

CAMBRIA

November 30, 1998

Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

#113
gas spills - beneath
dispenser
incident

Re: **Dispenser Soil Sampling Report**
Shell-branded Service Station
4411 Foothill Boulevard
Oakland, California
WIC #204-5508-3400
Cambria Project #240-0897-984



Dear Mr. Chan:

On behalf of Equilon Enterprises LLC (Equilon), Cambria Environmental Technology, Inc. (Cambria) is submitting this report presenting the results of sampling conducted during station upgrade activities at the site referenced above. Presented below are descriptions of the site conditions, sampling activities, analytical results, and conclusions.

SITE CONDITIONS

The site is located at the intersection of Foothill Boulevard and High Street in Oakland, California. The area surrounding the site is of mixed commercial and residential use.

This Shell-branded service station was upgraded by Paradiso Mechanical of San Leandro, California (Paradiso). Paradiso added secondary containment to the gasoline turbines and dispensers (Figure 1).

SAMPLING ACTIVITIES AND SAMPLE ANALYSIS

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


Cambria
Environmental
Technology, Inc.

<i>Personnel Present</i>	<i>Title</i>	<i>Company</i>
Michael Paves	Staff Engineer	Cambria
Chris Franchetti	Foreman	Paradiso

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

Sample Date: August 26, 1998.

Sampling Requirements: Based on Cambria's July 30, 1998 telephone conversation with Barney Chan of the Alameda County Department of Environmental Health (ACDEH), sampling is required beneath dispensers during 1998 upgrade projects.



Dispenser Sampling: Cambria inspected the dispenser and tank pit areas. No field indications of hydrocarbons were observed in the gasoline tank pit. The sandy, silty soil 1.5 feet beneath Disp-1 was stained and had a strong hydrocarbon odor. Hydrocarbon odors and staining were also detected in the silty clays beneath Disp-2, Disp-3, and Disp-4. One soil sample was collected beneath each dispenser at a depth of 2.0 feet into native soil (Figure 1).

Sample Analyses: Sequoia Analytical of Redwood City, California analyzed the dispenser samples for total petroleum hydrocarbons as gasoline (TPPH) by modified EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE) by EPA Method 8020. The highest detectable MTBE concentration was confirmed by EPA Method 8260.

ANALYTICAL RESULTS

The highest hydrocarbon concentrations were 1,500 milligrams per kilogram (mg/kg) TPHg in sample D-2(2.0) and 1,100 mg/kg TPHg in sample D-1(2.0). **Benzene concentrations range from 0.29 mg/kg in sample D-4(2.0) to 9.2 mg/kg in sample D-1(2.0).** The highest detectable MTBE concentration was 2.5 mg/kg by EPA Method 8260 in sample D-1(2.0). The laboratory reports are included as Attachment B.

CONCLUSIONS

Wells are already present at this site to monitor hydrocarbon concentrations in ground water. Therefore, no additional investigation of the tank pit or dispenser areas is proposed at this time.

CLOSING

We appreciate the opportunity to work with you on this project. Please call Darryk Ataide at (510) 420-3339 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



Diane M. Lundquist, P.E.
Principal Engineer



Attachments: A - Standard Piping and Dispenser Removal Sampling Procedures
B - Laboratory Analytical Reports for Soil

cc: Mr. Tim Hargraves, Equiva Services LLC, P.O. Box 8080, Martinez, CA 94553
Ms. Karen Petryna, Equiva Services LLC, P.O. Box 6249, Carson, CA 90749-6249
Mr. Leroy Griffin, City of Oakland Fire Department, 505 14th Street, Suite 702,
Oakland, CA 94612

G:\OAK4411\Upgrades\Upgrade Report.wpd

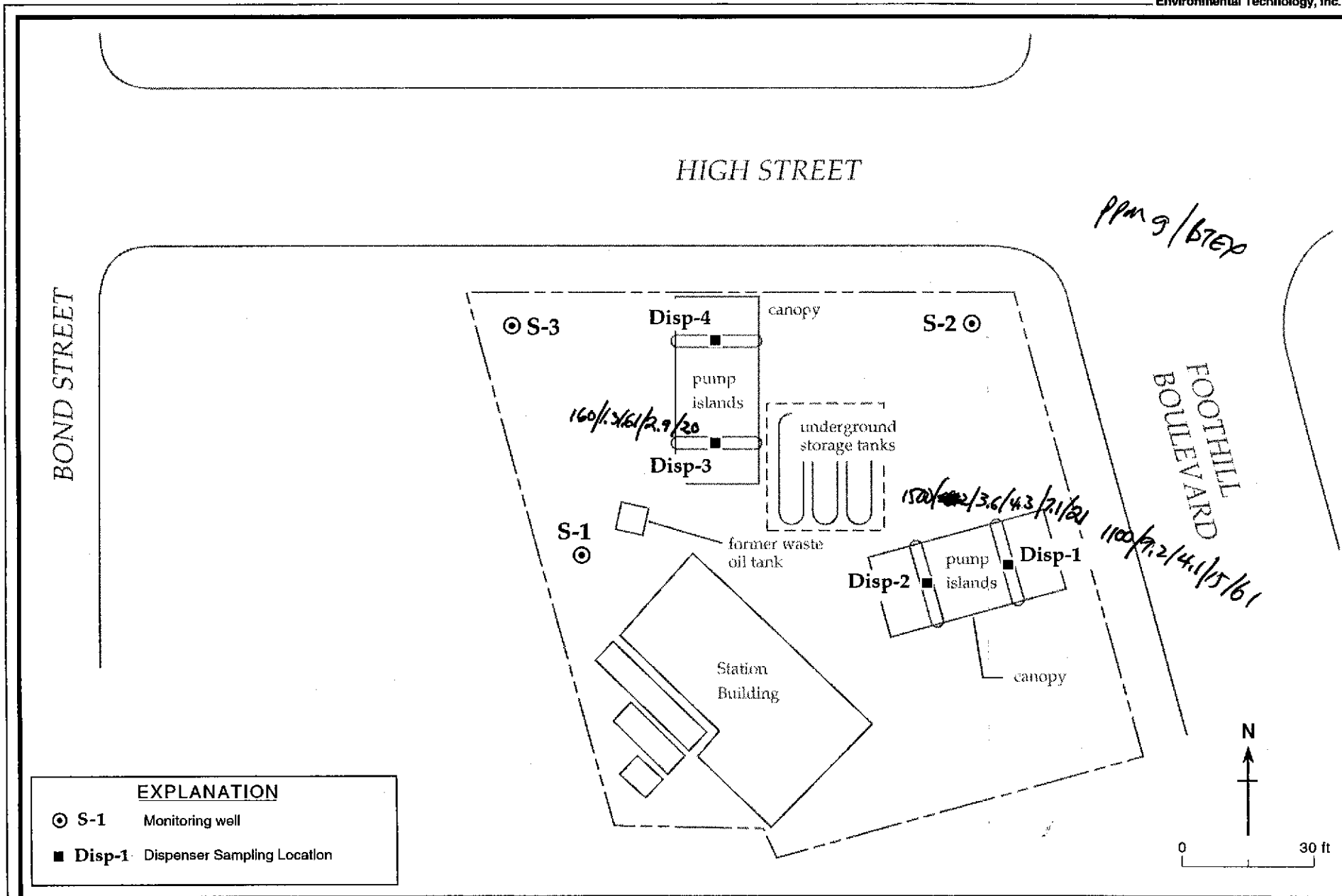


Figure 1. Dispenser Sampling Locations - August 26, 1998 - Shell-branded Service Station - WIC #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

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Table 1. Dispenser Sample Analytical Data - Shell-branded Service Station - WIC #204-0461-0501, 4411 Foothill Blvd., Oakland, California

Date	Sample ID	Depth (feet)	TPHg	MTBE	(Concentrations reported in milligrams per kilogram)			
					Benzene	Toluene	Ethylbenzene	Xylenes
8/26/98	D-1(2.0)	2.0	1,100	13(2.5)	9.2	4.1	15	61
8/26/98	D-2(2.0)	2.0	1,500	<6.2	3.6	4.3	7.1	21
8/26/98	D-3(2.0)	2.0	160	1.4	1.3	0.61	2.9	2.0
8/26/98	D-4(2.0)	2.0	180	0.83	0.29	0.17	0.10	0.43

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015.

MTBE = Methyl tert-butyl ether by EPA Method 8020. Result in parentheses represents MTBE by EPA 8260.

Benzene, ethylbenzene, toluene, and total xylenes by EPA Method 8020.

<n= Below detection limit of n milligrams per kilograms

29 ppm is 10⁻⁵ soil vol to outdoor air / commercial

ATTACHMENT A

**Standard Piping and Dispenser Removal
Sampling Procedures**

CAMBRIA

STANDARD PIPING AND DISPENSER REMOVAL SAMPLING PROCEDURES

Cambria Environmental Technology, Inc. (Cambria) has developed standard operating procedures for collecting soil samples during petroleum dispenser and piping removal. These procedures ensure that the samples are collected, handled, and documented in compliance with California Administration Code Title 23: Waters; Chapter 3: Water Resources Control Board; Subchapter 16: Underground Storage Tank Regulations (Title 23). Cambria's sampling procedures are based on guidelines contained in the California State Regional Water Quality Control Board Tri-Regional Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites dated August 10, 1990.

Piping and Dispenser Removal Sampling

The objective of sample collection during routine dispenser and piping removals is to determine whether hydrocarbons or other stored chemicals have leaked to the subsurface. We collect one soil sample from the native soil beneath each dispenser unit, at each piping elbow, and at every 20 ft of product piping, as applicable.

The soil samples are collected in steam cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe. When a backhoe is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil.

Upon removal from the split-spoon sampler or the backhoe, the samples are trimmed flush, capped with Teflon sheets and plastic end caps, labeled, logged and refrigerated for delivery under chain of custody to a State certified analytic laboratory.

ATTACHMENT B

Laboratory Analytical Reports for Soil



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

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FAX (916) 921-0100
FAX (707) 792-0342

Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Brian Busch

Project: Shell 4411 Foothill

Enclosed are the results from samples received at Sequoia Analytical on August 28, 1998.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9808104 -01	SOLID, D-1(2.0)	08/26/98	MTBE by 8260
9808104 -01	SOLID, D-1(2.0)	08/26/98	Purgeable TPH/BTEX/MTBE
9808104 -02	SOLID, D-2(2.0)	08/26/98	Purgeable TPH/BTEX/MTBE
9808104 -03	SOLID, D-3(2.0)	08/26/98	Purgeable TPH/BTEX/MTBE
9808104 -04	SOLID, D-4(2.0)	08/26/98	Purgeable TPH/BTEX/MTBE

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL


Peggy Penner
Project Manager





Cambria
1144 65th St. Suite C
Oakland, CA 94608

Client Proj. ID: Shell 4411 Foothill
Sample Descript: D-1(2.0)
Matrix: SOLID
Analysis Method: EPA 8260
Lab Number: 9808104-01

Sampled: 08/26/98
Received: 08/28/98
Extracted: 09/10/98
Analyzed: 09/10/98
Reported: 09/14/98

QC Batch Number: MS091098MTBEEEXA
Instrument ID: H6

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
Methyl t-Butyl Ether	1000	2500
Surrogates	Control Limits %	% Recovery
1,2-Dichloroethane-d4	70 121	60 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Cambria 1144 65th St. Suite C Oakland, CA 94608	Client Proj. ID: Shell 4411 Foothill Sample Descript: D-1(2.0) Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9808104-01	Sampled: 08/26/98 Received: 08/28/98 Extracted: 08/31/98 Analyzed: 09/01/98 Reported: 09/14/98
Attention: Brian Busch		

QC Batch Number: GC083198BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	250	1100
Methyl t-Butyl Ether	6.2	13
Benzene	1.2	9.2
Toluene	1.2	4.1
Ethyl Benzene	1.2	15
Xylenes (Total)	1.2	61
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	140 Q
4-Bromofluorobenzene	60 140	8 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





**Sequoia
Analytical**

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FAX (707) 792-0342

Cambria 1144 65th St. Suite C Oakland, CA 94608 Attention: Brian Busch	Client Proj. ID: Shell 4411 Foothill Sample Descript: D-2(2.0) Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9808104-02	Sampled: 08/26/98 Received: 08/28/98 Extracted: 08/31/98 Analyzed: 09/01/98 Reported: 09/14/98
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QC Batch Number: GC083198BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	250	1500
Methyl t-Butyl Ether	6.2	N.D.
Benzene	1.2	3.6
Toluene	1.2	4.3
Ethyl Benzene	1.2	7.1
Xylenes (Total)	1.2	21
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	113
4-Bromofluorobenzene	60 140	9 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Cambria	Client Proj. ID: Shell 4411 Foothill	Sampled: 08/26/98
1144 65th St. Suite C	Sample Descript: D-3(2.0)	Received: 08/28/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/31/98
Attention: Brian Busch	Analysis Method: 8015Mod/8020	Analyzed: 09/01/98
	Lab Number: 9808104-03	Reported: 09/14/98

QC Batch Number: GC083198BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	20	160
Methyl t-Butyl Ether	0.50	1.4
Benzene	0.10	1.3
Toluene	0.10	0.61
Ethyl Benzene	0.10	2.9
Xylenes (Total)	0.10	2.0
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	148 Q
4-Bromofluorobenzene	60 140	32 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





**Sequoia
Analytical**

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FAX (707) 792-0342

Cambria
1144 65th St. Ste. C
Oakland, CA 94608
Attention: Mike Paves

Client Project ID: Shell 4411 Foothill

QC Sample Group: 9808104-01-04

Reported: Sep 14, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015
Analyst: R.GECKLER

ANALYTE Gasoline

QC Batch #: GC083198BTEXEXA

Sample No.: 9808H03-3

Date Prepared: 8/31/98

Date Analyzed: 8/31/98

Instrument I.D.#: GCHP1

Sample Conc., mg/Kg: N.D.
Conc. Spiked, mg/Kg: 5.0

Matrix Spike, mg/Kg: 6.5
% Recovery: 130

Matrix
Spike Duplicate, mg/Kg: 6.6
% Recovery: 132

Relative % Difference: 1.5

RPD Control Limits: 0-25

LCS Batch#: GC083198BTEXEXA

Date Prepared: 8/31/98

Date Analyzed: 8/31/98

Instrument I.D.#: GCHP1

Conc. Spiked, mg/Kg: 5.0

Recovery, mg/Kg: 5.6
LCS % Recovery: 112

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.





**Sequoia
Analytical**

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Cambria Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Brian Busch

Client Project ID: Shell 4411 Foothill
Matrix: Solid

Work Order #: 9808104 -01

Reported: Sep 15, 1998

QUALITY CONTROL DATA REPORT

Analyte: MTBE

QC Batch#: MS091098MTBEH6A

Analy. Method: EPA 8260

Prep. Method: N.A.

Analyst: M. Williams

MS/MSD #: 980815002

Sample Conc.: N.D.

Prepared Date: 9/10/98

Analyzed Date: 9/10/98

Instrument I.D.#: H6

Conc. Spiked: 2500 µg/Kg

Result: 2000

MS % Recovery: 80

Dup. Result: 2100

MSD % Recov.: 84

RPD: 4.9

RPD Limit: 0-25

LCS #: LCS091098

Prepared Date: 9/10/98

Analyzed Date: 9/10/98

Instrument I.D.#: H6

Conc. Spiked: 50 mg/L

LCS Result: 43

LCS % Recov.: 86

MS/MSD 60-140

LCS 70-130

Control Limits

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS= Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9808104.CCC <1>





Sequoia
Analytical

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Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Brian Busch

Client Proj. ID: Shell 4411 Foothill
Lab Proj. ID: 9808I04

Received: 08/28/98
Reported: 09/14/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 9 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

MTBE6S Note:

Sample 9808I04-01 have low surrogate recovery. This sample was re-extracted and reanalyzed, but the recovery was low as well. This is a matrix interference problem and the result should be considered as a estimate.

A high purity mtbe spectral match was not possible for sample 9808I04-01 because of 3-methyl pentane interference. However the mtbe quantitation is not affected.

SEQUOIA ANALYTICAL


Peggy Permer
Project Manager





SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: _____

Date: 8/28/98

Page 1 of 1

Site Address: 4411 Foothill, Oakland

WICH: 204-5508-3400

Shell Engineer: TIM HARGRAVES
Phone No.: 510 335-5031
Fax #: 335-5016

Consultant Name & Address: CAMBRIA ENVIRONMENTAL
1114 65th St. Suite C, Oakland, CA 94608

Consultant Contact: Phone No.: 510 420-0700
Fax #: 420-9170

Comments: CONFIRM HIGHEST MTBE CONC. BY EPA 8260

Sampled by: [Signature] 9809104

Piloted Name: MICHAEL PAVES

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/6020)	Volatile Organics (EPA 8210)	Test for Disposal	Combination TPH 8015 & BTEX 8020 & MTBE	EPA 8260 - Confirm highest MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N
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LAB: SERQUISA

CHECK ONE (1) BOX ONLY	C1/D1	TURB AROUND TIME
G.W. Monitoring <input type="checkbox"/>	4441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	4442	16 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input checked="" type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hr. IAT.

UST AGENCY: Alameda County

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.
X D-1(2.0)	8/26/98		X			1
X D-2(2.0)	8/26/98		X			1
X D-3(2.0)	8/26/98		X			1
X D-4(2.0)	8/26/98		X			1

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
01	
02	
03	
04	

Relinquished By (signature): [Signature]
Relinquished By (signature): [Signature]
Relinquished By (signature): [Signature]

Printed Name: ANNI KREML
Printed Name: LAUCE A. DAVIDSON
Printed Name:

Date: 8/28/98
Time: 11:25
Date: 8-28-98
Time:
Date:
Time:

Received (signature): [Signature]
Received (signature): [Signature]
Received (signature): [Signature]

Printed Name: LAUCE A. DAVIDSON
Printed Name:
Printed Name: AURA DEMARE

Date: 8-28-98
Time: 11:25
Date:
Time:
Date: 8/28/98
Time: 12:20

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS