CAMBRIA

March 20, 1998

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

Re: **Dispenser Soil Sampling Report**
Shell Service Station
9750 Golf Links Road
Oakland, California
WIC #204-5508-2808
Cambria Project #240-0735-984

Dear Mr. Griffin:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this report presenting the results of the February 4, 1998 soil sampling at the site referenced above. Sampling was conducted during station upgrade activities. Presented below are summaries of the site conditions, sampling activities, analytical results, and conclusions.

SITE CONDITIONS

The site is located at the intersection of Golf Links Road and Mountain Boulevard in Oakland, California. The area surrounding the site is both commercial and residential. Highway 580 runs near the northern boundary of the site.

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).

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*
Maureen Feineman	Staff Geologist	Cambria
Michael Paves	Staff Engineer	Cambria
Ron McMahan	Site Foreman	Paradiso

Sample Date: February 4, 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. No field indications of hydrocarbons, such as staining or odor, were observed beneath dispensers D-1, D-2, or D-3 during the site visit. Therefore, no sampling was required for these dispensers. **Cambria personnel observed staining and odor beneath dispenser D-4. Soil samples were collected from sandy soil beneath this dispenser at depths of approximately 2 feet and 4 feet below pea gravel fill.** Cambria's standard procedures for dispenser and piping sampling are presented as Attachment A.

Sample Analyses: Sequoia Analytical of Redwood City, California (Sequoia) analyzed sample D-4 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 maximum hydrocarbon concentrations in soil were 7,800 milligrams per kilogram (mg/kg) TPHg and **37 mg/kg benzene** in sample D-4 at 4.0 feet. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment B.

CONCLUSIONS

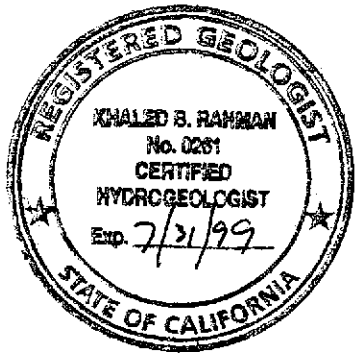
On February 20, 1998, Cambria filed an *Underground Storage Tank Unauthorized Release Site Report* in response to the hydrocarbons detected in sample D-4 and reported in Sequoia's February 19, 1998 laboratory report. No field indications of hydrocarbons were detected beneath the other three dispensers, which indicates that the hydrocarbons are limited to the area beneath dispenser D-4.

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.

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



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

cc: Pamela Evans, Alameda County Department of Environmental Health, 1131 Harbor Bay Parkway, 2nd Floor, Alameda, CA 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

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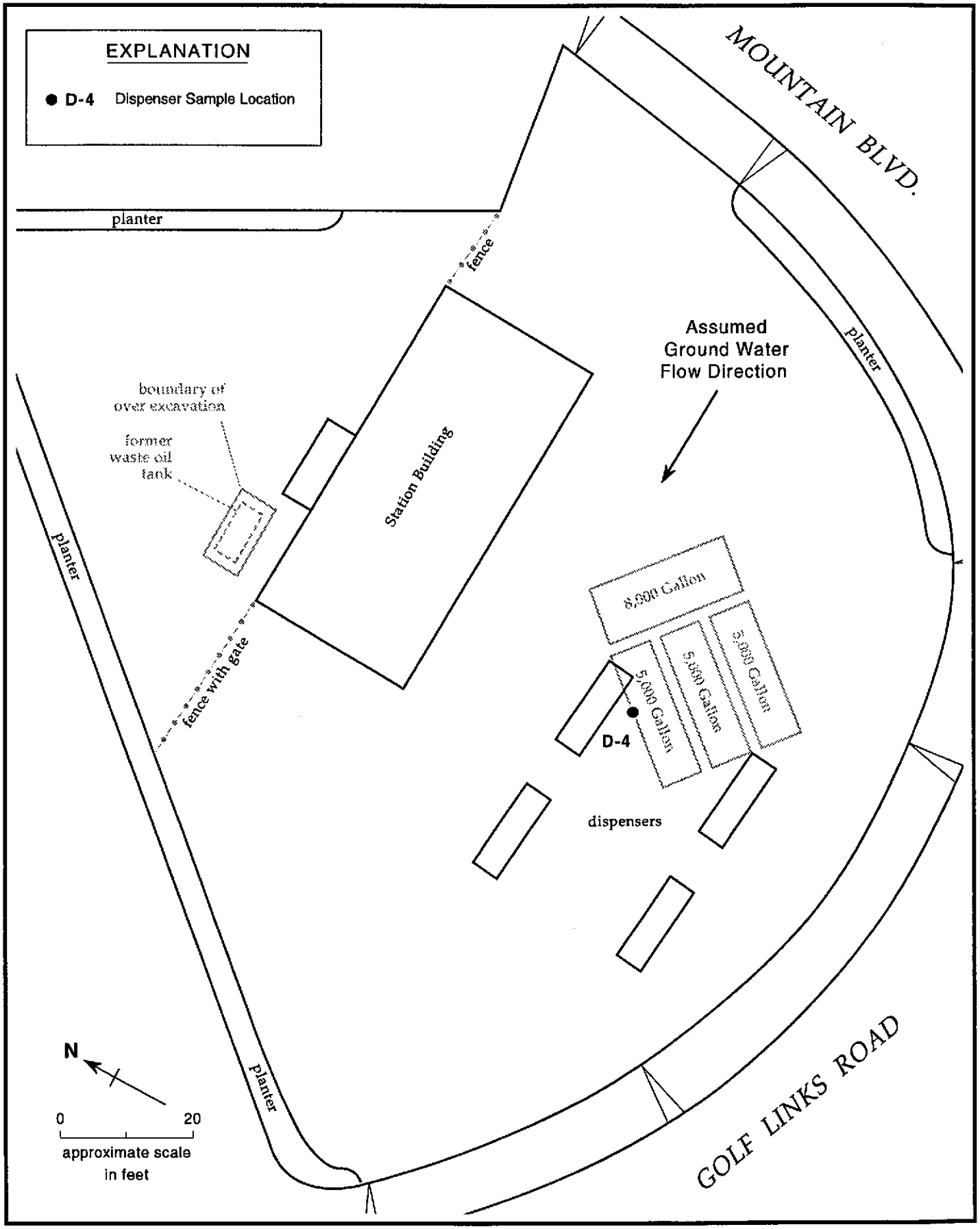

Figure 1. Dispenser Sample Location - Shell Service Station, 9750 Golf Links Road, Oakland, California

Table 1. Dispenser Sample Analytic Data - Shell Service Station - WIC #204-5508-2808, 9750 Golf Links Road, Oakland, California

Sample ID	Depth (feet)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
		← (Concentrations reported in milligrams per kilogram) →					
February 4, 1998 Samples:							
D-4	2.0	4,000	65	<1.2	230	68	600
D-4	4.0	7,800	140	37	440	130	1,000

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: Maureen Feineman

Project: Shell 9750 Golf Links

Enclosed are the results from samples received at Sequoia Analytical on February 6, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9802590 -01	SOLID, D-4-2'	02/04/98	Purgeable TPH/BTEX/MTBE
9802590 -02	SOLID, D-4-4'	02/04/98	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
1144 65th St. Suite C
Oakland, CA 94608

Attention: Maureen Feineman

Client Proj. ID: Shell 9750 Golf Links
Sample Descript: D-4-2'
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9802590-01

Sampled: 02/04/98
Received: 02/06/98
Extracted: 02/13/98
Analyzed: 02/17/98
Reported: 02/19/98

QC Batch Number: GC021398BTEXEXB
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**250**	**4000**
Methyl t-Butyl Ether	**6.2**	**65**
Benzene	1.2	N.D.
Toluene	**1.2**	**230**
Ethyl Benzene	**1.2**	**68**
Xylenes (Total)	**1.2**	**600**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	205 Q
4-Bromofluorobenzene	60	140	0 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 9750 Golf Links	Sampled: 02/04/98
1144 65th St. Suite C	Sample Descript: D-4-4'	Received: 02/06/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/13/98
	Analysis Method: 8015Mod/8020	Analyzed: 02/18/98
Attention: Maureen Feineman	Lab Number: 9802590-02	Reported: 02/19/98

QC Batch Number: GC021398BTEXEXB
Instrument ID: GCHP7

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**500**	**7800**
Methyl t-Butyl Ether	**12**	**140**
Benzene	**2.5**	**37**
Toluene	**2.5**	**440**
Ethyl Benzene	**2.5**	**130**
Xylenes (Total)	**2.5**	**1000**
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 Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Maureen Feineman

Client Project ID: Shell 9750 Golf Links
Matrix: Solid
Work Order #: 9802590 01

Reported: Feb 23, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC021398BTEXEXB	GC021398BTEXEXB	GC021398BTEXEXB	GC021398BTEXEXB	GC021398BTEXEXB
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 #:	980243001	980243001	980243001	980243001	980243001
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/13/98	2/13/98	2/13/98	2/13/98	2/13/98
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/17/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
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	0.19	0.19	0.59	1.3
MS % Recovery:	90	95	95	98	108
Dup. Result:	0.18	0.19	0.19	0.59	1.3
MSD % Recov.:	90	85	95	98	108
RPD:	0.0	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK021398	BLK021398	BLK021398	BLK021398	BLK021398
Prepared Date:	2/13/98	2/13/98	2/13/98	2/13/98	2/13/98
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/17/98
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:	0.19	0.19	0.20	0.59	1.2
LCS % Recov.:	95	95	100	98	100
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

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: 2/4/98
Page of

Site Address: 9750 Golf Links Oakland

WIC#: 204-5508-2809

Shell Engineer: Tim Hargraves
Phone No.:
Fax #: 335-5031

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

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

Comments:

Sampled by: Mike Paves

Printed Name:

LAB: Sequoia

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.
01 D-4-2'	2/4		X			1
02 D-4-4'	2/4		X			1

Analysis Required

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 8020			Asbestos	Container Size	Preparation Used	Composite Y/N
					X						
					X						

CHECK ONE (1) BOX ONLY — C1/D1

- G.W. Monitoring [ ] 4461
- Site Investigation [X] 4481
- Soil Classify/Disposal [ ] 4442
- Water Classify/Disposal [ ] 4443
- Soil/Air Rem. or Sys. O & M [ ] 4452
- Water Rem. or Sys. O & M [ ] 4453
- Other [ ]

TURN AROUND TIME

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

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

FEB 6 12 41

UST AGENCY: _____

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
	9802590

Relinquished By (signature):	Printed Name:	Date: 2/4/98 Time: 10:00	Received (signature):	Printed Name:	Date: 2/6/98 Time: 10:00
Maureen Feineman	Maureen Feineman		Ray Scroggin	Ray Scroggin	
Relinquished By (signature):	Printed Name:	Date: 2/6/98 Time:	Received (signature):	Printed Name:	Date: Time:
Ray Scroggin	Ray Scroggin				
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name: Alice Yang	Date: 2/6/98 Time: 12:47

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

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: Maureen Feineman

Client Proj. ID: Shell 9750 Golf Links
Lab Proj. ID: 9802590

Received: 02/06/98
Reported: 02/19/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 6 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

EQUOIA ANALYTICAL

ichard Herling
roject Manager