R0360

CAMBRIA

ENVIRONMENTAL PROTECTION

99 AUG 23 PM 3:27

August 12, 1999

Mr. Scott Seery
Groundwater Protection Program
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Subsurface Investigation Report**
Shell-branded Service Station
4226 First Street
Pleasanton, California
Incident #98995840
SAP #135782
Cambria Project #241-0523

Dear Mr. Seery:

On behalf of Equiva Services LLC (Equiva), Cambria Environmental Technology, Inc. (Cambria) is submitting the results of the **subsurface investigation conducted on April 7 through 9, 1999** at the above-referenced site. The investigation was conducted in accordance with our January 2, 1997 *Investigation Work Plan*, and February 19, 1997 *Investigation Work Plan Modification* and to meet Alameda County Health Care Services Agency (ACHCSA) requirements. Presented below are summaries of the site background, investigation procedures, investigation results, and conclusions.

BACKGROUND

Site Description: This Shell-branded station is located at the intersection of First Street and Vineyard Avenue, in Pleasanton, California (Figure 1). Three 10,000 gallon gasoline underground storage tanks (USTs) and one 550 gallon waste oil UST are located at the site.

Subsurface Investigation: In 1985 Emcon Associates of San Jose, California installed five soil borings between 20 and 30 feet below grade (fbg) adjacent to the gasoline USTs and collected soil samples. One soil boring was converted into a monitoring well of 30 ft depth. The maximum volatile fuel hydrocarbons detected was 1,300 parts per million (ppm) in S-B 4 at 15 feet below grade (fbg). No benzene was detected in the soil samples collected during this investigation. No ground water was ever encountered in the monitoring well.

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

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
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Underground Storage Tank Removal: In 1986 Blaine Technologies of San Jose, California (Blaine) collected soil samples beneath the four gasoline underground storage tanks when they were removed. Blaine collected soil samples from the excavation at each end of each tank and analyzed the samples for total petroleum hydrocarbons as gasoline (TPHg) and for benzene, toluene, ethylbenzene, and xylenes (BTEX). The concentrations of TPHg in the samples ranged from 240 ppm to below detection limits. Three 10,000 gallon double-walled fiberglass tanks were installed at a location closer to the dispenser islands. A soil sample was also collected from the waste oil tank excavation; no oil was detected in this sample.

Subsurface Investigation: In March 1990, Hart Crowser, Inc. of San Francisco (Hart), California drilled three soil borings between 30 and 50 ft deep in the vicinity of the former gasoline tanks and collected soil samples. They also abandoned monitoring well S-1 by drilling it out, and they continued drilling past the depth of the monitoring well to a total depth of 45 fbg. Soil samples were also collected from the well abandonment boring. The soil samples from all four borings were analyzed for TPHg and BTEX. Concentrations of 380 ppm and 290 ppm TPHg were detected in the samples from the well abandonment boring at 30 and 35 fbg, respectively. TPHg concentrations in the other soil samples were only as high as 18 ppm. In April 1990, Hart drilled two more soil borings at the site to a total depth of 51.5 fbg and collected soil samples. A maximum concentration of 820 ppm TPHg was detected at a depth of 35 fbg in one boring. No TPHg was detected in the other soil boring. A small amount of ground water was present at 49.5 fbg in one boring.

Dispenser and Piping Replacement: On September 8 and 11, 1995, Weiss Associates of Emeryville, California collected soil samples from beneath the gasoline product piping and dispensers. Paradiso Mechanical of San Leandro, California removed the product lines and replaced the dispensers and piping. A maximum concentration of 120 ppm TPHg was detected in soil samples collected at the southernmost former dispenser. Approximately 40 cubic yards of soil were overexcavated at the direction of the Pleasanton Fire Department.

1998 Upgrade: In July 1998, Cambria inspected the waste oil tank remote fill piping during its removal by Gettler-Ryan of Dublin, California. No field indications of hydrocarbons were observed during the site visit. Therefore, no further investigation was required. A sample was collected from the pea gravel. A concentration of 27 ppm of total extractable petroleum hydrocarbons as diesel was detected in this sample.

INVESTIGATION PROCEDURES

Cambria positioned the soil borings at the request of ACHCSA to determine whether groundwater has been affected by apparent releases from the underground storage tank (UST) complex. Two soil borings were installed on site, one of which was converted to monitoring well MW-1 (Figure 2).

The procedures for this subsurface investigation, described in Cambria's approved work plan and work plan addendum, are summarized below. Analytical results for soil and groundwater are summarized in Tables 1 and 2 and presented as Attachment A. Boring logs and Cambria's standard field procedures for monitoring well installation are presented in Attachments B and C, respectively. The well completion forms are presented in Attachment D.

Personnel Present: Barbara Jakub, Project Geologist, of Cambria.

Permits: Zone 7 permit #99062.

Drilling Company: Gregg Drilling of Martinez, California (License #485165).

Drilling Dates: April 7 through 9, 1999.

Drilling Method: Hollow stem auger with split-spoon sampler.

Number of Borings: Two borings, SB-6 and SB-7 (Figure 2).

Number of Wells: One. Soil boring SB-6 was converted to MW-1 (Figure 2).

Boring Depths: 58 and 100 fbg, respectively (Attachment B).

Well Depth: 57.5 fbg (Attachment B).

Sediment Lithology: The site is underlain by silts to 15 and 20 fbg. Interbedded gravelly sand, sandy silt, and sandy and clayey gravels underlie this unit. Interbedded clayey silt was encountered at 55 fbg and 59 fbg in SB-6 and SB-7, respectively. Clayey sand was encountered at 99 fbg to a total depth explored of 100 fbg.

Groundwater Depths: The groundwater table was encountered at 42.5 fbg, but groundwater was not evident in the boring until the hole was left open overnight.

Well Materials: The wells were constructed using two-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, Schedule 40 PVC well casing and #3 sand.

Screened Interval: 37-57 fbg (Attachment B).

Well Elevation Survey: The top of casing elevations were surveyed by Virgil Chavez Land Surveying of Vallejo, California on July 23, 1998 (Attachment E).

Chemical Analyses: Soil samples from each boring and grab water samples from borings were analyzed for:

- TPHg by modified EPA Method 8015,
- Methyl tert-butyl ether (MTBE), benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020, and
- The highest detection of MTBE in groundwater was confirmed by EPA Method 8260.

In addition, samples from the clayey silt unit were analyzed for physical properties including:

- Porosity,
- Moisture content,
- total organic carbon (TOC), and
- dry bulk density.

To characterize stockpiled soil for disposal, 4 brass tubes were collected from the stockpiled soil which were then composited by the analytical laboratory. The composite samples were analyzed for:

- TPHg by modified EPA Method 8015,
- BTEX by EPA Method 8020,
- CAM metals: TTLC for all metals, and
- STLC for all metals detected at 10 times the TTLC maximum, and
- Organic lead for lead over 13 mg/kg.

Backfill Method: The borings were backfilled with neat cement grout to match the existing grade.

Soil Handling: Soil cuttings produced from the borings were disposed by Manley and Sons Trucking Company of Sacramento, California at Forward Landfill in Manteca, California on July 27, 1999.

INVESTIGATION RESULTS

Field Detections of Hydrocarbons: Since field detections of hydrocarbons were observed in the grab groundwater samples a monitoring well was installed in soil boring SB-6 as per the ACHCSA request.

Analytical Results for Soil Samples: The only detection of TPHg was detected in sample SB-7-40.0' at 83 ppm. The only detection of benzene was in sample SB-6 at 45 fbg at 0.1 ppm. No MTBE was detected in any soil sample collected during this investigation. A physical property sample was collected from the clayey silt layer in SB-7 in case a risk assessment is warranted in the future. The results are presented in Attachment A.

Analytical Results for Groundwater: **TPHg was detected in** grab groundwater **in borings SB-6** and SB-7 at concentrations of **10,000** and 750 ppb, respectively. **Benzene was detected in SB-6** and SB-7 at concentrations of **4,500** and 20 ppb, respectively. **No MTBE was detected in groundwater from either boring.**

GW grab samples, both

CONCLUSIONS

Low levels of soil hydrocarbons were detected in the capillary fringe area in the borings. These are likely due to dissolved phase hydrocarbons. Dissolved-phase hydrocarbons were detected in groundwater samples collected downgradient of the former UST complex. However, no MTBE was detected in the groundwater samples. **At this time we propose to monitor groundwater in MW-1 quarterly.** We also propose to add dissolved oxygen to the list of analytes to determine if biodegradation may be occurring at the site.

CLOSING

We appreciate your continued assistance with this project. Please call Barbara Jakub at (510) 420-3309 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Barbara J. Jakub
Project Geologist

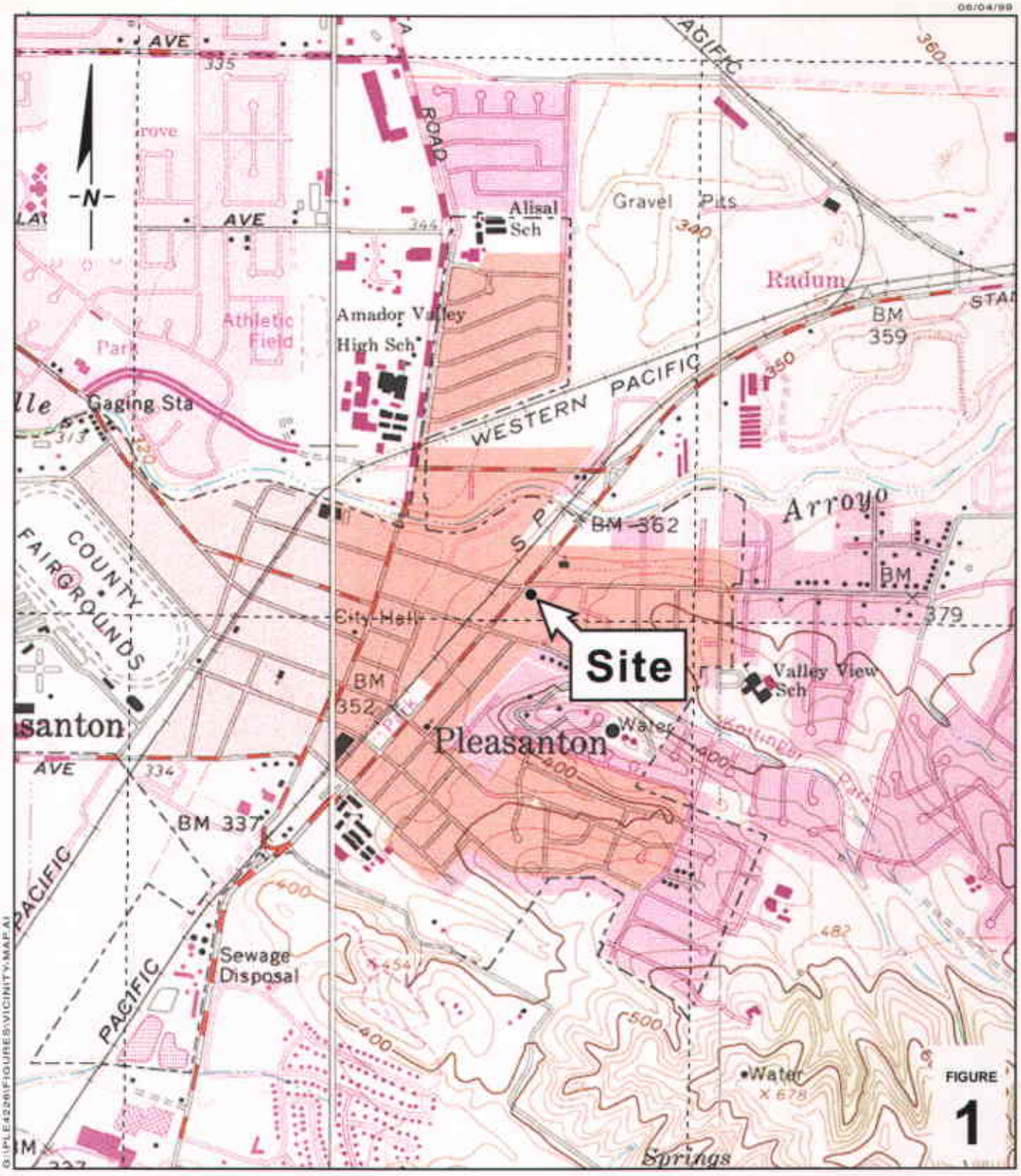
Ailsa S. LeMay, R.G.
Senior Geologist

REGISTERED GEOLOGIST
AILSA S. LE MAY
NO. 6717
STATE OF CALIFORNIA

Attachments:
A - Analytical Reports for Soil and Ground Water
B - Soil Boring Logs
C - Standard Field Procedures for Monitoring Well Installation
D – Well Completion Report
E - Well Elevation Survey Results

cc: Karen Petryna, Equiva Services LLC, P.O. Box 6249, Carson, CA 90749-6249
cc: Wyman Hong, Zone 7, 5997 Parkside Drive, Pleasanton, CA 94588-5127

\\PROXY\SHELL\PLE4226\REPORTS\MWInvReport4226.doc



Shell-branded Service Station
4226 First Street
Pleasanton, California
Incident #98995840

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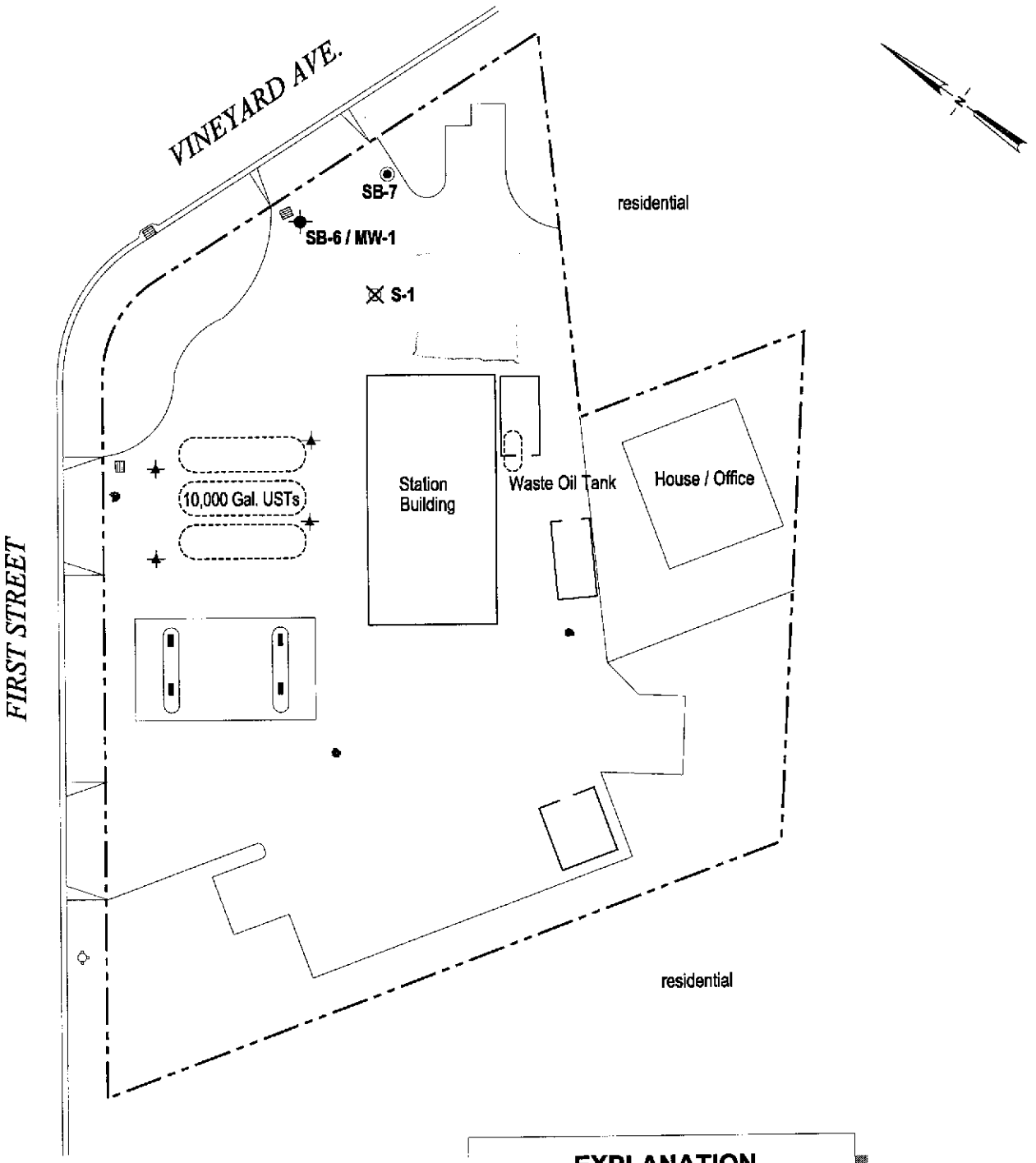
Vicinity Map



EXPLANATION

MW-1 ✦	Monitoring well location
✦	Observation well location
SB-7 ◉	Soil Boring location
S-1 ⊠	Abandoned Well

0 20 40

Scale (ft)

FIGURE

2

G:\PLEA4226\FIGURES\SITE PLAN.DWG

Shell-branded Service Station

4226 First Street

Pleasanton, California

Incident #98995840

CAMBRIA

Site Plan

Table 1 Soil Analytical Results - Shell-branded Service Station Incident# 98995840
4226 First Street, Pleasanton, California

Sample	TPHg	Benzene	Toluene	Ethyl Benzene	Xylene	MTBE
	(ppm)					
SB-6-15.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-19.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-25.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-30.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-35.0'	<1.0	0.0069	<0.0050	<0.0050	<0.0050	<0.025
SB-6-40.0'	<1.0	<0.0050	0.28	<0.0050	<0.0050	<0.025
SB-6-45.0'	<1.0	0.1	<0.0050	<0.0050	<0.0050	<0.025
SB-7-15.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-19.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-24.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-29.3'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-34.3'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-40.0'	83	<0.0050	0.37	0.26	0.26	<0.025
SB-7-44.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-59.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050
SB-7-64.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-Butyl Ether
ppm = parts per million

Samples collected April 7 through 9, 1999

Table 2 Ground Water Analytical Results - Shell-branded Service Station Incident# 98995840
4226 First Street, Pleasanton, California

Sample	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE
	← (ppb) →					
SB-6 (MW-1)	10,000	**4,500**	<50	<50	140	<250
SB-7	750	20	<0.50	3.4	2.9	<2.5

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-Butyl Ether
ppb = parts per billion

grab samples

Samples collected April 7 through 9, 1999

Attachment A

Analytical Reports for Soil and Ground Water

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 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
1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Barbara Jakub

Client Proj. ID: Shell 4226 First St.Plesanton
Lab Proj. ID: 9904269

Received: 04/09/99
Reported: 04/14/99

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 11 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Barbara Jakub

Project: Shell 4226 First St.Plesanton

The following samples were received at Sequoia Analytical on April 9, 1999. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9904269 -01	SOLID, SB-7-59.5	04/07/99	TPPH/BTEX/MTBE (Concord)
9904269 -02	SOLID, SB-7-64.5	04/07/99	TPPH/BTEX/MTBE (Concord)
9904269 -03	LIQUID, SB-7-GW	04/07/99	TPPH/BTEX/MTBE (Concord)
9904269 -04	LIQUID, SB-6-GW	04/09/99	TPPH/BTEX/MTBE (Concord)

These samples are scheduled to be completed

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
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1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

Cambria	Client Proj. ID: Shell 4226 First St.Plesanton	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-59.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/12/99
Attention: Barbara Jakub	Lab Number: 9904269-01	Reported: 04/14/99

QC Batch Number: SP0412998020EXA
Instrument ID: HP-4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.050	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	78

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

Cambria	Client Proj. ID: Shell 4226 First St.Plesanton	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-64.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/12/99
Attention: Barbara Jakub	Lab Number: 9904269-02	Reported: 04/14/99

QC Batch Number: SP0412998020EXA
Instrument ID: HP-4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.050	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	80

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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

Attention: Barbara Jakub

Client Proj. ID: Shell 4226 First St.Plesanton
Sample Descript: SB-7-GW
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9904269-03

Sampled: 04/07/99
Received: 04/09/99

Analyzed: 04/12/99
Reported: 04/14/99

QC Batch Number: GC041299802005A
Instrument ID: HP-5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**750**
Methyl t-Butyl Ether	2.5	N.D.
Benzene	**0.50**	**20**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**3.4**
Xylenes (Total)	**0.50**	**2.9**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	83

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

Cambria	Client Proj. ID: Shell 4226 First St.Plesanton	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-GW	Received: 04/09/99
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/13/99
Attention: Barbara Jakub	Lab Number: 9904269-04	Reported: 04/14/99

QC Batch Number: GC041299802005A
Instrument ID: HP-5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**5000**	**10000**
Methyl t-Butyl Ether	250	N.D.
Benzene	**50**	**4500**
Toluene	50	N.D.
Ethyl Benzene	50	N.D.
Xylenes (Total)	**50**	**140**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Liquid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904269 03	Reported: Apr 20, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC041299802005A	GC041299802005A	GC041299802005A	GC041299802005A	GC041299802005A
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:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	9040549	9040549	9040549	9040549	9040549
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Analyzed Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	18	19	19	58	300
MS % Recovery:	90	95	95	97	97
Dup. Result:	18	18	18	56	300
MSD % Recov.:	90	90	90	93	97
RPD:	0.0	5.4	5.4	3.5	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS041299	LCS041299	LCS041299	LCS041299	LCS041299
Prepared Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Analyzed Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	18	18	18	54	280
LCS % Recov.:	90	90	90	90	90
MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	50-150

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
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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404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 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
1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904269 01, 02
Reported: Apr 20, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	SP0412998020EXA	SP0412998020EXA	SP0412998020EXA	SP0412998020EXA	SP0412998020EXA
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:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	9040567	9040567	9040567	9040567	9040567
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Analyzed Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	12 mg/Kg
Result:	0.74	0.63	0.66	2.2	11
MS % Recovery:	93	79	83	92	92
Dup. Result:	0.75	0.64	0.67	2.2	11
MSD % Recov.:	94	80	84	92	92
RPD:	1.3	1.6	1.5	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS041299	LCS041299	LCS041299	LCS041299	LCS041299
Prepared Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Analyzed Date:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	12 mg/Kg
LCS Result:	0.79	0.67	0.70	2.4	12
LCS % Recov.:	99	84	88	10	100
MS/MSD LCS Control Limits	50-150	50-150	50-150	50-150	50-150

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
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.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Barbara Jakub

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Liquid
Work Order #: 9904269 04
Reported: Apr 20, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC041399802002A	GC041399802002A	GC041399802002A	GC041399802002A	GC041399802002A
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:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	9040577	9040577	9040577	9040577	9040577
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/13/99	4/13/99	4/13/99	4/13/99	4/13/99
Analyzed Date:	2/16/01	2/16/01	2/16/01	2/16/01	2/16/01
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	21	16	16	54	340
MS % Recovery:	105	80	80	90	110
Dup. Result:	21	15	16	51	330
MSD % Recov.:	105	75	80	85	106
RPD:	0.0	6.5	0.0	5.7	3.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS041399	LCS041399	LCS041399	LCS041399	LCS041399
Prepared Date:	4/13/99	4/13/99	4/13/99	4/13/99	4/13/99
Analyzed Date:	2/16/01	2/16/01	2/16/01	2/16/01	2/16/01
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	17	17	17	56	300
LCS % Recov.:	85	85	85	93	97
MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	50-150

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
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

[illegible] St., [illegible]

INCIDENT # [illegible]

Shell Engineer: Karen Petryna	Phone No.: (559) 645-9806; Fax #: 645-0643
Consultant Name & Address: CAMBRIA ENVIRONMENTAL, 1144 65th St. Suite C, Oakland, CA 94608	
Consultant Contact: Barbara Jakub	Phone No.: 510 420-0700; Fax #: 420-9170
Comments: 99-04-269	
Sampled by: Barbara Jakub (signature)	
Printed Name: Barbara Jakub	

Analysis Required

LAB: Sequoia [illegible]

CHECK ONE (1) BOX ONLY	CT/DT		TURN AROUND TIME	
G.W. Monitoring	[ ]	4461	24 hours	[ ]
Site Investigation	[ ]	4441	48 hours	[✓]
Soil Classify/Disposal	[ ]	4442	16 days	[ ] (Normal)
Water Classify/Disposal	[ ]	4443	Other	[ ] ______
Soil/Air Rem. or Sys. O & M	[ ]	4452		
Water Rem. or Sys. O & M	[ ]	4453	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.	
Other	[ ]			

UST AGENCY: Alameda Co.

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	Highest MTBE confirmed by 8260	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-94.5'	4/7/99 1535		✓			1					Hold								Hold
SB-7-100.0'	4/7/99 1610		✓			1						Hold							Hold
SB-7-GW	4/8/99 0845			✓		3						48 hour	✓						48 hour TAT

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Barbara Jakub (signature)	Barbara Jakub	Date: 4/8/99 Time: 1400	[signature]	HARRB	Date: 4/8/99 Time: 1400
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

99-04-269

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No:

Date: 4/7/99
Page 2 of 5

Site Address: 4226 First St, Pleasanton, CA

INCIDENT # 98995840

Shell Engineer: Karen Petryna
Phone No.: (559) 645-9806
Fax #: 645-6643

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

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

Comments:

Sampled by: Barbara Jakub

Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring [ ]	4461	24 hours [ ]
Site Investigation [ ]	4441	48 hours [✓]
Soil Classify/Disposal [ ]	4442	16 days [ ] (Normal)
Water Classify/Disposal [ ]	4443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	4452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M [ ]	4453	
Other [ ]		

UST AGENCY: Alameda Co.

Analysis Required

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	Confirm highest MTBE w/ 8260		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-54.3'	4/7/99 1155		✓			1						Hold								Hold
SB-7-59.5'	1215		✓			1						48 Hour								48 hour
SB-7-64.5'	1220		✓			1						48 hour								48 hour
SB-7-69.5'	1315		✓			1						Hold								Hold
SB-7-74.5'	1340		✓			1						Hold								Hold
SB-7-79.5'	1410		✓			1						Hold								Hold
SB-7-85.0'	1430		✓			1						Hold								Hold
SB-7-89.6'	1520		✓			1						Hold								Hold

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Barbara Jakub	Barbara Jakub	Date: 4/9/99 Time: 1405	Harris	HARRIS	Date: 4/9/99 Time: 1400
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

INCIDENT # 98995840 99-04-269

Shell Engineer: Karen Petryna	Phone No.: (559) 645-9312 Fax #: 645-5643
Consultant Name & Address: CAMBRIA ENVIRONMENTAL 1144 65th St. Suite C, Oakland, CA 94608	
Consultant Contact: Barbara Jakub	Phone No.: 510 420-0700 Fax #: 420-9170
Comments:	
Sampled by: Barbara Jakub	
Printed Name: Barbara Jakub	

CIRCLE ONE (1) BOX ONLY		CT/DT
G.W. Monitoring	[ ]	4461
Site Investigation	[✓]	4441
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	[ ]
16 days	[✓] (Normal)
Other	[ ] ______

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

UST AGENCY: Alameda Co.

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	Confirm highest MTBE using EM8260		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-15.0'	4/7/99 0935		✓			1						✓	✓							16 Day TAT
SB-7-19.5'	0945		✓			1						✓	✓							↓
SB-7-24.5'	1000		✓			1						✓	✓							↓
SB-7-29.3'	1035		✓			1						✓	✓							↓
SB-7-34.3'	1040		✓			1						✓	✓							↓
SB-7-40.0'	1050		✓			1						✓	✓							↓
SB-7-44.5'	1115		✓			1						✓	✓							↓
SB-7-49.5'	1140		✓			1						Hold BJ 4/9/99								Hold

Relinquished By (signature):	Printed Name:	Date: / Time:	Received (signature):	Printed Name:	Date: / Time:
Barbara Jakub	Barbara Jakub	4/9/99 / 1400	[signature]	HARRIS	4/9/99 / 1400

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

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Received: 04/09/99
1144 65th St. Suite C		
Oakland, CA 94608	Lab Proj. ID: 9904268	Reported: 05/14/99
Attention: Barbara Jakub		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 48 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

EPA Methods 8080 and 8150 were not performed by the laboratory.

SEQUOIA ANALYTICAL

Project Manager

Sequoia Analytical

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

Attention: Barbara Jakub

Client Proj. ID: Shell 4226 First St. Plesanto

Lab Proj. ID: 9904268-19
Sample Descript: SOLID,SP-1

Sampled: 04/08/99
Received: 04/09/99
Analyzed: see below

Reported: 05/14/99

LABORATORY ANALYSIS

Analyte	Units	Detection Limit	Method	Analyst	Date Analyzed	Sample Results
#1271 Lead	mg/L	0.050	EPA 6010A	WC	05/12/99	N.D.
#1271 Organic Lead	mg/Kg	2.5	LUFT	WC	05/10/99	N.D.

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

ELAP Number
SEQUOIA ANALYTICAL - ELAP #1210

Please Note:
This sample was preserved in accordance with EPA approved preservation methods.

Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-15.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-01	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-19.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-02	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	114

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-24.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-03	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	109

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-29.3	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-04	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-34.3	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-05	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	106

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-40.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-06	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**83**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	**0.0050**	**0.37**
Ethyl Benzene	**0.0050**	**0.26**
Xylenes (Total)	**0.0050**	**0.26**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	73

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/07/99
1144 65th St. Suite C	Sample Descript: SB-7-44.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-07	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-15.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/20/99
Attention: Barbara Jakub	Lab Number: 9904268-08	Reported: 05/14/99

QC Batch Number: SP0420998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	109

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-19.5	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-09	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-25.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-10	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	112

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-30.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-11	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-35.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-12	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.0069**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	116

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-40.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-13	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.28**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.099**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	114

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/09/99
1144 65th St. Suite C	Sample Descript: SB-6-45.0	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/99
Attention: Barbara Jakub	Lab Number: 9904268-14	Reported: 05/14/99

QC Batch Number: SP0421998020EXA
Instrument ID: HP4

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.10**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	117

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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

Attention: Barbara Jakub

Client Proj. ID: Shell 4226 First St. Plesanto
Sample Descript: SP-1a
Matrix: SOLID
Analysis Method: EPA 8015 Mod
Lab Number: 9904268-15

Sampled: 04/08/99
Received: 04/09/99
Extracted: 04/16/99
Analyzed: 04/19/99
Reported: 05/14/99

QC Batch Number: SP0416998015EXC
Instrument ID: HP3A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	1.2
Chromatogram Pattern:		UH>C20

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1b	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/16/99
	Analysis Method: EPA 8015 Mod	Analyzed: 04/19/99
Attention: Barbara Jakub	Lab Number: 9904268-16	Reported: 05/14/99

QC Batch Number: SP0416998015EXC
Instrument ID: HP3A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1c	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/16/99
	Analysis Method: EPA 8015 Mod	Analyzed: 04/19/99
Attention: Barbara Jakub	Lab Number: 9904268-17	Reported: 05/14/99

QC Batch Number: SP0416998015EXC
Instrument ID: HP3A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	70

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1d	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/16/99
	Analysis Method: EPA 8015 Mod	Analyzed: 04/19/99
Attention: Barbara Jakub	Lab Number: 9904268-18	Reported: 05/14/99

QC Batch Number: SP0416998015EXC
Instrument ID: HP3A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	104

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

SEQUOIA ANALYTICAL - ELAP #1271

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/20/99
	Analysis Method: EPA6010/7470	Analyzed: 04/22/99
Attention: Barbara Jakub	Lab Number: 9904268-19	Reported: 05/14/99

QC Batch Number: ME0420992007MDB
Instrument ID: MV-4

TCLP Metals

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Arsenic, As	5.0	0.10	N.D.
Barium,Ba	**100**	**0.10**	**1.3**
Cadmium, Cd	1.0	0.010	N.D.
Chromium, Cr	**5.0**	**0.010**	**0.15**
Lead, Pb	5.0	0.020	N.D.
Mercury,Hg	0.20	0.0010	N.D.
Selenium, Se	1.0	0.10	N.D.
Silver, Ag	5.0	0.010	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Project Manager

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/20/99
	Analysis Method: EPA 8270	Analyzed: 04/27/99
Attention: Barbara Jakub	Lab Number: 9904268-19	Reported: 05/14/99

QC Batch Number: SP0420998270EXA
Instrument ID: GC/MS1

TCLP Semivolatiles (EPA 8270)

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Total Cresol	200	0.0080	N.D.
1,4-Dichlorobenzene	7.5	0.0080	N.D.
2,4-Dinitrotoluene	0.13	0.0080	N.D.
Hexachlorobenzene	0.13	0.0080	N.D.
Hexachloro-1,3-butadiene	0.5	0.0080	N.D.
Hexachloroethane	3.0	0.0080	N.D.
Nitrobenzene	2.0	0.0080	N.D.
Pentachlorophenol	100	0.040	N.D.
Pyridine	5.0	0.040	N.D.
2,4,5-Trichlorophenol	400	0.040	N.D.
2,4,6-Trichlorophenol	2.0	0.0080	N.D.

rogates	Control Limits %		% Recovery
uorophenol	21	110	39
Phenol-d6	10	110	26
Nitrobenzene-d5	35	114	80
2-Fluorobiphenyl	43	116	77
2,4,6-Tribromophenol	10	123	77

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

SEQUOIA ANALYTICAL - ELAP #1210

Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 4226 First St. Plesanto	Sampled: 04/08/99
1144 65th St. Suite C	Sample Descript: SP-1	Received: 04/09/99
Oakland, CA 94608	Matrix: SOLID	Extracted: 04/19/99
	Analysis Method: EPA 8240	Analyzed: 04/27/99
Attention: Barbara Jakub	Lab Number: 9904268-19	Reported: 05/14/99

QC Batch Number: MS0426998240S2C
Instrument ID: MS-2

TCLP Volatiles (EPA 8240)

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Benzene	0.5	0.10	N.D.
Carbon tetrachloride	0.5	0.10	N.D.
Chlorobenzene	100	0.10	N.D.
Chloroform	6.0	0.10	N.D.
1,2-Dichloroethane	0.5	0.10	N.D.
1,1-Dichloroethylene	0.7	0.10	N.D.
Methyl ethyl ketone	200	0.50	N.D.
Tetrachloroethylene	0.7	0.10	N.D.
Trichloroethylene	0.5	0.10	N.D.
Vinyl chloride	0.2	0.10	N.D.

Surrogates	Control Limits %		% Recovery
Dichloroethane-d4	76	114	91
ene-d8	88	110	98
4-Bromofluorobenzene	86	115	104

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

SEQUOIA ANALYTICAL - ELAP #1210

Project Manager

Sequoia Analytical

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904268 19

Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Cadmium	Chromium	Copper	Nickel
QC Batch#:	ME0419996010MDA	ME0419996010MDA	ME0419996010MDA	ME0419996010MDA
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3050	EPA 3050	EPA 3050	EPA 3050
Analyst:	J. Kelly	J. Kelly	J. Kelly	J. Kelly
MS/MSD #:	9041163	9041163	9041163	9041163
Sample Conc.:	N.D.	28	26	43
Prepared Date:	4/19/99	4/19/99	4/19/99	4/19/99
Analyzed Date:	4/19/99	4/19/99	4/19/99	4/19/99
Instrument I.D. #	MV4	MV4	MV4	MV4
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
Result:	47	80	83	100
MS % Recovery:	94	104	114	114
Dup. Result:	52	100	97	110
MSD % Recov.:	104	144	142	134
RPD:	10	22	16	9.5
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	LCS041999	LCS041999	LCS041999	LCS041999
Prepared Date:	4/19/99	4/19/99	4/19/99	4/19/99
Analyzed Date:	4/19/99	4/19/99	4/19/99	4/19/99
Instrument I.D.#:	MV4	MV4	MV4	MV4
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
LCS Result:	50	56	53	53
LCS % Recov.:	100	112	106	106
MS/MSD LCS Control Limits	80-120	80-120	80-120	80-120

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
Project Manager

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904268 19
Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Lead	Zinc
QC Batch#:	ME041999601OMDA	ME041999601OMDA
Analy. Method:	EPA 6010	EPA 6010
Prep. Method:	EPA 3050	EPA 3050
Analyst:	J. Kelly	J. Kelly
MS/MSD #:	9041163	9041163
Sample Conc.:	54	180
Prepared Date:	4/19/99	4/19/99
Analyzed Date:	4/19/99	4/19/99
Instrument I.D. #	MV4	MV4
Conc. Spiked:	50 mg/Kg	50 mg/Kg
Result:	110	170
MS % Recovery:	112	20
Dup. Result:	120	190
MSD % Recov.:	132	80
RPD:	8.7	11
RPD Limit:	0-20	0-20

LCS #:	LCS041999	LCS041999
Prepared Date:	4/19/99	4/19/99
Analyzed Date:	4/19/99	4/19/99
Instrument I.D.#:	MV4	MV4
Conc. Spiked:	50 mg/Kg	50 mg/Kg
LCS Result:	48	54
LCS % Recov.:	96	108

MS/MSD LCS Control Limits	80-120	80-120

SEQUOIA ANALYTICAL
ELAP #1271

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Lead
QC Batch#:	ME050799STLCMDA
Analy. Method:	EPA 7420
Prep. Method:	STLC
Analyst:	T. Le
MS/MSD #:	9050399
Sample Conc.:	N.D.
Prepared Date:	5/7/99
Analyzed Date:	5/12/99
Instrument I.D.#:	MV1
Conc. Spiked:	2.0 mg/L
Result:	1.8
MS % Recovery:	90
Dup. Result:	1.9
MSD % Recov.:	95
RPD:	5.4
RPD Limit:	0-20

LCS #:	LCS050799
Prepared Date:	5/7/99
Analyzed Date:	5/12/99
Instrument I.D.#:	MV1
Conc. Spiked:	2.0 mg/L
LCS Result:	2.1
LCS % Recov.:	105

MS/MSD	75-125
LCS	80-120
Control Limits	

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Organic Lead
QC Batch#:	ME050799LUFTMDA
Analy. Method:	LUFT
Prep. Method:	LUFT
Analyst:	T. Le
MS/MSD #:	9041413
Sample Conc.:	N.D.
Prepared Date:	5/7/99
Analyzed Date:	5/10/99
Instrument I.D.#:	MV1
Conc. Spiked:	100 mg/Kg
Result:	9.5
MS % Recovery:	9.5
Dup. Result:	10
MSD % Recov.:	10
RPD:	5.1
RPD Limit:	0-20

LCS #:	LCS050799
Prepared Date:	5/7/99
Analyzed Date:	5/10/99
Instrument I.D.#:	MV1
Conc. Spiked:	100 mg/Kg
LCS Result:	16
LCS % Recov.:	16

MS/MSD	0-62
LCS	10-110
Control Limits	

SEQUOIA ANALYTICAL
ELAP #1271

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Mercury
QC Batch#:	ME0420997471MDA
Analy. Method:	EPA 7471
Prep. Method:	EPA 7471
Analyst:	T. Le
MS/MSD #:	90941413
Sample Conc.:	0.042
Prepared Date:	4/20/99
Analyzed Date:	4/20/99
Instrument I.D.#:	MV1
Conc. Spiked:	0.10 mg/Kg
Result:	0.14
MS % Recovery:	98
Dup. Result:	0.15
MSD % Recov.:	108
RPD:	6.9
RPD Limit:	0-20

LCS #:	LCS042099
Prepared Date:	4/20/99
Analyzed Date:	4/20/99
Instrument I.D.#:	MV1
Conc. Spiked:	0.10 mg/Kg
LCS Result:	0.10
LCS % Recov.:	100

MS/MSD	75-125
LCS	75-125
Control Limits	

SEQUOIA ANALYTICAL
ELA #1271

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Mercury
QC Batch#:	ME0420997471MDA
Analy. Method:	EPA 7470
Prep. Method:	EPA 7470
Analyst:	T. Le
MS/MSD #:	90941413
Sample Conc.:	N.D.
Prepared Date:	4/20/99
Analyzed Date:	4/20/99
Instrument I.D.#:	MV1
Conc. Spiked:	0.010 mg/L
Result:	0.011
MS % Recovery:	110
Dup. Result:	0.011
MSD % Recov.:	110
RPD:	0.0
RPD Limit:	0-20

LCS #:	LCS042099
Prepared Date:	4/20/99
Analyzed Date:	4/20/99
Instrument I.D.#:	MV1
Conc. Spiked:	0.010 mg/L
LCS Result:	0.011
LCS % Recov.:	110

MS/MSD	75-125
LCS	75-125
Control Limits	

SEQUOIA ANALYTICAL
ELA #1271

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904268 19
Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Arsenic	Barium	Cadmium	Chromium
QC Batch#:	ME0420992007MDB	ME0420992007MDB	ME0420992007MDB	ME0420992007MDB
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Analyst:	J. Kelly	J. Kelly	J. Kelly	J. Kelly
MS/MSD #:	9041413	9041413	9041413	9041413
Sample Conc.:	N.D.	1.3	N.D.	0.15
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/22/99	4/22/99	4/22/99	4/22/99
Instrument I.D.#:	MV4	MV4	MV4	MV4
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	1.1	2.3	1.0	1.2
MS % Recovery:	110	100	100	105
Dup. Result:	1.0	2.2	1.0	1.1
MSD % Recov.:	100	90	100	95
RPD:	9.5	4.4	0.0	8.7
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	LCS042099	LCS042099	LCS042099	LCS042099
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/22/99	4/22/99	4/22/99	4/22/99
Instrument I.D.#:	MV4	MV4	MV4	MV4
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	1.0	1.0	1.0	0.99
LCS % Recov.:	100	100	100	99
MS/MSD LCS Control Limits	80-120	80-120	80-120	80-120

SEQUOIA ANALYTICAL
ELAP #1271

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Lead	Selenium	Silver
QC Batch#:	ME0420992007MDB	ME0420992007MDB	ME0420992007MDB
Analy. Method:	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 6010	EPA 6010	EPA 6010
Analyst:	J. Kelly	J. Kelly	J. Kelly
MS/MSD #:	9041413	9041413	9041413
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/22/99	4/22/99	4/22/99
Instrument I.D.#:	MV4	MV4	MV4
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.97	1.1	0.93
MS % Recovery:	97	110	93
Dup. Result:	0.95	1.1	0.91
MSD % Recov.:	95	110	91
RPD:	2.1	0.0	2.2
RPD Limit:	0-20	0-20	0-20
LCS #:	LCS042099	LCS042099	LCS042099
Prepared Date:	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/22/99	4/22/99	4/22/99
Instrument I.D.#:	MV4	MV4	MV4
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	1.0	1.1	0.9
LCS % Recov.:	95	110	92
MS/MSD LCS Control Limits	80-120	80-120	80-120

SEQUOIA ANALYTICAL
ELAP #1271

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 01, 09-14	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	SP0420998020EXA	SP0420998020EXA	SP0420998020EXA	SP0420998020EXA	SP0420998020EXA
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:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	9041402	9041402	9041402	9041402	9041402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	16 mg/Kg
Result:	0.91	0.84	0.91	3.0	12
MS % Recovery:	114	105	114	125	75
Dup. Result:	1.0	0.95	1.0	3.3	12
MSD % Recov.:	125	119	125	138	75
RPD:	9.4	12	9.4	9.5	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS042099	LCS042099	LCS042099	LCS042099	LCS042099
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	16 mg/Kg
LCS Result:	0.89	0.77	0.82	2.7	11
LCS % Recov.:	111	96	102	113	78
MS/MSD LCS Control Limits	50-150	50-150	50-150	50-150	50-150

SEQUOIA ANALYTICAL
ELAP #1271

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904268 02-08

Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	SP0421998020EXA	SP0421998020EXA	SP0421998020EXA	SP0421998020EXA	SP0421998020EXA
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:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	9041404	9041404	9041404	9041404	9041404
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Analyzed Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	16 mg/Kg
Result:	0.94	0.81	0.87	2.9	11
MS % Recovery:	118	101	109	121	69
Dup. Result:	1.1	0.90	0.92	3.1	11
MSD % Recov.:	138	113	115	129	69
RPD:	16	11	5.6	6.7	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS042199	LCS042199	LCS042199	LCS042199	LCS042199
Prepared Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Analyzed Date:	4/21/99	4/21/99	4/21/99	4/21/99	4/21/99
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	0.80 mg/Kg	0.80 mg/Kg	0.80 mg/Kg	2.4 mg/Kg	16 mg/Kg
LCS Result:	1.1	0.92	0.94	3.1	12
LCS % Recov.:	138	115	118	129	75
MS/MSD LCS Control Limits	50-150	50-150	50-150	50-150	50-150

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 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 Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Barbara Jakub

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: TCLP Ext
Work Order #: 9904268 19
Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
QC Batch#:	MS042699O624S2C	MS042699O624S2C	MS042699O624S2C	MS042699O624S2C	MS042699O624S2C
Analy. Method:	EPA 624	EPA 624	EPA 624	EPA 624	EPA 624
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	N. Nelson	N. Nelson	N. Nelson	N. Nelson	N. Nelson
LCS/LCSD #:	LCS042699	LCS042699	LCS042699	LCS042699	LCS042699
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/26/99	4/26/99	4/26/99	4/26/99	4/26/99
Analyzed Date:	4/26/99	4/26/99	4/26/99	4/26/99	4/26/99
Instrument I.D.#:	GCMS2	GCMS2	GCMS2	GCMS2	GCMS2
Conc. Spiked:	250 µg/L	250 µg/L	250 µg/L	250 µg/L	250 µg/L
Result:	230	270	270	280	280
LCS % Recov.:	92	108	108	112	112
Dup. Result:	240	280	290	290	290
LCSD % Recov:	96	112	116	116	116
RPD:	4.3	3.6	7.1	3.5	3.5
RPD Limit:	0-25	0-25	0-25	0-25	0-25

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	65-135	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
Project Manager

Please Note:
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342
1551 Industrial Road, San Carlos, CA 94070-4111, (650) 232-9600, FAX (650) 232-9612

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

Client Project ID: Shell 4226 First St. Pleasanton
Matrix: Solid
Work Order #: 9904268 19
Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	Phenol	2-Chlorophenol	1,4-Dichloro-benzene	N-Nitroso-Di-N-propylamine
Analy. Method:	EPA 625	EPA 625	EPA 625	EPA 625
Prep. Method:	EPA 3510	EPA 3510	EPA 3510	EPA 3510
Analyst:	L. Diaz	L. Diaz	L. Diaz	L. Diaz
BS/BSD #:	BLK042099	BLK042099	BLK042099	BLK042099
Sample Conc.:	ND..	ND..	ND..	ND..
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/26/99	4/26/99	4/26/99	4/26/99
Instrument I.D.#:	GCMS1	GCMS1	GCMS1	GCMS1
Conc. Spiked:	150 µg/L	150 µg/L	100 µg/L	100 µg/L
Result:	50	110	73	81
BS % Recovery:	33	73	73	81
Dup. Result:	50	120	74	87
BSD % Recov.:	33	80	74	87
RPD:	0.0	8.7	1.4	7.1
RPD Limit:	0-30	0-30	0-30	0-30

MS/MSD LCS Control Limits	12-110	27-123	36-97	41-116

SEQUOIA ANALYTICAL

Kayvan Kiayai
Project Manager

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	1,2,4-Trichloro-benzene	4-Chloro-3-Methylphenol	Acenaphthene	4-Nitrophenol
Analy. Method:	EPA 625	EPA 625	EPA 625	EPA 625
Prep. Method:	EPA 3510	EPA 3510	EPA 3510	EPA 3510
Analyst:	L. Diaz	L. Diaz	L. Diaz	L. Diaz
BS/BSD #:	BLK042099	BLK042099	BLK042099	BLK042099
Sample Conc.:	ND..	ND..	ND..	ND..
Prepared Date:	4/20/99	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/26/99	4/26/99	4/26/99	4/26/99
Instrument I.D.#:	GCMS1	GCMS1	GCMS1	GCMS1
Conc. Spiked:	100 µg/L	150 µg/L	100 µg/L	150 µg/L
Result:	83	120	81	51
BS % Recovery:	83	80	81	34
Dup. Result:	82	120	84	50
BSD % Recov.:	82	80	84	33
RPD:	1.2	0.0	3.6	2.0
RPD Limit:	0-30	0-30	0-30	0-30

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				

MS/MSD LCS Control Limits	39-98	23-97	46-118	10-80

SEQUOIA ANALYTICAL

Kayvan Kimyai
Project Manager

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Cambria Environmental Tech.	Client Project ID:	Shell 4226 First St. Pleasanton	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Barbara Jakub	Work Order #:	9904268 19	Reported: May 18, 1999

QUALITY CONTROL DATA REPORT

Analyte:	2,4-Dinitro-toluene	Pentachloro-phenol	Pyrene
QC Batch#:			
Analy. Method:	EPA 625	EPA 625	EPA 625
Prep. Method:	EPA 3510	EPA 3510	EPA 3510
Analyst:	L. Diaz	L. Diaz	L. Diaz
BS/BSD #:	BLK042099	BLK042099	BLK042099
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	4/20/99	4/20/99	4/20/99
Analyzed Date:	4/26/99	4/26/99	4/26/99
Instrument I.D.#:	GCMS1	GCMS1	GCMS1
Conc. Spiked:	100 µg/L	150 µg/L	100 µg/L
Result:	84	130	80
BS % Recovery:	84	87	80
Dup. Result:	87	130	80
BSD % Recov.:	87	87	80
RPD:	3.5	0.0	0.0
RPD Limit:	0-30	0-30	0-30

LCS #:			
Prepared Date:			
Analyzed Date:			
Instrument I.D.#:			
Conc. Spiked:			
LCS Result:			
LCS % Recov.:			

MS/MSD LCS Control Limits	24-95	9-103	26-127

SEQUOIA ANALYTICAL
ELAP #1271

Kayvan Kimyai
Project Manager

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SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Seal#: _____

Date: 4/ '99
Page 1 of 5

Site Address: 4226 First St, Pleasanton, CA

INCIDENT # 98995840

Shell Engineer: Karen Petryna — Phone No.: (559) 645-9806 — Fax #: 645-0643

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

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

Comments:

Sampled by: Barbara Jakub

Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

UST AGENCY: Alameda Co.

Sample ID	Date	Sludge	Soil	Water	Air	No. of cont.	TPH GRA 8015 Mod. Gas	TPH DRA 8015 Mod. Diesel	BTEX GRA 8020/602	Volatile Organics GRA 8240	Test for Disposal	Combination TPH 8015 & BTEX 8020, MTBE	Confirm highest MPE using EM8260	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-15.0'	4/7/99 0935		✓			1						✓	✓						16 Day TAT
SB-7-19.5'	0945		✓			1						✓	✓						
SB-7-24.5'	1000		✓			1						✓	✓						
SB-7-29.3'	1035		✓			1						✓	✓						
SB-7-34.3'	1040		✓			1						✓	✓						
SB-7-40.0'	1050		✓			1						✓	✓						
SB-7-44.5	1115		✓			1						✓	✓						
SB-7-49.5	1140		✓			1						✓	✓						Hold

CHECK ONE (1) BOX ONLY — C/I/H

G.W. Monitoring	☐	4181
Site Investigation	☑	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Remed. or Sys. O & M	☐	4412
Water Remed. or Sys. O & M	☐	4413
Other	☐	

TURN AROUND TAT

24 hours ☐
48 hours ☐
10 days ☑ (Normal)
Other ☐ _____

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

Relinquished By (signature):	Printed Name:	Date: 4/9/99 Time: 1700	Received (signature):	Printed Name:	Date: 4/9/99 Time: 1400
Barbara Jakub	Barbara Jakub		JKUNZ	HARRIS	
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 THE CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

SEQUOIA ANALYTICAL 925 988 9673 04/13/99 12:16 :02/13 NO:286

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 4/ , 199
Page 2 of 5

Site Address: 4276 First St, Pleasanton, CA

INCIDENT # 98995840

Shell Engineer: Kevin Petryna — Phone No.: (559) 645-9806, Fax #: 645-8643

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

Consultant Contact: Barbara Jakub — Phone No.: 510 420-0700, Fax #: 420-9170

Comments:

Sampled by: Barbara Jakub

Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

CHECK ONE (1) BOX ONLY — C/DI

- G.W. Monitoring [ ] 4161
- Site Investigation [ ] 4161
- Soil Classify/Disposal [ ] 4162
- Water Classify/Disposal [ ] 4163
- Soil/Air Rem. or Sys. O & M [ ] 4164
- Water Rem. or Sys. O & M [ ] 4165
- Other [ ]

TURN AROUND TIME

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

RUSH: Verify 24/48 hr. TAT

UST AGENCY: Alameda Co.

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of cont.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/8021)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020), MTBE	Confirm high MTBE w/ 8240	Asbestos	Container Size	Preservation Used	N/A	Composite	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-54.3'	4/7/99 1155		✓			1						Hold								Hold
SB-7-59.5'	1215		✓			1						48 Hour								48hour
SB-7-64.5'	1220		✓			1						48hour								48hour
SB-7-69.5'	1315		✓			1						Hold								Hold
SB-7-74.5'	1340		✓			1						Hold								Hold
SB-7-79.5'	1410		✓			1						Hold								Hold
SB-7-85.0'	1430		✓			1						Hold								Hold
SB-7-89.5'	1520		✓			1						Hold								Hold

Relinquished by (signature):	Printed Name:	Date: 4/9/99 Time: 1400	Received (signature):	Printed Name:	Date: 4/9/99 Time: 1400
Barbara Jakub	Barbara Jakub			HARRIS	
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ____________

Date: 4/ /99
Page 3 of 5

SEQUOIA ANALYTICAL

Site Address: 4226 First St, Pleasanton, CA

INCIDENT # 98995840

Shell Engineer: Karen Petryna
Phone No.: (559) 645-9806
Fax #: 645-0643

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

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

Comments:

Sampled by: Barbara Jakub (signature)

Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

CIRCLE ONE (1) BOX ONLY		CT/DT	TURN AROUND TIME	
G.W. Monitoring	[ ]	4461	24 hours	[ ]
Site Investigation	[ ]	4441	48 hours	[✓]
Soil Classify/Disposal	[ ]	4442	16 days	[ ] (Normal)
Water Classify/Disposal	[ ]	4443	Other	[ ] ______
Soil/Air Rem. or Sys. O & M	[ ]	4452		
Water Rem. or Sys. O & M	[ ]	4453		
Other	[ ]			

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

UST AGENCY: Alameda Co.

Analysis Required

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	Highest MTBE confirmed by 8260		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-7-94.5'	4/7/99 1535		✓			1					Hold									Hold
SB-7-100.0'	4/7/99 1610		✓			1						Hold								Hold
SB-7-GW	4/8/99 0845			✓		3						48 hour	✓							48 hour TAT

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Barbara Jakub (signature)	Barbara Jakub	Date: 4/9/99 Time: 1401	[illegible] (signature)	HARRB	Date: 4/9/99 Time: 1400
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ______

Date: 4/ /99
Page 4 of 5

Site Address: 4226 First St, Pleasanton, CA
INCIDENT #: 98995840
Shell Engineer: Karen Petryna
Phone No.: (559) 645-9302
Fax #: 645-8643
Consultant Name & Address: CAMBRIA ENVIRONMENTAL
1144 65th St. Suite C, Oakland, CA 94608
Consultant Contact: Barbara Jakub
Phone No.: 510 420-0700
Fax #: 420-9170
Comments:
Sampled by: Barbara Jakub
Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

CIRCLE ONE (1) BOX ONLY	CT/DT
G.W. Monitoring	4461
Site Investigation	4441
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 ☑ (Only) / 16 days ☑ (Normal) / Other ☐

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

UST AGENCY: Alameda Co.

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 / Confirm highest MTBE w/EPA method 8260 / Asbestos / Container Size / Preparation Used / Composite Y/N

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH Gas	TPH Diesel	BTEX	Volatile Organics	Test for Disposal	Combination TPH/BTEX/MTBE	Confirm highest MTBE w/EPA 8260	Asbestos	Container Size	Preparation Used	Composite Y/N	Material Description	Sample Condition/Comments
SB-6-15.0'	4/5/99 1125		✓			1						✓	✓						
SB-6-19.5'	1145		✓			1						✓	✓						
SB-6-25.0'	1155		✓			1						✓	✓						
SB-6-30.0'	1215		✓			1						✓	✓						
SB-6-35.0'	1305		✓			1						✓	✓						
SB-6-40.0'	1335		✓			1						✓	✓						
SB-6-45.0'	1420		✓			1						✓	✓						
SB-6-GW	4/5/99 1615			✓		3						✓	✓						48 hour TAT

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Barbara Jakub	Barbara Jakub	Date: 4/9/99 Time: 1400	J. Harris	HARRIS	Date: 4/9/99 Time: 1400
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ______

Date: 4/ /99
Page 5 of 5

Site Address: 4226 First St, Pleasanton, CA

INCIDENT # 98995840

Shell Engineer: Karen Petryna

Phone No.: (510) 645-9806
Fax #: 645-8643

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

Consultant Contact: Barbara Jakub

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

Comments:

Sampled by: Barbara Jakub

Printed Name: Barbara Jakub

LAB: Sequoia Redwood City

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring [ ]	4461	24 hours [ ]
Site Investigation [ ]	4441	48 hours [ ]
Soil Classify/Disposal [✓]	4442	15 days [✓] (Normal)
Water Classify/Disposal [ ]	4443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	4452	
Water Rem. or Sys. O & M [ ]	4453	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Other [ ]		

UST AGENCY: Alameda Co.

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
~~SP-1~~ SP-1a	4/8/99		✓			1					✓									Use attached disposal protocol
SP-1b	↓		✓			1					✓									
SP-1c	↓		✓			1					✓									
SP-1d	↓		✓			1					✓									

Relinquished By (signature):	Printed Name:	Date/Time	Received (signature):	Printed Name:	Date/Time
Barbara Jakub	Barbara Jakub	Date: 4/9/99 Time: 1400	[signature]	HARRIS	Date: 4/9/99 Time: 1400
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

ISSUED DATE: 05/23/97
CANCELS ISSUE: 03/05/97
ISSUED BY: RLG

MATERIAL: SOIL CONTAMINATED WITH GASOLINE, DIESEL OR CRUDE (NOT FROM A LEAKING UNDERGROUND STORAGE TANK)

USE FOR ARIZONA , CALIFORNIA AND NEVADA WASTE ONLY!!!

MINIMUM REQUIRED TESTING

TPH = TOTAL PETROLEUM HYDROCARBONS, DHS GC-FID MOD 8015
GASOLINE OR DIESEL AS REQUIRED.
BTXE = EPA 8020 + MTBE
CAM METALS = TTLC ALL:
STLC ON ALL TTLC METALS 10 X STLC MAXIMUM:
TTLC LEAD => 13 MG/KG REQUIRES ORGANIC ANALYSIS
TCLP EXTRACTION = EPA 1311 AND
VOC ON EXTRACT = EPA 8240
SVOC ON EXTRACT = EPA 8270
METALS ON EXTRACT = EPA 6010, (USE 7470 FOR Hg)

NOTE: IF PESTICIDES = EPA 8080 (ON EXTRACT)
IF HERBICIDES = EPA 8150 (ON EXTRACT)

AQUATIC BIOASSAY (FISH TOX) IS ONLY TO BE RUN ON SAMPLES WITH GREATER THAN 5000 PPM TPH. COMPOSITE A MAXIMUM OF 4 SAMPLES.

AQUATIC BIOASSAY (FISH TOX) = PART 800 OF "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER (15TH EDITION)"

LABORATORY INSTRUCTIONS (MINIMUM GUIDELINES ONLY)

- TPH REQUIRED FOR ALL SAMPLES.
- ALL OTHER TESTS REQUIRED TO BE RUN ON COMPOSITE(S). MAXIMUM 4 SAMPLES PER COMPOSITE.
- STLC REQUIRED FOR METALS WITH TTLC VALUE 10 X STLC MAXIMUM.
- ORGANIC ANALYSIS REQUIRED FOR TTLC LEAD OF 13 MG/KG OR GREATER.
- LABORATORY IS TO SUPPLY QA/QC INFO. WITH ALL ANALYTICAL REPORTS.
- MAIL OR FAX ALL ANALYSIS TO PERSON REQUESTING ANALYSIS.

SUB-CHAIN OF COUSTODY

SEQUOIA ANALYTICAL
680 CHESAPEAKE DRIVE
REDWOOD CITY, CA 94063
TEL415-364-9600 FAX415-364-9233

PROJECT SUBBED TO: WC

TAT REQUESTED: [ ] 24H [ ] 48H [ ] 72H [ ] 5D [ ] 10D

DUE DATE: 4/21

REPORT TO: K. Kinyas

WORKORDER #: 99-04-268

PROJECT NAME: Camorsa

ANALYSIS REQUESTED: TPH GAS BTEX MTBE; confirm hi; (or) MTBE BY 8260; TBA GAS; TPH Diesel; Disposal Test for

FRACTION NUMBER	SAMPLE DESCRIPTION	MATRIX	NUMBER OF CONT.	TYPE CONT.	SAMPLING TIME/DATE	TPH GAS BTEX MTBE	confirm hi; (or) MTBE BY 8260	TBA GAS	TPH Diesel	Disposal Test for				REMARKS
12	SB-6-35.0	S	1		4/9	X	X							
13	40.0	↓	↓		↓	↓	↓							
14	45.0	↓	↓		↓	↓	↓							
15	SP-1a	↓	↓		4/8			X	X					
16	B	↓	↓		↓			↓	↓					
17	C	↓	↓		↓			↓	↓					
18	D	↓	↓		↓			↓	↓					
19	SP-1a-1d	↓	4		↓					X				comp 4:1

RELINQUISHED FROM SEQUOIA BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	SAMPLE CONDITION?
[signature]						
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TEMP?
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	

SUB-CHAIN OF CUSTODY

SEQUOIA ANALYTICAL
680 CHESAPEAKE DRIVE
REDWOOD CITY, CA 94063
TEL415-364-9600 FAX415-364-9233

PROJECT SUBBED TO: WC

TAT REQUESTED: ☐ 24H ☐ 48H ☐ 72H ☐ 5D ☐ 10D

DUE DATE: 4/21

REPORT TO: K. Kinzig

WORKORDER # 99-04-268

PROJECT NAME: Cambria

FRACTION NUMBER	SAMPLE DESCRIPTION	MATRIX	NUMBER OF CONT.	TYPE CONT.	SAMPLING TIME/DATE	ANALYSIS REQUESTED: TPH GAS BTEX	MTBE	Confirm highest MTBE BTX 8260	REMARKS
01	SB-7-15.0	S	1		4/7	X	X	X	
02	19.5								
03	24.5								
04	29.3								
05	34.3								
06	40.0								
07	44.5								
08	SB-6-15.0				4/9				
09	19.5								
10	25.0								
11	30.0								

RELINQUISHED FROM SEQUOIA BY:	DATE	TIME	RECEIVED BY: DATE TIME
RELINQUISHED BY:	DATE	TIME	RECEIVED BY: DATE TIME
RELINQUISHED BY:	DATE	TIME	RECEIVED BY: DATE TIME

SAMPLE CONDITION?

TEMP?

Attachment B

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	Equiva Services LLC	**BORING/WELL NAME**	MW-1 / SB-6
JOB/SITE NAME	ple-4226	**DRILLING STARTED**	08-Apr-99
LOCATION	4226 First Street, Pleasanton, California	**DRILLING COMPLETED**	[illegible]
PROJECT NUMBER	241-0395	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	371.83 ft
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	371.20 ft
BORING DIAMETER	8"	**SCREENED INTERVAL**	37.5 to 57.5 ft bgs
LOGGED BY	B. Jakub	**DEPTH TO WATER (First Encountered)**	42.5 ft (08-Apr-99)
REVIEWED BY	B. Jakub	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5' bgs; located near NW planter/entrance to Shell station on Vineyard and W of SB-7.		

TPHg (mg/kg)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								ASPHALT.	0.3	
								FILL.	1.5	
						ML		**Sandy SILT**; (ML); brown (10YR4/3); very soft; wet; 5% clay, 70% silt, 25% fine to medium grained sand; low plasticity; moderate to low estimated permeability.	4.5	
					5	ML		**SILT**; (ML); dark yellow brown (10YR4/6); stiff; moist; 5% clay, 85% silt, 8% sand, 2% fine grained gravel; low plasticity; low estimated permeability.	9.7	Portland Type I/II
					10	ML		**Clayey SILT**; (ML); yellow brown (10YR5/8); stiff; damp; 38% clay, 50% silt, 2% fine grained sand, 10% fine to coarse subangular gravel; high plasticity; low estimated permeability.	15.0	
	18 28 30				15					
<1.0			SB-6 -15.5			SP		**Clayey Gravelly SAND**; (SP); dark greenish gray (5GY4/1); dense; damp; 20% clay, 50% sand, 30% gravel; medium plasticity; low to moderate estimated permeability; wood fragments.	19.3	
	13 11 20				20	ML		**Sandy SILT with Clay**; (ML); olive (5Y4/3); very stiff; damp; 15% clay, 50% silt, 35% very fine grained sand; low plasticity; moderate to low estimated permeability.	24.5	2" diam., Schedule 40 PVC
<1.0			SB-6 - 19.5							
	20 28 30				25	SP		**Gravelly SAND with Silt**; (SP); olive (5Y4/3); dense; damp; 5% clay, 15% silt, 60% fine to medium grained sand, 20% gravel; no plasticity; high to moderate estimated permeability.	29.0	
<1.0			SB-6 - 25.0							
	40 43 45				30	GP		**Sandy GRAVEL**; (GP); olive (5Y4/3); very dense; damp; 2% clay, 13% silt, 35% medium grained sand (red grains), 50% fine to coarse, subangular to subrounded gravel (chert); no plasticity; high estimated permeability.	34.0	Bentonite Seal
<1.0			SB-6 - 30.0							
	20 35				35			**Clayey Gravelly SAND**; (SP); dark yellow brown		

Continued Next Page

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	MW-1
JOB/SITE NAME	ple-4226	**DRILLING STARTED**	08-Apr-99
LOCATION	4226 First Street, Pleasanton, California	**DRILLING COMPLETED**	09-Apr-99

Continued from Previous Page

TPHg (mg/kg)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
<1.0	50		SB-6 - 35.0					(10YR4/6); very dense; damp; 20% clay, 10% silt, 40% medium grained sand, 30% fine to coarse grained gravel (sandstone/claystone, serpentinite, some MnO_2/Fe staining); low plasticity; moderate to low estimated permeability.		Monterey Sand #3
	20									
	45				40					
<1.0	50/4		SB-6 - 40.0			SP				
	25							@ 44' - moist to wet.		
	45									
	45				45					
	32									2"-diam., 0.020" Slotted Schedule 40 PVC
	80/6				50					
						GC		**Clayey GRAVEL with Silt**; (GC); dark yellow brown (10YR4/6); very dense; moist to wet; 25% clay, 15% silt, 20% fine to coarse grained sand, 40% fine to coarse grained gravel.	50.0	
	15				55					
	40									
	50					MH		**Clayey SILT**; (MH); light olive brown (2.5Y5/4); hard; damp; 25% clay, 75% silt; medium to high plasticity; very low estimated permeability; black MnO_2 blebs throughout.	55.2	
									58.0	Bottom of Boring @ 58 ft

WELL LOG (TPH-G) G:\PLE4226\GINT\PLE4226.GPJ DEFAULT.GDT 8/11/99

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-7
JOB/SITE NAME	ple-4226	**DRILLING STARTED**	07-Apr-99
LOCATION	4226 First Street, Pleasanton, California	**DRILLING COMPLETED**	07-Apr-99
PROJECT NUMBER	241-0395	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	8"	**SCREENED INTERVAL**	NA
LOGGED BY	B. Jakub	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	B. Jakub	**DEPTH TO WATER (Static)**	42.50ft (08-Apr-99)

REMARKS Hand augered to 4' bgs; located E side of Vineyard exit near planter.

TPHg (mg/kg)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								ASPHALT.	0.3	
								FILL.	1.5	
						ML		**Sandy SILT**; (ML); brown (10YR4/3); very soft; wet; 5% clay, 70% silt, 25% fine to medium grained sand; low plasticity; moderate to low estimated permeability.	4.5	
	11 12 19				5	ML		**SILT**; (ML); dark yellow brown (10YR4/6); stiff; moist; 5% clay, 85% silt, 8% sand, 2% fine grained gravel; low plasticity; low estimated permeability.	9.7	
	15 25 31				10	ML		**Clayey SILT**; (ML); yellow brown (10YR5/8); stiff; damp; 38% clay, 50% silt, 2% fine grained sand, 10% fine to coarse subangular gravel; high plasticity; low estimated permeability.		
<1.0	16 25 35		SB-7 -15.0		15	ML		@ 14.3 - olive brown (2.5Y4/4) mottled with olive; 20% clay, 78% silt, 2% fine grained gravel; medium plasticity; low estimated permeability.	19.5	
<1.0	11 22 25		SB-7 - 19.5		20	SP		**Gravelly SAND with Silt**; (SP); olive gray (5Y4/2); dense; damp; 3% clay, 15% silt, 62% fine to coarse grained sand, 20% fine to coarse grained gravel; no plasticity; high estimated permeability.	20.3	
						GP		**Clayey Sandy GRAVEL**; (GP); yellow brown (10YR5/6); 20% clay, 20% fine to coarse grained sand, 80% fine to coarse grained gravel (quartz, possibly chert); low to medium plasticity; low to moderate estimated permeability.	24.3	
<1.0	20 20 20		SB-7 - 24.5		25	SP		**Gravelly SAND with Silt**; (SP); yellow brown (10YR5/6); dense; damp; 3% clay, 15% silt, 52% medium grained sand, 25% fine grained gravel; no plasticity; high estimated permeability.	25.3	
						ML		**Clayey SILT**; (ML); stiff; damp; 30% clay, 60% silt, 10% fine grained sand; high plasticity; low estimated permeability; trace carbon.	29.0	
<1.0	35 36 40		SB-7 - 29.3		30	GP		**Sandy GRAVEL with Clay**; (GP); dark olive gray (5Y3/2); 15% clay, 5% silt, 35% fine to coarse grained sand, 45% fine to coarse grained gravel (quartz); low plasticity; moderate to high estimated permeability.	34.0	
	19 20				35			**Clayey GRAVEL with Silt**; (GC); yellow brown		

Continued Next Page

WELL LOG (TPH-G) G:\PLE4226\GINT\PLE4226.GPJ DEFAULT.GDT 8/11/99

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-7
JOB/SITE NAME	ple-4226	**DRILLING STARTED**	07-Apr-99
LOCATION	4226 First Street, Pleasanton, California	**DRILLING COMPLETED**	07-Apr-99

Continued from Previous Page

TPHg (mg/kg)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
	50		SB-7 - 34.3					(10YR5/8); very dense; damp; 35% clay, 15% silt, 10% sand, 40% fine to coarse grained gravel (quartz); medium plasticity; moderate to low estimated permeability.		
	25 45 53							@ 39' - quartz, siltstone, chert gravels.		
<1.0			SB-7 - 40.0		40	GC				
	25 40 50/3							@ 44' - moist to wet.		
83			SB-7 - 44.5		45					
	20 30 50							**Clayey GRAVEL**; (GC); yellow brown (10YR5/4); very dense; moist to wet; 20% clay, 10% silt, 10% medium to coarse grained sand, 60% fine grained gravel; medium plasticity; low to moderate estimated permeability.	49.0	Portland Type I/II
<1.0			SB-7 -49.5		50					
	30 50/3					GC				
<1.0			SB-7 - 54.3		55					
	20 30 50/3								59.0	
<1.0			SB-7 - 59.5		60			**Clayey SILT**; (MH); mottled yellow brown (10YR4/6) and light brownish gray (2.5Y6/2); hard; dry; 20% clay, 70% silt, 10% very fine to fine grained sand; medium plasticity; low estimated permeability.		
	25 35 50/3					MH		@ 64' - dark brown MnO_2 or organic blebs throughout.		
<1.0			SB-7 - 64.5		65					
	17 32 50/4							**Clayey SILT**; (MH); light olive brown (2.5Y5/4); hard; dry; 25% clay, 75% silt; medium plasticity; very low estimated permeability.	69.0	
			SB-7 - 69.5		70					
	20 40							@ 74' - increasing mottled with yellow brown (10YR5/8).	74.5	
					75					

Continued Next Page

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1144 - 65th St.
Oakland, CA 94608
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Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-7
JOB/SITE NAME	ple-4226	**DRILLING STARTED**	07-Apr-99
LOCATION	4226 First Street, Pleasanton, California	**DRILLING COMPLETED**	07-Apr-99

Continued from Previous Page

TPHg (mg/kg)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
	50/4		SB-7 - 74.5					@ 74' to 74.5' - black blebs, possibly MnO_2.		
	15 30 50/2		SB-7 - 79.5		80					
	15 25 50		SB-7 - 85.0		85	MH		@ 84' - dark yellow brown (10YR4/6); damp; 30% clay, 70% silt.		
	15 46 50				90					
	25 30 50		SB-7 - 94.5		95			@ 94' - MnO_2 blebs throughout; becomes siltier.		
	25 50/3		SB-7 - 100.0		100	SC		**Clayey SAND with Gravel**; (SC); dark yellow brown (10YR4/6); dense; damp; 30% clay, 5% silt, 50% fine to coarse grained sand, 15% fine grained gravel (quartz); medium plasticity; low to moderate estimated permeability.	99.0 100.0	Bottom of Boring @ 100 ft
								Ground water sample (SB-7-GW) collected.		

WELL LOG (TPH-G) G:\PLE4226\GINT\PLE4226.GPJ DEFAULT.GDT 8/11/99

Attachment C

Standard Field Procedures for Monitoring Well Installation

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned 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.

Sample Analysis

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

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. 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. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may 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.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Ground water monitoring wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and 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. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

F:\TEMPLATE\SOPS\WELLS-GW.WPD

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Attachment E

Well Elevation Survey Results