CAMBRIA

ENVIRONMENTAL PROTECTION

98 MAY 11 PM 4:42

May 4, 1998

Susan Hugo
Alameda County
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Dispenser Soil Sampling Report**
Shell Service Station
1800 Powell Street
Emeryville, California
WIC #204-2495-0101
Cambria Project #240-0894-984

Dear Ms. Hugo:

On behalf of Shell Oil Products Company (Shell), 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 summaries of the site conditions, sampling activities, analytical results, and conclusions.

SITE CONDITIONS

The site is located at the intersection of Powell Street and Frontage Road in Emeryville, California. Highway 80 runs near the eastern boundary of the site. The area surrounding the site is primarily commercial with some residential buildings.

This Shell service station was recently upgraded by Paradiso Mechanical of San Leandro, California (Paradiso). Paradiso added secondary containment to the existing dispensers and the turbine sumps (Figure 1).

SAMPLING ACTIVITIES AND SAMPLE ANALYSIS

Personnel Present	*Title*	*Company*
Michael Paves	Staff Engineer	Cambria
John Riggi	Staff Geologist	Cambria
Ron Hales	Site Foreman	Paradiso

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

Sample Date: March 19, 1998.

Sampling Requirements: Based on Cambria's March 3, 1998 telephone conversation with Pamela Evans, the Alameda County Department of Environmental Health does not require sampling at dispensers during 1998 Upgrade projects unless there is evidence of hydrocarbons.

Dispenser Sampling: Cambria inspected the dispenser and tank pit areas. Soil samples were collected from native soil beneath dispenser D-7 at a depth of approximately 2.0 feet below pea gravel fill and D-9 at a depth of 3.5 feet below pea gravel fill, because field indications of hydrocarbons were observed. Standing water beneath dispensers D-1 and D-4 prevented soil samples from being collected. No field indications of hydrocarbons were observed beneath dispensers D-2, D-3, D-5, D-6, or D-8. Cambria's standard procedures for dispenser and piping sampling are presented as Attachment A.

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

ANALYTICAL RESULTS

The highest hydrocarbon concentrations were 260 milligrams per kilogram (mg/kg) TPHg, 250 mg/kg TPHd, and 0.26 mg/kg benzene in sample D-9 at 3.5 feet. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment B.

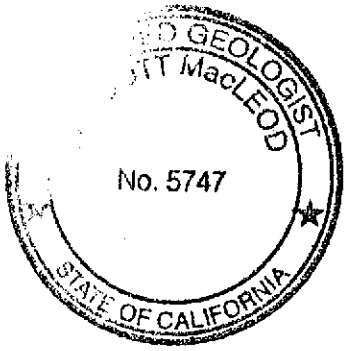
CONCLUSIONS

Wells are already installed at this site to monitor hydrocarbon concentrations in ground water. Therefore, no additional investigation of the dispenser area is warranted at this time.

CLOSING

We appreciate the opportunity to work with you on this project. Please call if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



N. Scott MacLeod, R.G.
Principal Geologist

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

cc: Mr. Tim Hargraves, Shell Oil Products Company, P.O. Box 8080, Martinez, CA 94553
Mr. A.E. (Alex) Perez, Shell Oil Products Company, P.O. Box 8080, Martinez, CA 94553

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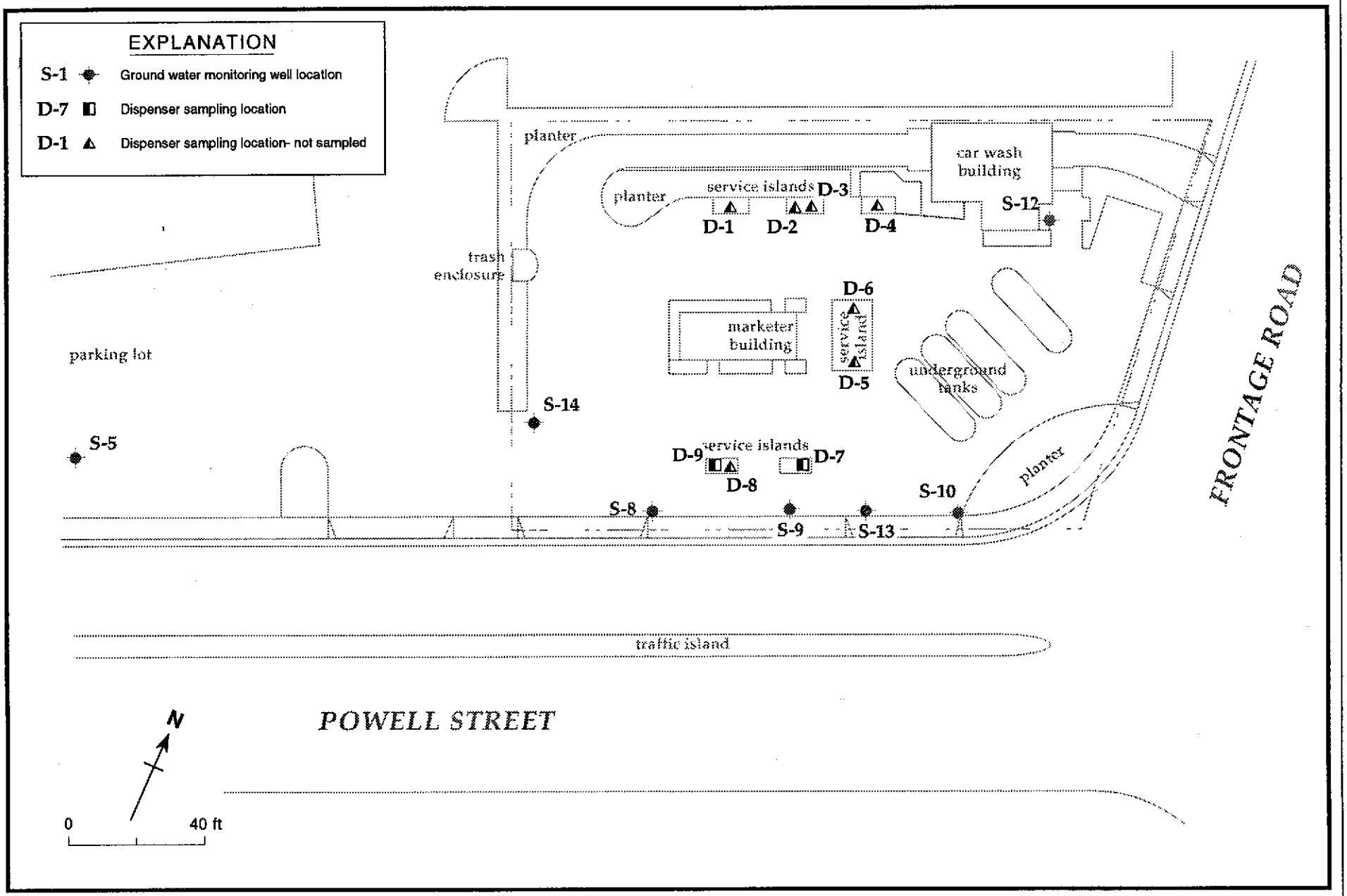

Figure 1. Dispenser Soil Sample Locations - March 19, 1998 - Shell Service Station WIC #204-2495-0101, 1800 Powell Street, Emeryville, California.

Table 1. Dispenser Sample Analytical Data - Shell Service Station - WIC #204-2495-0101, 1800 Powell Street, Emeryville, California

Date	Sample ID	Depth (feet)	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (Concentrations reported in milligrams per kilogram) →						
3/19/98	D-7	2.0	32	220	0.13	0.25	0.061	0.53	3.5
3/19/98	D-9	3.5	260	250	<0.62	0.26	1.0	2.6	14

Abbreviations and Notes:

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

TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.

MTBE = Methyl tert-butyl ether by EPA Method 8020.

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

ATTACHMENT A

Standard Piping and Dispenser Removal
Sampling Procedures

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, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

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

Project: Shell 1800 Powell,Emeryville

Enclosed are the results from samples received at Sequoia Analytical on March 20, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9803G07 -01	SOLID, D-9 (3.5)	03/19/98	Purgeable TPH/BTEX/MTBE
9803G07 -01	SOLID, D-9 (3.5)	03/19/98	TPHD_S Extractable TPH
9803G07 -02	SOLID, D-7 (2.0)	03/19/98	Purgeable TPH/BTEX/MTBE
9803G07 -02	SOLID, D-7 (2.0)	03/19/98	TPHD_S Extractable TPH

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

Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 1800 Powell,Emeryville	Sampled: 03/19/98
1144 65th St. Suite C	Sample Descript: D-9 (3.5)	Received: 03/20/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/30/98
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/98
Attention: Mike Paves	Lab Number: 9803G07-01	Reported: 04/06/98

QC Batch Number: GC033098BTEXEXB
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**25**	**260**
Methyl t-Butyl Ether	0.62	N.D.
Benzene	**0.12**	**0.26**
Toluene	**0.12**	**1.0**
Ethyl Benzene	**0.12**	**2.6**
Xylenes (Total)	**0.12**	**14**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111
4-Bromofluorobenzene	60	140	5 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 1800 Powell,Emeryville	Sampled: 03/19/98
1144 65th St. Suite C	Sample Descript: D-9 (3.5)	Received: 03/20/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/25/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/27/98
Attention: Mike Paves	Lab Number: 9803G07-01	Reported: 04/06/98

QC Batch Number: GC0325980HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**10**	**250**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	144

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 1800 Powell,Emeryville	Sampled: 03/19/98
1144 65th St. Suite C	Sample Descript: D-7 (2.0)	Received: 03/20/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/30/98
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/98
Attention: Mike Paves	Lab Number: 9803G07-02	Reported: 04/06/98

QC Batch Number: GC033098BTEXEXB
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**5.0**	**32**
Methyl t-Butyl Ether	**0.12**	**0.13**
Benzene	**0.025**	**0.25**
Toluene	**0.025**	**0.061**
Ethyl Benzene	**0.025**	**0.53**
Xylenes (Total)	**0.025**	**3.5**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	122
4-Bromofluorobenzene	60	140	30 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 1800 Powell,Emeryville	Sampled: 03/19/98
1144 65th St. Suite C	Sample Descript: D-7 (2.0)	Received: 03/20/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/25/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/27/98
Attention: Mike Paves	Lab Number: 9803G07-02	Reported: 04/06/98

QC Batch Number: GC0325980HBPEXA
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**10**	**220**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	267 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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

Client Project ID: Shell 1800 Powell, Emeryville
Matrix: Solid
Work Order #: 9803G07 01, 02
Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC033098BTEXEXB	GC033098BTEXEXB	GC033098BTEXEXB	GC033098BTEXEXB	GC033098BTEXEXB
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9803H0704	9803H0704	9803H0704	9803H0704	9803H0704
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/30/98	3/30/98	3/30/98	3/30/98	3/30/98
Analyzed Date:	3/31/98	3/31/98	3/31/98	3/31/98	3/31/98
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.18	0.18	0.19	0.57	1.1
MS % Recovery:	90	90	95	95	92
Dup. Result:	0.18	0.18	0.18	0.58	1.1
MSD % Recov.:	90	90	90	97	92
RPD:	0.0	0.0	5.4	1.7	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK033098	BLK033098	BLK033098	BLK033098	BLK033098
Prepared Date:	3/30/98	3/30/98	3/30/98	3/30/98	3/30/98
Analyzed Date:	3/31/98	3/31/98	3/31/98	3/31/98	3/31/98
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.21	0.20	0.21	0.64	1.2
LCS % Recov.:	105	100	105	107	100
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL

Richard Herling
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

Sequoia Analytical

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Cambria Environmental Tech.	Client Project ID:	Shell 1800 Powell, Emeryville	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Mike Paves	Work Order #:	9803G07 01, 02	Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0325980HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550/DHS
Analyst:	G. Fish
MS/MSD #:	9803E6153
Sample Conc.:	77
Prepared Date:	3/25/98
Analyzed Date:	3/26/98
Instrument I.D.#:	GCHP5A
Conc. Spiked:	25 mg/Kg
Result:	76
MS % Recovery:	-4.0
Dup. Result:	84
MSD % Recov.:	28
RPD:	10
RPD Limit:	0-50

LCS #:	BLK032598
Prepared Date:	3/25/98
Analyzed Date:	3/26/98
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
LCS Result:	21
LCS % Recov.:	84

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Richard Hering
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

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 1800 Powell,Emeryville	Received: 03/20/98
1144 65th St. Suite C		
Oakland, CA 94608	Lab Proj. ID: 9803G07	Reported: 04/06/98
Attention: Mike Paves		

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.).

SEQUOIA ANALYTICAL

Richard Herling
Project Manager

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 9883607

Date: 3/19/98
Page 1 of 1

Site Address: 800 Powell, Emeryville

WIC#: 204-5508-5702

Shell Engineer: Tim Hargraves — Phone No.: 510 337-5084 Fax #: 337-5016

Consultant Name & Address: CAMBRIA ENVIRONMENTAL 1144 65th St. Suite C, Oakland, CA 94608

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

Comments:

Sampled by: John Rigel

Printed Name: Mike Paves

LAB: SEQUOIA

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 +MTBE		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1 D-9 (3.5)	3/19/98		X			1		X				X							
2 D-7 (2.0)	3/19/98		X			1		X				X							

Analysis Required

CHECK ONE (1) BOX ONLY — CT/DI

- G.W. Monitoring [ ] 4481
- Site Investigation [ ] 4441
- Soil Classify/Disposal [ ] 4442
- Water Classify/Disposal [ ] 4443
- Soil/Air Remt. or Sys. O & M [ ] 4452
- Water Remt. or Sys. O & M [ ] 4453
- Other [X]

TURN AROUND TIME

- 24 hours [ ]
- 48 hours [ ]
- 96 days [X] (Normal)
- Other [ ] _____

NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Mike Paves	MICHAEL PAVES	3/20/98	2:45 PM		Nick Custrop	3/20	2:45
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

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