RO-403

CAMBRIA

MAR 12 2002

March 8, 2002

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

Re: **LETTER OF TRANSMITTAL**
Supplemental Investigation Report
BP Site No. 11133
2220 98th Avenue
Oakland, California

Dear Mr. Hooton:

Cambria Environmental Technology, Inc. has enclosed the *Supplemental Investigation Report* for the above-referenced site for your use. We have distributed copies of the report on your behalf as noted below.

We appreciate the opportunity to provide BP with environmental consulting services. If you have any questions or comments, please do not hesitate to call me at (510) 450-1985.

Sincerely,
Cambria Environmental Technology, Inc.

Khaled Rahman, R.G., C.H.G.
Associate Geologist

Enclosures: *Supplemental Investigation Report* dated March 8, 2002 (2 copies)

cc: Eva Chu, Alameda County Health Services Agency, 1131 Harbor Bay Parkway, 2nd Floor, Alameda, California 94502 (1 copy)
Mark Jones, Montgomery Watson Harza, 777 Campus Commons, Suite 175, Sacramento, California 95825 (1 copy)
David Camille, TOSCO Marketing Co., 2000 Crow Canyon Place, Suite 400, San Ramon, California 94583 (1 copy)

\\SERVER\IR\British Petroleum\11133 - 98th, Oakland\Supplemental Investigation\Report\March 8, 2002 Transmittal.doc

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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

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MAR 12 2002

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SUPPLEMENTAL INVESTIGATION REPORT

BP Oil Site No. 11133
2220 98th Avenue
Oakland, California
Cambria Project No. 852-1692

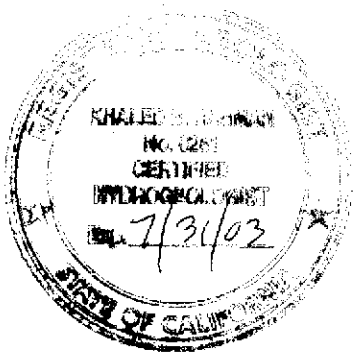
March 8, 2002

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



Sara Dwight
Staff Scientist

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

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SUPPLEMENTAL INVESTIGATION REPORT

BP Oil Site No. 11133
2220 98th Avenue
Oakland, California
Cambria Project No. 852-1692

March 8, 2002

INTRODUCTION

Cambria Environmental Technology, Inc. (Cambria) has prepared this *Supplemental Investigation Report* for the above-referenced BP Oil Company (BP) site. The scope of work for the investigation was presented in our August 27, 2001 *Supplemental Investigation Work Plan* (Work Plan) and was approved in an August 31, 2001 Alameda County Environmental Health Services (ACEHS) letter. The site background, investigation activities, analytical results, and recommended activities are described below.

SITE BACKGROUND

Site Description: The site is a dormant 76-branded gasoline retail outlet located at the southeast corner of Bancroft Avenue and 98th Avenue in Oakland, California (see Figure 1). The site is located in a largely residential area.

BP acquired the property from Mobil Oil Corporation in 1989. In 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time. In 1999, TOSCO removed the underground storage tanks and associated piping, and ceased gasoline retail operations at the site. We understand that redevelopment of the site as a commercial car wash is planned.

The site consists of a fenced lot with a service station building and canopy. Currently, seven onsite monitoring wells, three onsite vapor extraction wells, and six offsite monitoring wells are located at the site (see Figure 2).

Site Hydrogeology: The site is typically underlain by clay and silt with clayey sand, silty sand and silty or clayey gravel intervals locally observed. Groundwater was observed from approximately 11 to 20 feet below ground surface (bgs) in onsite monitoring wells in July 2001. Groundwater flow fluctuates across the site but is generally westward.

SUPPLEMENTAL INVESTIGATION

Sampling Activities

In response to a December 15, 2000 *Risk-Based Corrective Action (RBCA) Evaluation*, the ACEHS requested additional investigation of site conditions near the eastern and southeastern property boundaries. To assess inhalation exposures from the subsurface and to supplement existing analytical data, six borings were advanced to 28 to 30 feet bgs using a Geoprobe rig. Soil, soil-vapor, and water samples were collected from each boring.

Personnel Present: Sara Dwight, Cambria Scientist, working under the supervision of Khaled Rahman, California Registered Geologist.

Number of Borings: Six borings (B-1 through B-6).

Boring Locations: Borings B-1 through B-3 were advanced on the southeastern property line, adjacent to a 2-story apartment building. Borings B-4 through B-6 were advanced on the eastern property line, adjacent to a single-story residence.

Permits: Alameda County Public Works Agency permit No. W01-871 was issued for the borings (see Appendix B).

Drilling Company: Gregg Drilling and Testing of Martinez, California (C-57 License No. 485165).

Drilling Dates: October 22 and 23, 2001

Drilling Method: Geoprobe hydraulic push rig.

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Sampling Methods: Vapor samples were collected in SUMMA canisters at 5-foot intervals from unsaturated soil as the borings were advanced. Soil was continuously cored from 4 to 28-30 feet bgs. Temporary wells were installed using ¾-inch PVC casing with 0.010-inch machined slot and No. 2/12 sand filter pack. Depending on recharge rates, 1 to 3 casing volumes of water were purged from each temporary well to reduce particulates. Following purging, each well was sampled using a bailer.

Boring Depths: Borings B-1, B-2, and B-4 were advanced to 28 feet bgs. Borings B-3, B-5, and B-6 were advanced to 30 feet bgs.

Groundwater Depths: Groundwater was encountered at depths ranging from 18 to 23 feet bgs.

Soil Types Encountered: Soils encountered typically consisted of silts, sandy silts, clayey silts, silty sands, and gravelly sands to the total depth explored of 30 feet bgs (see Appendix C).

Chemical Analysis: Selected soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) using modified EPA Method 8015, and benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA Method 8021 by Pace Analytical (Pace) of Houston, Texas (see Table 1). Selected vapor samples were analyzed for TPHg, BTEX, and MTBE using EPA Method TO-3; and for oxygen, methane, and carbon dioxide using modified ASTM Method D-1946 by Air Toxics Ltd. of Folsom, California (see Table 2). Grab groundwater samples were analyzed for TPHg using modified EPA Method 8015, and BTEX and MTBE by EPA Method 8260 by Pace (see Table 3). Analytical results are presented in Appendix D.

Boring Seals: Following sampling, the temporary casing was removed and the borings were sealed to the surface with bentonite-cement grout.

Soil Handling: Soil cuttings produced during sampling activities were stockpiled temporarily on visquene and stored onsite.

Summary: No BTEX and MTBE were typically reported in soil samples collected from the vadose zone. Soil-vapor samples generally reported low BTEX and MTBE concentrations (e.g., less than 0.35 ppmv benzene), where detected. The BTEX and MTBE concentrations in the groundwater along the eastern property boundary are typically an order of magnitude higher than along the southeastern property boundary. Based on the findings of this investigation, the BTEX and MTBE mass near the eastern and southeastern property boundaries is largely limited to the dissolved-phase. The general absence of BTEX and MTBE in soil and low concentrations in soil-vapor samples indicate that the site conditions (e.g., clayey/silty soil) and/or biodegradation are attenuating the BTEX and MTBE in the vadose zone.

RECOMMENDED ACTIVITIES

RBCA Evaluation

We understand that Montgomery Watson Harza is updating the *RBCA Evaluation* using data from this investigation. The revised *RBCA Evaluation* will be submitted shortly.

Groundwater Monitoring

Monitoring and sampling of selected site wells will continue on a biannual basis. These reports will be submitted under separate cover.

ATTACHMENTS

Figure 1 – Vicinity Map
Figure 2 – Site Plan

Table 1 – Soil Analytical Data
Table 2 – Soil-Vapor Analytical Data
Table 3 – Water Analytical Data

Appendix A – Standard Field Procedures for Geoprobe Sampling
Appendix B – Drilling Permit
Appendix C – Soil Boring Logs
Appendix D – Analytical Reports

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Figures

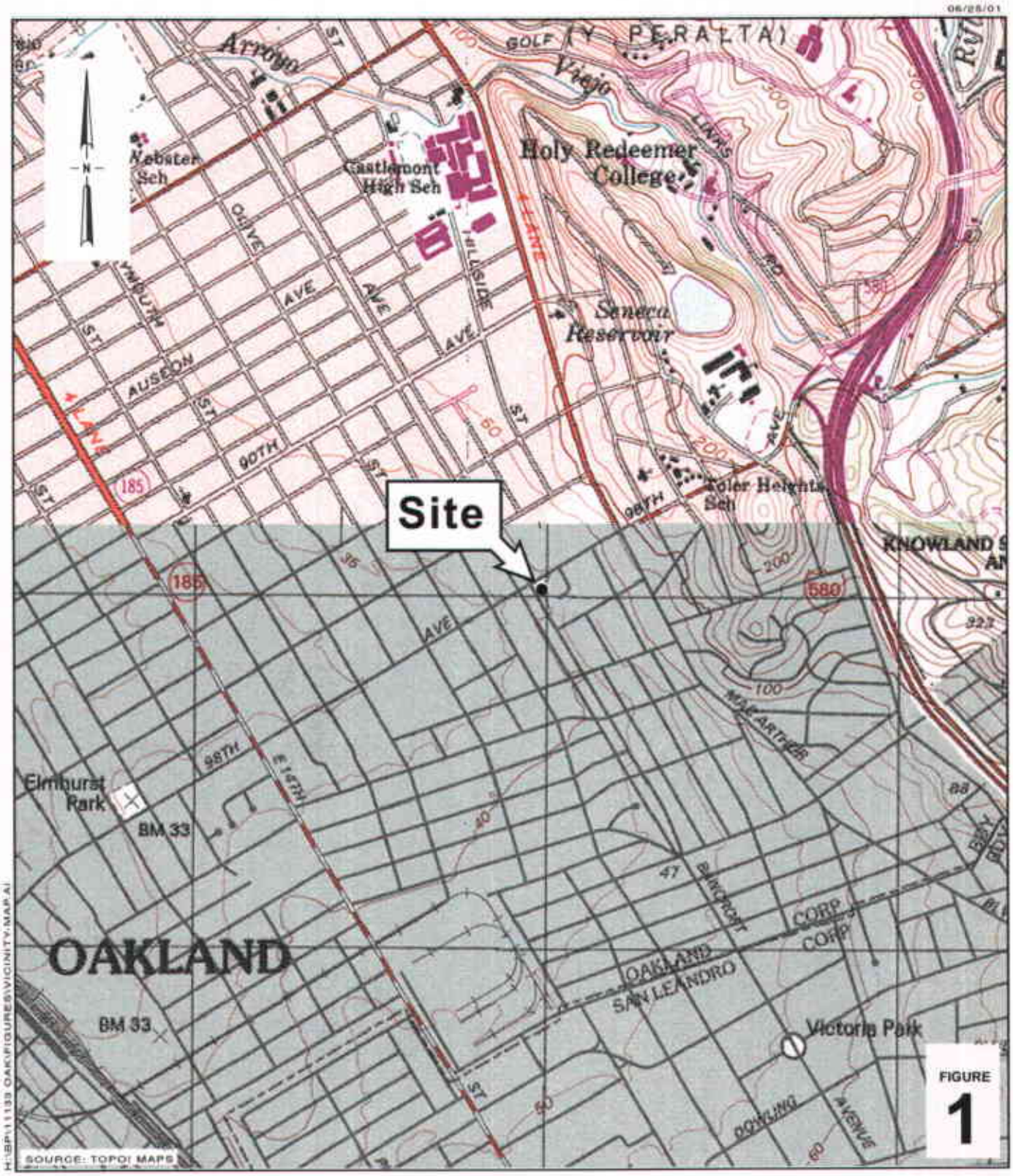

FIGURE 1

BP Oil Site No. 11133

2220 98th Avenue

Oakland, California

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Vicinity Map

12/05/01

Site Plan

EXPLANATION

- AW-1 — Monitoring well
- VW-1 — Vapor Extraction well
- RW-1 — Combined Groundwater Recovery/ Vapor Extraction well
- B-1 — Grab Sampling Location

Residential

AW-3

SPRINGFIELD

AW-8

Residential

Residential

6'-High concrete block wall

98TH AVENUE

planter

AW-5

Trash enclosure

Single-Story Residence

AW-6

B-4 B-5 B-6

AW-1

Service Station Building

AW-4

WARNER AVENUE

AW-9

planter

dispenser islands

restrooms

RW-1

planter

B-1

2-Story Apartment Building

Residential

MW-1

VW-1

VW-2

B-2

MW-2

USTs

VW-3

MW-3

B-3

planter

Telephone booths

BANCROFT AVENUE

AW-2

AW-7

0 25 50 100

Scale (ft)

FIGURE

2

BP Oil Site No. 11133
2220 98th Avenue
Oakland, California

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H:\BP\11133 OAKLAND\FIGURES\BAMP-LOC.DWG

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Table 1. **Soil Analytical Data** - BP Site No. 11133, 2220 98th Avenue, Oakland, California

Sample ID (Depth in feet)	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)
Analytical Method:		**8015m**	**8021**	**8021**	**8021**	**8021**	**8021**	**6010**
B-1-4.5	10/22/01	**0.49**	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-1-13.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-2-5	10/22/01	**1.6**	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-2-13.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-3-4.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-3-13.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-4-4.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-4-13.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
DUP	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-4-19.5	10/22/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-5-5.5	10/23/01	**0.084**	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-5-19.5	10/23/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
B-6-5.5	10/23/01	<0.250	<0.005	<0.005	<0.005	**0.013**	<0.005	-
B-6-19.5	10/23/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	-
Composite	10/23/01	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<4.72

Abbreviations and Notes:

mg/kg = Milligrams per kilogram
MTBE = Methyl tert-butyl ether
TPHg = Total petroleum hydrocarbons as gasoline
<n = Below detection limit of n mg/kg
--- = Not analyzed

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Table 2. **Soil-Vapor Analytical Data** - BP Site No. 11133, 2220 98th Avenue, Oakland, California

Sample ID (Depth in feet)	Date Sampled	TPHg (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Xylenes (ppmv)	MTBE (ppmv)	Oxygen (%)	Total Methane (%)	Carbon Dioxide (%)
Analytical Method:		**TO-3**	**TO-3**	**TO-3**	**TO-3**	**TO-3**	**TO-3**	**D-1946**	**D-1946**	**D-1946**
B-1-V1 (5')	10/22/01	**6.6**	**0.0073**	**0.0062**	<0.0020	**0.0049**	**0.0038**	-	-	-
B-1-V2 (10')	10/22/01	**9.9**	<0.0027	**0.0033**	<0.0027	**0.0031**	<0.0027	-	-	-
B-1-V3 (15')	10/22/01	**1.8**	**0.0033**	**0.0096**	<0.0025	**0.0067**	**0.0050**	-	-	-
B-2-V1 (5')	10/22/01	**2.4**	**0.0080**	**0.0070**	<0.0026	**0.0038**	<0.0026	**22**	<0.0026	**0.28**
B-2-V2 (10')	10/22/01	**11**	**0.0062 a**	**0.0063**	<0.0026	<0.0026	<0.0026	**21**	<0.0026	**0.33**
B-2-V3 (15')	10/22/01	**4.5**	**0.0072**	**0.0072**	<0.0025	**0.0035**	<0.0025	**20**	<0.0025	**0.33**
B-3-V1 (5')	10/22/01	**7.0**	**0.026**	**0.019**	<0.0025	**0.0098**	**0.0047**	-	-	-
B-3-V2 (10')	10/22/01	**2.2**	**0.0079**	**0.0055**	<0.0036	**0.0039**	<0.0036	-	-	-
B-3-V3 (15')	10/22/01	**1.6**	**0.0064**	**0.0074**	**0.0027**	**0.0063**	**0.0040**	-	-	-
B-4-V1 (5')	10/22/01	**1.3**	**0.010 a**	**0.0082**	<0.0029	**0.0043**	<0.0029	**20**	<0.0029	**0.066**
B-4-V2 (10')	10/22/01	**1.3**	**0.0042 a**	**0.0060**	<0.0026	**0.0051**	<0.0026	**20**	<0.0026	**0.070**
B-4-V3 (15')	10/22/01	**2.1**	**0.013**	**0.011**	**0.0040 a**	**0.0090**	**0.0042**	**20**	<0.0025	**0.092**
B-5-V1 (5')	10/23/01	**6.2**	**0.023 a**	**0.020**	<0.0040	**0.012**	**0.0070**	-	-	-
B-5-V2 (10')	10/23/01	**2.0**	**0.0058**	**0.0094**	<0.0024	**0.0084**	**0.0033**	-	-	-
B-5-V3 (15')	10/23/01	**1.7**	<0.0042 b	**0.0055**	<0.0042 b	<0.0042 b	<0.0042 b	-	-	-
B-6-V1 (5')	10/23/01	**4.2**	**0.030 a**	**0.017**	**0.0078**	**0.11**	**0.0062**	-	-	-
B-6-V2 (10')	10/23/01	**2.3**	**0.029**	**0.060**	**0.0070**	**0.025**	**0.0061**	-	-	-
B-6-V3 (15')	10/23/01	**2.4**	**0.34**	**0.23**	**0.15**	**0.59**	**0.062**	-	-	-

Abbreviations and Notes:

ppmv = Parts per million by volume
MTBE = Methyl tert-butyl ether
TPHg = Total petroleum hydrocarbons as gasoline
<n = Below detection limit of n ppmv or %
- = Not analyzed
a = Reported value may be biased due to apparent matrix interferences.
b = Elevated reporting limits due to high residual canister vacuum.

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Table 3. **Water Analytical Data** - BP Oil Site No. 11133, 2220 98th Avenue, Oakland, California

Well ID (Sample ID)	Date Sampled	TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
Analytical Method:		**8015m**	**8260**	**8260**	**8260**	**8260**	**8260**
B-1-W1	10/22/01	<50	<2.0	**2.29**	<2.0	<2.0	**71.6**
B-2-W1	10/22/01	**15,000**	**3,610**	**1,120**	**383**	**1,330**	**1,500**
B-3-W1	10/22/01	**4,600**	**1,410**	**171**	**1,010**	**1,290**	**1,420**
B-4-W1	10/23/01	**71,000**	**7,300**	**10,800**	**7,060**	**36,600**	**177**
DUP	10/23/01	**52,000**	**7,600**	**9,650**	**4,230**	**21,600**	<200
B-5-W1	10/23/01	**100,000**	**16,800**	**42,100**	**6,720**	**33,300**	**244**
B-6-W1	10/23/01	**110,000**	**30,600**	**36,800**	**5,410**	**26,900**	**1,010**

Abbreviations and Notes:

ug/l = micrograms per liter
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
<n = Below detection limit of n ug/L

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Appendix A

Standard Field Procedures for Geoprobe Sampling

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STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Cambria Environmental Technology's standard field methods for GeoProbe® soil and ground water sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed 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.

Soil Vapor Sampling

Geoprobe® cuttingless drill rigs allow for rapid sample retrieval and can move quickly between boring locations. The drill-rig uses a hydraulic-push advancement method and is equipped with a variety of ground water, soil and vapor sampling systems to assure sample collection in most hydrogeologic environments. Since the hollow drill rods are pushed into the ground, rather than augured, the stratigraphy forms a vapor seal between the surface and subsurface environments ensuring that the surface and subsurface gases do not mix. Once the desired soil vapor sampling depth has been reached, the Geoprobe® operator installs disposable tubing with a threaded adaptor that screws into the bottom of the rods. The screw adaptor ensures that the vapor sample comes directly from the bottom of the drill rods and does not mix with other vapor from inside the rod or from the ground surface. The operator then pulls up on the rods and exposes about six inches of the desired stratigraphy by leaving an expendable drive point at the maximum depth. The required volume of soil vapor is then purged through the polyethylene tubing using a standard vacuum pump. The soil vapor can be sampled for direct injection into a field gas chromatograph, pumped into inert tedlar bags using a "bell jar" sampling device, or allowed to enter a Summa vacuum canister. Once collected, the vapor sample is transported under chain-of-custody to a state-certified laboratory. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure. Drilling and sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

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

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Grab Ground Water Sampling

Ground water samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting ground water using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. 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.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also 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.

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Appendix B

Drilling Permit

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) ~~670-5575~~ ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN
399 Elmhurst St. Hayward, CA 94544
Phone (510) 670-5554 - Fax (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 2220 98th Ave
Oakland, CA
Fremont BP Oil Site No. 11133

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

CLIENT
Name BP Oil Company - Scott Haxton
Address 295 SW 41st St Bldg 13 Phone (425) 251-0689
City Renton Zip 98055

APPLICANT
Name Cambria Environmental - Khaled Rahman
Fax 510-450-8295
Address 6762 Hollis St Phone 510-450-1985
City Emeryville 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	☐
Cable	☐	Auger	☐
		Other	☒ Direct Push (Geoprobe)

DRILLER'S LICENSE NO. C57 - 485165 Gregg Drilling

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 2 in. Depth 30 ft.

ESTIMATED STARTING DATE Oct 22 2001
ESTIMATED COMPLETION DATE Oct 23, 2001

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

APPLICANT'S SIGNATURE Khaled Rahman (Cambria) DATE 9/19/01
for BP & Gregg

FOR OFFICE USE

PERMIT NUMBER W01-871
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 ____ DATE 9-19-01

See Attached blank Permit Application

** TOTAL PAGE.02 **

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Appendix C

Soil Boring Logs

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**	B-1
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	22-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	22-Oct-01 (0.87 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	18 to 28 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	19.5 ft (22-Oct-01)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	18.5 ft (22-Oct-01)

REMARKS Hand augered to 5 feet. Located on southern property boundary adjacent to apartment complex.

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
								SILT (ML); brown; dry; 90% silt, 10% fine grained sand; no plasticity; moderate to high estimated permeability.		
0.4	6.6	0.49	B-1-4.5 B-1-V 1		5	ML		@4': very stiff; 10% clay, 85% silt, 5% fine grained sand; low plasticity; low estimated permeability.	8.0	3/4" diam., Schedule 40 PVC
			B-1-9.5 B-1-V 2		10	ML		SANDY SILT (ML); brown; dry; medium stiff; 5% clay, 80% silt, 15% fine grained sand; no plasticity; low to moderate estimated permeability.	10.0	Open Borehole
0.4	9.9					ML		SILT (ML); brown; dry; very stiff; 10% clay, 85% silt, 5% fine grained sand; no plasticity; low estimated permeability; some roots.	12.0	
0.4		<0.050	B-1-1 3.5			ML		CLAYEY SILT (ML); brown; dry; soft; 15% clay, 75% silt, 10% fine grained sand; low to medium plasticity; low to moderate estimated permeability.		
	1.8		B-1-V 3		15				17.0	
0.4						ML		SANDY SILT (ML); brown; damp; 15% clay, 65% silt, 20% fine grained sand; low to medium plasticity; low to moderate estimated permeability.	19.0	
			B-1-1 9.5		20	SM		SILTY SAND (SM); brown; wet; 20% silt, 60% fine to coarse grained sand, 20% fine gravel; no plasticity; high estimated permeability.		Monterey Sand #2/12
									23.0	3/4"-diam., 0.010" Slotted Schedule 40 PVC
			B-1-2 3.5		25	SP		GRAVELLY SAND (SP); brown; wet; 15% silt, 45% medium to coarse grained sand, 40% fine gravel; no plasticity; high estimated permeability.	28.0	
								Total depth = 28'. Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.		Bottom of Boring @ 28 ft

WELL LOG (PID/VP/SOIL) H:\BRITIS~1\11133~1\BP-11133.GPJ DEFAULT.GDT 2/19/02

Cambria Environmental Technology, Inc.
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Oakland, CA 94608
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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	B-2
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	22-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	22-Oct-01 (0.93 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	18 to 28 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	18.0 ft (22-Oct-01)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	18.0 ft (22-Oct-01)
REMARKS	Hand augered to 5 feet. Located on southern property boundary adjacent to apartment complex.		

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
						ML		SANDY SILT (ML); dark brown; dry; 5% clay, 80% silt, 15% fine grained sand; no plasticity; low estimated permeability.	4.0	
7.0	2.4	1.6	B-2-V 1, B-2-5		5	ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine grained sand; no plasticity; low estimated permeability.	8.0	3/4" diam., Schedule 40 PVC
			B-2-9 .5			ML		SANDY SILT (ML); dark brown; dry; 5% clay, 80% silt, 15% fine grained sand; no plasticity; low to moderate estimated permeability, some roots.	10.0	Open Borehole
20	11		B-2-V 2		10	ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine grained sand; no plasticity; low estimated permeability.	12.0	
6.0		<0.050	B-2-1 3.5			ML		SANDY SILT (ML); brown; dry; medium stiff; 10% clay, 70% silt, 20% fine grained sand; no plasticity; low estimated permeability.		
	4.5		B-2-V 3		15	ML		@16': damp; 15% clay, 60% silt, 25% fine grained sand; low to medium plasticity; low to moderate estimated permeability.	18.0	
						SP		GRAVELLY SAND (SP); brown; wet; 10% silt, 50% medium to coarse grained sand; 40% fine to coarse gravel; no plasticity; high estimated permeability.	19.0	
			B-2-1 9.5			SM		SILTY SAND (SM); brown; wet; 15% silt, 85% fine grained sand; no plasticity; high estimated permeability.	20.0	Monterey Sand #2/12
6.0					20	ML		SANDY SILT (ML); brown; wet; 15% clay, 60% silt, 25% fine grained sand; low to medium plasticity; moderate estimated permeability.	21.0	
						SM		SILTY SAND (SM); brown; wet; 15% silt, 85% fine grained sand; no plasticity; high estimated permeability.	22.0	
			B-2-2 3.5			SP		GRAVELLY SAND (SP); brown; wet; 10% silt, 50% medium to coarse grained sand; 40% fine to coarse gravel; no plasticity; high estimated permeability.	24.0	3/4"-diam., 0.010" Slotted Schedule 40 PVC
5.0					25	SM		SILTY SAND (SM); brown; wet; 15% silt, 85% fine grained sand; no plasticity; high estimated permeability.	25.0	
						SP		GRAVELLY SAND (SP); brown; wet; 10% silt, 50% medium to coarse grained sand; 40% fine to coarse gravel; no plasticity; high estimated permeability.	27.0	
			B-2-2 7.5			ML		CLAYEY SILT (ML); brown; damp; 15% clay, 75% silt, 10% fine grained sand; low to medium plasticity; low to moderate estimated permeability.	28.0	Bottom of Boring @ 28 ft
								Total depth = 28'. Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.		

WELL LOG (PID/VP/SOIL) H:\BRITIS~1\11133~1\BP-11133.GPJ DEFAULT.GDT 2/19/02

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	B-3
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	22-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	22-Oct-01 (0.58 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	20 to 30 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	21.0 ft (22-Oct-01)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	21.0 ft (22-Oct-01)

REMARKS Hand augered to 5 feet. Located on southern property boundary adjacent to apartment complex.

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
						ML		SANDY SILT (ML); brown; dry; 70% silt, 30% fine to coarse grained sand; no plasticity; high estimated permeabilty.	4.0	
6.0	7.0	<0.050	B-3-4 .5 B-3-V 1		5	ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine grained sand; no plasticity; low estimated permeability.		3/4" diam., Schedule 40 PVC
4.0	2.2		B-3-9 .5 B-3-V 2		10					Open Borehole
									12.0	
5.0		<0.050	B-3-1 3.5			ML		SANDY SILT (ML); brown; dry; stiff; 10% clay, 75% silt, 15% fine grained sand; low plasticity; low estimated permeability.		
					15				15.0	
	1.6		B-3-V 3			ML		SILT (ML); brown; dry; 10% clay, 80% silt, 10% fine grained sand; low plasticity; low estimated permeability.	17.0	
						ML		SANDY SILT (ML); brown; damp; 15% clay, 65% silt, 20% fine grained sand; low to medium plasticity; low estimated permeability.		
4.0			B-3-1 9.5		20				21.0	
						SM		SILTY SAND (SM); brown; wet; 25% silt, 75% fine grained sand; no plasticity; high estimated permeability.	23.0	Monterey Sand #2/12
3.0			B-3-2 3.5			ML		CLAYEY SILT (ML); brown; damp; stiff; 20% clay, 75% silt, 5% fine grained sand; medium plasticity; low to moderate estimated permeability.	25.0	
					25	SM		SILTY SAND (SM); brown; wet; 25% silt, 75% fine grained sand; no plasticity; high estimated permeability.	26.0	3/4"-diam., 0.010" Slotted Schedule 40 PVC
3.0			B-3-2 7.5			ML		CLAYEY SILT (ML); brown; wet; 20% clay, 70% silt, 5% fine grained sand, 5% fine gravel; medium plasticity; low to moderate estimated permeability. @27': 30% clay, 65% silt, 5% fine grained sand.		
					30				30.0	
								Total depth = 30'. Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.		Bottom of Boring @ 30 ft

WELL LOG (PID/VP/SOIL) H:\BRITIS~1\11133~1\BP-11133.GPJ DEFAULT.GDT 2/19/02

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	B-4
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	22-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	23-Oct-01 (0.66 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	18 to 28 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	21.0 ft (22-Oct-01)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	21.0 ft (23-Oct-01)
REMARKS	Hand augered to 5 feet. Located on eastern property boundary adjacent to single story residence.		

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
						ML		SANDY SILT (ML); brown; dry; 75% silt, 25% fine grained sand; no plasticity; moderate estimated permeability.	4.0	
4.0	1.3	<0.050	B-4-4 .5 B-4-V 1		5	ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine grained sand; no plasticity; low estimated permeability.		3/4" diam., Schedule 40 PVC
5.0	1.3		B-4-9 .5 B-4-V 2		10			@10': 10% clay, 80% silt; low plasticity.	12.0	Open Borehole
5.0		<0.050 <0.050	DUP B-4-1 3.5			ML		SANDY SILT (ML); brown; dry; medium stiff; 5% clay, 80% silt, 15% fine grained sand; no plasticity; low estimated permeability.		
	2.1		B-4-V 3		15				16.0	
						ML		SILT (ML); brown; dry; 5% clay, 85% silt, 10% fine grained sand; low plasticity; low estimated permeability.		
3.0		<0.050	B-4-1 9.5		20				20.0	
						ML		CLAYEY SILT (ML); brown; damp; 15% clay, 75% silt, 10% fine grained sand; low to medium plasticity; low to moderate estimated permeability.	21.0	Monterey Sand #2/12
1162			B-4-2 3.5			SM		SILTY SAND (SM); brown with grey; wet; 15% silt, 55% medium to coarse grained sand, 30% fine gravel; no plasticity; high estimated permeability. @23': 25% silt, 75% fine grained sand. @24': 45% medium to coarse grained sand, 30% fine gravel. @25': 25% silt, 75% fine grained sand.		3/4"-diam., 0.010" Slotted Schedule 40 PVC
1730					25				26.0	
						ML		CLAYEY SILT (ML); brown; damp; 15% clay, 75% silt, 10% fine grained sand; low to medium plasticity; low to moderate estimated permeability.	28.0	
			B-4-2 7.5					Total depth = 28'.		Bottom of Boring @ 28 ft

Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.

WELL LOG (PID/VP/SOIL) H:\BRITIS--1\111133--1\BP-11133.GPJ DEFAULT.GDT 2/19/02

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	B-5
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	23-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	23-Oct-01 (0.44 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	15 to 25 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	24.0 ft (23-Oct-01)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	18.0 ft (23-Oct-01)
REMARKS	Hand augered to 5 feet. Located on eastern property boundary adjacent to single story residence.		

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
								SANDY SILT (ML); dark brown; dry; 70% silt, 15% medium to coarse grained sand; 15% fine gravel; no plasticity; moderate estimated permeability.		
0	6.2	0.084	B-5-V 1 B-5-5 .5		5	ML		@5': brown; hard; 80% silt, 20% medium grained sand; low estimated permeability.		◄ 3/4" diam., Schedule 40 PVC ◄ Open Borehole
0.5	2.0		B-5-9 .5 B-5-V 2		10			@8': very stiff; 5% clay, 75% silt, 15% medium grained sand, 5% fine gravel; low plasticity. @10': 65% silt, 25% medium grained sand, 10% fine gravel; no plasticity.	12.0	
0.5			B-5-1 3.5			SM		SILTY SAND (SM); brown; dry; 40% silt, 60% fine to medium grained sand; no plasticity; moderate estimated pearmeability.	13.0	
	1.7		B-5-V 3		15	ML		SANDY SILT (ML); brown; dry; 5% clay, 55% silt, 40% fine grained sand; low plasticity; low estimated permeability.	16.0	
						ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine grained sand; low plasticity; low estimated permeability.	17.0	
						ML		CLAYEY SILT (ML); brown; damp; stiff; 20% clay, 70% silt, 10% fine grained sand; low plasticity; low estimated permeability.	19.0	◄ Monterey Sand #2/12
5.0		<0.050	B-5-1 9.5		20	ML		SANDY SILT (ML); brown; damp; 5% clay, 65% silt, 25% fine grained sand; low plasticity; low to moderate estimated permeability. @20': medium stiff; 15% clay, 55% silt, 30% fine grained sand; low to medium plasticity. @22': stiff; 65% silt, 20% fine grained sand.		◄ 3/4"-diam., 0.010" Slotted Schedule 40 PVC
3.5			B-5-2 3.5						23.0	
					25	SM		SILTY SAND (SM); brown; wet; 30% silt, 50% fine to coarse grained sand, 20% fine gravel; no plasticity; high estimated permeability. @24': 5% clay, 30% silt, 65% fine grained sand; low plasticity. @26': 20% silt, 60% fine to coarse grained sand, 20% fine gravel; no plasticity; moderate estimated permeability.	27.0	
2.5			B-5-2 7.5			ML		SANDY SILT (ML); brown; wet; medium stiff; 20% clay, 65% silt, 15% fine grained sand; moderate plasticity; low estimated permeability.	30.0	◄ Slough
					30			Total depth = 30'. Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.		Bottom of Boring @ 30 ft

WELL LOG (PID/VP/SOIL) H:\BRITIS~1\11133~1\BP-11133.GPJ DEFAULT.GDT 2/19/02

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	B-6
JOB/SITE NAME	BP-11133	**DRILLING STARTED**	23-Oct-01
LOCATION	2220 98th Avenue, Oakland, California	**DRILLING COMPLETED**	23-Oct-01
PROJECT NUMBER	852-1692	**WELL DEVELOPMENT DATE (YIELD)**	23-Oct-01 (0.38 gal purge volume)
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	20 to 30 ft bgs
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	23.0 ft (23-Oct-01) ▽
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	24.0 ft (23-Oct-01) ▼
REMARKS	Hand augered to 5 feet. Located on eastern property boundary adjacent to single story residence.		

PID (ppm)	Vapor THC (ppmv)	Soil TPHg (ppm)	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
						ML		GRAVELLY SILT (ML); dark brown; dry; 70% silt, 15% medium to coarse grained sand, 15% fine gravel; no plasticity; moderate estimated permeability.	5.0	
5	4.2	<0.250	B-6-V 1 B-6-5 .5		5	ML		SILT (ML); brown; dry; very stiff; 5% clay, 85% silt, 10% fine to medium grained sand; no plasticity; low estimated permeability.	9.0	◄ 3/4" diam., Schedule 40 PVC
3.7	2.3		B-6-9 .5 B-6-V 2		10	ML		SANDY SILT (ML); brown; dry; 5% clay, 80% silt, 15% fine to coarse grained sand; no plasticity; low to moderate estimated permeability. @10': brown mottled with white; 65% silt, 35% fine to medium grained sand; moderate estimated permeability. @12': 60% silt, 5% fine gravel.		◄ Open Borehole
			B-6-1 3.5						15.0	
	2.4		B-6-V 3		15	ML		SILT (ML); brown; dry; 5% clay, 85% silt, 10% fine grained sand; low plasticity; low estimated permeability.	18.0	
						ML		SANDY SILT (ML); brown; dry; 5% clay, 80% silt, 15% fine grained sand; low plasticity; low to moderate estimated permeabilty.	20.0	
		<0.050	B-6-1 9.5		20	ML		CLAYEY SILT (ML); brown; damp; 30% clay, 60% silt, 10% fine grained sand; moderate plasticity; low to moderate estimated permeability.	22.0	◄ Monterey Sand #2/12
			B-6-2 3.5			ML		SANDY SILT (ML); brown; wet; 20% clay, 50% silt, 30% fine grained sand; moderate plasticity; moderate estimated permeability. ▽ ▼		
					25				26.0	◄ 3/4"-diam., 0.010" Slotted Schedule 40 PVC
						SM		SILTY SAND (SM); brown with grey; wet; 10% clay, 25% silt; 65% fine grained sand; low plasticity; high estimated permeability.	27.0	
			B-6-2 7.5			ML		SILT (ML); brown; damp; 10% clay, 80% silt, 10% fine grained sand; low plasticity; low to moderate estimated permeability.	30.0	
					30			Total depth = 30'. Temporary well casing installed. Well purged and grab water sample collected using bailer. Casing removed and sealed with grout after sampling.		Bottom of Boring @ 30 ft

WELL LOG (PID/VP/SOIL) H:\BRITTIS--1\111133--1\BP-11133.GPJ DEFAULT.GDT 2/19/02

CAMBRIA

Appendix D

Analytical Reports

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

November 09, 2001

Mr. Khaled Rahman
Cambria
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Dear Mr. Rahman:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2001. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Cambria
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Attn: Mr. Khaled Rahman
Phone:

Solid results are reported on a wet weight basis

Lab Sample No: 851717130 Project Sample Number: 8524057-001 Date Collected: 10/22/01 09:35
Client Sample ID: B-1-4.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	490	ug/kg	50.	1.0	10/25/01 20:16	WRIC			
4-Bromofluorobenzene (S)	103	%		1.0	10/25/01 20:16	WRIC	460-00-4		
1,4-Difluorobenzene (S)	91	%		1.0	10/25/01 20:16	WRIC			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 20:16	WRIC	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 20:16	WRIC	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 20:16	WRIC	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 20:16	WRIC	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 20:16	WRIC	1634-04-4		
1,4-Difluorobenzene (S)	97	%		1.0	10/25/01 20:16	WRIC			
4-Bromofluorobenzene (S)	94	%		1.0	10/25/01 20:16	WRIC	460-00-4		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717131 Project Sample Number: 8524057-002 Date Collected: 10/22/01 10:00
Client Sample ID: B-1-13.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 19:16	LJAS			
4-Bromofluorobenzene (S)	105	%		1.0	10/25/01 19:16	LJAS	460-00-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 19:16	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 19:16	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 19:16	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 19:16	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 19:16	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 19:16	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 19:16	LJAS			
4-Bromofluorobenzene (S)	91	%		1.0	10/25/01 19:16	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717132 Project Sample Number: 8524057-003 Date Collected: 10/22/01 11:50
Client Sample ID: B-2-5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	1600	ug/kg	50.	1.0	10/25/01 20:35	LJAS			
4-Bromofluorobenzene (S)	126	%		1.0	10/25/01 20:35	LJAS	460-00-4		
1,4-Difluorobenzene (S)	113	%		1.0	10/25/01 20:35	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 20:35	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 20:35	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 20:35	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 20:35	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 20:35	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	98	%		1.0	10/25/01 20:35	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	10/25/01 20:35	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717133 Project Sample Number: 8524057-004 Date Collected: 10/22/01 12:05
Client Sample ID: B-2-13.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 21:35	LJAS			
4-Bromofluorobenzene (S)	117	%		1.0	10/25/01 21:35	LJAS	460-00-4		
1,4-Difluorobenzene (S)	106	%		1.0	10/25/01 21:35	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 21:35	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 21:35	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 21:35	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 21:35	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 21:35	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	97	%		1.0	10/25/01 21:35	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	10/25/01 21:35	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717134 Project Sample Number: 8524057-005 Date Collected: 10/22/01 13:55
Client Sample ID: B-3-4.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 21:55	LJAS			
4-Bromofluorobenzene (S)	122	%		1.0	10/25/01 21:55	LJAS	460-00-4		
1,4-Difluorobenzene (S)	109	%		1.0	10/25/01 21:55	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 21:55	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 21:55	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 21:55	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 21:55	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 21:55	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 21:55	LJAS			
4-Bromofluorobenzene (S)	92	%		1.0	10/25/01 21:55	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717135 Project Sample Number: 8524057-006 Date Collected: 10/22/01 14:10
Client Sample ID: B-3-13.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 22:14	LJAS			
4-Bromofluorobenzene (S)	119	%		1.0	10/25/01 22:14	LJAS	460-00-4		
1,4-Difluorobenzene (S)	107	%		1.0	10/25/01 22:14	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 22:14	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 22:14	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 22:14	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 22:14	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 22:14	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 22:14	LJAS			
4-Bromofluorobenzene (S)	96	%		1.0	10/25/01 22:14	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717136 Project Sample Number: 8524057-007 Date Collected: 10/22/01 15:25
Client Sample ID: B-4-4.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 22:34	LJAS			
4-Bromofluorobenzene (S)	108	%		1.0	10/25/01 22:34	LJAS	460-00-4		
1,4-Difluorobenzene (S)	102	%		1.0	10/25/01 22:34	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 22:34	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 22:34	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 22:34	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 22:34	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 22:34	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 22:34	LJAS			
4-Bromofluorobenzene (S)	90	%		1.0	10/25/01 22:34	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717137 Project Sample Number: 8524057-008 Date Collected: 10/22/01 15:45
Client Sample ID: B-4-13.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 22:54	LJAS			
4-Bromofluorobenzene (S)	131	%		1.0	10/25/01 22:54	LJAS	460-00-4		
1,4-Difluorobenzene (S)	117	%		1.0	10/25/01 22:54	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 22:54	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 22:54	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 22:54	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 22:54	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 22:54	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	97	%		1.0	10/25/01 22:54	LJAS			
4-Bromofluorobenzene (S)	97	%		1.0	10/25/01 22:54	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717138 Project Sample Number: 8524057-009 Date Collected: 10/22/01 16:00
Client Sample ID: B-4-19.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 23:13	LJAS			
4-Bromofluorobenzene (S)	120	%		1.0	10/25/01 23:13	LJAS	460-00-4		
1,4-Difluorobenzene (S)	110	%		1.0	10/25/01 23:13	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 23:13	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 23:13	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 23:13	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 23:13	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 23:13	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	95	%		1.0	10/25/01 23:13	LJAS			
4-Bromofluorobenzene (S)	92	%		1.0	10/25/01 23:13	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717139 Project Sample Number: 8524057-010 Date Collected: 10/22/01 00:00
Client Sample ID: DUP Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 23:33 LJAS			
4-Bromofluorobenzene (S)	137	%		1.0	10/25/01 23:33 LJAS	460-00-4	1	
1,4-Difluorobenzene (S)	122	%		1.0	10/25/01 23:33 LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	5.0	1.0	10/25/01 23:33 LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 23:33 LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 23:33 LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 23:33 LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 23:33 LJAS	1634-04-4		
1,4-Difluorobenzene (S)	97	%		1.0	10/25/01 23:33 LJAS			
4-Bromofluorobenzene (S)	99	%		1.0	10/25/01 23:33 LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717140 Project Sample Number: 8524057-011 Date Collected: 10/23/01 09:00
Client Sample ID: B-5-5.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	84.	ug/kg	50.	1.0	10/25/01 23:53	LJAS			
4-Bromofluorobenzene (S)	140	%		1.0	10/25/01 23:53	LJAS	460-00-4	1	
1,4-Difluorobenzene (S)	116	%		1.0	10/25/01 23:53	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/25/01 23:53	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/25/01 23:53	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/25/01 23:53	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/25/01 23:53	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/25/01 23:53	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/25/01 23:53	LJAS			
4-Bromofluorobenzene (S)	101	%		1.0	10/25/01 23:53	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717141 Project Sample Number: 8524057-012 Date Collected: 10/23/01 09:45
Client Sample ID: B-5-19.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/26/01 00:13	LJAS			
4-Bromofluorobenzene (S)	135	%		1.0	10/26/01 00:13	LJAS	460-00-4		
1,4-Difluorobenzene (S)	117	%		1.0	10/26/01 00:13	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	10/26/01 00:13	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/26/01 00:13	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/26/01 00:13	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/26/01 00:13	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/26/01 00:13	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	96	%		1.0	10/26/01 00:13	LJAS			
4-Bromofluorobenzene (S)	97	%		1.0	10/26/01 00:13	LJAS	460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717142 Project Sample Number: 8524057-013 Date Collected: 10/23/01 11:15
Client Sample ID: B-6-5.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	ug/kg	250	5.0	11/04/01 13:49	LJAS		
4-Bromofluorobenzene (S)	97	%		1.0	11/04/01 13:49	LJAS	460-00-4	
1,4-Difluorobenzene (S)	96	%		1.0	11/04/01 13:49	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	5.0	1.0	10/26/01 00:32	LJAS	71-43-2	
Ethylbenzene	ND	ug/kg	5.0	1.0	10/26/01 00:32	LJAS	100-41-4	
Toluene	ND	ug/kg	5.0	1.0	10/26/01 00:32	LJAS	108-88-3	
Xylene (Total)	13.	ug/kg	5.0	1.0	10/26/01 00:32	LJAS	1330-20-7	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/26/01 00:32	LJAS	1634-04-4	
1,4-Difluorobenzene (S)	99	%		1.0	10/26/01 00:32	LJAS		
4-Bromofluorobenzene (S)	108	%		1.0	10/26/01 00:32	LJAS	460-00-4	

Comments : The sample was diluted to reduce matrix interference, resulting in elevated reporting limits.

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717143 Project Sample Number: 8524057-014 Date Collected: 10/23/01 12:05
Client Sample ID: B-6-19.5 Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/26/01 01:32	LJAS		
4-Bromofluorobenzene (S)	149	%		1.0	10/26/01 01:32	LJAS 460-00-4	1	
1,4-Difluorobenzene (S)	127	%		1.0	10/26/01 01:32	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	5.0	1.0	10/31/01 01:52	LJAS 71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/31/01 01:52	LJAS 100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/31/01 01:52	LJAS 108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/31/01 01:52	LJAS 1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/31/01 01:52	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	97	%		1.0	10/31/01 01:52	LJAS		
4-Bromofluorobenzene (S)	78	%		1.0	10/31/01 01:52	LJAS 460-00-4		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717144 Project Sample Number: 8524057-015 Date Collected: 10/23/01 13:25
Client Sample ID: COMPOSITE Matrix: Soil Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
Metals								
SW6010 Metals, Routine Soil	Method: EPA 6010							
Lead	ND	mg/kg	4.72	0.9	10/30/01	PBAR 7439-92-1		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	ug/kg	50.	1.0	10/25/01 01:51	WRIC		
4-Bromofluorobenzene (S)	139	%		1.0	10/25/01 01:51	WRIC 460-00-4		
1,4-Difluorobenzene (S)	122	%		1.0	10/25/01 01:51	WRIC		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	5.0	1.0	10/31/01 02:12	LJAS 71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	10/31/01 02:12	LJAS 100-41-4		
Toluene	ND	ug/kg	5.0	1.0	10/31/01 02:12	LJAS 108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	10/31/01 02:12	LJAS 1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	10/31/01 02:12	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	99	%		1.0	10/31/01 02:12	LJAS		
4-Bromofluorobenzene (S)	76	%		1.0	10/31/01 02:12	LJAS 460-00-4		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717145 Project Sample Number: 8524057-016 Date Collected: 10/22/01 11:15
Client Sample ID: B-1-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
GC Volatiles								
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	ug/l	50.	1.0	10/25/01 11:40	WRIC		
1,4-Difluorobenzene (S)	126	%		1.0	10/25/01 11:40	WRIC		
4-Bromofluorobenzene (S)	112	%		1.0	10/25/01 11:40	WRIC 460-00-4		
GC/MS Volatiles								
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260							
Benzene	ND	ug/l	2.00	1.0	10/30/01 15:43	DBEN 71-43-2		
Ethylbenzene	ND	ug/l	2.00	1.0	10/30/01 15:43	DBEN 100-41-4		
Toluene	2.29	ug/l	2.00	1.0	10/30/01 15:43	DBEN 108-88-3		
Xylene (Total)	ND	ug/l	2.00	1.0	10/30/01 15:43	DBEN 1330-20-7		
Methyl-tert-butyl ether	71.6	ug/l	2.00	1.0	10/30/01 15:43	DBEN 1634-04-4		
Toluene-d8 (S)	105	%		1.0	10/30/01 15:43	DBEN 2037-26-5		
4-Bromofluorobenzene (S)	102	%		1.0	10/30/01 15:43	DBEN 460-00-4		
1,2-Dichloroethane-d4 (S)	117	%		1.0	10/30/01 15:43	DBEN 17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717146 Project Sample Number: 8524057-017 Date Collected: 10/22/01 13:30
Client Sample ID: B-2-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	15000	ug/l	1200	25.0	10/26/01 12:56	WRIC			
1,4-Difluorobenzene (S)	127	%		1.0	10/26/01 12:56	WRIC			
4-Bromofluorobenzene (S)	115	%		1.0	10/26/01 12:56	WRIC	460-00-4		
GC/MS Volatiles									
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260								
Benzene	3610	ug/l	200.	100	10/30/01 16:17	DBEN	71-43-2		
Ethylbenzene	383.	ug/l	20.0	10.0	10/30/01 16:17	DBEN	100-41-4		
Toluene	1120	ug/l	20.0	10.0	10/30/01 16:17	DBEN	108-88-3		
Xylene (Total)	1330	ug/l	20.0	10.0	10/30/01 16:17	DBEN	1330-20-7		
Methyl-tert-butyl ether	1500	ug/l	20.0	10.0	10/30/01 16:17	DBEN	1634-04-4		
Toluene-d8 (S)	104	%		1.0	10/30/01 16:17	DBEN	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	10/30/01 16:17	DBEN	460-00-4		
1,2-Dichloroethane-d4 (S)	112	%		1.0	10/30/01 16:17	DBEN	17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717147 Project Sample Number: 8524057-018 Date Collected: 10/22/01 16:10
Client Sample ID: B-3-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Req Limit
GC Volatiles								
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	4600	ug/l	1200	25.0	10/26/01 13:15	WRIC		
1,4-Difluorobenzene (S)	124	%		1.0	10/26/01 13:15	WRIC		
4-Bromofluorobenzene (S)	113	%		1.0	10/26/01 13:15	WRIC 460-00-4		
GC/MS Volatiles								
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260							
Benzene	1410	ug/l	20.0	10.0	10/30/01 16:51	DBEN 71-43-2		
Ethylbenzene	1010	ug/l	20.0	10.0	10/30/01 16:51	DBEN 100-41-4		
Toluene	171.	ug/l	2.00	1.0	10/30/01 16:51	DBEN 108-88-3		
Xylene (Total)	1290	ug/l	20.0	10.0	10/30/01 16:51	DBEN 1330-20-7		
Methyl-tert-butyl ether	1420	ug/l	20.0	10.0	10/30/01 16:51	DBEN 1634-04-4		
Toluene-d8 (S)	104	%		1.0	10/30/01 16:51	DBEN 2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	10/30/01 16:51	DBEN 460-00-4		
1,2-Dichloroethane-d4 (S)	108	%		1.0	10/30/01 16:51	DBEN 17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717148 Project Sample Number: 8524057-019 Date Collected: 10/23/01 08:00
Client Sample ID: B-4-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
GC Volatiles								
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	71000	ug/l	5000	100	10/26/01 20:24	WRIC		
1,4-Difluorobenzene (S)	125	%		1.0	10/26/01 20:24	WRIC		
4-Bromofluorobenzene (S)	118	%		1.0	10/26/01 20:24	WRIC 460-00-4		
GC/MS Volatiles								
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260							
Benzene	7300	ug/l	200.	100	10/30/01 17:25	DBEN 71-43-2		
Ethylbenzene	7060	ug/l	200.	100	10/30/01 17:25	DBEN 100-41-4		
Toluene	10800	ug/l	200.	100	10/30/01 17:25	DBEN 108-88-3		
Xylene (Total)	36600	ug/l	200.	100	10/30/01 17:25	DBEN 1330-20-7		
Methyl-tert-butyl ether	177.	ug/l	2.00	1.0	10/30/01 17:25	DBEN 1634-04-4		
Toluene-d8 (S)	103	%		1.0	10/30/01 17:25	DBEN 2037-26-5		
4-Bromofluorobenzene (S)	106	%		1.0	10/30/01 17:25	DBEN 460-00-4		
1,2-Dichloroethane-d4 (S)	97	%		1.0	10/30/01 17:25	DBEN 17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717149 Project Sample Number: 8524057-020 Date Collected: 10/23/01 13:05
Client Sample ID: B-5-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
GC Volatiles								
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	100000	ug/l	12000	250	10/29/01 13:02	WRIC		
1,4-Difluorobenzene (S)	124	%		1.0	10/29/01 13:02	WRIC		
4-Bromofluorobenzene (S)	111	%		1.0	10/29/01 13:02	WRIC 460-00-4		
GC/MS Volatiles								
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260							
Benzene	16800	ug/l	200.	100	10/30/01 19:07	DBEN 71-43-2		
Ethylbenzene	6720	ug/l	200.	100	10/30/01 19:07	DBEN 100-41-4		
Toluene	42100	ug/l	2000	1000	10/30/01 19:07	DBEN 108-88-3		
Xylene (Total)	33300	ug/l	200.	100	10/30/01 19:07	DBEN 1330-20-7		
Methyl-tert-butyl ether	244.	ug/l	200.	100	10/30/01 19:07	DBEN 1634-04-4		
Toluene-d8 (S)	102	%		1.0	10/30/01 19:07	DBEN 2037-26-5		
4-Bromofluorobenzene (S)	108	%		1.0	10/30/01 19:07	DBEN 460-00-4		
1,2-Dichloroethane-d4 (S)	92	%		1.0	10/30/01 19:07	DBEN 17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717150 Project Sample Number: 8524057-021 Date Collected: 10/23/01 13:40
Client Sample ID: B-6-W1 Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
GC Volatiles								
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	110000	ug/l	5000	100	10/29/01 12:23	WRIC		
1,4-Difluorobenzene (S)	128	%		1.0	10/29/01 12:23	WRIC		
4-Bromofluorobenzene (S)	115	%		1.0	10/29/01 12:23	WRIC 460-00-4		
GC/MS Volatiles								
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260							
Benzene	30600	ug/l	2000	1000	10/30/01 19:41	DBEN 71-43-2		
Ethylbenzene	5410	ug/l	200.	100	10/30/01 19:41	DBEN 100-41-4		
Toluene	36800	ug/l	2000	1000	10/30/01 19:41	DBEN 108-88-3		
Xylene (Total)	26900	ug/l	200.	100	10/30/01 19:41	DBEN 1330-20-7		
Methyl-tert-butyl ether	1010	ug/l	200.	100	10/30/01 19:41	DBEN 1634-04-4		
Toluene-d8 (S)	102	%		1.0	10/30/01 19:41	DBEN 2037-26-5		
4-Bromofluorobenzene (S)	107	%		1.0	10/30/01 19:41	DBEN 460-00-4		
1,2-Dichloroethane-d4 (S)	86	%		1.0	10/30/01 19:41	DBEN 17060-07-0		

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

Lab Sample No: 851717151 Project Sample Number: 8524057-022 Date Collected: 10/23/01 00:00
Client Sample ID: DUP Matrix: Water Date Received: 10/24/01 08:35

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limi
GC Volatiles									
GAS by Mod 8015, Water	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	52000	ug/l	5000	100	10/29/01	12:42	WRIC		
1,4-Difluorobenzene (S)	125	%		1.0	10/29/01	12:42	WRIC		
4-Bromofluorobenzene (S)	115	%		1.0	10/29/01	12:42	WRIC	460-00-4	
GC/MS Volatiles									
SW8260 Nonroutine VOCs, Water	Prep/Method: See analytical meth / EPA 8260								
Benzene	7600	ug/l	200.	100	10/30/01	20:14	DBEN	71-43-2	
Ethylbenzene	4230	ug/l	200.	100	10/30/01	20:14	DBEN	100-41-4	
Toluene	9650	ug/l	200.	100	10/30/01	20:14	DBEN	108-88-3	
Xylene (Total)	21600	ug/l	200.	100	10/30/01	20:14	DBEN	1330-20-7	
Methyl-tert-butyl ether	ND	ug/l	200.	100	10/30/01	20:14	DBEN	1634-04-4	
Toluene-d8 (S)	102	%		1.0	10/30/01	20:14	DBEN	2037-26-5	
4-Bromofluorobenzene (S)	108	%		1.0	10/30/01	20:14	DBEN	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%		1.0	10/30/01	20:14	DBEN	17060-07-0	

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Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

PARAMETER FOOTNOTES

ND Not Detected
NC Not Calculable
(S) Surrogate
[1] Surrogate recovery outside of control limits. The data was accepted based upon valid recovery of remaining surrogate.

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59610 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS by Mod 8015, Water
Associated Lab Samples: 851717145

METHOD BLANK: 851717181
Associated Lab Samples: 851717145

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/l	ND	50.	
1,4-Difluorobenzene (S)	%	125		
4-Bromofluorobenzene (S)	%	113		

LABORATORY CONTROL SAMPLE: 851717182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Gasoline Range Organics	ug/l	1000	852.2	85	
1,4-Difluorobenzene (S)				90	
4-Bromofluorobenzene (S)				114	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717183 851717184

Parameter	Units	851717046 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/l	9.612	1000.00	782.2	796.0	77	79	2	
1,4-Difluorobenzene (S)						115	115		
4-Bromofluorobenzene (S)						124	125		

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59642 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851717130 851717131 851717132 851717133 851717134 851717135 851717136 851717137 851717138 851717139 851717140 851717141 851717143 851717144

METHOD BLANK: 851717322
Associated Lab Samples: 851717130 851717131 851717132 851717133 851717134 851717135 851717136 851717137 851717138 851717139 851717140 851717141 851717143 851717144

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	96		
1,4-Difluorobenzene (S)	%	82		

LABORATORY CONTROL SAMPLE: 851717323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Gasoline Range Organics	ug/kg	1000	876.8	88	
4-Bromofluorobenzene (S)				99	
1,4-Difluorobenzene (S)				124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717388 851717389

Parameter	Units	851717060 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	23.86	900.00	618.7	592.9	66	63	4	
4-Bromofluorobenzene (S)						85	94		
1,4-Difluorobenzene (S)						111	109		

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59643 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851717130 851717131 851717132 851717133 851717134 851717135 851717136 851717137 851717138 851717139 851717140 851717141 851717142

METHOD BLANK: 851717326
Associated Lab Samples: 851717130 851717131 851717132 851717133 851717134 851717135 851717136 851717137 851717138 851717139 851717140 851717141 851717142

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	93		
4-Bromofluorobenzene (S)	%	83		

LABORATORY CONTROL SAMPLE: 851717327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/kg	50	44.19	88	
Ethylbenzene	ug/kg	50	50.31	101	
Toluene	ug/kg	50	46.91	94	
Xylene (Total)	ug/kg	100	101.9	102	
Methyl-tert-butyl ether	ug/kg	50	41.42	83	
1,4-Difluorobenzene (S)				102	
4-Bromofluorobenzene (S)				100	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717390 851717391

Parameter	Units	851717130 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/kg	0.1177	50.00	39.25	38.30	78	76	2	

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717390 851717391

Parameter	Units	851717130 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Ethylbenzene	ug/kg	0.1545	50.00	42.69	41.70	85	83	2	
Toluene	ug/kg	0.6764	50.00	40.66	39.52	80	78	3	
Xylene (Total)	ug/kg	1.742	150.00	85.15	83.23	56	54	2	
Methyl-tert-butyl ether	ug/kg	0.4644	50.00	39.29	39.04	78	77	1	
1,4-Difluorobenzene (S)						97	96		
4-Bromofluorobenzene (S)						92	91		

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59693 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS by Mod 8015, Water
Associated Lab Samples: 851717146 851717147 851717148 851717149 851717150 851717151

METHOD BLANK: 851717466
Associated Lab Samples: 851717146 851717147 851717148 851717149 851717150 851717151

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/l	ND	50.	
1,4-Difluorobenzene (S)	%	122		
4-Bromofluorobenzene (S)	%	113		

LABORATORY CONTROL SAMPLE: 851717467

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Gasoline Range Organics	ug/l	1000	1039	104	
1,4-Difluorobenzene (S)				118	
4-Bromofluorobenzene (S)				134	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717468 851717469

Parameter	Units	851717242 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/l	0	1000.00	1058	1149	106	115	8	
1,4-Difluorobenzene (S)						116	120		
4-Bromofluorobenzene (S)						120	120		

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www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59855 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851717143 851717144

METHOD BLANK: 851718045
Associated Lab Samples: 851717143 851717144

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	100		
4-Bromofluorobenzene (S)	%	73		

LABORATORY CONTROL SAMPLE: 851718046

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/kg	50	40.81	82	
Ethylbenzene	ug/kg	50	47.50	95	
Toluene	ug/kg	50	42.95	86	
Xylene (Total)	ug/kg	100	99.66	100	
Methyl-tert-butyl ether	ug/kg	50	38.35	77	
1,4-Difluorobenzene (S)				98	
4-Bromofluorobenzene (S)				97	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851718047 851718048

Parameter	Units	851717143 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/kg	0.4133	50.00	52.06	52.00	103	103	0	
Ethylbenzene	ug/kg	0.8607	50.00	58.97	58.77	116	116	0	
Toluene	ug/kg	0.8398	50.00	54.72	54.21	108	107	1	
Xylene (Total)	ug/kg	2.477	100.00	123.7	123.2	121	121	0	

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Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851718047 851718048

Parameter	Units	851717143 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Methyl-tert-butyl ether	ug/kg	0.5154	50.00	47.66	47.03	94	93	1	
1,4-Difluorobenzene (S)						98	99		
4-Bromofluorobenzene (S)						94	96		

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Houston, TX 77058
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Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59879 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851717142

METHOD BLANK: 851718142
Associated Lab Samples: 851717142

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	93		
1,4-Difluorobenzene (S)	%	94		

LABORATORY CONTROL SAMPLE: 851718143

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Gasoline Range Organics	ug/kg	1000	921.2	92	
4-Bromofluorobenzene (S)				113	
1,4-Difluorobenzene (S)				106	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851718144 851718145

Parameter	Units	851717376 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	33.89	5000.00	4158	4072	82	81	2	
4-Bromofluorobenzene (S)						103	109		
1,4-Difluorobenzene (S)						102	101		

Comments : The sample was diluted to reduce matrix interference, resulting in elevated reporting limits.

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QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59895 Analysis Method: EPA 8260
QC Batch Method: See analytical meth Analysis Description: SW8260 Nonroutine VOCs, Water
Associated Lab Samples: 851717145 851717146 851717147 851717148 851717149 851717150 851717151

METHOD BLANK: 851718231
Associated Lab Samples: 851717145 851717146 851717147 851717148 851717149 851717150 851717151

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.00	
Ethylbenzene	ug/l	ND	2.00	
Toluene	ug/l	ND	2.00	
Xylene (Total)	ug/l	ND	2.00	
Methyl-tert-butyl ether	ug/l	ND	2.00	
Toluene-d8 (S)	%	104		
4-Bromofluorobenzene (S)	%	101		
1,2-Dichloroethane-d4 (S)	%	110		

LABORATORY CONTROL SAMPLE: 851718232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/l	50	53.09	106	
Ethylbenzene	ug/l	50	55.59	111	
Toluene	ug/l	50	51.27	103	
Xylene (Total)	ug/l	150	151.9	101	
Toluene-d8 (S)				104	
4-Bromofluorobenzene (S)				103	
1,2-Dichloroethane-d4 (S)				111	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851718233 851718234

Parameter	Units	851717145 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0	50.00	50.37	49.72	101	99	1	
Ethylbenzene	ug/l	0	50.00	56.19	52.93	112	106	6	

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Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851718233 851718234

Parameter	Units	851717145 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Toluene	ug/l	2.287	50.00	60.67	56.93	117	109	6	
Xylene (Total)	ug/l	0	150.00	169.5	162.6	113	108	4	
Toluene-d8 (S)						102	103		
4-Bromofluorobenzene (S)						108	108		
1,2-Dichloroethane-d4 (S)						85	88		

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Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QC Batch: 59747
QC Batch Method:
Associated Lab Samples: 851717144

Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil

METHOD BLANK: 851717679
Associated Lab Samples: 851717144

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	5.00	

LABORATORY CONTROL SAMPLE: 851717682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	12.25	11.72	96	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717680 851717681

Parameter	Units	851717062 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	4.798	12.50	11.66	10.56	55	48	10	1

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Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8524057
Client Project ID: BP Site#11133/852-1692-003

QUALITY CONTROL DATA PARAMETER FOOTNOTES

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

LCS(D)Laboratory Control Sample (Duplicate)
MS(D)Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not Detected
NC Not Calculable
RPD Relative Percent Difference
(S) Surrogate
[1] Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

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Page: 1 of 4

To Be Completed by Pace Analytical and Client

Section A — Required Client Information:

Company	Cambria Environmental
Address	6262 Hollis St Emeryville, CA 94608
Phone	510-450-1985
Fax	510-450-8295

Section B — Required Client Information:

Report To:	Khaled Rahman
Invoice To:	BP Oil Company - Scott Hooton
P.O.	J822431
Project Name:	BP - 11133
Project Number:	852-1692-003

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

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

Section C

Quote Reference:	
Project Manager:	
Project #:	85240S7
Profile #:	1990 / 7

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: 8015 TPHg/BTEX/MTBE; 8021 HOLD

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (hh:mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	8015 TPHg/BTEX/MTBE	8021	HOLD	Remarks / Lab ID
1	B-1-4-5	SL	10/22/01	935a	1	X						X			85[illegible]7B0
2	B-1-9-5			940a	1	X								X	85171713852
3	B-1-13-5			1000a	1	X						X			31
4	B-1-19-5			1025a	1	X								X	@33+53
5	B-1-25-5			1040a	1	X								X	@32 54
6	B-2-5			1150a	1	X						X			32
7	B-2-9-5			1200p	1	X								X	@33 55
8	B-2-13-5			1205p	1	X						X			33
9	B-2-19-5			1230p	1	X								X	@34 56
10	B-2-25-5			1235p	1	X								X	@30 57
11	B-2-25-5			1238p	1	X								X	@36 58
12	B-3-4-5			155p	1	X						X			34

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:	3.6			Sara Dwight / Cambria	10/23/01	430	[illegible]		
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:
EDF Requested

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sara Dwight

SIGNATURE of SAMPLER: Sara Dwight

DATE Signed: (MM / DD / YY) 10-23-01

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 4

Required Client Information: **Section A**

Company: Cambria Environmental
Address: 6262 Hollis St
Emeryville, CA 94608
Phone: 510-450-1985 Fax: 510-450-8295

Required Client Information: **Section B**

Report To: Khaled Rahman
Invoice To: BP Oil Company - Scott Hooton
P.O.: J822431
Project Name: BP-11133
Project Number: 852-1692-003

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

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

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

Quote Reference:
Project Manager:
Project #:
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 (hh: mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Requested Analysis: 8015M TPHg / 8021 BTEX / MTBE	Hold	Remarks / Lab ID
1	B-3-9.5	SL	10/22/01	200p	1	X							X	85171 59
2	B-3-14.5			210p	1	X						X		35
3	B-3-19.5			230p	1	X							X	60
4	B-3-24.5			235p	1	X							X	61
5	B-3-29.5			245p	1	X							X	62
6	B-4-4.5			325p	1	X						X		36
7	B-4-9.5			330p	1	X							X	63
8	B-4-14.5			345p	1	X						X		37
9	B-4-19.5			400p	1	X						X		39
10	B-4-24.5			415p	1	X							X	64
11	B-4-29.5			435p	1	X							X	65
12	D-W-P		—	—	1	X						X		39

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:	3.6			Sara Dwight / Cambria	10/23/01	430	[illegible] / Pace	10/24/01	
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:
EDF Requested

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Sara Dwight
SIGNATURE of SAMPLER: Sara Dwight
DATE Signed: (MM / DD / YY) 10-23-01

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ORIGINAL

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of 4

Required Client Information: **Section A**

Company	Cambria Environmental
Address	6262 Hollis St Emeryville, CA 94608
Phone	510-450-1985
Fax	510-450-8285

Required Client Information: **Section B**

Report To:	Khaled Rahman
Invoice To:	BP Oil Co. - Scott Hooten
P.O.	J822431
Project Name:	BP 11133
Project Number:	852-1692-003

Client Information (Check quote/contract):

Requested Due Date: *TAT: Standard

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calendar days.

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

Quote Reference:

Project Manager:

Project #:

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: 8015M TPH-g/BTEX/MTBE; 8021 BTEX/MTBE; 8260B 5 Oxygenates/BTEX/MTBE; Total Lead 6010; HOLD

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (hh:mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	8015M	8021	8260B	Total Lead 6010	HOLD	Remarks / Lab ID
1	B-1-W	WT	10/22/01	1115a	4				X			X					85717145
2	B-2-W			130p	4				X			X					46
3	B-3-W			410p	4				X			X					47
4	B-4-W		10/23/01	800a	4				X			X					48
5	B-5-W			105p	4				X			X					49
6	B-6-W			140p	4				X			X					50
7	COMPOSITE	SL		125p	2	X					X				X		Composite samples for analysis 44
8	B-5-5.5			900a	1	X					X						40
9	B-5-9.5			905a	1	X										X	6
10	B-5-13.5			925a	1	X										X	67
11	B-5-15.5			945a	1	X					X						41
12	B-5-25.5			955a	1	X										X	68

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:	3.6			Sara Dwight / Cambria	10/23/01	430	Pathos/Pac	~~10/23/01~~ 10/24/01	
Received on ICE:	(Y) / N								
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:

EDF requested Duplicate ID - 85717151

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sara Dwight

SIGNATURE of SAMPLER: Sara Dwight

DATE Signed: (MM / DD / YY) 10-23-01

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Page: 4 of 4

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:
Address: 6262 Hollis St, Emeryville, CA 94608	Invoice To: BP Oil Co. - Scott Hooton	Project Manager:
	P.O.: J822431	Project #:
	Project Name: BP-11133	Profile #:
Phone: 510-450-1985 Fax: 510-450-8295	Project Number: 852-1692-003	

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

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calendar 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: 8015M TPHg/BTEX/MTBE 8021 HOLD

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED hh:mm a/p	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	8015M	8021	HOLD	Remarks / Lab ID
1	B-5-2.5	SL	10/23/01	1010a	1	X						-		X	857171 69
2	B-6-5.5			1115a	1	X						X		X	42
3	B-6-9.5			1130a	1	X								X	70
4	B-6-13.5			1140a	1	X								X	71
5	B-6-19.5			1205p	1	X						X			43
6	B-6-23.5			1215p	1	X								X	72
7	B-6-27.5			1230p	1	X								X	73
8															
9															
10															
11															
12															

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:	3.6			Sara Dwight / Cambria	10/23/01	430	C. Pothes / Pace	10/23/01	
Received on ICE:	(Y) / N						@	10/24/01	
Sealed Cooler:	(Y) / N								
Samples Intact:	(Y) / N								

Additional Comments:
EDF requested

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sara Dwight

SIGNATURE of SAMPLER: Sara Dwight

DATE Signed: (MM / DD / YY) 10-23-01

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ORIGINAL

@AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0110471A

Work Order Summary

CLIENT:	Ms. Sara Dwight Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	**BILL TO:**	Ms. Sara Dwight Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608
PHONE:	510-450-8294	**P.O. #**	J822431
FAX:	510-450-8295	**PROJECT #**	852-1692-003 BP-11133
DATE RECEIVED:	10/25/01	**CONTACT:**	Lisa Argento
DATE COMPLETED:	11/12/01		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	B-1-V1	TO-3	0.2psi
02A	B-1-V2	TO-3	7.5 "Hg
03A	B-1-V3	TO-3	5.5 "Hg
04A	B-2-V1	TO-3	7.0 "Hg
05A	B-2-V2	TO-3	7.0 "Hg
06A	B-2-V3	TO-3	6.0 "Hg
07A	B-3-V1	TO-3	6.0 "Hg
08A	B-3-V2	TO-3	13.0 "Hg
09A	B-3-V3	TO-3	7.5 "Hg
10A	B-4-V1	TO-3	9.0 "Hg
11A	B-4-V2	TO-3	7.0 "Hg
12A	B-4-V3	TO-3	6.0 "Hg
13A	B-5-V1	TO-3	15.0 "Hg
14A	B-5-V2	TO-3	5.0 "Hg
15A	B-5-V3	TO-3	15.5 "Hg
16A	B-6-V1	TO-3	13.0 "Hg
17A	B-6-V2	TO-3	5.0 "Hg
18A	B-6-V3	TO-3	1.0 "Hg
19A	Lab Blank	TO-3	NA
19B	Lab Blank	TO-3	NA
20A	LCS	TO-3	NA
20B	LCS	TO-3	NA

CERTIFIED BY: Linda J. Fruman DATE: 11/12/01

Laboratory Director

Certfication numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217, AZ ELAP - AZ0567, LA - AI 30763
Name of Accrediting Agency: NELAP/State of New York Department of Health, Scope of Accreditation : Non Potable Water
Accreditation number :11291, Effective date: 6/7/01, Expiration date: 4/1/02

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
TO-3
Cambria Environmental Technology
Workorder# 0110471A

Eighteen 1 Liter Summa Canister samples were received on October 25, 2001. The laboratory performed analysis via modified EPA Method TO-3 for Benzene, Toluene, Ethylbenzene, Xylenes and Total Petroleum Hydrocarbons (TPH). BTEX was analyzed via GC/PID and TPH via GC/FID. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. See the data sheets for the reporting limits for each compound.

Receiving Notes

Sample B-5-V3 was received with significant vacuum remaining in the canister. The client was contacted and analysis proceeded. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

AIR TOXICS LTD.

SAMPLE NAME: B-1-V1

ID#: 0110471A-01A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110734	Date of Collection:	10/22/01
Dil. Factor:	1.99	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0020	0.0065	0.0073	0.024
Toluene	0.0020	0.0076	0.0062	0.024
Ethyl Benzene	0.0020	0.0088	Not Detected	Not Detected
Total Xylenes	0.0020	0.0088	0.0049	0.022
Methyl tert-Butyl Ether	0.0020	0.0073	0.0038	0.014
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.050	0.21	6.6	28
C2-C4 Hydrocarbons ref. to Gasoline	0.050	0.21	0.31	1.3

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	96	75-125
Fluorobenzene (FID)	98	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-1-V2

ID#: 0110471A-02A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110735	**Date of Collection:**	10/22/01
Dil. Factor:	2.69	**Date of Analysis:**	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0027	0.0087	Not Detected	Not Detected
Toluene	0.0027	0.010	0.0033	0.013
Ethyl Benzene	0.0027	0.012	Not Detected	Not Detected
Total Xylenes	0.0027	0.012	0.0031	0.014
Methyl tert-Butyl Ether	0.0027	0.0098	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.067	0.28	9.9	41
C2-C4 Hydrocarbons ref. to Gasoline	0.067	0.28	0.16	0.68

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	98	75-125
Fluorobenzene (FID)	101	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-1-V3

ID#: 011047IA-03A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110736	Date of Collection:	10/22/01
Dil. Factor:	2.47	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0025	0.0080	0.0033	0.011
Toluene	0.0025	0.0095	0.0096	0.037
Ethyl Benzene	0.0025	0.011	Not Detected	Not Detected
Total Xylenes	0.0025	0.011	0.0067	0.030
Methyl tert-Butyl Ether	0.0025	0.0090	0.0050	0.018
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.062	0.26	1.8	7.4
C2-C4 Hydrocarbons ref. to Gasoline	0.062	0.26	0.12	0.50

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	95	75-125
Fluorobenzene (FID)	100	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-2-V1

ID#: 0110471A-04A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110737	Date of Collection:	10/22/01
Dil. Factor:	2.64	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0026	0.0086	0.0080	0.026
Toluene	0.0026	0.010	0.0070	0.027
Ethyl Benzene	0.0026	0.012	Not Detected	Not Detected
Total Xylenes	0.0026	0.012	0.0038	0.017
Methyl tert-Butyl Ether	0.0026	0.0097	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.066	0.27	2.4	9.9
C2-C4 Hydrocarbons ref. to Gasoline	0.066	0.27	0.36	1.5

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	98	75-125
Fluorobenzene (FID)	100	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-2-V2

ID#: 0110471A-05A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110738	**Date of Collection:**	10/22/01
Dil. Factor:	2.64	**Date of Analysis:**	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0026	0.0086	0.0062 M	0.020 M
Toluene	0.0026	0.010	0.0063	0.024
Ethyl Benzene	0.0026	0.012	Not Detected	Not Detected
Total Xylenes	0.0026	0.012	Not Detected	Not Detected
Methyl tert-Butyl Ether	0.0026	0.0097	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.066	0.27	11	47
C2-C4 Hydrocarbons ref. to Gasoline	0.066	0.27	0.28	1.1

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	97	75-125
Fluorobenzene (FID)	100	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-2-V3

ID#: 0110471A-06A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110739	Date of Collection:	10/22/01
Dil. Factor:	2.53	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0025	0.0082	0.0072	0.023
Toluene	0.0025	0.0097	0.0072	0.028
Ethyl Benzene	0.0025	0.011	Not Detected	Not Detected
Total Xylenes	0.0025	0.011	0.0035	0.015
Methyl tert-Butyl Ether	0.0025	0.0093	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.063	0.26	4.5	19
C2-C4 Hydrocarbons ref. to Gasoline	0.063	0.26	0.30	1.3

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	95	75-125
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-3-V1

ID#: 0110471A-07A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110740	Date of Collection:	10/22/01
Dil. Factor:	2.53	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0025	0.0082	0.026	0.084
Toluene	0.0025	0.0097	0.019	0.072
Ethyl Benzene	0.0025	0.011	Not Detected	Not Detected
Total Xylenes	0.0025	0.011	0.0098	0.043
Methyl tert-Butyl Ether	0.0025	0.0093	0.0047	0.017
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.063	0.26	7.0	29
C2-C4 Hydrocarbons ref. to Gasoline	0.063	0.26	0.90	3.7

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	97	75-125
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-3-V2

ID#: 0110471A-08A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110741	Date of Collection:	10/22/01
Dil. Factor:	3.57	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0036	0.012	0.0079	0.026
Toluene	0.0036	0.014	0.0055	0.021
Ethyl Benzene	0.0036	0.016	Not Detected	Not Detected
Total Xylenes	0.0036	0.016	0.0039	0.017
Methyl tert-Butyl Ether	0.0036	0.013	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.089	0.37	2.2	9.0
C2-C4 Hydrocarbons ref. to Gasoline	0.089	0.37	0.47	2.0

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	96	75-125
Fluorobenzene (FID)	98	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-3-V3

ID#: 0110471A-09A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110742	Date of Collection:	10/22/01
Dil. Factor:	2.69	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0027	0.0087	0.0064	0.021
Toluene	0.0027	0.010	0.0074	0.028
Ethyl Benzene	0.0027	0.012	0.0027	0.012
Total Xylenes	0.0027	0.012	0.0063	0.028
Methyl tert-Butyl Ether	0.0027	0.0098	0.0040	0.015
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.067	0.28	1.6	6.7
C2-C4 Hydrocarbons ref. to Gasoline	0.067	0.28	0.42	1.7

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	97	75-125
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-4-V1

ID#: 0110471A-10A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110743	Date of Collection:	10/22/01
Dil. Factor:	2.89	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0029	0.0094	0.010 M	0.033 M
Toluene	0.0029	0.011	0.0082	0.031
Ethyl Benzene	0.0029	0.013	Not Detected	Not Detected
Total Xylenes	0.0029	0.013	0.0043	0.019
Methyl tert-Butyl Ether	0.0029	0.010	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.072	0.30	1.3	5.4
C2-C4 Hydrocarbons ref. to Gasoline	0.072	0.30	0.49	2.0

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	98	75-125
Fluorobenzene (FID)	101	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-4-V2

ID#: 0110471A-11A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110744	**Date of Collection:**	10/22/01
Dil. Factor:	2.64	**Date of Analysis:**	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0026	0.0086	0.0042 M	0.014 M
Toluene	0.0026	0.010	0.0060	0.023
Ethyl Benzene	0.0026	0.012	Not Detected	Not Detected
Total Xylenes	0.0026	0.012	0.0051	0.022
Methyl tert-Butyl Ether	0.0026	0.0097	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.066	0.27	1.3	5.5
C2-C4 Hydrocarbons ref. to Gasoline	0.066	0.27	0.18	0.76

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)*	98	75-125
Fluorobenzene (FID)	100	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-4-V3

ID#: 0110471A-12A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110745	Date of Collection:	10/22/01
Dil. Factor:	2.53	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0025	0.0082	0.013	0.043
Toluene	0.0025	0.0097	0.011	0.043
Ethyl Benzene	0.0025	0.011	0.0040 M	0.017 M
Total Xylenes	0.0025	0.011	0.0090	0.040
Methyl tert-Butyl Ether	0.0025	0.0093	0.0042	0.015
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.063	0.26	2.1	8.6
C2-C4 Hydrocarbons ref. to Gasoline	0.063	0.26	0.63	2.6

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	99	75-125
Fluorobenzene (FID)	101	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-5-V1

ID#: 0110471A-13A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110804	**Date of Collection:**	10/23/01
Dil. Factor:	4.04	**Date of Analysis:**	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0040	0.013	0.023 M	0.074 M
Toluene	0.0040	0.015	0.020	0.077
Ethyl Benzene	0.0040	0.018	Not Detected	Not Detected
Total Xylenes	0.0040	0.018	0.012	0.055
Methyl tert-Butyl Ether	0.0040	0.015	0.0070	0.026
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.10	0.42	6.2	26
C2-C4 Hydrocarbons ref. to Gasoline	0.10	0.42	1.2	4.9

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125
Fluorobenzene (FID)	92	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-5-V2

ID#: 0110471A-14A

EPA METHOD TO-3 GC/PID/FID

File Name:	**d110805**	**Date of Collection: 10/23/01**	
Dil. Factor:	**2.42**	**Date of Analysis: 11/8/01**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0024	0.0078	0.0058	0.019
Toluene	0.0024	0.0093	0.0094	0.036
Ethyl Benzene	0.0024	0.011	Not Detected	Not Detected
Total Xylenes	0.0024	0.011	0.0084	0.037
Methyl tert-Butyl Ether	0.0024	0.0089	0.0033	0.012
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.060	0.25	2.0	8.1
C2-C4 Hydrocarbons ref. to Gasoline	0.060	0.25	0.17	0.72

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125
Fluorobenzene (FID)	93	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-5-V3

ID#: 0110471A-15A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110806	Date of Collection:	10/23/01
Dil. Factor:	4.18	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0042	0.014	Not Detected	Not Detected
Toluene	0.0042	0.016	0.0055	0.021
Ethyl Benzene	0.0042	0.018	Not Detected	Not Detected
Total Xylenes	0.0042	0.018	Not Detected	Not Detected
Methyl tert-Butyl Ether	0.0042	0.015	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.10	0.43	1.7	7.1
C2-C4 Hydrocarbons ref. to Gasoline	0.10	0.43	0.21	0.86

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125
Fluorobenzene (FID)	93	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-6-V1

ID#: 0110471A-16A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110807	Date of Collection:	10/23/01
Dil. Factor:	3.57	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0036	0.012	0.030 M	0.098 M
Toluene	0.0036	0.014	0.017	0.067
Ethyl Benzene	0.0036	0.016	0.0078	0.034
Total Xylenes	0.0036	0.016	0.11	0.49
Methyl tert-Butyl Ether	0.0036	0.013	0.0062	0.022
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.089	0.37	4.2	17
C2-C4 Hydrocarbons ref. to Gasoline	0.089	0.37	1.9	8.0

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	92	75-125
Fluorobenzene (FID)	95	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-6-V2

ID#: 0110471A-17A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110808	Date of Collection:	10/23/01
Dil. Factor:	2.42	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0024	0.0078	0.029	0.094
Toluene	0.0024	0.0093	0.060	0.23
Ethyl Benzene	0.0024	0.011	0.0070	0.031
Total Xylenes	0.0024	0.011	0.025	0.11
Methyl tert-Butyl Ether	0.0024	0.0089	0.0061	0.022
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.060	0.25	2.3	9.6
C2-C4 Hydrocarbons ref. to Gasoline	0.060	0.25	0.61	2.5

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	94	75-125
Fluorobenzene (FID)	97	75-125

AIR TOXICS LTD.

SAMPLE NAME: B-6-V3

ID#: 0110471A-18A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110809	Date of Collection:	10/23/01
Dil. Factor:	2.09	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0021	0.0068	0.34	1.1
Toluene	0.0021	0.0080	0.23	0.88
Ethyl Benzene	0.0021	0.0092	0.15	0.67
Total Xylenes	0.0021	0.0092	0.59	2.6
Methyl tert-Butyl Ether	0.0021	0.0076	0.062	0.23
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.052	0.22	2.4	10
C2-C4 Hydrocarbons ref. to Gasoline	0.052	0.22	Not Detected	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	93	75-125
Fluorobenzene (FID)	94	75-125

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SAMPLE NAME: Lab Blank

ID#: 0110471A-19A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110722	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 11/7/01	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0044	Not Detected	Not Detected
Total Xylenes	0.0010	0.0044	Not Detected	Not Detected
Methyl tert-Butyl Ether	0.0010	0.0037	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.025	0.10	Not Detected	Not Detected
C2-C4 Hydrocarbons ref. to Gasoline	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	98	75-125
Fluorobenzene (FID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0110471A-19B

EPA METHOD TO-3 GC/PID/FID

File Name:	d110803	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0044	Not Detected	Not Detected
Total Xylenes	0.0010	0.0044	Not Detected	Not Detected
Methyl tert-Butyl Ether	0.0010	0.0037	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.025	0.10	Not Detected	Not Detected
C2-C4 Hydrocarbons ref. to Gasoline	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	91	75-125
Fluorobenzene (FID)	93	75-125

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0110471A-20A

EPA METHOD TO-3 GC/PID/FID

File Name:	d110747b	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis:	11/8/01

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	%Recovery
Benzene	0.0010	0.0032	89
Toluene	0.0010	0.0038	89
Ethyl Benzene	0.0010	0.0044	86
Total Xylenes	0.0010	0.0044	80
Methyl tert-Butyl Ether	0.0010	0.0037	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0110471A-20B

EPA METHOD TO-3 GC/PID/FID

File Name:	d110824b	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 11/9/01	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	%Recovery
Benzene	0.0010	0.0032	93
Toluene	0.0010	0.0038	96
Ethyl Benzene	0.0010	0.0044	96
Total Xylenes	0.0010	0.0044	90
Methyl tert-Butyl Ether	0.0010	0.0037	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	92	75-125

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Project # 852-1692-003
Project Name: BP-11133

Turn Around Time:
[X] Normal
[ ] Rush ____ Specify
8 10-25-01

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	B-1-V1	10/22/01 925a	TO-3 TPHg/BTEX/MTBE			0.2 psi
02A	B-1-V2	950a				7.5" Hg
03A	B-1-V3	1010a				5.5" Hg
04A	B-2-V1	1140a	D-1946 $O_2/CO_2/CH_4$			7.0" Hg
05A	B-2-V2	1155a	" $O_2/CO_2/CH_4$			7.0" Hg
06A	B-2-V3	1210p	" $O_2/CO_2/CH_4$			6.0" Hg
07A	B-3-V1	145p				6.0" Hg
08A	B-3-V2	205p				13.0" Hg
09A	B-3-V3	220p				7.5" Hg
10A	B-4-V1	315p	D-1946 $O_2/CO_2/CH_4$			9.0" Hg

Relinquished By: (Signature) Date/Time: Sara Dwight 10-24-01 1430
Received By: (Signature) Date/Time: K.L. Foley 10/24/01 1320
Relinquished By: (Signature) Date/Time: K.L. Foley 10/24/01 1630
Received By: (Signature) Date/Time: Tracy Watson 10/24/01 1830

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Courier		KCB	—	good	Yes No None	0110471A

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CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

Contact Person: Khaled Rahman
Company: Cambria Environmental
Address: 6262 Hollis St City: Emeryville State: CA Zip: 94608
Phone: 510-450-1985 FAX: 510-450-8295
Collected By: Signature: Sara Dwight

Project info:
P.O. # J822431
Project # 552-1692-003
Project Name BP-11133

Turn Around Time:
☒ Normal
☐ Rush _____ Specify
10-25-01

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
11A	B-4-V2	10/22/01 335p	TPHg/BTEX/MTBE 10-3 D-1946 $O_2/CO_2/CH_4$		7.0	6.0"Hg 10-25-01
12A	B-4-V3	↓ 350p	" $O_2/CO_2/CH_4$			6.0"Hg
13A	B-5-V1	10/23/01 845a				15.0"Hg
14A	B-5-V2	910a				5.0"Hg
15A	B-5-V3	935a				15.5"Hg
16A	B-6-V1	1105a				13.0"Hg
17A	B-6-V2	1130a				5.0"Hg
18A	B-6-V3	↓ 1145a	↓			1.0"Hg

Relinquished By: (Signature) Date/Time: Sara Dwight 10-23-01 1430 — Received By: (Signature) Date/Time: [illegible] 10/24/01 1320
Relinquished By: (Signature) Date/Time: [illegible] 10/24/01 1630 — Received By: (Signature) Date/Time:
Relinquished By: (Signature) Date/Time: — Received By: (Signature) Date/Time: [illegible] 10/24/01 1630

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Courier		KCB	-	good	Yes No (None)	011047

Form 1293 rev. 09

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WORK ORDER #: 0110471B

Work Order Summary

CLIENT:	Ms. Sara Dwight Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	**BILL TO:**	Ms. Sara Dwight Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608
PHONE:	510-450-8294	**P.O. #**	J822431
FAX:	510-450-8295	**PROJECT #**	852-1692-003 BP-11133
DATE RECEIVED:	10/25/01	**CONTACT:**	Lisa Argento
DATE COMPLETED:	11/8/01		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
04A	B-2-V1	ASTM D-1946	7.0 "Hg
05A	B-2-V2	ASTM D-1946	7.0 "Hg
06A	B-2-V3	ASTM D-1946	6.0 "Hg
10A	B-4-V1	ASTM D-1946	9.0 "Hg
11A	B-4-V2	ASTM D-1946	7.0 "Hg
12A	B-4-V3	ASTM D-1946	6.0 "Hg
13A	Lab Blank	ASTM D-1946	NA
13B	Lab Blank	ASTM D-1946	NA
14A	LCS	ASTM D-1946	NA
14B	LCS	ASTM D-1946	NA

CERTIFIED BY: Linda D. Fruman DATE: 11/08/01

Laboratory Director

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217, AZ ELAP - AZ0567, LA - AI 30763
Name of Accrediting Agency: NELAP/State of New York Department of Health, Scope of Accreditation : Non Potable Water
Accreditation number :11291, Effective date: 6/7/01, Expiration date: 4/1/02

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
ASTM D-1946
Cambria Environmental Technology
Workorder# 0110471B

Six 1 Liter Summa Canister samples were received on October 24, 2001. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of up to 1.0 mL of sample. See the data sheets for the reporting limits for each compound.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

AIR TOXICS LTD.

SAMPLE NAME: B-2-V1

ID#: 0110471B-04A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	**3102620**	**Date of Collection:**	**10/22/01**
Dil. Factor:	**2.64**	**Date of Analysis:**	**10/26/01**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	22
Methane	0.0026	Not Detected
Carbon Dioxide	0.0026	0.28

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: B-2-V2

ID#: 0110471B-05A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103014	**Date of Collection:**	10/22/01
Dil. Factor:	2.64	**Date of Analysis:**	10/30/01

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	21
Methane	0.0026	Not Detected
Carbon Dioxide	0.0026	0.33

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: B-2-V3

ID#: 0110471B-06A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103017	**Date of Collection:**	10/22/01
Dil. Factor:	2.53	**Date of Analysis:**	10/30/01

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	20
Methane	0.0025	Not Detected
Carbon Dioxide	0.0025	0.33

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: B-4-V1

ID#: 0110471B-10A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103016	Date of Collection:	10/22/01
Dil. Factor:	2.89	Date of Analysis:	10/30/01

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.29	20
Methane	0.0029	Not Detected
Carbon Dioxide	0.0029	0.066

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: B-4-V2

ID#: 0110471B-11A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103013	Date of Collection:	10/22/01
Dil. Factor:	2.64	Date of Analysis:	10/30/01

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	20
Methane	0.0026	Not Detected
Carbon Dioxide	0.0026	0.070

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: B-4-V3

ID#: 0110471B-12A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103015	Date of Collection:	10/22/01
Dil. Factor:	2.53	Date of Analysis:	10/30/01

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	20
Methane	0.0025	Not Detected
Carbon Dioxide	0.0025	0.092

Container Type: 1 Liter Summa Canister

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0110471B-13A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	**3102607**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/26/01**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.0010	Not Detected
Carbon Dioxide	0.0010	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0110471B-13B

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103006	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 10/30/01	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.0010	Not Detected
Carbon Dioxide	0.0010	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0110471B-14A

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3102604	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/26/01

Compound	Rpt. Limit (%)	%Recovery
Oxygen	0.10	106
Methane	0.0010	102
Carbon Dioxide	0.0010	106

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0110471B-14B

NATURAL GAS ANALYSIS BY ASTM D-1946 GC/TCD/FID

File Name:	3103002	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/30/01

Compound	Rpt. Limit (%)	%Recovery
Oxygen	0.10	100
Methane	0.0010	99
Carbon Dioxide	0.0010	100

Container Type: NA - Not Applicable

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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

Contact Person: Khaled Rahman
Company: Cambria Environmental
Address: 6262 Hollis St City: Emeryville State: CA Zip: 94608
Phone: 510-450-1985 FAX: 510-450-8295
Collected By: Signature: Sara Dwight

Project info:
P.O. # 1822431
Project # 852-1692-003
Project Name: BP-11133

Turn Around Time:
[X] Normal
[ ] Rush ____ Specify
SK 10-25-01

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
~~01A~~	B-1-V1	10/22/01 925a	TO-3 TPHg/BTEX/MtBE			0.2 psi
~~02A~~	B-1-V2	950a				7.5"Hg
~~03A~~	B-1-V3	1010a				5.5"Hg
04A	B-2-V1	1140a	D-1946: $O_2/CO_2/CH_4$			7.0"Hg
05A	B-2-V2	1155a	$O_2/CO_2/CH_4$			7.0"Hg
06A	B-2-V3	1210p	$O_2/CO_2/CH_4$			6.0"Hg
~~07A~~	B-3-V1	145p				6.0"Hg
~~08A~~	B-~~9~~3-V2	205p				13.0"Hg
~~09A~~	B-3-V3	220p				7.5"Hg
10A	B-4-V1	315p	D-1946 $O_2/CO_2/CH_4$			9.0"Hg

@ 10-25-01

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Sara Dwight	10-24-01 1200	[illegible]	10/24/01 1320
[illegible]	10/24/01 1630		
		Kelly Scott	10/24/01 1630

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Courier		KRS	—	Good	Yes No None	0110471

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CHAIN-OF-CUSTODY RECORD

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(916) 985-1000 FAX: (916) 985-1020

Contact Person: Khaled Rahman
Company: Cambria Environmental
Address: 6262 Hollis St City: Emeryville State: CA Zip: 94608
Phone: 510-450-1985 FAX: 510-450-8295
Collected By: Signature: Sara Dwight

Project info:
P.O. # J822431
Project # 852-1692-003
Project Name BP-11133

Turn Around Time:
☒ Normal
☐ Rush _____ Specify

OK 10-25-01

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
			TO-3			
11A	B-4-V2	10/22/01 335p	TPHg/BTEX/MTBE D-1946 $O_2/CO_2/CH_4$		7.0	~~6.0~~ 5.0 "Hg
12A	B-4-V3	↓ 350p	" $O_2/CO_2/CH_4$			6.0 "Hg
~~13A~~	B-5-V1	10/23/01 845a				15.0 "Hg
~~14A~~	B-5-V2	910a				5.0 "Hg
~~15A~~	B-5-V3	935a				15.5 "Hg
16A	B-6-V1	1105a				13.0 "Hg
~~17A~~	B-6-V2	1130a				5.0 "Hg
~~18A~~	B-6-V3	1145a				1.0 "Hg

(5) 10-25-01

Relinquished By: (Signature) Date/Time: Sara Dwight 10-24-01 1120
Received By: (Signature) Date/Time: [illegible] 10/24/01 1320

Relinquished By: (Signature) Date/Time: [illegible] 10/24/01 1630
Received By: (Signature) Date/Time:

Relinquished By: (Signature) Date/Time:
Received By: (Signature) Date/Time: Holly Blevins 10/24/01 1630

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Courier		KCB	-	Good	Yes No (None)	011047 1

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