug/l	7500	04/03/00	VN		
Benzene	4500	ug/l	75	04/03/00	VN	71-43-2	
Toluene	8000	ug/l	75	04/03/00	VN	108-88-3	
Ethylbenzene	960	ug/l	75	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	6700	ug/l	75	04/03/00	VN	1634-04-4	
Xylene (Total)	10000	ug/l	75	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	91	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

Pace Sample No: 603353376 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: MW-2 AFT Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	110000	ug/l	7500	04/03/00	VN		
Benzene	12000	ug/l	75	04/03/00	VN	71-43-2	
Toluene	24000	ug/l	75	04/03/00	VN	108-88-3	
Ethylbenzene	2600	ug/l	75	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	20000	ug/l	75	04/03/00	VN	1634-04-4	
Xylene (Total)	15000	ug/l	75	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	94	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 04/20/00

Pace Project Number: 6039719
Client Project ID: BP 11117

Pace Sample No: 603353384 Date Collected: 03/30/00 Matrix: Water
Client Sample ID: EX-2 AFT Date Received: 03/31/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	300	ug/l	50	04/03/00	VN		1,2
Benzene	ND	ug/l	0.5	04/03/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	04/03/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	04/03/00	VN	100-41-4	
Methyl-tert-butyl Ether	710	ug/l	38	04/03/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	04/03/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	93	%		04/03/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Concentration of MTBE in the calculation of TPH-G is an estimate only.
[2]	Sample does not fit gasoline profile.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

QUALITY CONTROL DATA

DATE: 04/20/00

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6039719
Client Project ID: BP 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 80662
QC Batch Method: EPA 8015/8020 Modif
Analysis Method: EPA 8015/8020 Modif
Analysis Description: GAS BTEX by 8015, Water
Associated Pace Samples: 603353335 603353343 603353350 603353368 603353376 603353384

METHOD BLANK: 603359043
Associated Pace Samples:
603353335 603353343 603353350 603353368 603353376 603353384

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	12	
Benzene	ug/l	ND	0.05	
Toluene	ug/l	ND	0.05	
Ethylbenzene	ug/l	ND	0.05	
Methyl-tert-butyl Ether	ug/l	ND	0.05	
Xylene (Total)	ug/l	ND	0.05	
a,a,a-Trifluorotoluene (S)	%	103		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603359050 603359068

Parameter	Units	603345695	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	0	40	40.30	101	39.80	99.5	1	
Benzene	ug/l	0	6.667	5.860	87.9	5.890	88.4	1	
Toluene	ug/l	0	6.667	6.000	90.0	6.040	90.6	1	
Ethylbenzene	ug/l	0	6.667	6.000	90.0	6.100	91.5	2	
Methyl-tert-butyl Ether	ug/l	0	6.667	6.340	95.1	6.330	95.0	0	
a,a,a-Trifluorotoluene (S)					102		101		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6039719
Client Project ID: BP 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

493777

Page: 1 of 1

To Be Completed by Pace Analytical and Client

Required Client Information: **Section A**	Required Client Information: **Section B**	**Section C**
Company: CAMBRIA ENV. TECH	Report To: KHALED ARRAKAM	Quote Reference: 16225 A
Address: 1144 65th ST.	Invoice To: SCOTT HOOTON-BP OIC	Project Manager:
EMERYVILLE, CA. 94608	P.O.: J19738 1	Project #: 6039719
Phone: (510) 420-0700 Fax: (510) 420-0701	Project Name: BP 11117	Profile #:
	Project Number: 852-1546	

Client Information (Check quote/contract):
Requested Due Date:
*TAT: STANDARD

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

Section D Required Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / ,–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPH EPA 8015 / BTEX EPA 8020 / MTBE EPA 8020

#	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Remarks / Lab
1	EX-2 BEF	WT	3/30/00	0735	4				✓			
2	EX-1 BEF	WT	3/30/00	0830	4				✓			
3	MW-2 BEF	WT	3/30/00	1015	4				✓			
4	EX-1 AFT	WT	3/30/00	1300	4				✓			
5	MW-2 AFT	WT	3/30/00	1345	4				✓			
6	EX-2 AFT	WT	3/30/00	1440	4				✓			
7												
8												
9												
10												
11												
12												

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				Clifford Perini / Cambria	3/30/00	1515		3/31	10
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CLIFFORD PERINI

SIGNATURE of SAMPLER: Clifford Perini

DATE Signed: (MM / DD / YY) 3/30/00

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

April 18, 2000

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

RE: Pace Project Number: 6040010
Client Project ID: bp 11117

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on April 7, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 04/18/00
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6040010
Client Project ID: bp 11117

Attn: Mr. KHALED RAHMAN
Phone:

Solid results are reported on a wet weight basis

Pace Sample No: 603376716 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: EX1-A Date Received: 04/07/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif			
Gasoline	36000	ug/l	7500	04/14/00	VN		
Benzene	3700	ug/l	75	04/14/00	VN	71-43-2	
Toluene	5700	ug/l	75	04/14/00	VN	108-88-3	
Ethylbenzene	530	ug/l	75	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	4300	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	5800	ug/l	75	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	92	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

Pace Sample No: 603376724 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: MW2-A Date Received: 04/07/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	140000	ug/l	7500	04/14/00	VN		
Benzene	14000	ug/l	75	04/14/00	VN	71-43-2	
Toluene	27000	ug/l	75	04/14/00	VN	108-88-3	
Ethylbenzene	2900	ug/l	75	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	21000	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	19000	ug/l	75	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	88	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

Pace Sample No: 603376732 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: MW2-B Date Received: 04/07/00

Long Beach Laboratory

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	140000	ug/l	7500	04/14/00	VN		
Benzene	15000	ug/l	75	04/14/00	VN	71-43-2	
Toluene	28000	ug/l	750	04/14/00	VN	108-88-3	
Ethylbenzene	3300	ug/l	75	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	23000	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	19000	ug/l	75	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	92	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

Pace Sample No: 603376740 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: EX1-B Date Received: 04/07/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif			Prep Method: EPA 8015/8020 Modif			
Gasoline	44000	ug/l	7500	04/14/00	VN		
Benzene	3400	ug/l	75	04/14/00	VN	71-43-2	
Toluene	5600	ug/l	75	04/14/00	VN	108-88-3	
Ethylbenzene	610	ug/l	75	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	8200	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	7200	ug/l	75	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	91	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 04/18/00

Pace Project Number: 6040010
Client Project ID: bp 11117

Pace Sample No: 603376757 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: EX2-A Date Received: 04/07/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	110	ug/l	50	04/14/00	VN		1,2
Benzene	ND	ug/l	0.5	04/14/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	04/14/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	420	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	94	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

Pace Sample No: 603376765 Date Collected: 04/06/00 Matrix: Water
Client Sample ID: EX2-B Date Received: 04/07/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015/8020 Modif				Prep Method: EPA 8015/8020 Modif		
Gasoline	230	ug/l	50	04/14/00	VN		1,2
Benzene	ND	ug/l	0.5	04/14/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	04/14/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	04/14/00	VN	100-41-4	
Methyl-tert-butyl Ether	640	ug/l	75	04/14/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	04/14/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	101	%		04/14/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace® Analytical

The Right Chemistry, The Right Solution®

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Required Client Information: Section A

Company: CAMBRIA
Address: 1144 65TH ST, SUITE C
OAKLAND, CA 94608
Phone: 510.420.3320 Fax: 510.420.9170

Required Client Information: Section B

Report To: Khaled Rahman
Invoice To: BP - Renton, WA
P.O.: J197381
Project Name: BP Oakland
Project Number: BP # 11117

Client Information (Check quote/contract):
Requested Due Date: *TAT: 14 day

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client Section C

Quote Reference: 16398 A
Project Manager:
Project #: 60406814
Profile #:

Section D Required Client Information:

SAMPLE ID

One character per box.
(A–Z, 0–9 / -)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Requested Analysis: TPH-g	BTEX	MTBE	Remarks / Lab ID
1	MW-2 PRE	WT	4/27/00	0825	3				X			X	X	X	
2	EX-2 PRE	"	"	1145	3				X			X	X	X	
3	EX-1 PRE	"	"	0740	3				X			X	X	X	
4															
5															
6															
7															
8															
9															
10															
11															
12															

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				Brian Busch / CAMBRIA	4/28	1500		5/1/00	9:0
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: BRIAN BUSCH
SIGNATURE of SAMPLER: Brian Busch
DATE Signed (MM / DD / YY): 4/28/00

SEE REVERSE SIDE FOR INSTRUCTIONS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical™

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

QUALITY CONTROL DATA

DATE: 05/11/00

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

Attn: Mr. KHALED RAHMAN
Phone: 510-4200700

QC Batch ID: 82524
QC Batch Method: EPA 8015 Mod/8020
Analysis Method: EPA 8015 Mod/8020
Analysis Description: GAS BTEX by 8015, Water
Associated Pace Samples: 603441973 603441981 603441999

METHOD BLANK: 603445362
Associated Pace Samples:
603441973 603441981 603441999

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	12	
Benzene	ug/l	ND	0.05	
Toluene	ug/l	ND	0.05	
Ethylbenzene	ug/l	ND	0.05	
Methyl-tert-butyl Ether	ug/l	ND	0.05	
Xylene (Total)	ug/l	ND	0.05	
a,a,a-Trifluorotoluene (S)	%	116		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603445370 603445388

Parameter	Units	603441866	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	0	40	37.60	94.0	38.00	95.0	1	
Benzene	ug/l	0	6.667	6.360	95.4	6.720	101	6	
Toluene	ug/l	0	6.667	6.690	100	7.000	105	4	
Ethylbenzene	ug/l	0	6.667	6.670	100	6.880	103	3	
Methyl-tert-butyl Ether	ug/l	0	6.667	7.699	116	7.070	106	8	
a,a,a-Trifluorotoluene (S)					106		113		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Sample does not fit gasoline profile. Sample contain mainly MTBE.
[2]	Concentration of MTBE in the calculation of TPH-G is an estimate only.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

Pace Sample No: 603441999 Date Collected: 04/27/00 Matrix: Water
Client Sample ID: BP OAKLAND EX-1 PRE Date Received: 05/02/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015 Mod/8020				Prep Method: EPA 8015 Mod/8020		
Gasoline	35000	ug/l	7500	05/01/00	VN		
Benzene	3500	ug/l	75	05/01/00	VN	71-43-2	
Toluene	9900	ug/l	75	05/01/00	VN	108-88-3	
Ethylbenzene	600	ug/l	75	05/01/00	VN	100-41-4	
Methyl-tert-butyl Ether	3500	ug/l	75	05/01/00	VN	1634-04-4	
Xylene (Total)	7600	ug/l	75	05/01/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	122	%		05/01/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

Pace Sample No: 603441981 Date Collected: 04/27/00 Matrix: Water
Client Sample ID: BP OAKLAND EX-2 PRE Date Received: 05/02/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015 Mod/8020				Prep Method: EPA 8015 Mod/8020		
Gasoline	340	ug/l	50	05/01/00	VN		1,2
Benzene	0.53	ug/l	0.5	05/01/00	VN	71-43-2	
Toluene	ND	ug/l	0.5	05/01/00	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.5	05/01/00	VN	100-41-4	
Methyl-tert-butyl Ether	1300	ug/l	75	05/01/00	VN	1634-04-4	
Xylene (Total)	ND	ug/l	0.5	05/01/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	113	%		05/01/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

DATE: 05/11/00
PAGE: 1

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

Pace Project Number: 6040684
Client Project ID: BP OAKLAND

Attn: Mr. KHALED RAHMAN
Phone: 510-4200700

Solid results are reported on a wet weight basis

Pace Sample No: 603441973 Date Collected: 04/27/00 Matrix: Water
Client Sample ID: BP OKLAND MW-2 PRE Date Received: 05/02/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water	Method: EPA 8015 Mod/8020				Prep Method: EPA 8015 Mod/8020		
Gasoline	110000	ug/l	75000	05/01/00	VN		
Benzene	14000	ug/l	750	05/01/00	VN	71-43-2	
Toluene	26000	ug/l	750	05/01/00	VN	108-88-3	
Ethylbenzene	2600	ug/l	750	05/01/00	VN	100-41-4	
Methyl-tert-butyl Ether	28000	ug/l	750	05/01/00	VN	1634-04-4	
Xylene (Total)	17000	ug/l	750	05/01/00	VN	1330-20-7	
a,a,a-Trifluorotoluene (S)	106	%		05/01/00	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

May 11, 2000

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

RE: Pace Project Number: 6040684
Client Project ID: BP OAKLAND

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s)received by the laboratory on May 2, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

FOR
Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical

The Right Chemistry, The Right Solution®

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

493778

Page: 1 of 1

To Be Completed by Pace Analytical and Client

Section A — Required Client Information:

Company: CAMBRIA ENV TECH
Address: 1144 65th st
Emeryville, CA 94608
Phone: 510-420-0700 Fax: 510-420-9170

Section B — Required Client Information:

Report To: Khaled Rahman
Invoice To: Scott Houlton BP OIL
P.O.: 5 19738 1
Project Name: BP 11117
Project Number: 852-1546

Client Information (Check quote/contract):
Requested Due Date: *TAT: Standard

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

Section C

Quote Reference: 16265A
Project Manager:
Project #: 6040010
Profile #:

Section D — Required Client Information:

SAMPLE ID

One character per box.
(A–Z, 0–9 / ,–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPH EPA 8015, BTEX EPA 8020, MTBE EPA 8020

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Remarks / Lab ID
1	EX1-A	WT	4/6/00	0730	4				✓			
2	MW2-A			0835								
3	MW2-B			1130								
4	EX1-B			1240								
5	EX2-A			1145								
6	EX2-B	WT		1455								
7												
8												
9												
10												
11												
12												

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				Clifford Perini / Cambria	4/6/00		Neal K	4/7/00	9:00
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Clifford Perini
SIGNATURE of SAMPLER: Clifford Perini
DATE Signed: (MM / DD / YY) 4/6/00

SEE REVERSE SIDE FOR INSTRUCTIONS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

QUALITY CONTROL DATA

DATE: 04/18/00

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
SUITE B
OAKLAND, CA 94608

Pace Project Number: 6040010
Client Project ID: bp 11117

Attn: Mr. KHALED RAHMAN
Phone:

QC Batch ID: 81415
Analysis Method: EPA 8015/8020 Modif
Associated Pace Samples: 603376716 603376724 603376732 603376740 603376757 603376765

QC Batch Method: EPA 8015/8020 Modif
Analysis Description: GAS BTEX by 8015, Water

METHOD BLANK: 603394396
Associated Pace Samples: 603376716 603376724 603376732 603376740 603376757 603376765

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	12	
Benzene	ug/l	ND	0.05	
Toluene	ug/l	ND	0.05	
Ethylbenzene	ug/l	ND	0.05	
Methyl-tert-butyl Ether	ug/l	ND	0.05	
Xylene (Total)	ug/l	ND	0.05	
a,a,a-Trifluorotoluene (S)	%	99		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603394404 603394412

Parameter	Units	603376682	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	0	40	40.20	100	41.40	104	3	
Benzene	ug/l	0	6.667	6.000	90.0	5.920	88.8	1	
Toluene	ug/l	0	6.667	6.380	95.7	6.070	91.1	5	
Ethylbenzene	ug/l	0	6.667	6.090	91.4	6.240	93.6	2	
Methyl-tert-butyl Ether	ug/l	0.6494	6.667	6.530	88.2	6.500	87.8	0	
a,a,a-Trifluorotoluene (S)					88		94		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman Street
Long Beach, CA 90815
Phone: 562.498.9515
Fax: 562.597.0786

Pace Project Number: 6040010
Client Project ID: bp 11117

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Sample does not fit gasoline profile. Sample contain mainly MTBE.
[2]	Concentration of MTBE in the calculation of TPH-G is an estimate only.

REPORT OF LABORATORY ANALYSIS

CAMBRIA

Appendix F

Recovery Test Data

Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000 | Page 2 Project: BP-11117 Evaluated by:

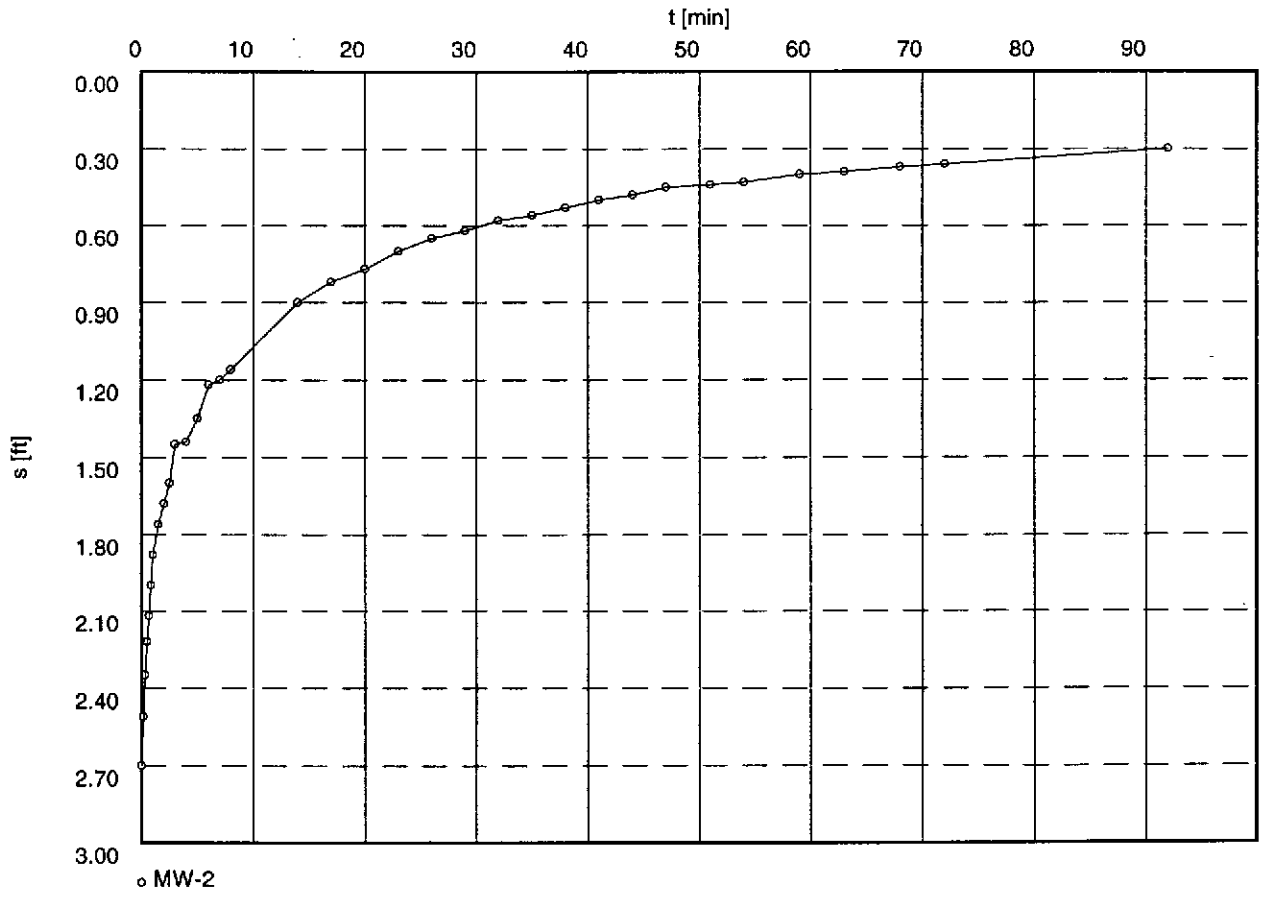
Pumping Test No.	Test conducted on: April 27, 2000
MW-2	MW-2

Static water level: 17.75 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
1	0.00	20.45	2.70
2	0.17	20.26	2.51
3	0.33	20.10	2.35
4	0.50	19.97	2.22
5	0.67	19.87	2.12
6	0.83	19.75	2.00
7	1.00	19.63	1.88
8	1.50	19.51	1.76
9	2.00	19.43	1.68
10	2.50	19.35	1.60
11	3.00	19.20	1.45
12	4.00	19.19	1.44
13	5.00	19.10	1.35
14	6.00	18.97	1.22
15	7.00	18.95	1.20
16	8.00	18.91	1.16
17	14.00	18.65	0.90
18	17.00	18.57	0.82
19	20.00	18.52	0.77
20	23.00	18.45	0.70
21	26.00	18.40	0.65
22	29.00	18.37	0.62
23	32.00	18.33	0.58
24	35.00	18.31	0.56
25	38.00	18.28	0.53
26	41.00	18.25	0.50
27	44.00	18.23	0.48
28	47.00	18.20	0.45
29	51.00	18.19	0.44
30	54.00	18.18	0.43
31	59.00	18.15	0.40
32	63.00	18.14	0.39
33	68.00	18.12	0.37
34	72.00	18.11	0.36
35	92.00	18.05	0.30

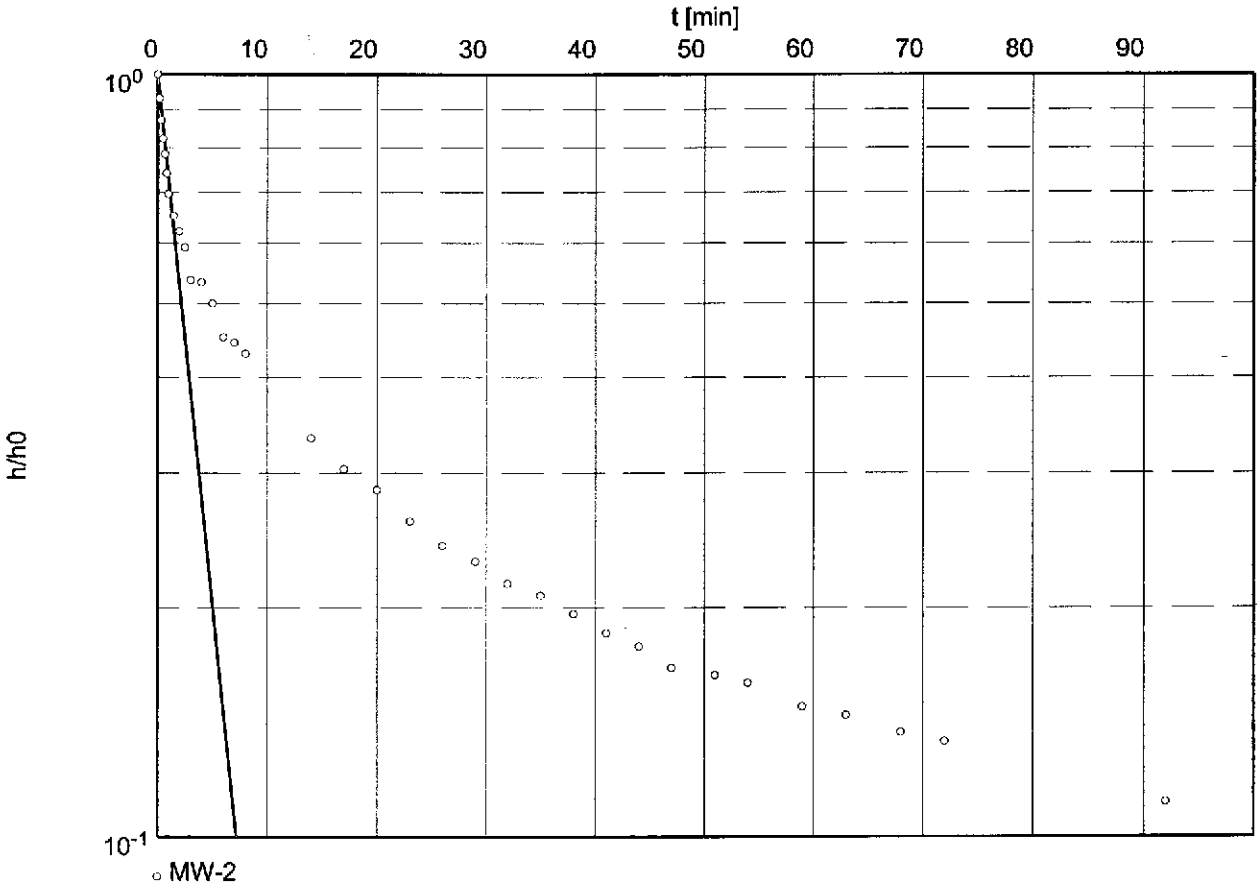
Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Pumping Test No.	Test conducted on: April 27, 2000
MW-2	



Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis BOUWER-RICE's method	Date: 03.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

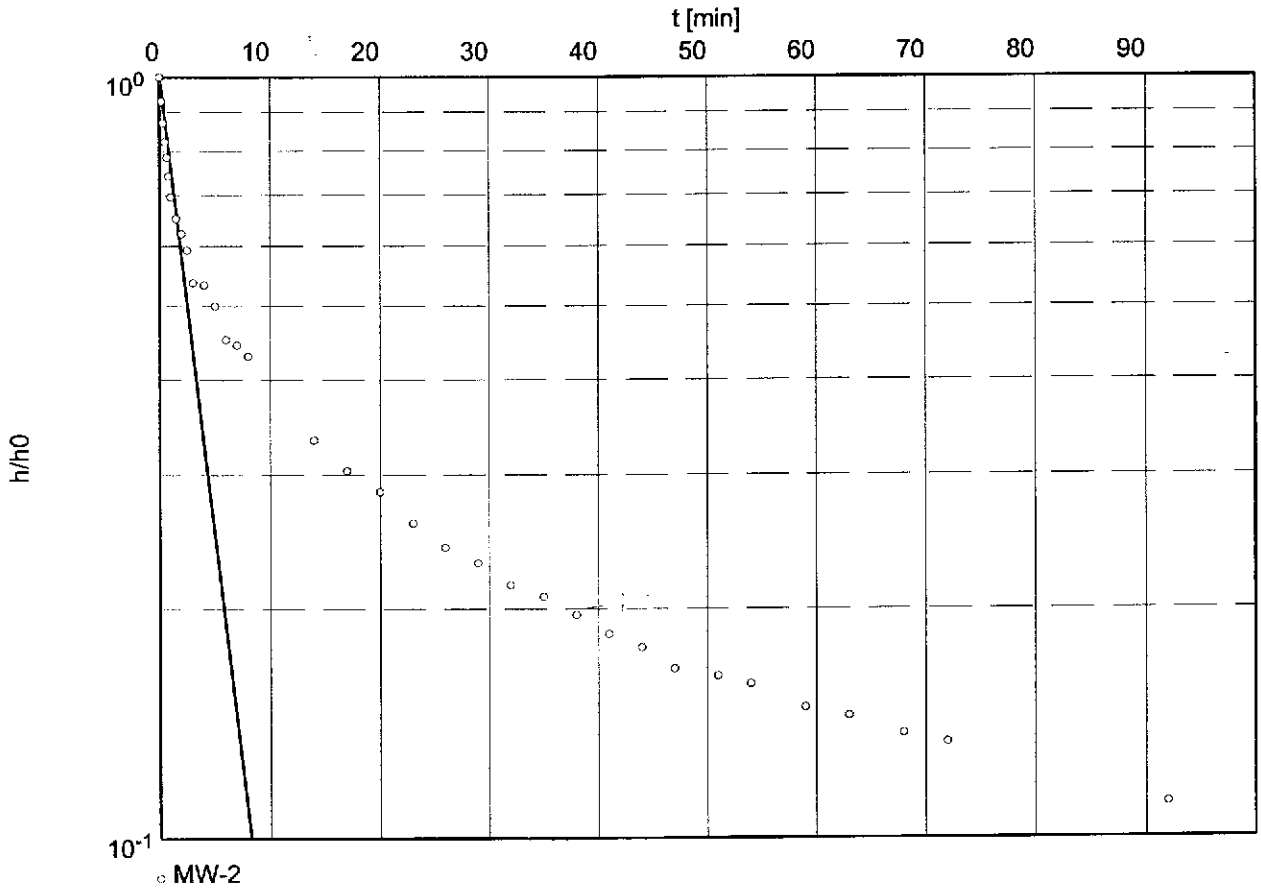
Slug Test No.	Test conducted on: April 27, 2000
MW-2	



Hydraulic conductivity [ft/min]: 8.33×10^{-4}

Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis HVORSLEV's method	Date: 03.05.2000 Page 1 Project: BP-11117 Evaluated by:

Slug Test No.	Test conducted on: April 27, 2000
MW-2	



Hydraulic conductivity [ft/min]: 1.85×10^{-4}

Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 02.05.2000	Page 2
		Project:	
		Evaluated by:	

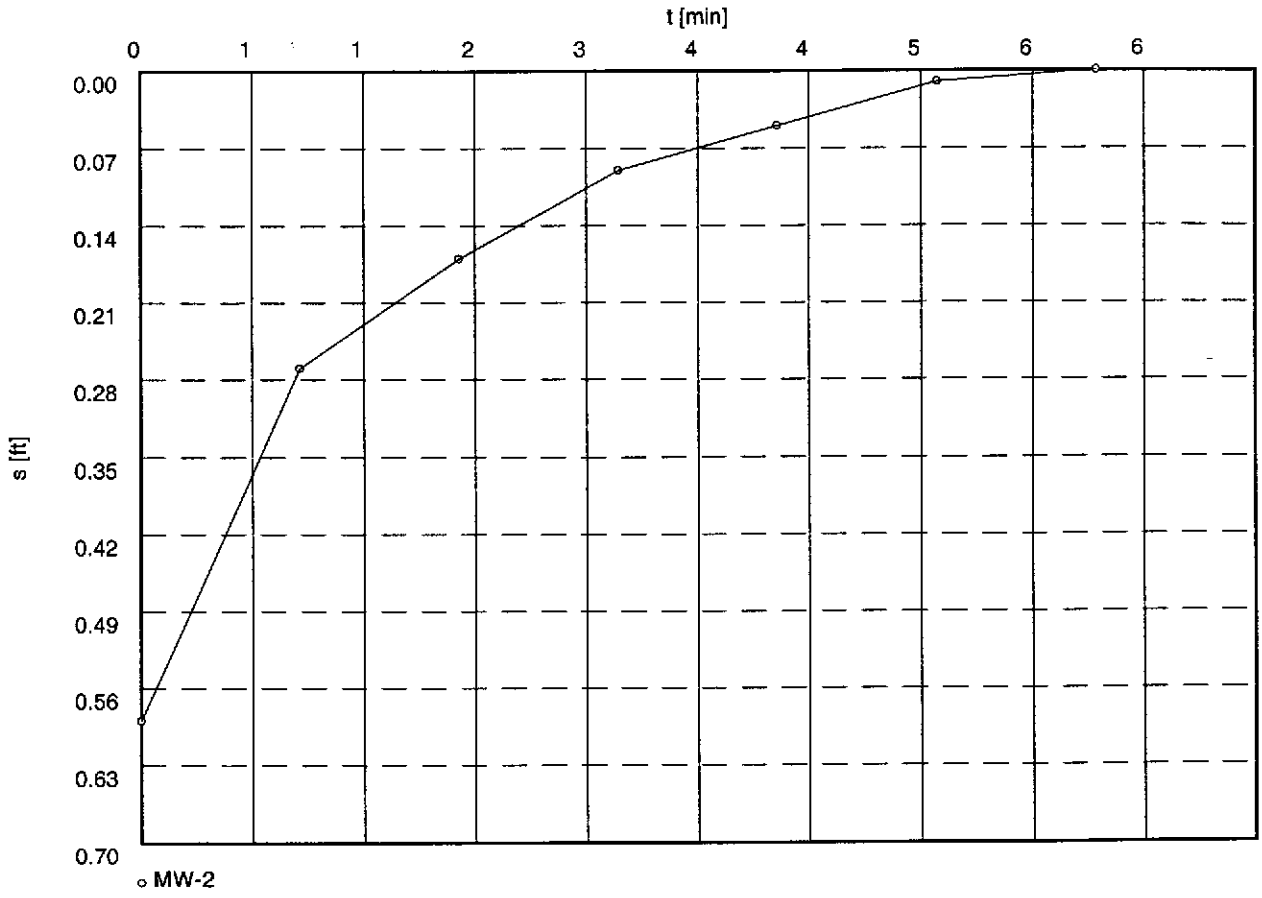
Pumping Test No.	Test conducted on:
	MW-2

Static water level: 18.61 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
1	0.00	19.20	0.59	
2	1.00	18.88	0.27	
3	2.00	18.78	0.17	
4	3.00	18.70	0.09	
5	4.00	18.66	0.05	
6	5.00	18.62	0.01	
7	6.00	18.61	0.00	

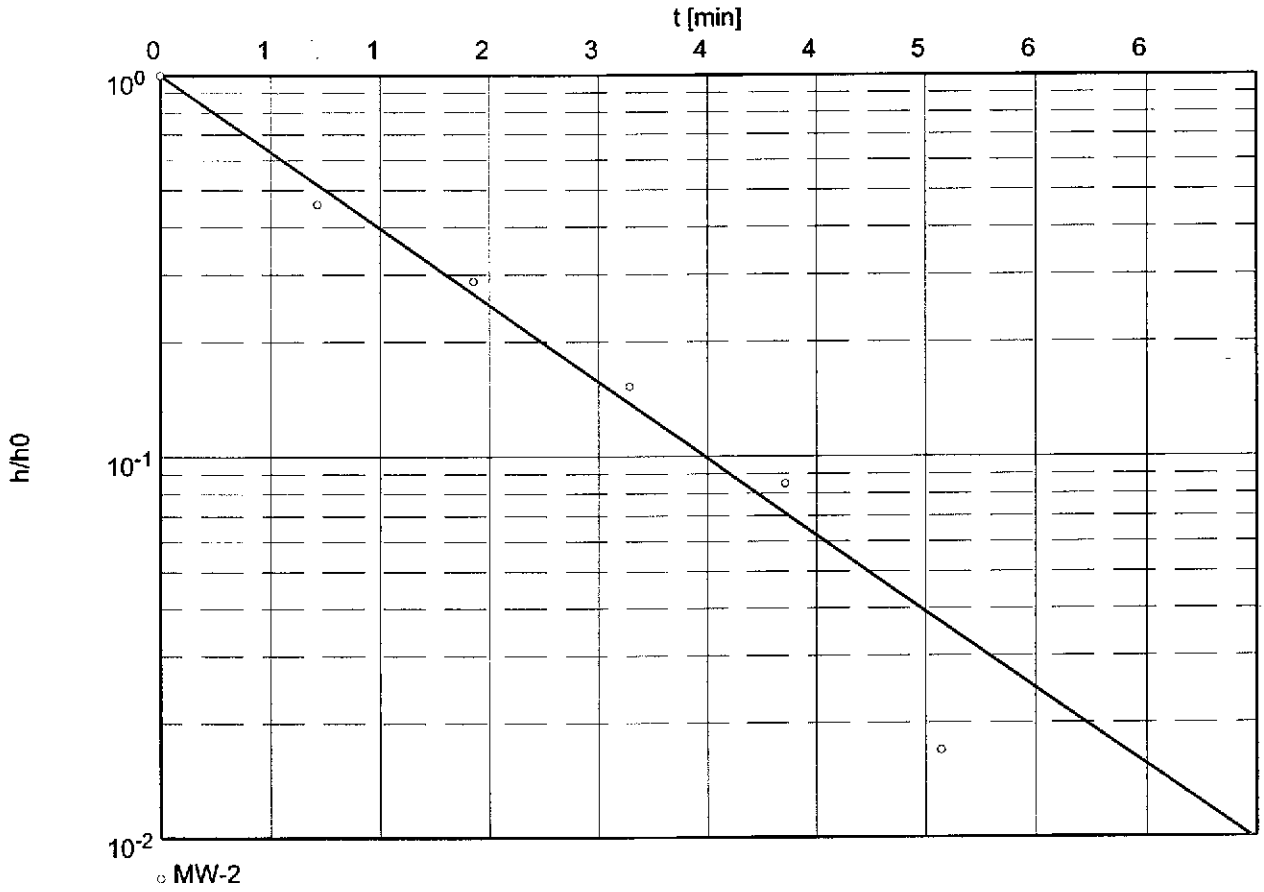
Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 02.05.2000	Page 1
		Project:	
		Evaluated by:	

Pumping Test No.	Test conducted on:



Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis BOUWER-RICE's method	Date: 02.05.2000 Page 1 Project: BP-11117 Evaluated by:

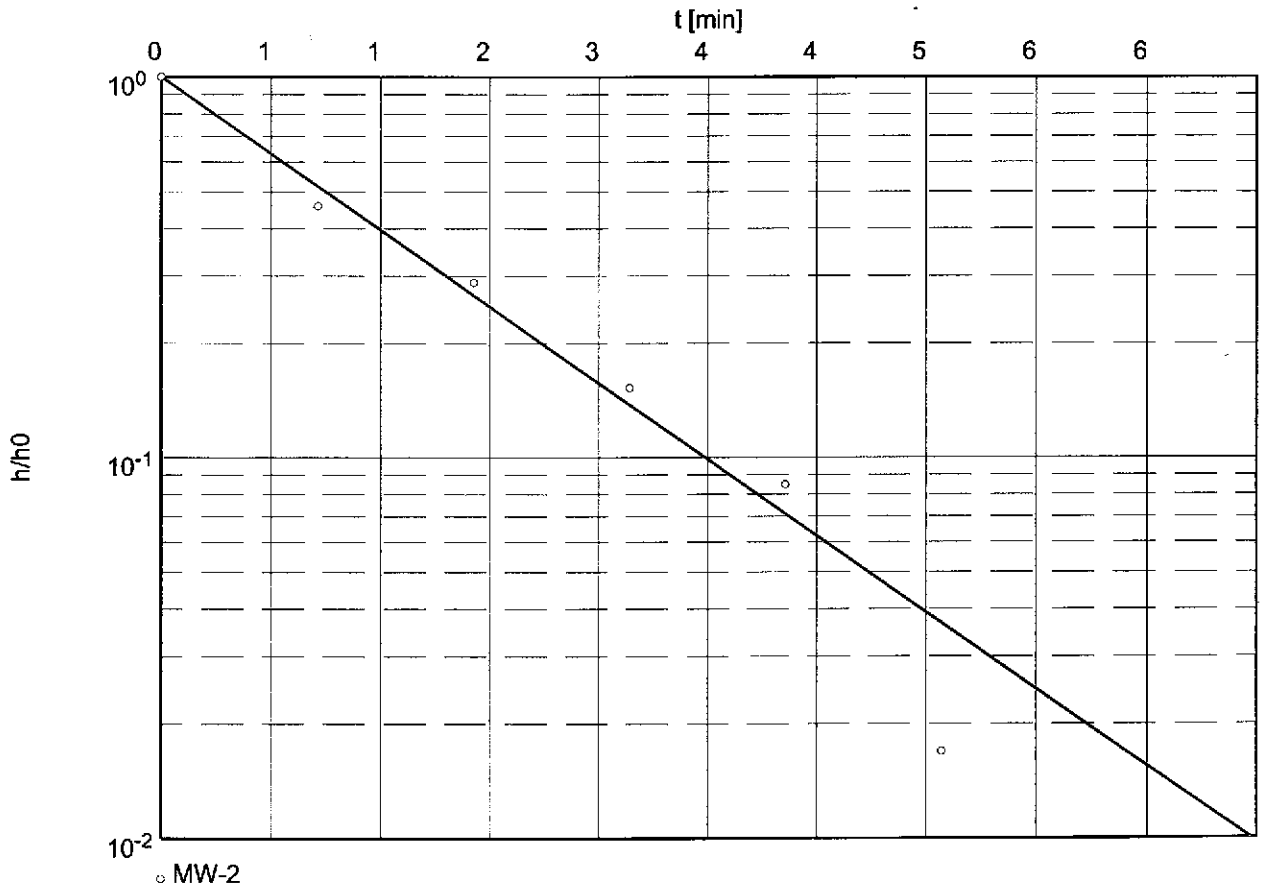
Slug Test No.	Test conducted on: April 28, 2000
MW-2	



Hydraulic conductivity [ft/min]: 3.39×10^{-4}

Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis HVORSLEV's method	Date: 02.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Slug Test No.	Test conducted on: April 28, 2000
MW-2	



Hydraulic conductivity [ft/min]: 4.36×10^{-4}

SITE/LOCATION 7210 Bancroft Avenue, Oakland, CA	BEGUN 12/27/91	BORING DIAMETER 8 Inches	GLE/BEARING 90 Degrees	BORING NO MW-2
DRILLING CONTRACTOR Bayland Drilling	COMPLETED 12/27/91	FIRST ENCOUNTERED WATER DEPTH 30 Feet		
OPERATOR Tom Schmidt	LOGGED BY T. Lane	STATIC WATER DEPTH/DATE 30 Feet		
DRILL MAKE & MODEL CME 75	SAMPLING METHOD California modified split spoon			BOTTOM OF BORING 40 Feet
WELL MATERIAL 2" SCH 40 PVC	SLOT SIZE 0.020"	FILTER PACK #2/16	WELL SEAL Neat cement over bentonite	WELL NO. MW-2

FIELD HEADSPACE *	DEPTH	SAMPLE	WATER LEVEL	WELL CONSTR.	GRAPHIC LOG	MATERIAL CLASSIFICATION & PHYSICAL DESCRIPTION
	1					ASPHALT
	2					BASEROCK
	3					Silty CLAY (CL) dark brown, low plasticity, 20-25% silt, trace fine to coarse sand, trace pebble gravel, dry.
	4					
0.0	5					Sandy CLAY (CL) yellow-brown, low plasticity, 30-35% fine sand, trace pebble gravel, trace rootlets, moist.
	6					
	7					Gravelly SAND (SW) med. brown, well graded, medium to coarse grained, 15% sub-rounded pebble gravel, moist.
	8					
	9					Silty CLAY (CL) medium brown, low plasticity, 15-20% silt, trace medium sand, damp.
0.0	10					
	11					
	12					
	13					
	14					Sandy CLAY (CL) medium brown, low plasticity, 35-40% fine sand, trace rounded pebble gravel, wet.
0.0	15					
	16					Silty CLAY (CL) medium yellow-brown, low plasticity, 15-20% silt, trace angular pebble gravel, trace charcoal fragments, wet.
	17					
	18					
	19					
0.0	20					
	21					Gravelly SAND (SW) medium brown, well graded coarse sand, 10-15% well rounded pebble gravel, wet.
	22					
	23					
	24					Gravelly CLAY (CL) medium brown, low plasticity, 10-15% pebble gravel, damp.
0.0	25					
	26					
	27					
	28		▽			
*PID (ppm)	29		▼			
	30					

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

DATE:

APPROVED BY: Frederick G. Moss, PE No. 35162

SOIL BORING LOG MW-2
AND
WELL CONSTRUCTION MW-2

BP Oil Station No. 11117
7210 Bancroft Avenue
Oakland, CA

PLATE
A-4

JOB NO.
9-029

SITE/LOCATION 7210 Bancroft Avenue, Oakland, CA	BEGUN 12/27/91	BORING DIAMETER 8 Inches	ANGLE/BEARING 90 Degrees	BORING NO MW-2
DRILLING CONTRACTOR Bayland Drilling	COMPLETED 12/27/91	FIRST ENCOUNTERED WATER DEPTH 30 Feet		
OPERATOR Tom Schmidt	LOGGED BY T. Lane	STATIC WATER DEPTH/DATE 30 Feet		
DRILL MAKE & MODEL CME 75	SAMPLING METHOD California modified split spoon			BOTTOM OF BORING 40 Feet
WELL MATERIAL 2" SCH 40 PVC	SLOT SIZE 0.020"	FILTER PACK #2/16	WELL SEAL Neat cement over bentonite	WELL NO. MW-2

FIELD HEADSPACE *	DEPTH	SAMPLE	WATER LEVEL	WELL CONSTR.	GRAPHIC LOG	MATERIAL CLASSIFICATION & PHYSICAL DESCRIPTION
	31–60					Gravelly CLAY (CL) medium brown, low plasticity, 20-30% sub-rounded coarse gravel, wet.

*PID (ppm)

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

DATE:

APPROVED BY: Frederick G. Moss, PE No. 35162

SOIL BORING LOG MW-2
AND
WELL CONSTRUCTION MW-2

BP Oil Station No. 11117
7210 Bancroft Avenue
Oakland, CA

PLATE
A-5

JOB NO.
9-029

Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000	Page 2
		Project: BP-11117	
		Evaluated by:	

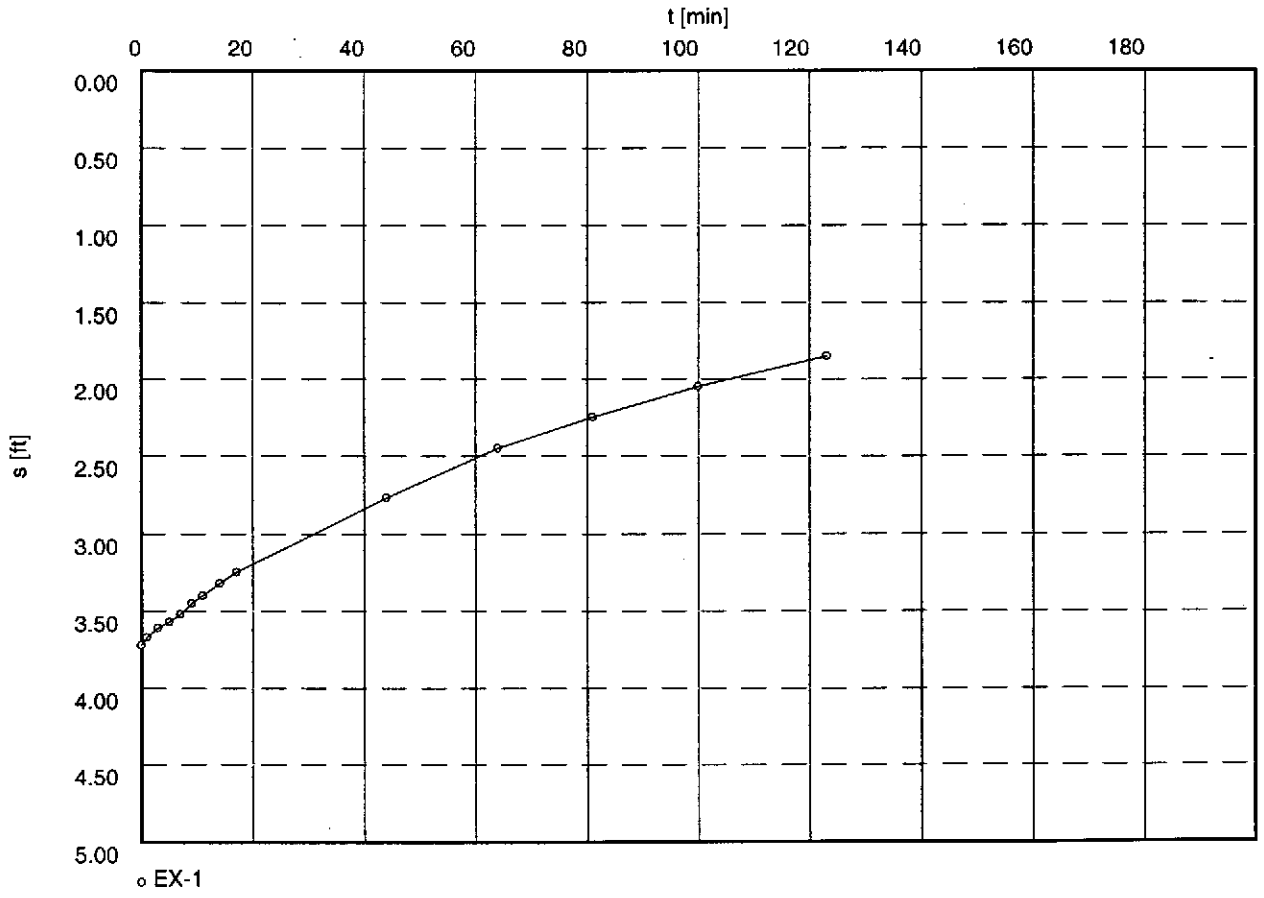
Pumping Test No.	Test conducted on: April 27, 2000
EX-1	EX-1

Static water level: 17.75 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
1	0.00	21.47	3.72
2	1.00	21.42	3.67
3	3.00	21.36	3.61
4	5.00	21.32	3.57
5	7.00	21.27	3.52
6	9.00	21.20	3.45
7	11.00	21.15	3.40
8	14.00	21.07	3.32
9	17.00	21.00	3.25
10	44.00	20.52	2.77
11	64.00	20.20	2.45
12	81.00	20.00	2.25
13	100.00	19.80	2.05
14	123.00	19.60	1.85

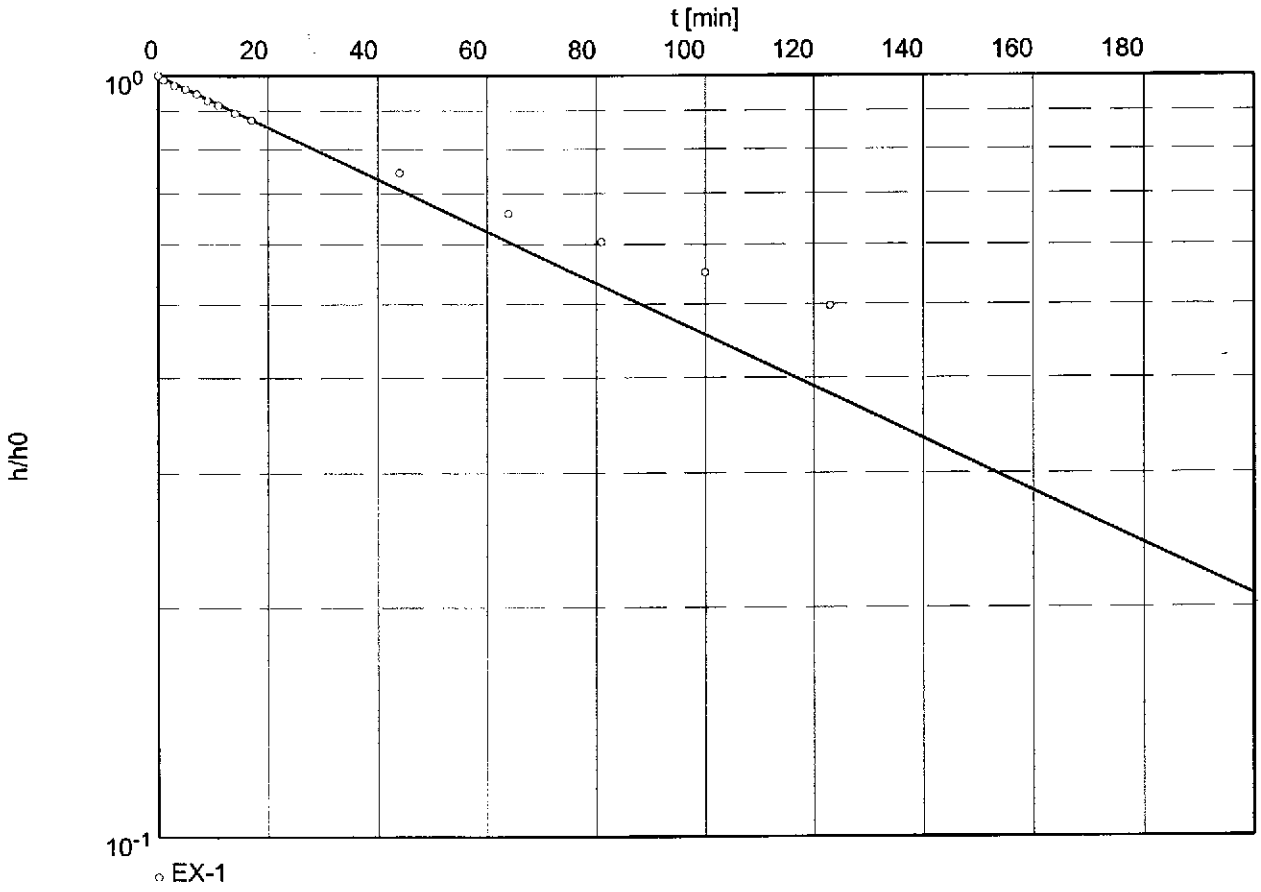
Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Pumping Test No.	Test conducted on: April 27, 2000
EX-1	



Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis BOUWER-RICE's method	Date: 03.05.2000 Page 1 Project: BP-11117 Evaluated by:

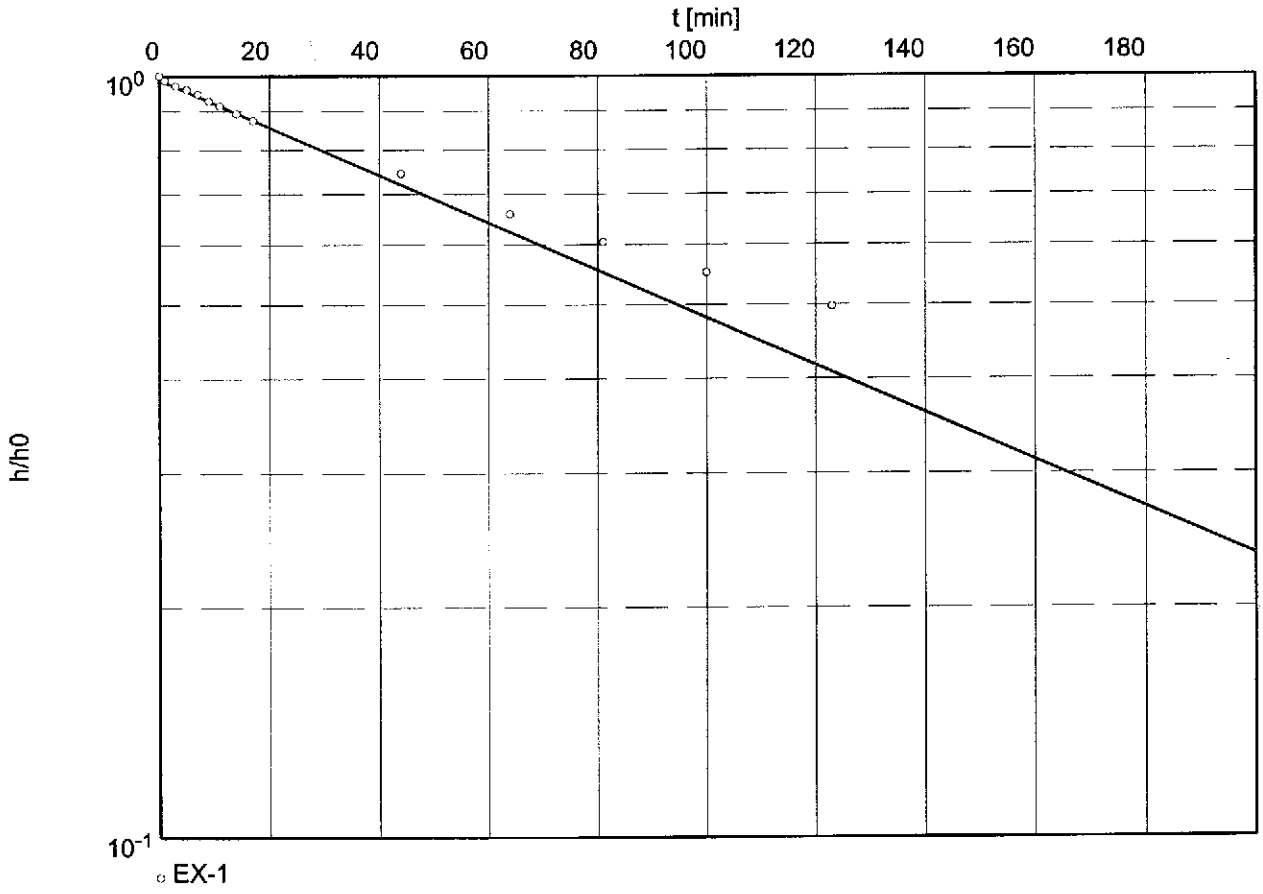
Slug Test No.	Test conducted on: April 27, 2000
EX-1	



Hydraulic conductivity [ft/min]: 3.85×10^{-5}

Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis HVORSLEV's method	Date: 03.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Slug Test No.	Test conducted on: April 27, 2000
EX-1	



Hydraulic conductivity [ft/min]: 2.02×10^{-5}

Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000	Page 2
		Project: BP-11117	
		Evaluated by:	

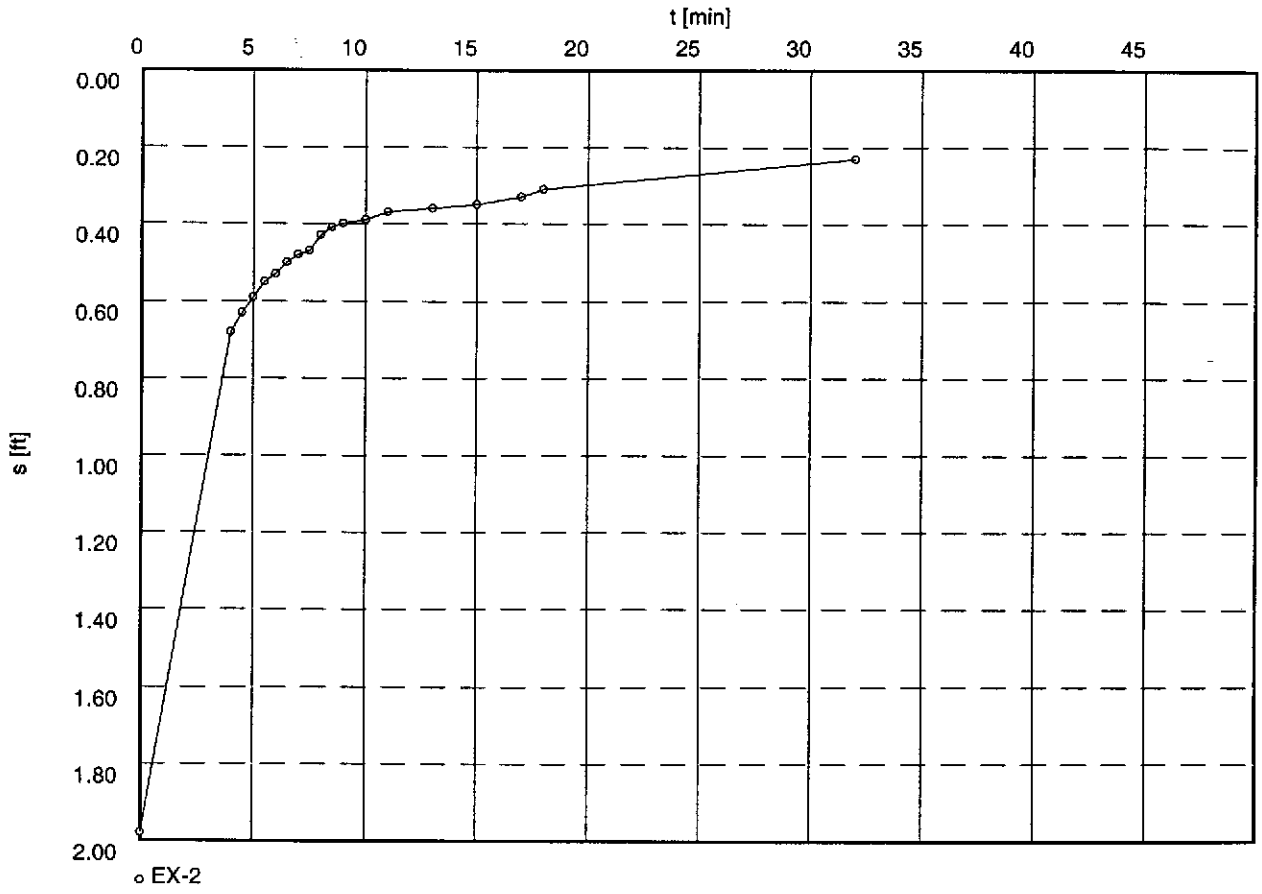
Pumping Test No.	Test conducted on: April 27, 2000
EX-2	EX-2

Static water level: 18.02 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
1	0.00	20.00	1.98
2	4.00	18.70	0.68
3	4.50	18.65	0.63
4	5.00	18.61	0.59
5	5.50	18.57	0.55
6	6.00	18.55	0.53
7	6.50	18.52	0.50
8	7.00	18.50	0.48
9	7.50	18.49	0.47
10	8.00	18.45	0.43
11	8.50	18.43	0.41
12	9.00	18.42	0.40
13	10.00	18.41	0.39
14	11.00	18.39	0.37
15	13.00	18.38	0.36
16	15.00	18.37	0.35
17	17.00	18.35	0.33
18	18.00	18.33	0.31
19	32.00	18.25	0.23

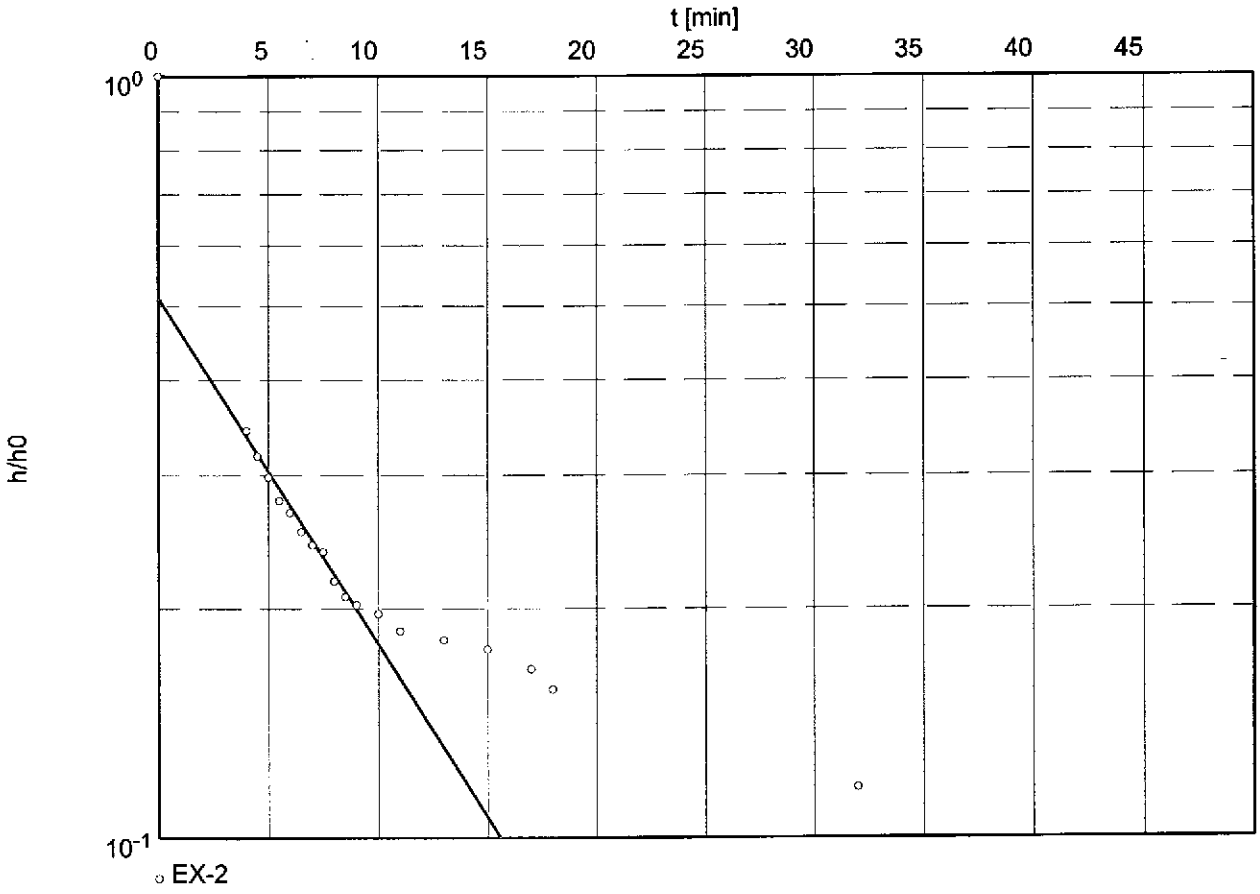
Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 03.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Pumping Test No.	Test conducted on: April 27, 2000
EX-2	



Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis BOUWER-RICE's method	Date: 03.05.2000 Page 1 Project: BP-11117 Evaluated by:

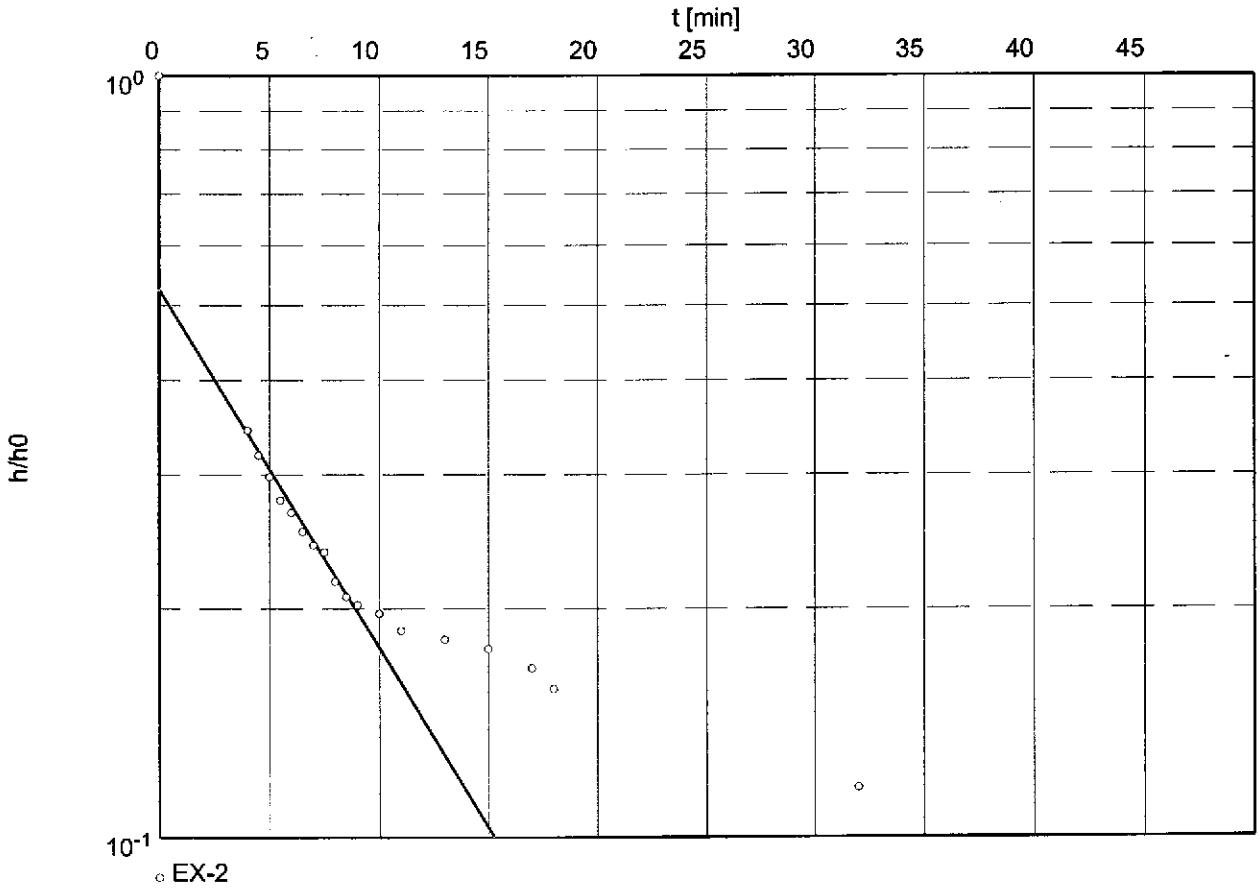
Slug Test No.	Test conducted on: April 27, 2000
EX-2	



Hydraulic conductivity [ft/min]: 5.13×10^{-4}

Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis HVORSLEV's method	Date: 03.05.2000 Page 1 Project: BP-11117 Evaluated by:

Slug Test No.	Test conducted on: April 27, 2000
EX-2	



Hydraulic conductivity [ft/min]: 3.04×10^{-4}

Cambria Environmental
1144 65th Street, Suite B
Oakland, California 94608
ph.(510) 420-0700

Pumping test analysis
Time-Drawdown plot

Date: 02.05.2000 | Page 2

Project: BP-11117

Evaluated by:

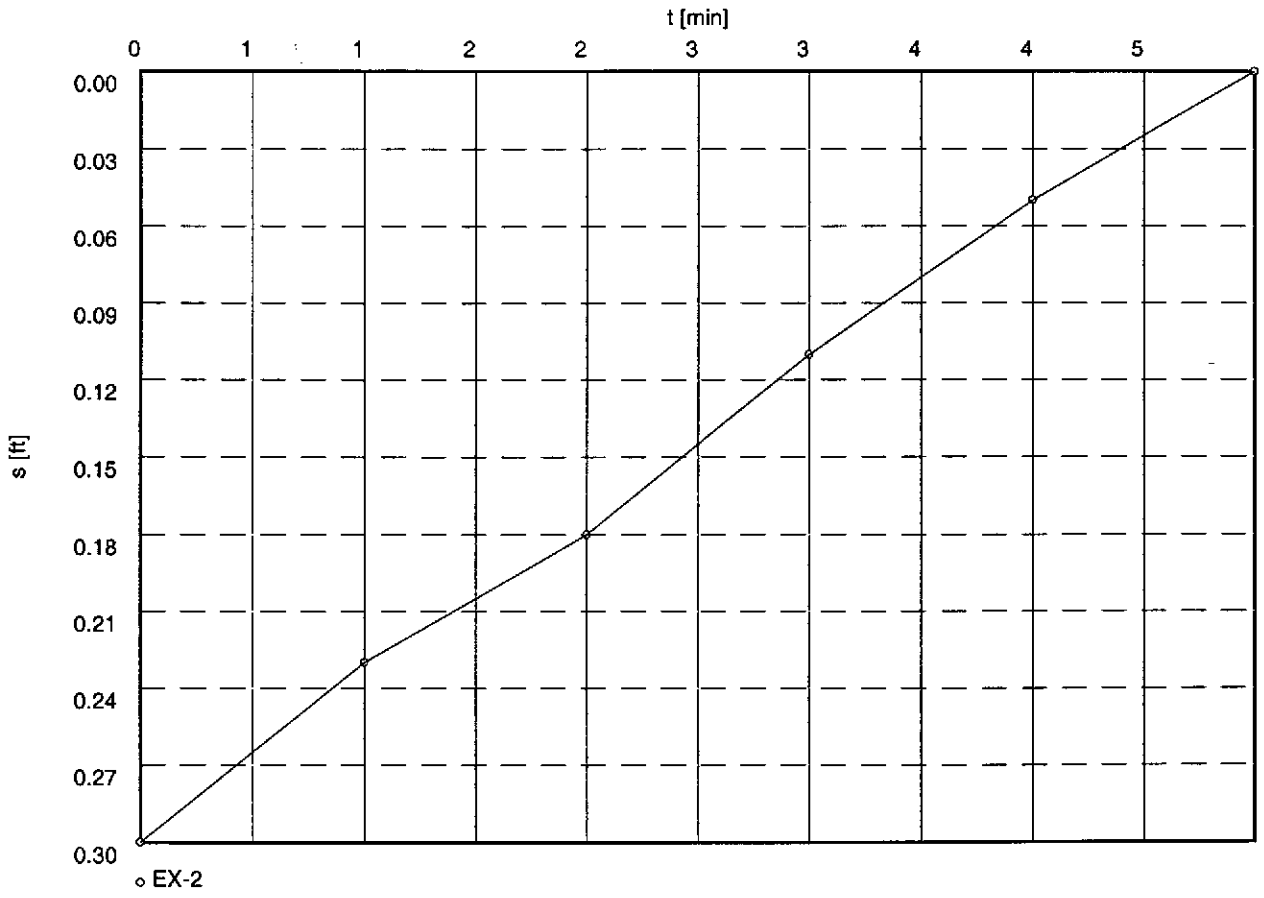
Pumping Test No.	Test conducted on: April 28, 2000
EX-2	EX-2

Static water level: 18.70 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
1	0.00	19.00	0.30	
2	1.00	18.93	0.23	
3	2.00	18.88	0.18	
4	3.00	18.81	0.11	
5	4.00	18.75	0.05	
6	5.00	18.70	0.00	

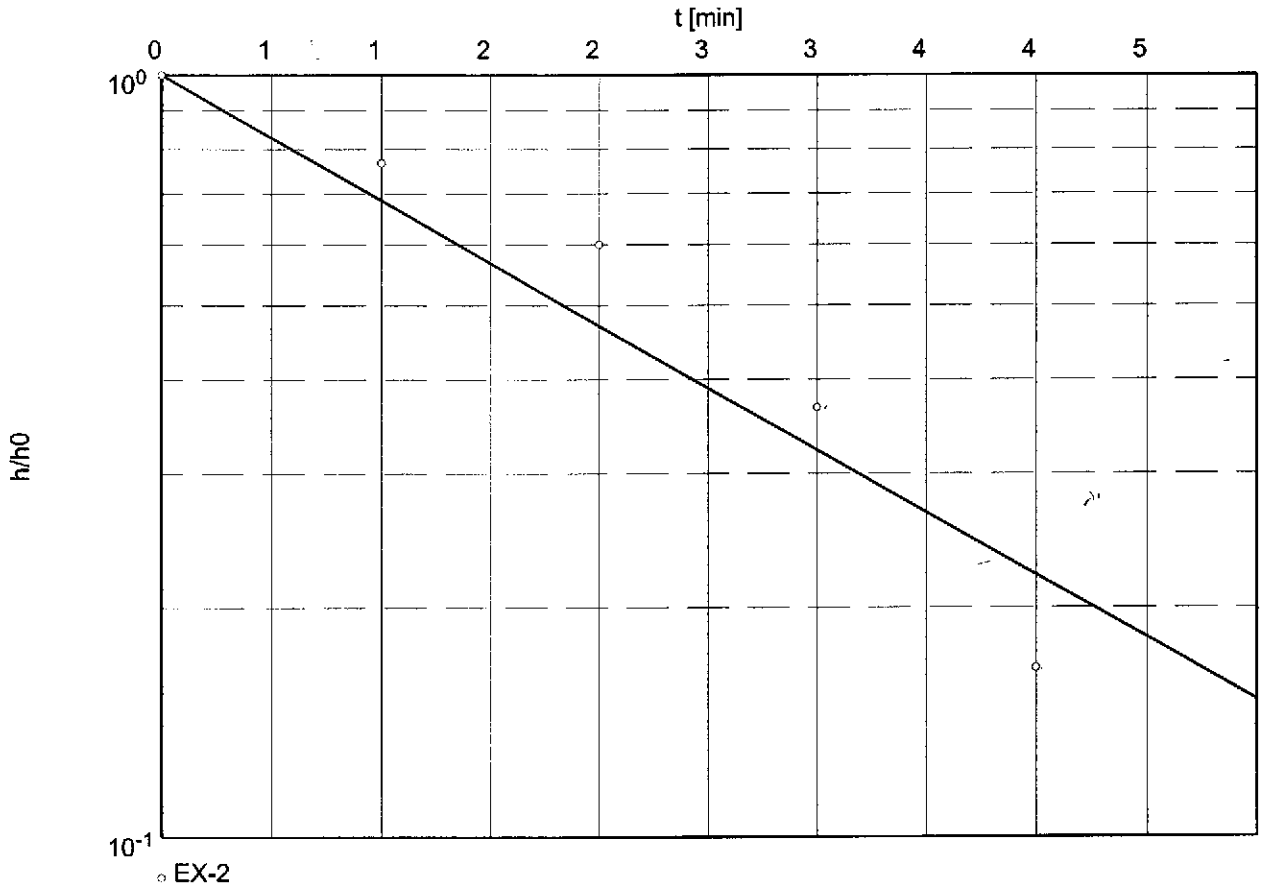
Cambria Environmental 1144 65th Street, Suite B Oakland, California 94608 ph.(510) 420-0700	Pumping test analysis Time-Drawdown plot	Date: 02.05.2000	Page 1
		Project: BP-11117	
		Evaluated by:	

Pumping Test No.	Test conducted on: April 28, 2000
EX-2	



Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis BOUWER-RICE's method	Date: 02.05.2000 Page 1 Project: BP-11117 Evaluated by:

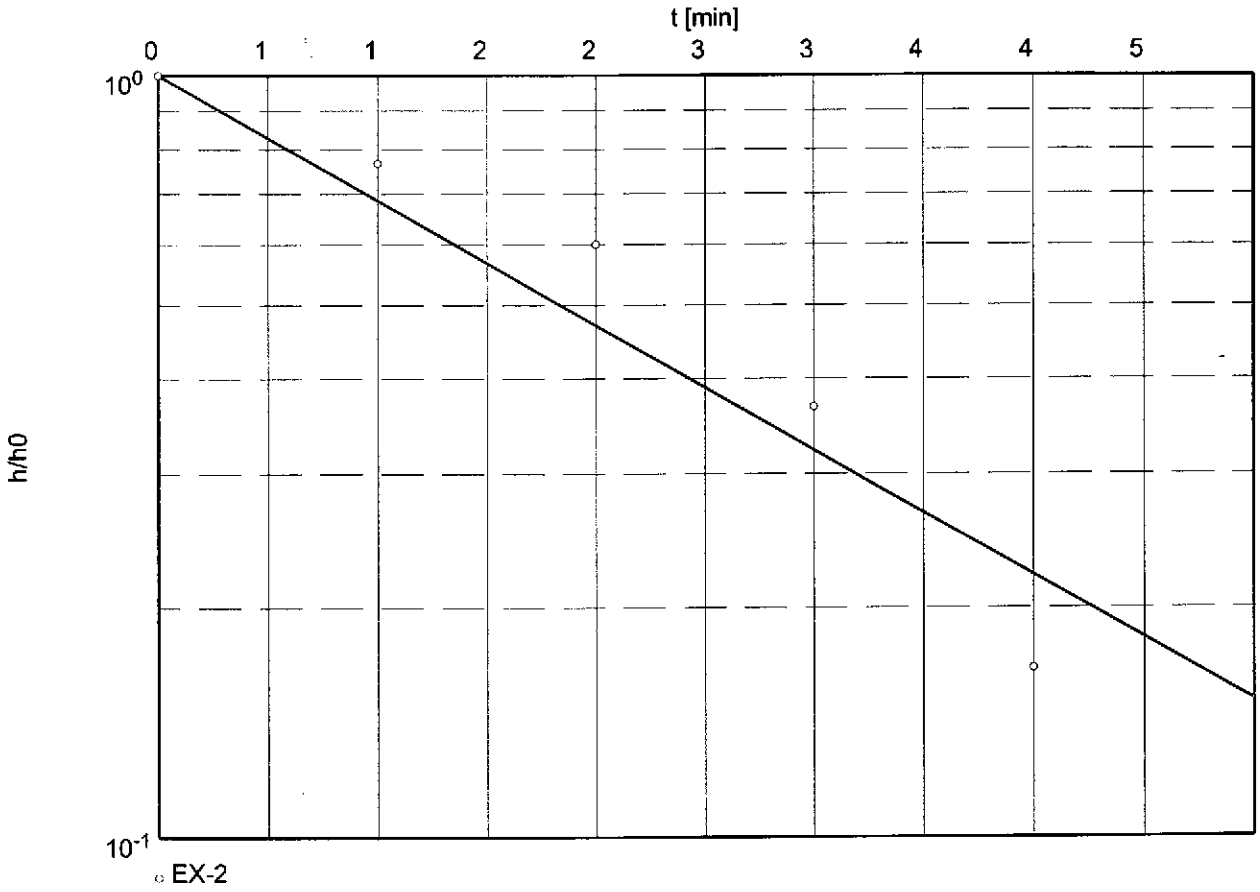
Slug Test No.	Test conducted on: April 28, 2000
EX-2	



Hydraulic conductivity [ft/min]: 2.13×10^{-3}

Cambria Environmental 1144 65th Street, Suite C Oakland, California ph.(510)420-0070	slug/bail test analysis HVORSLEV's method	Date: 02.05.2000 Page 1 Project: BP-11117 Evaluated by:

Slug Test No.	Test conducted on: April 28, 2000
EX-2	



Hydraulic conductivity [ft/min]: 1.06×10^{-3}