CAMBRIA

April 9, 1998

Leroy Griffin
City of Oakland
Fire Department
505 14th Street, Suite 702
Oakland, California 94612

Re: **Dispenser Soil Sampling Report**
Shell Service Station
5755 Broadway
Oakland, California
WIC #204-5510-0303
Cambria Project #240-483-984

LOP 3618

Dear Mr. Griffin:

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 Broadway and Taft Street in Oakland, California. The area surrounding the site is mixed commercial and residential.

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

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

SAMPLING ACTIVITIES AND SAMPLE ANALYSIS

Personnel Present	*Title*	*Company*
Michael Paves	Staff Engineer	Cambria
Lance Taylor	Site Foreman	Paradiso

Sample Date: March 12, 1998.

Sampling Requirements: Based on Cambria's February 3, 1998 telephone conversation with Leroy Griffin, the City of Oakland 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-2, D-3, and D-4 at a depth of approximately 2.0 feet into native soil, because field indications of hydrocarbons were observed. No field indications of hydrocarbons were observed beneath dispenser D-1 during the site visit; therefore, no samples were collected. 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 990 milligrams per kilogram (mg/kg) TPHg and 1.8 mg/kg benzene in sample D-4 at 2.0 feet. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment B.

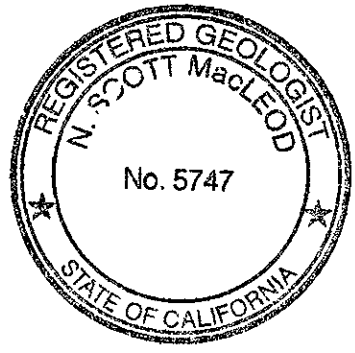
CONCLUSIONS

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 Analytic Reports for Soil

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

G:\OAK5755\Upgrades\Upgrade Report.wpd

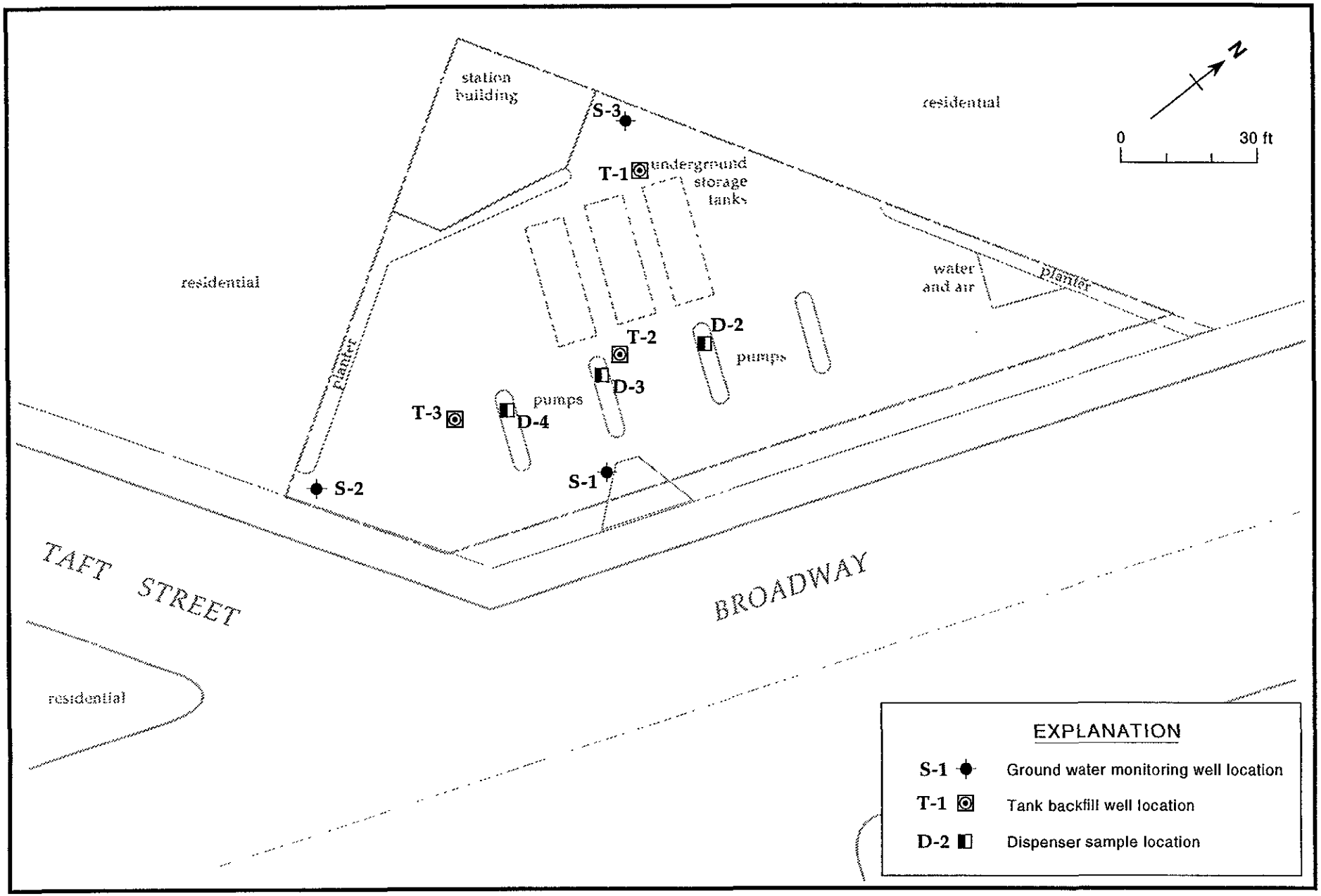


Figure 1. Dispenser Sample Locations - March 12, 1998 - Shell Service Station, 5755 Broadway, Oakland, California.

Table 1. Dispenser Sample Analytical Data - Shell Service Station - WIC# 204-5510-0303, 5755 Broadway, Oakland, California

Sample ID	Depth (feet)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
		(Concentrations reported in milligrams per kilogram)					
March 12, 1998 Samples:							
D-2	2.0	260	<2.5	1.7	<0.50	3.3	5.4
D-3	2.0	750	9.8	<0.50	3.4	6.5	41
D-4	2.0	990	25	1.8	2.3	13	68

Abbreviations and Notes:

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

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

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

mg/kg = Milligrams per kilogram

<x = Below detection limit of x mg/kg

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 Analytic 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

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

Project: Shell 5755 Broadway, Oakland

Enclosed are the results from samples received at Sequoia Analytical on March 13, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9803C21 -01	SOLID, D-3(2.0)	03/12/98	Purgeable TPH/BTEX/MTBE
9803C21 -02	SOLID, D-4(2.0)	03/12/98	Purgeable TPH/BTEX/MTBE
9803C21 -03	SOLID, D-2(2.0)	03/12/98	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

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 5755 Broadway, Oakland	Sampled: 03/12/98
1144 65th St. Suite C	Sample Descript: D-3(2.0)	Received: 03/13/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/25/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/25/98
Attention: Mike Paves	Lab Number: 9803C21-01	Reported: 04/01/98

QC Batch Number: GC032598BTEXEXD
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**100**	**750**
Methyl t-Butyl Ether	**2.5**	**9.8**
Benzene	0.50	N.D.
Toluene	**0.50**	**3.4**
Ethyl Benzene	**0.50**	**6.5**
Xylenes (Total)	**0.50**	**41**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	114
4-Bromofluorobenzene	60	140	13 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 5755 Broadway, Oakland	Sampled: 03/12/98
1144 65th St. Suite C	Sample Descript: D-4(2.0)	Received: 03/13/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/25/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/25/98
Attention: Mike Paves	Lab Number: 9803C21-02	Reported: 04/01/98

QC Batch Number: GC032598BTEXEXD
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**100**	**990**
Methyl t-Butyl Ether	**2.5**	**25**
Benzene	**0.50**	**1.8**
Toluene	**0.50**	**2.3**
Ethyl Benzene	**0.50**	**13**
Xylenes (Total)	**0.50**	**68**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	131 Q
4-Bromofluorobenzene	60	140	11 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 5755 Broadway, Oakland	Sampled: 03/12/98
1144 65th St. Suite C	Sample Descript: D-2(2.0)	Received: 03/13/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/25/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/25/98
Attention: Mike Paves	Lab Number: 9803C21-03	Reported: 04/01/98

QC Batch Number: GC032598BTEXEXD
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**100**	**260**
Methyl t-Butyl Ether	2.5	N.D.
Benzene	**0.50**	**1.7**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**3.3**
Xylenes (Total)	**0.50**	**5.4**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	101
4-Bromofluorobenzene	60	140	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 Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Mike Paves

Client Project ID: Shell 5755 Broadway, Oakland
Matrix: Solid
Work Order #: 9803C21 01-03
Reported: Apr 2, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032598BTEXEXD	GC032598BTEXEXD	GC032598BTEXEXD	GC032598BTEXEXD	GC032598BTEXEXD
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 #:	9803E4701	9803E4701	9803E4701	9803E4701	9803E4701
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/15/98	3/15/98	3/15/98	3/15/98	3/15/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.13	0.18	0.21	0.65	1.2
MS % Recovery:	65	90	105	108	100
Dup. Result:	0.12	0.16	0.20	0.60	1.2
MSD % Recov.:	60	80	100	100	100
RPD:	8.0	12	4.9	8.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK032598	BLK032598	BLK032598	BLK032598	BLK032598
Prepared Date:	3/25/98	3/25/98	3/25/98	3/25/98	3/25/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.16	0.19	0.21	0.64	1.3
LCS % Recov.:	80	95	105	107	108
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 3/12/98
Page 1 of 1

Site Address: 5755 Broadway, Oakland

WIC#: 204 - 5510 - 0303

Shell Engineer: TIM HARGRAVES
Phone No.: 510 335-5091
Fax #: 335-5016

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: 9803C21

Sampled by: [signature]

Printed Name: MIKE PAVES

LAB: SEQUOIA

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.
D-3 (2.0)	3/12/98		X			1
D-4 (2.0)	3/12/98		X			1
D-2 (2.0)	3/12/98		X			1

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/6020)	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
					X							01	
					X							02	
					X							03	

CHECK ONE (1) BOX ONLY — C/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 ☒

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 96 days ☐ (Normal)
- Other ☐ _____

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

UST AGENCY: _____

ER 13 11 36

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
[signature]	MICHAEL PAVES	3/13/98 9:05	[signature]	ERWIN VILLEROS	3/13/98 905
[signature]		3/13/98			
			Jerri Downs	DOWNS	3/13 1136

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

End Of Line of Custody

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

Client Proj. ID: Shell 5755 Broadway, Oakland
Lab Proj. ID: 9803C21

Received: 03/13/98
Reported: 04/01/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 7 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: _____

Date: 3/12/98
Page (1 of 1)

Site Address: 5755 Broadway, Oakland

WIC#: 204 - 5510 - 0303

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

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: [signature]

Printed Name: MIKE PAVES

LAB: SEQUOIA

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
D-3 (2.0)	3/12/98		X			1						X								
D-4 (2.0)	3/12/98		X			1						X								
D-2 (2.0)	3/12/98		X			1						X								

CHECK ONE (1) BOX ONLY — CT/DT

- G.W. Monitoring [ ] 4461
- 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 [ ] (Normal)
- Other [ ] _____

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

UST AGENCY: _____

Relinquished By (signature):	Printed Name:	Date: 3/13/98	Received (signature):	Printed Name:	Date: 3/13/98
[signature]	MICHAEL PAVES	Time: 9:45	[signature]	ERWIN VILLEROS	Time: 9:45
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
		Time:			Time:
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
		Time:			Time:

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

CT1/M1