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ENVIRONMENTAL PROTECTION

00 MAY 16 PM 4:23

May 12, 2000

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Subsurface Investigation Report and Vapor Extraction Test Report**
Shell-branded service station
285 Hegenberger Road
Oakland, California
SAP Code: 135691
Incident: #98995749
Cambria Project #241-0734-006

Dear Mr. Chan:

On behalf of Equiva Services LLC (Equiva), Cambria Environmental Technology, Inc. (Cambria) is submitting the results of the subsurface investigation and soil vapor extraction test for the above-referenced site. The investigation and vapor testing were carried out in accordance with Cambria's February 4, *1999 Letter Response and Work Plan* and March 15, 1999 boring location changes. The February *Work Plan* was conditionally approved by the Alameda County Health Care Services Agency (ACHCSA) in a letter dated February 11, 1999 pending boring location changes. The boring location changes were approved in a telephone conversation with ACHCSA on March 16, 1999. A site summary, description of investigation techniques, results of our geoprobe investigation and soil vapor extraction testing, and conclusions and recommendations are presented below.

BACKGROUND

Site Location: This operating Shell-branded service station is located at the intersection of Hegenberger Road and Leet Drive in Oakland, California (Figure 1). The surrounding area is of mixed commercial and industrial use. Oakland International Airport is located approximately one mile west of the subject site.

Site History: There are currently 8 groundwater monitoring wells located onsite and 3 monitoring wells located in the median of Hegenberger Road, to the south of the site.

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Soil Vapor Extraction: Soil vapor extraction (SVE) began on August 30, 1993 and was discontinued in February 1995 after influent concentrations of total petroleum hydrocarbons (TPHg) and benzene reached asymptotic levels, corresponding to negligible hydrocarbon removal. A February 9, 1995 letter from Pacific Environmental Group, Inc. (PEG) states that the SVE system was shut down due to low influent concentrations and high groundwater conditions. PEG's June 20, 1995 quarterly report states that the system would remain shut down until the groundwater elevations decreased to approximately 5 to 6 feet below grade (fbg).

Underground Storage Tanks: Three USTs are present onsite.

Groundwater Depth and Flow Direction: Groundwater in the site vicinity is located at a depth of between 4 fbg and 8 fbg. Groundwater generally flows toward the south.

INVESTIGATION PROCEDURES

To investigate the extent of hydrocarbons offsite and near sewer and storm drain conduits, Cambria drilled three borings in Hegenberger Road (Figure 1). The procedures are summarized below. Analytical results for soil and groundwater are summarized in Tables 1 and 2 and the analytical report is presented in Attachment A. Boring logs and Cambria's standard field procedures for Geoprobe sampling are presented in Attachments B and C, respectively.

FIELD ACTIVITIES

Personnel Present:	*Title:*	*Organization:*
Michael Paves	Project Engineer	Cambria
Paul Rogers	Driller	Gregg Drilling

Permits: A drilling permit was obtained from the Alameda County Public Works Agency (#99WR066), and an Excavation Permit was obtained from the City of Oakland Office of Planning and Building (#X9900158). Copies of these permits are included in Attachment D.

Drilling Date: March 18, 1999

Drilling Method: Hand auger and hydraulic push (Geoprobe).

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Number of Borings: Three (SB-1, SB-2, and SB-3), see Figure 1.

Boring Depths: Boring SB-1 was advanced to a depth of 11.5 fbg, with the first 9.5 ft advanced using a hand auger. Boring SB-2 was drilled to a total depth of 12.0 fbg. Boring SB-3 was advanced to a total depth of 17.0 fbg.

Groundwater Depth: Groundwater was encountered in all three borings. Water was encountered at approximately 7.0 fbg in boring SB-1, 8.0 fbg in SB-2, and 9.0 fbg in SB-3.

Sediment Lithology: Lithology encountered during this investigation consists primarily of gravelly sands of high estimated permeability to the approximate depth of 9-11 fbg (Attachment B). The sands are underlain by silty clay of low estimated permeability to approximately 14 fbg. A silty sand layer was encountered in SB-3 between 14 and 16 fbg, the total depth of the boring.

Chemical Analysis: Selected soil and groundwater samples were analyzed for TPHg and total petroleum hydrocarbons as diesel (TPHd) by modified EPA Method 8015, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl t-butyl ether (MTBE) by EPA Method 8020. EPA Method 8260 confirmed the highest MTBE concentration in groundwater. Sequoia's analytical report is included as Attachment A.

Backfill Method: Borings were backfilled with neat cement grout.

INVESTIGATION RESULTS

Hydrocarbon Distribution in Soil: The maximum TPHg concentration identified during this investigation was 27.6 ppm in boring SB-3 from a depth of 9.0 fbg. The maximum TPHd concentration of 35.8 ppm was detected in SB-3 at a depth of 10.5 fbg. No TPHg, TPHd, or BTEX was detected in soil boring SB-1, which was advanced within the backfill of the concrete sewer vault southwest of the subject site. No benzene or MTBE was detected in soil from any of the three borings.

Hydrocarbon Distribution in Groundwater: The maximum TPHg, TPHd and benzene concentrations were detected in SB-3 at concentrations of 16,500 ppb, 5,080 ppb and 268 ppb, respectively. Although MTBE was detected at a maximum concentration of 180 ppb in SB-3

using EPA Method 8020, the concentration was below detection limits when analyzed by EPA Method 8260. No TPHg or BTEX was detected in SB-1.

SITE INVESTIGATION CONCLUSIONS

Site reconnaissance performed by Cambria prior to this investigation revealed that the 8-inch sanitary sewer running from the open water channel (west of the site) did not slope toward the channel as originally thought. Because of this discovery, the boring locations were revised, with the focus shifting to the area between the site and the 54 inch storm drain running along the westbound lanes of Hegenberger Road. No hydrocarbons were detected in backfill soil collected from boring SB-1, near the vault connecting two 8-inch sanitary sewer lines. Low levels of diesel and MTBE were detected in water collected from SB-1, however it does not appear that this 8-inch sewer pipe is serving as a contaminant conduit to the water channel.

Hydrocarbons and MTBE have been detected in soil borings placed along the utility corridor. However, no hydrocarbons or MTBE have been detected in downgradient monitoring wells MW-11, MW-12 or MW-13. This suggests that either the storm drain is intercepting and diverting groundwater flow, or the plume has stabilized before it reached the downgradient monitoring wells. Hydrocarbons have been detected in soil borings SB-3 and SB-2 but have not appeared to reach SB-1. EPA Method 8020 detected MTBE in all three soil borings. However, the maximum detected MTBE was not detected using EPA Method 8260. MTBE was not confirmed by EPA Method 8260 in the other two groundwater samples.

City utility maps indicate that sanitary sewer and storm drain lines run beneath the Hegenberger Road parallel to the southern property line. Although the precise location of the lines is unknown, as are the composition and backfill of the piping, we can estimate the mass transport of contaminants of concern (COC's) within the utility corridors using conservative assumptions about the utility construction and location. For this assessment, we have used a protocol established by the RWQCB for a similar situation at the San Francisco International Airport (staff comments dated July 16, 1998 signed by Mr. Steven Morse, Chief of the Toxics Cleanup Division, addressed to the SFIA Consolidated Tenant Group).

This simplified procedure assumes that utility backfills are more permeable than the native soils surrounding the utilities and that the higher-permeability backfill intercepts and then redirects contaminant-laden groundwater downgradient to a surface water discharge point. The calculations assume that the entire width of the plume is intercepted by the utility, that no further groundwater inflow or outflow occurs between the downgradient edge of the plume and the discharge point, and that the contaminant mass entering the utility corridor is diluted by inflow of clean water from upgradient portions of the utility. The protocol developed for SFIA assumes that the dilution attenuation factor (DAF) is directly proportional to the distance between the

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downgradient edge of the plume and the discharge point, in increments of the plume width. In other words, if the plume is 100-ft wide across the intercepting trench and the distance to the discharge point is 1,000 ft, the DAF is equal to 10.

For the 285 Hegenberger Road plume, the average benzene plume concentration along the South side of the Hegenberger Road corridor (the closest point that a utility might be located) is 91 ppb, and the plume width at this point is conservatively estimated at 40 ft. Using this plume characteristic and using a distance of 160 ft between the downgradient edge of the plume and the open water channel, the DAF prior to discharge at the Open Water Channel is 4, producing a final discharge concentration of 23 ppb benzene. This is below the SFIA Order No. 95-136 saltwater ecological protection zone Tier 1 standard of 71 ppb benzene.

99-045

Similarly, we estimate the average MTBE concentration in the area of the trench is probably less than 42 ppb. Based on a similarly calculated DAF of 4, we calculate a discharge concentration of 10.5 ppb. A saltwater ecological protection zone Tier 1 standard for MTBE was not established in SFIA Order No. 95-136. However, the calculated discharge concentration is below the proposed guidelines of 13 ppb. Therefore, these calculations indicate that potential transport of contaminated groundwater through utility backfill would not pose a significant impact to the Bay.

The average TPHg concentration is approximately 6,700 ppb. The plume width at the trench is 68 ft and the distance from the downgradient edge of the plume to the discharge point is 168 feet. Therefore using a calculated DAF prior to discharge at the Open Water Channel of 2.5, we calculate a discharge concentration of 2,680 ppb. The corresponding SFIA Order No. 95-136 saltwater ecological protection zone Tier 1 standard for TPHg is 100 ppb. These calculations indicate that potential transport of contaminated groundwater through utility backfill could pose a significant impact at the point of discharge. However, the Bay is over one-mile downstream of the discharge point to the open water channel and with the dilution expected from upstream along the creek, the amount of TPHg that reaches the bay will be significantly less.

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SOIL VAPOR EXTRACTION TEST

Cambria performed short-term SVE testing on four (4) existing vapor extraction wells for approximately 2 hours each, followed by a long-term test of wells VW-1 and VW-4 for approximately 5 days. Vapor extraction flow rates, the vacuum applied to each wellhead, and the vacuum influence in the immediate vicinity was measured. Organic Vapor Meter (OVM) readings were also taken to determine the vapor concentration influent, midpoint between carbon vessels and effluent discharge from the carbon adsorption treatment system. Additionally, bag samples of influent and effluent vapor were collected for laboratory analysis of TPHg, BTEX, and MTBE. After short-term testing on individual wells, vapor extraction wells VW-1 and VW-4 were selected to perform the long-term test procedure. This selection was based on the limited flow conditions present in VW-2 and VW-3.

SVE Test Equipment

A diesel generator was used to power a 5 horsepower (hp) positive displacement blower, MD Pneumatic Model No. 3208, equipped with an 80-gallon water knockout drum and two 55-gallon vapor phase adsorption canisters, used to treat the extracted soil vapor. A Thermo Environmental Instruments Model 580B OVM was used to measure hydrocarbon concentrations of the extracted vapor. A TSI Model No. 8330 VelociCheck air mass flow meter was used to measure vapor extraction velocities for flow rate calculations. Magnahelic differential pressure gauges were used to measure the applied vacuum at each wellhead and the vacuum influence at nearby wells.

SVE Test Results

SVE field test data and hydrocarbon mass removal summaries are presented in Table 3 and Table 4, respectively. Analytical results for soil vapor samples are included as Attachment E. Influent TPHg concentrations ranged from 259 to 1,410 parts per million by volume (ppmv). Benzene concentrations ranged from 2.3 to 32.3 ppmv. MTBE concentrations ranged from 26.4 to 44.2 ppmv by EPA Method 8020.

Maximum TPHg analytical results were 1,410 ppmv from sample VW-1A collected one hour into the individual well test. Maximum benzene analytical results were 32.3 ppmv from sample VW-1B collected 2 hours into the individual well test. Maximum MTBE concentrations by EPA Method 8020 were 44.2 ppmv from sample VW-1B collected two hours into the individual well test.

Vapor extraction flow rates ranged from 0 to 26 scfm per well based on applied vacuum ranging from 45 to 60 inches of water, resulting in a TPHg removal rate of 0.95 to 2.1 pounds per day (lbs/day) per well. During long-term test procedure, vapor extraction flow rates ranged from 18.0

to 22.7 scfm (combined extraction from wells VW-1 and VW-4). The TPHg removal rate during the long-term test ranged from 2.13 to 5.95 lbs/day.

Due to shallow groundwater conditions and the well screen intervals, minimal well screen was available for vapor extraction from wells VW-1 and VW-4 and no well screen was available in wells VW-2 and VW-3. VW-3 was discovered plugged with bentonite.

Estimated SVE Radius of Influence

To determine the effective radius of influence, we compared the applied vacuum to the observed vacuum in nearby wells during the individual well tests and long-term SVE testing of the above-referenced wells. No vacuum-induced influence was observed in any surrounding monitoring wells during the SVE testing. Additionally, there were no significant changes in water levels in surrounding wells during SVE testing.

Estimated Hydrocarbon Removal

The estimation of hydrocarbon removal was calculated by multiplying the calculated removal rates (based on lab data) and the amount of days in operation.

A maximum mass removal rate of 5.95 pounds per day TPGg was achieved from combined vapor extraction from wells VW-1 and VW-4. The total mass of TPHg removed during the test is estimated to be 18.66 pounds. The total mass of MTBE and benzene removed during the test is estimated to be 2.33 pounds and 0.973 pounds respectively.

SVE TEST CONCLUSIONS

Low overall mass removal rates were achieved due to low to moderate soil vapor concentrations (259 ppmv to 1,410 ppmv). Additionally, low influent flow rates were achieved as a result of shallow groundwater conditions and low permeability soils. No measurable influence on surrounding wells was achieved during SVE testing. could be due to well on no exposed screen.

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RECOMMENDATIONS

To address the potential for preferential migration of contaminants in utility corridors and to remediate residual hydrocarbon concentrations in soil and groundwater, Cambria proposes installation of an air sparge and soil vapor extraction system. The objective of the air sparge system is to increase oxygen levels in groundwater to enhance bio-degradation of hydrocarbons in soil and groundwater. The objective of the soil vapor extraction system is to remove residual hydrocarbons in the soil and to recover vapors generated by air sparging. Following is a conceptual description of both the air sparge and soil vapor extraction systems. Actual engineered drawings will be provided to ACHCSA prior to obtaining City of Oakland buildings permits.

Air Sparge System: The air sparge system will consist of injecting heated air supplemented with 100% oxygen (O_2) at 15-25 standard cubic feet per minute (scfm) into three proposed dual completion coxial wells. The proposed coxial wells are identified on Figure 1 as VEW-5/AS-1, VEW-6/AS-2, and VEW-7/AS-3. The coxial wells are spaced along the leading edge of the dissolved hydrocarbon plume as shown on Figure 1. A coxial well completion diagram is shown on Figure 2.

Sparge air will be heated to approximately 150-200 degrees Fahrenheit and supplemented with 100% O_2 gas prior to injection into the proposed air sparge wells. The objective of heating the sparge air is to increase soil vapor pressure to enhance volatilization of hydrocarbons in soil and groundwater. The objective of supplementing the sparge air with 100% O_2 gas is to increase the O_2 concentrations in groundwater to enhance bio-degradation in soil and groundwater.

Soil Vapor Extraction System: The soil vapor extraction system will consist of a vacuum blower, water knockout container, and vapor phase carbon for emission abatement. Vacuum will be applied to the existing vapor extraction well VW-1 and proposed coxial wells VEW-5/AS-1, VEW-6/AS-2, and VEW-7/AS-3. The objective of the soil vapor extraction system is to remove residual hydrocarbons in soil and to recover sparge air injected into the air sparge wells. Actual engineered drawings will be provided to ACHCSA prior to obtaining City of Oakland buildings permits.

Well Abandonment: Cambria will abandon VW-3 according to Alameda County Public Works guidelines prior to installation of the proposed coxial wells. During vapor testing it was discovered that VW-3 was plugged with bentonite which resulted in a total depth of only 3 feet. VW-3 will be abandoned

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Schedule: Cambria will prepare engineered drawings for the installation of the proposed air sparge and vapor extraction system by June 30th, 2000. We anticipate installation of the proposed system and remediation wells to occur during the third quarter of 2000.

CLOSING

We appreciate your assistance with this project. If you have any questions or comments regarding this report, please call Darryk Ataide at (510) 420-3339.

Sincerely, page 510 684-3339

Cambria Environmental Technology, Inc.

D. Ataide

Darryk Ataide REA I
Project Manager

Diane Lundquist P.E.
Principal Engineer

Attachments:
A - Analytical Report for Soil and Groundwater
B - Soil Boring Logs
C - Standard Field Procedures for Geoprobe Sampling
D – Soil Boring and Encroachment Permits
E – Analytical Results for Soil Vapor

cc: Ms. Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, CA 91510-7869

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APPROXIMATE SCALE IN FEET

EXPLANATION

- VEW-5/ AS-3 — Proposed Co-axial vapor and sparge well
- SB-1 — Soil Boring Location
- MW-1 — Ground water monitoring well
- VEW-1 — Soil vapor extraction well
- VEW-4 — Dual completion air sparging/soil vapor extraction well
- VEW-5 — Abandoned well
- (VEW-3) — Well Proposed for Abandonment
- Sanitary Sewer Line
- Storm Drain
- Electrical Line
- Gas Line
- Location Inferred
- Manhole
- Utility Box

Basemap from Pacific Environmental Group, Inc.

Soil Boring Locations and Underground Utilities Map

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Shell-branded Service Station
285 Hegenberger Road
Oakland, California
Incident #98995749

FIGURE **1**

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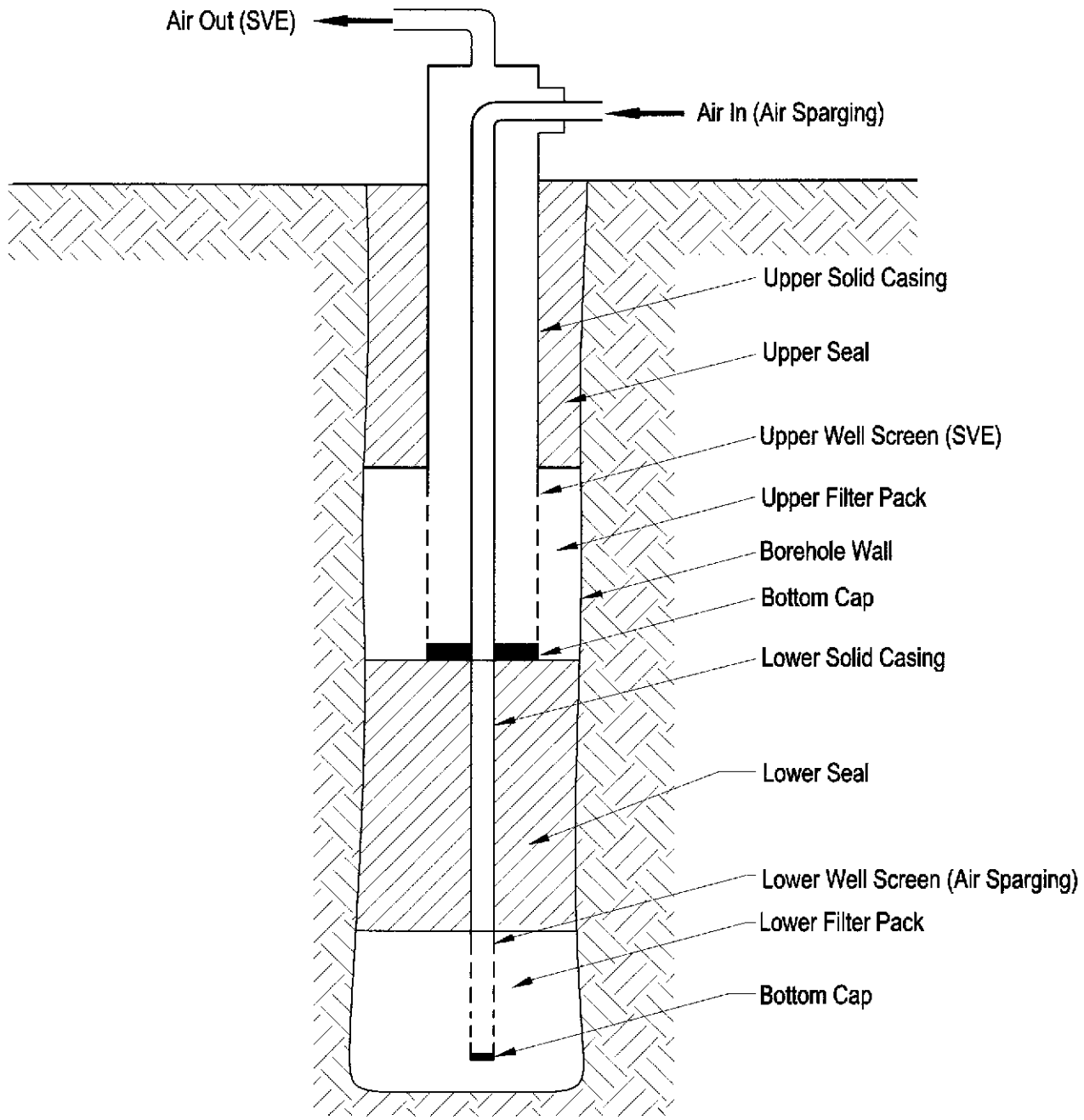

FIGURE

2

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Shell-branded Service Station

285 Hegenberger Road

Oakland, California

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Coaxial Well Completion Diagram for SVE and Air Sparging

Table 1. Soil Boring Analytical Data - Shell-branded Service Station - Incident #98995749, 285 Hegenberger Rd., Oakland, California

Sample ID	Depth (feet)	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
		←			(ppm)			→
March 18, 1999 Samples:								
SB-1-5.5	5.5	<0.400	<5.00	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-1-10	10.0	<0.400	<5.00	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-2-5.0	5.0	0.777	15.2	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-2-7.5	7.5	<0.400	<5.00	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-2-6	6.0	3.33	19.3	<0.0100	<0.00200	0.00598	0.00977	0.0259
SB-2-12.0	12.0	<0.400	<5.00	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-2-10.0	10.0	<0.400	<15.0	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-2-10.5	10.5	<0.400	<15.0	<0.0100	<0.00200	<0.00200	<0.00200	<0.00400
SB-3-7.5	7.5	5.94	14.8	<0.0100	<0.00200	<0.00200	0.0501	0.0548
SB-3-9.0	9.0	27.6	13.1	<0.0500	<0.0100	<0.0100	0.0502	0.0948
SB-3-10.5	10.5	4.33	35.8	<0.0500	<0.0100	<0.0100	0.354	0.548
SB-3-11.5	11.5	9.90	27.6	<0.0500	<0.0100	<0.0100	0.0628	0.0973
SB-3-15.0	15.0	23.5	26.5	<0.0500	<0.0100	<0.0100	0.291	0.424
SB-3-17.0	17.0	0.508	<5.00	<0.0100	<0.00200	<0.00200	0.0269	0.0393

Abbreviations and Notes:

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

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

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

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

ppb = parts per billion

Table 2. Water Analytical Data - Shell-branded Service Station - Incident #98995749, 285 Hegenberger Rd., Oakland, California

Sample ID	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
	←			(ppb)			→
March 18, 1999 Samples:							
SB-1	<50.0	182	86.3	<0.500	<0.500	<0.500	<0.500
SB-2	3,650	1,290	33.9	4.96	<0.500	3.11	2.76
SB-3	16,500	5,080	180(<5.00)	268	8.11	901	1,400

Notes and Abbreviations:

ppb = parts per billion
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015.
TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
MTBE = Methyl tert-butyl ether by EPA Method 8020. Result in parentheses represents MTBE by EPA Method 8260B.
Benzene, ethylbenzene, toluene, xylenes by EPA Method 8020.
<n = Below detection limit of n mg/kg

Table 3. Soil Vapor Extraction Test Field Data Summary - Shell-branded Service Station, Incident #98995749, 285 Hegenberger Road, Oakland, California

Well ID	Date	Cumulative Hours of Operation (hrs.)	System Flow Rate (cfm)	System Vacuum ("H_2O)	HYDROCARBON CONCENTRATIONS (ppmv) Influent FID	Midpoint FID	Effluent FID	Comments
VW-4	11/03/99	0	26	50	150	0.1	0.7	Start up, VW-4 open only
VW-4	11/03/99	0.6	--	50	135	---	---	50" at max flowrate for VW-4
VW-4	11/03/99	1.77	15.6	45	145	2.5	4.7	VW-4A sample collected
VW-4	11/03/99	2	17.6	45	140	---	---	End test. VW-4B sample collected
VW-1	11/04/99	0	1.0	25	40	---	---	Startup VW-1 open only
VW-1	11/04/99	0.25	0.9	25	40	---	---	
VW-1	11/04/99	0.33	2.22	50	95	0.7	0.7	
VW-1	11/04/99	0.583	1.32	60	---	---	---	60" at max flowrate for VW-1
VW-1	11/04/99	1	8.8	60	66	---	---	Collected VW-1A sample
VW-1	11/04/99	1.25	3.63	60	130	---	---	
VW-1	11/04/99	1.75	4.18	55	77	---	---	
VW-1	11/04/99	2	2.2	60	125	---	---	End test. VW-1B sample collected
VW-2	11/04/99	0	0.29	25	---	---	---	Startup VW-2 open only
	11/04/99	0.083	0	25	---	---	---	
	11/04/99	0.25	0	25	---	---	---	End test. No flow, No Screen.
VW-3	11/04/99	0	0	25	---	---	---	Startup, VW-3 open only
	11/04/99	0.083	0	50	---	---	---	
	11/04/99	0.25	0	75	---	---	---	End test. No flow
VW-1/VW-4	11/04/99	0	22.7	50	152	---	---	Startup,
	11/04/99	0.5	18.3	45	144	---	---	
	11/04/99	1	18.7	45	55	---	---	VW-1/VW-4 sample collected
	11/05/99	26.66	19.1	50	---	---	---	Optimized system
	11/05/99	26.91	19.6	50	---	---	---	
	11/05/99	27.74	19.6	50	---	---	---	
	11/08/99	71	---	---	---	---	---	
	11/09/99	71	18.9	50	206	---	---	System operating
	11/09/99	72.25	17.8	50	195	11	0	
	11/09/99	73	18	50	185	---	---	VW-1/VW-4 sample collected

Table 3. Soil Vapor Extraction Test Field Data Summary - Shell-branded Service Station, Incident #98995749, 285 Hegenberger Road, Oakland, California

Well ID	Date	Cumulative Hours of Operation (hrs.)	System Flow Rate (cfm)	System Vacuum ("H_2O)	HYDROCARBON CONCENTRATIONS (ppmv) Influent FID	Midpoint FID	Effluent FID	Comments

Abbreviations and Notes:

cfm = Cubic feet per minute
ppmv = Parts per million by volume
# = Pounds
"H_20 = Inches of water
--- = Not analyzed / not measured
SVE = Soil vapor extraction
TPHg = Total petroleum hydrocarbons as gasoline (C6-C12), analyzed by modified EPA Method 8015
Benzene and MTBE are analyzed by EPA Method 8020

Table 4. Hydrocarbon Mass Removal Summary - Shell-branded Service Station, Incident #98995749, 285 Hegenberger Road, Oakland, California

Well ID	Date	Cumulative Hours of Operation (hrs.)	System Flow Rate (cfm)	HYDROCARBON CONCENTRATIONS Influent TPHg (ppmv)	MTBE (ppmv)	Benzene (ppmv)	TPHg Removal Rate (#/day)	Cumulative TPHg Removal (#)	MTBE Removal Rate (#/day)	Cumulative MTBE Removal (#)	Benzene Removal Rate (#/day)	Cumulative Benzene Removal (#)	Comments
VW-4	11/03/99	0	26	---	---	---	---	---	---	---	---	---	Startup
VW-4	11/03/99	0.6	---	---	---	---	---	---	---	---	---	---	
VW-4	11/03/99	1.77	15.6	259	26.4	2.3	1.3	0.096	0.135	0.010	0.010	0.001	VW-4A sample collected
VW-4	11/03/99	2	17.6	366	3.47	6.05	2.1	0.172	0.020	0.002	0.031	0.003	End Test. VW-4B sample collected
VW-1	11/04/99	0	1.0	---	---	---	---	---	---	---	---	---	Startup
VW-1	11/04/99	0.25	0.9	---	---	---	---	---	---	---	---	---	
VW-1	11/04/99	0.33	2.22	---	---	---	---	---	---	---	---	---	
VW-1	11/04/99	0.583	1.32	---	---	---	---	---	---	---	---	---	
VW-1	11/04/99	1	8.8	1,410	40.6	24.5	4.0	0.166	0.12	0.005	0.06	0.003	VW-1A sample collected
VW-1	11/04/99	1.25	3.63	---	---	---	---	---	---	---	---	---	
VW-1	11/04/99	1.75	4.18	---	---	---	---	---	---	---	---	---	
VW-1	11/04/99	2	2.2	1,350	44.2	32.3	0.95	0.206	0.03	0.006	0.02	0.499	End Test. VW-1B sample collected
VW-2	11/04/99	0	0.29	---	---	---	---	---	---	---	---	---	Startup
VW-2	11/04/99	0.083	0	---	---	---	---	---	---	---	---	---	
VW-2	11/04/99	0.25	0	---	---	---	---	---	---	---	---	---	End Test
VW-3	11/04/99	0	0	---	---	---	---	---	---	---	---	---	Start up
VW-3	11/04/99	0.083	0	---	---	---	---	---	---	---	---	---	
VW-3	11/04/99	0.25	0	---	---	---	---	---	---	---	---	---	End Test
VW-1/VW-4	11/04/99	0	22.7	---	---	---	---	---	---	---	---	---	Startup at Optimized settings VW-1/VW-4
VW-1/VW-4	11/04/99	0.5	18.3	---	---	---	---	---	---	---	---	---	
VW-1/VW-4	11/04/99	1	18.7	355	37.8	3.32	2.13	0.089	0.23	0.010	0.02	0.001	VW-1/VW-4 sample collected
VW-1/VW-4	11/05/99	26.66	19.1	---	---	---	---	---	---	---	---	---	Optimized System
VW-1/VW-4	11/05/99	26.91	19.6	---	---	---	---	---	---	---	---	---	
VW-1/VW-4	11/05/99	27.74	19.6	---	---	---	---	---	---	---	---	---	
VW-1/VW-4	11/08/99	71	--	---	---	---	---	---	---	---	---	---	System down on arrival - 71 hrs of operation.
VW-1/VW-4	11/09/99	71	18.9	---	---	---	---	---	---	---	---	---	Re-start system at 8:30 am
VW-1/VW-4	11/09/99	72.25	17.8	---	---	---	---	---	---	---	---	---	
VW-1/VW-4	11/09/99	73	18	1,030	129	29.7	5.95	17.933	0.76	2.300	0.16	0.467	End test. VW-1/VW-4 sample collected
EFF Carbon	11/09/99	---	---	---	---	---	---	---	---	---	---	---	Effluent Sample taken at 10:30 am, ND
						Total Mass Removed (#):		**18.661**		**2.333**		**0.973**	

Table 4. Hydrocarbon Mass Removal Summary - Shell-branded Service Station, Incident #98995749, 285 Hegenberger Road, Oakland, California

Well ID	Date	Cumulative Hours of Operation (hrs.)	System Flow Rate (cfm)	HYDROCARBON CONCENTRATIONS Influent TPHg (ppmv)	MTBE (ppmv)	Benzene (ppmv)	TPHg Removal Rate (#/day)	Cumulative TPHg Removal (#)	MTBE Removal Rate (#/day)	Cumulative MTBE Removal (#)	Benzene Removal Rate (#/day)	Cumulative Benzene Removal (#)	Comments

Abbreviations and Notes:

cfm = Cubic feet per minute
ppmv = Parts per million by volume
# = Pounds
ND = Below detection limits
--- = Not analyzed or not measured.
SVE = Soil vapor extraction
TPHg = Total petroleum hydrocarbons as gasoline (C6-C12), analyzed by modified EPA Method 8015
Benzene and MTBE are analyzed by EPA Method 8020
TPHg, MTBE, and benzene removal rate = Lab concentration(ppmv) x system flow rate (cfm) x (1lb-mole/386ft3) x molecular weight (86 lb/lb-mole for TPHg, 88.15 lb/lb-mole for MTBE, 78 lb/lb-mole for benzene) x 1440 min/day x 1/1,000,000.
Cumulative TPHg, MTBE, and benzene removal = Cumulative sum of the current and previous removal

Attachment A

Analytical Report for Soil and Groundwater

Sequoia
Analytical

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

April 12, 1999

Darryk Ataide
Cambria Environmental - Oakland
1144 65th St., Suite C
Oakland, CA 94608

RE: Shell Oil Co./P903614

Dear Darryk Ataide

Enclosed are the results of analyses for sample(s) received by the laboratory on March 22, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Scott Forbes

Scott Forbes
Project Manager

CA ELAP Certificate Number 2245

Sequoia Analytical

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Petaluma, CA 94954
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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

ANALYTICAL REPORT FOR P903614

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
SB-1-5.5	P903614-01	Soil	3/18/99
SB-1-10	P903614-02	Soil	3/18/99
SB-2-5.0	P903614-03	Soil	3/18/99
SB-2-7.5	P903614-04	Soil	3/18/99
SB-2-6.0	P903614-05	Soil	3/18/99
SB-2-12.0	P903614-06	Soil	3/18/99
SB-2-10.0	P903614-07	Soil	3/18/99
SB-2-10.5	P903614-08	Soil	3/18/99
SB-3-7.5	P903614-09	Soil	3/18/99
SB-3-9.0	P903614-10	Soil	3/18/99
SB-3-10.5	P903614-11	Soil	3/18/99
SB-3-11.5	P903614-12	Soil	3/18/99
SB-3-15.0	P903614-13	Soil	3/18/99
SB-3-17.0	P903614-14	Soil	3/18/99
SB-1	P903614-15	Water	3/18/99
SB-2	P903614-16	Water	3/18/99
SB-3	P903614-17	Water	3/18/99

Sequoia Analytical

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-1-5.5			**P903614-01**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*98.7*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*80.7*	"	
SB-1-10			**P903614-02**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*104*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*67.7*	"	
SB-2-5.0			**P903614-03**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	**0.777**	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*96.0*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*83.0*	"	
SB-2-7.5			**P903614-04**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*92.0*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*89.0*	"	
SB-2-6.0			**P903614-05**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	**3.33**	mg/kg	

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled:	3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received:	3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-2-6.0 (continued)			P903614-05				Soil	
Benzene	9030612	3/25/99	3/25/99		0.00200	ND	mg/kg	
Toluene	"	"	"		0.00200	**0.00598**	"	
Ethylbenzene	"	"	"		0.00200	**0.00977**	"	
Xylenes (total)	"	"	"		0.00400	**0.0259**	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*89.7*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*104*	"	
SB-2-12.0			P903614-06				Soil	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*93.0*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*70.0*	"	
SB-2-10.0			P903614-07				Soil	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*92.3*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*86.0*	"	
SB-2-10.5			P903614-08				Soil	
Gasoline	9030612	3/25/99	3/25/99		0.400	ND	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Xylenes (total)	"	"	"		0.00400	ND	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*92.0*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*74.7*	"	
SB-3-7.5			P903614-09				Soil	
Gasoline	9030612	3/25/99	3/25/99		0.400	**5.94**	mg/kg	
Benzene	"	"	"		0.00200	ND	"	

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-3-7.5 (continued)			**P903614-09**				**Soil**	
Toluene	9030612	3/25/99	3/25/99		0.00200	ND	mg/kg	
Ethylbenzene	"	"	"		0.00200	**0.0501**	"	
Xylenes (total)	"	"	"		0.00400	**0.0548**	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*80.0*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*96.7*	"	
SB-3-9.0			**P903614-10**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		2.00	**27.6**	mg/kg	
Benzene	"	"	"		0.0100	ND	"	
Toluene	"	"	"		0.0100	ND	"	
Ethylbenzene	"	"	"		0.0100	**0.0502**	"	
Xylenes (total)	"	"	"		0.0200	**0.0948**	"	
Methyl tert-butyl ether	"	"	"		0.0500	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*81.0*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*100*	"	
SB-3-10.5			**P903614-11**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		2.00	**43.3**	mg/kg	
Benzene	"	"	"		0.0100	ND	"	
Toluene	"	"	"		0.0100	ND	"	
Ethylbenzene	"	"	"		0.0100	**0.354**	"	
Xylenes (total)	"	"	"		0.0200	**0.548**	"	
Methyl tert-butyl ether	"	"	"		0.0500	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*102*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*102*	"	
SB-3-11.5			**P903614-12**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		2.00	**9.90**	mg/kg	
Benzene	"	"	"		0.0100	ND	"	
Toluene	"	"	"		0.0100	ND	"	
Ethylbenzene	"	"	"		0.0100	**0.0628**	"	
Xylenes (total)	"	"	"		0.0200	**0.0973**	"	
Methyl tert-butyl ether	"	"	"		0.0500	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*94.7*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*93.3*	"	
SB-3-15.0			**P903614-13**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		2.00	**23.5**	mg/kg	
Benzene	"	"	"		0.0100	ND	"	
Toluene	"	"	"		0.0100	ND	"	

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled:	3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received:	3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-3-15.0 (continued)			**P903614-13**				**Soil**	
Ethylbenzene	9030612	3/25/99	3/25/99		0.0100	**0.291**	mg/kg	
Xylenes (total)	"	"	"		0.0200	**0.424**	"	
Methyl tert-butyl ether	"	"	"		0.0500	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*103*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*96.3*	"	
SB-3-17.0			**P903614-14**				**Soil**	
Gasoline	9030612	3/25/99	3/25/99		0.400	**0.508**	mg/kg	
Benzene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	**0.0269**	"	
Xylenes (total)	"	"	"		0.00400	**0.0393**	"	
Methyl tert-butyl ether	"	"	"		0.0100	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*91.7*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*81.7*	"	
SB-1			**P903614-15**				**Water**	1
Gasoline	9030606	3/25/99	3/25/99		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.00	**86.3**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*98.7*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*104*	"	
SB-2			**P903614-16**				**Water**	
Gasoline	9030606	3/25/99	3/25/99		50.0	**3650**	ug/l	
Benzene	"	"	"		0.500	**4.96**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	**3.11**	"	
Xylenes (total)	"	"	"		0.500	**2.76**	"	
Methyl tert-butyl ether	"	"	"		2.00	**33.9**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*92.0*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*115*	"	
SB-3			**P903614-17**				**Water**	
Gasoline	9030606	3/25/99	3/25/99		250	**16500**	ug/l	
Benzene	"	"	"		2.50	**268**	"	
Toluene	"	"	"		2.50	**8.11**	"	
Ethylbenzene	"	"	"		2.50	**901**	"	

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-3 (continued)			**P903614-17**				**Water**	
Xylenes (total)	9030606	3/25/99	3/25/99		2.50	**1400**	ug/l	
Methyl tert-butyl ether	"	"	"		10.0	**180**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*65.0-135*		*100*	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	*65.0-135*		*98.0*	"	

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Diesel & others by EPA 8015M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-1-5.5			**P903614-01**				**Soil**	
Diesel	9030750	3/31/99	4/2/99		5.00	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*104*	%	
SB-1-10			**P903614-02**				**Soil**	
Diesel	9030750	3/31/99	4/2/99		5.00	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*104*	%	
SB-2-5.0			**P903614-03**				**Soil**	
Diesel	9030750	3/31/99	4/2/99		5.00	**15.2**	mg/kg	2
Surrogate: o-Terphenyl	"	"	"	-		*113*	%	
SB-2-7.5			**P903614-04**				**Soil**	
Diesel	9030750	3/31/99	4/2/99		5.00	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*105*	%	
SB-2-6.0			**P903614-05**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	**19.3**	mg/kg	3
Surrogate: o-Terphenyl	"	"	"	-		*107*	%	
SB-2-12.0			**P903614-06**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*97.6*	%	
SB-2-10.0			**P903614-07**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		15.0	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*104*	%	
SB-2-10.5			**P903614-08**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		15.0	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*99.3*	%	
SB-3-7.5			**P903614-09**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	**14.8**	mg/kg	4
Surrogate: o-Terphenyl	"	"	"	-		*110*	%	
SB-3-9.0			**P903614-10**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	**13.1**	mg/kg	4
Surrogate: o-Terphenyl	"	"	"	-		*102*	%	
SB-3-10.5			**P903614-11**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		15.0	**35.8**	mg/kg	3

Sequoia Analytical

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

Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Diesel & others by EPA 8015M
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-3-10.5 (continued)			**P903614-11**				**Soil**	
Surrogate: o-Terphenyl	*9030750*	*3/31/99*	*4/3/99*	-		*99.7*	*%*	
SB-3-11.5			**P903614-12**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	**27.6**	mg/kg	3
Surrogate: o-Terphenyl	"	"	"	-		*105*	*%*	
SB-3-15.0			**P903614-13**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		15.0	**26.5**	mg/kg	3
Surrogate: o-Terphenyl	"	"	"	-		*104*	*%*	
SB-3-17.0			**P903614-14**				**Soil**	
Diesel	9030750	3/31/99	4/3/99		5.00	ND	mg/kg	
Surrogate: o-Terphenyl	"	"	"	-		*108*	*%*	
SB-1			**P903614-15**				**Water**	
Diesel	9040009	4/1/99	4/8/99		0.0500	**0.182**	mg/l	2
Surrogate: o-Terphenyl	"	"	"	*50.0-150*		*88.8*	*%*	
SB-2			**P903614-16**				**Water**	
Diesel	9040009	4/1/99	4/9/99		0.0500	**1.29**	mg/l	4
Surrogate: o-Terphenyl	"	"	"	*50.0-150*		*114*	*%*	
SB-3			**P903614-17**				**Water**	
Diesel	9040009	4/1/99	4/9/99		0.0500	**5.08**	mg/l	4
Surrogate: o-Terphenyl	"	"	"	*50.0-150*		*118*	*%*	

Sequoia Analytical

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled:	3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received:	3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	4/12/99

Volatile Organic Compounds by EPA Method 8260B
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SB-3			**P903614-17**				**Water**	**5**
Methyl tert-butyl ether	9030643	3/26/99	3/26/99		5.00	ND	ug/l	
Surrogate: Dibromofluoromethane	"	"	"	*86.0-118*		*107*	%	

Sequoia Analytical

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(707) 792-1865
FAX (707) 792-0342

Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9030606	**Date Prepared: 3/25/99**					**Extraction Method: EPA 5030 waters**				
Blank	**9030606-BLK1**									
Gasoline	3/25/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**2.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*300*		*314*	"	*65.0-135*	*105*			
Surrogate: 4-Bromofluorobenzene	"	*300*		*307*	"	*65.0-135*	*102*			
Blank	**9030606-BLK2**									
Gasoline	3/26/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**2.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*300*		*299*	"	*65.0-135*	*99.7*			
Surrogate: 4-Bromofluorobenzene	"	*300*		*295*	"	*65.0-135*	*98.3*			
LCS	**9030606-BS1**									
Gasoline	3/25/99	1000		1040	ug/l	65.0-135	104			
Surrogate: 4-Bromofluorobenzene	"	*300*		*307*	"	*65.0-135*	*102*			
LCS	**9030606-BS2**									
Benzene	3/26/99	100		104	ug/l	65.0-135	104			
Toluene	"	100		102	"	65.0-135	102			
Ethylbenzene	"	100		97.0	"	65.0-135	97.0			
Xylenes (total)	"	300		306	"	65.0-135	102			
Surrogate: a,a,a-Trifluorotoluene	"	*300*		*296*	"	*65.0-135*	*98.7*			
Matrix Spike	**9030606-MS1**		**P903623-01**							
Gasoline	3/25/99	1000	ND	968	ug/l	65.0-135	**96.8**			
Surrogate: 4-Bromofluorobenzene	"	*300*		*292*	"	*65.0-135*	*97.3*			
Matrix Spike Dup	**9030606-MSD1**		**P903623-01**							
Gasoline	3/25/99	1000	ND	1030	ug/l	65.0-135	**103**	20.0	**6.21**	
Surrogate: 4-Bromofluorobenzene	"	*300*		*309*	"	*65.0-135*	*103*			

Sequoia Analytical

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9030612	**Date Prepared: 3/25/99**					**Extraction Method: EPA 5030 soils**				
Blank	**9030612-BLK1**									
Gasoline	3/25/99			**ND**	mg/kg	**0.400**				
Benzene	"			**ND**	"	**0.00200**				
Toluene	"			**ND**	"	**0.00200**				
Ethylbenzene	"			**ND**	"	**0.00200**				
Xylenes (total)	"			**ND**	"	**0.00400**				
Methyl tert-butyl ether	"			**ND**	"	**0.0100**				
Surrogate: a,a,a-Trifluorotoluene	"	*0.300*		*0.314*	"	*65.0-135*	*105*			
Surrogate: 4-Bromofluorobenzene	"	*0.300*		*0.282*	"	*65.0-135*	*94.0*			
LCS	**9030612-BS1**									
Benzene	3/25/99	0.200		0.207	mg/kg	65.0-135	103			
Toluene	"	0.200		0.198	"	65.0-135	99.0			
Ethylbenzene	"	0.200		0.194	"	65.0-135	97.0			
Xylenes (total)	"	0.600		0.587	"	65.0-135	97.8			
Surrogate: a,a,a-Trifluorotoluene	"	*0.300*		*0.322*	"	*65.0-135*	*107*			
Matrix Spike	**9030612-MS1**		**P903614-01**							
Benzene	3/25/99	0.200	ND	0.212	mg/kg	65.0-135	**106**			
Toluene	"	0.200	ND	0.201	"	65.0-135	**101**			
Ethylbenzene	"	0.200	ND	0.194	"	65.0-135	**97.0**			
Xylenes (total)	"	0.600	ND	0.586	"	65.0-135	**97.7**			
Surrogate: a,a,a-Trifluorotoluene	"	*0.300*		*0.328*	"	*65.0-135*	*109*			
Matrix Spike Dup	**9030612-MSD1**		**P903614-01**							
Benzene	3/25/99	0.200	ND	0.204	mg/kg	65.0-135	**102**	35.0	**3.85**	
Toluene	"	0.200	ND	0.195	"	65.0-135	**97.5**	35.0	**3.53**	
Ethylbenzene	"	0.200	ND	0.188	"	65.0-135	**94.0**	35.0	**3.14**	
Xylenes (total)	"	0.600	ND	0.566	"	65.0-135	**94.3**	35.0	**3.54**	
Surrogate: a,a,a-Trifluorotoluene	"	*0.300*		*0.317*	"	*65.0-135*	*106*			

Sequoia Analytical

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Petaluma, CA 94954
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FAX (707) 792-0342

Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Total Petroleum Hydrocarbons as Diesel & others by EPA 8015M/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9030750	**Date Prepared: 3/31/99**					**Extraction Method: CA LUFT - orb shaker**				
Blank	**9030750-BLK1**									
Diesel	4/2/99			**ND**	mg/kg	**5.00**				
Surrogate: o-Terphenyl	"	*3.33*		*3.36*	"		*101*			
LCS	**9030750-BS1**									
Diesel	4/2/99	33.3		32.1	mg/kg	50.0-150	96.4			
Surrogate: o-Terphenyl	"	*3.33*		*3.96*	"		*119*			
Matrix Spike	**9030750-MS1**		**P903614-04**							
Diesel	4/2/99	33.3	ND	32.9	mg/kg	50.0-150	**98.8**			
Surrogate: o-Terphenyl	"	*3.33*		*3.72*	"		*112*			
Matrix Spike Dup	**9030750-MSD1**		**P903614-04**							
Diesel	4/2/99	33.3	ND	33.9	mg/kg	50.0-150	**102**	35.0	**3.19**	
Surrogate: o-Terphenyl	"	*3.33*		*3.79*	"		*114*			
Batch: 9040009	**Date Prepared: 4/1/99**					**Extraction Method: EPA 3520B**				
Blank	**9040009-BLK1**									
Diesel	4/5/99			**ND**	mg/l	**0.0500**				
Surrogate: o-Terphenyl	"	*0.100*		*0.115*	"	*50.0-150*	*115*			
LCS	**9040009-BS1**									
Diesel	4/5/99	1.00		0.821	mg/l	50.0-150	82.1			
Surrogate: o-Terphenyl	"	*0.100*		*0.115*	"	*50.0-150*	*115*			
LCS Dup	**9040009-BSD1**									
Diesel	4/5/99	1.00		0.855	mg/l	50.0-150	85.5	20.0	4.06	
Surrogate: o-Terphenyl	"	*0.100*		*0.115*	"	*50.0-150*	*115*			

Sequoia Analytical

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

Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Volatile Organic Compounds by EPA Method 8260B/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9030643	**Date Prepared: 3/26/99**					**Extraction Method: EPA 5030 waters**				
Blank	**9030643-BLK1**									
Methyl tert-butyl ether	3/26/99			**ND**	ug/l	**0.500**				
Surrogate: Dibromofluoromethane	"	*5.00*		*5.14*	"	*86.0-118*	*103*			
Blank	**9030643-BLK2**									
Methyl tert-butyl ether	3/26/99			**ND**	ug/l	**0.500**				
Surrogate: Dibromofluoromethane	"	*5.00*		*5.34*	"	*86.0-118*	*107*			
LCS	**9030643-BS1**									
Methyl tert-butyl ether	3/26/99	5.00		5.57	ug/l	72.7-119	111			
Surrogate: Dibromofluoromethane	"	*5.00*		*5.16*	"	*86.0-118*	*103*			
LCS	**9030643-BS2**									
Methyl tert-butyl ether	3/26/99	5.00		5.64	ug/l	72.7-119	113			
Surrogate: Dibromofluoromethane	"	*5.00*		*5.43*	"	*86.0-118*	*109*			
Matrix Spike	**9030643-MS1**		**P903645-02**							
Methyl tert-butyl ether	3/26/99	5.00	ND	5.66	ug/l	72.7-119	**113**			
Surrogate: Dibromofluoromethane	"	*5.00*		*5.49*	"	*86.0-118*	*110*			
Matrix Spike Dup	**9030643-MSD1**		**P903645-02**							
Methyl tert-butyl ether	3/26/99	5.00	ND	6.25	ug/l	72.7-119	**125**	15.0	**10.1**	6
Surrogate: Dibromofluoromethane	"	*5.00*		*5.83*	"	*86.0-118*	*117*			

Sequoia Analytical

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Cambria Environmental - Oakland	Project:	Shell Oil Co.	Sampled: 3/18/99
1144 65th St., Suite C	Project Number:	285 Hegenberger, Oakland	Received: 3/22/99
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 4/12/99

Notes and Definitions

#	Note
1	Insufficient preservative to reduce the sample pH to less than 2. Sample was analyzed within 14 days of sampling, but beyond the 7 days recommended for Benzene, Toluene, and Ethylbenzene.
2	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
3	Sample contains a mixture of gasoline range and heavy oil range hydrocarbons.
4	Results in the diesel organics range are primarily due to overlap from a gasoline range product.
5	The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
6	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date: 3/18/99
Page 1 of 3

Site Address: 285 Hegenberger, Oakland
WIC#: 204-6614

Shell Engineer: Karen Petryna
Phone No.: 551 645-9306
Fax #: 645-5643

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

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

Comments:

Sampled by:

Printed Name: MICHAEL PAVES

LAB: SEQUOIA

UST AGENCY: Alameda County DEH

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	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1-5.5	3/18/99	✓	X			1		X				X	P903		69-01		ICE	N	Confirm highest MTBE concentration by EPA 8260	
SB-1-10	3/18/99	✓	X					X				X			- 02					
SB-2-5.0	3/18/99	✓	X					X				X			- 03					
SB-2-7.5	3/18/99	✓	X					X				X			- 04					
SB-2-6.0	3/18/99	✓	X					X				X			- 05					
SB-2-8.0	3/18/99	✓	X					X				X			- 06					
SB-2-10.0	3/18/99	✓	X					X				X			- 07					
SB-2-10.5	3/18/99	✓	X					X				X			- 08				→ Do not analyze SB-2-10.5	

CHECK ONE (1) BOX ONLY — C1/01

G.W. Monitoring	☐	4461
Site Investigation	☒	4461
Soil Classify/Disposal	☐	4462
Water Classify/Disposal	☐	4463
Soil/Air Remt. or Sys. O & M	☐	4452
Water Remt. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME
24 hours ☐
48 hours ☐
96 hours ☒ (Normal)
Other ☐ .....

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

Relinquished By (signature):	Printed Name: MIKE PAVES	Date: 3.19.99 Time: 1100	Received (signature):	Printed Name: Lance J. Anderson	Date: 3.19.99 Time: 1100
Relinquished By (signature):	Printed Name: LANCE ANDERSON	Date: 3/19/99 Time:	Received (signature):	Printed Name: Noelle Lane	Date: 3/19/99 Time: 1237
Relinquished By (signature):	Printed Name:	Date: 3-22-99 Time:	Received (signature):	Printed Name: Erma Torres	Date: 3/22 Time: 1400

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

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ N/A

COOLER TEMPERATURE: 3°C

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Seal# No:_____

Date: 3/18/99
Page 2 of 3

Site Address: 285 Hegenberger, Oakland
WIC#:

Shell Engineer: Karen Petryna
Phone No.: 551 645-9304
Fax #: 645-5243

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

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

Comments:

Sampled by: [signature]
Printed Name: MICHAEL PAVES

LAB: SEQUOIA

UST AGENCY: Alameda County DEH

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
SB-3-7.5	3/18/99	✓	X					X				X		P903614	-09		Confirm the highest MTBE concentration by EPA 8260	
SB-3-9.0		✓	X					X				X			-10			
SB-3-10.5		✓	X					X				X			-11			
SB-3-11.5		✓	X					X				X			-12			
SB-3-15.0	✓		X					X				X			-13			
SB-3-17.0	✓	✓	X					X				X			-14			

05-10-12 38

Relinquished By (signature):	Printed Name:	Date: 3.19.99 Time: 1100	Received (signature):	Printed Name:	Date: 3/19/99 Time: 1100
Relinquished By (signature):	Printed Name:	Date: 3-19-99 Time:	Received (signature):	Printed Name: Noelle Lane	Date: 3/19/99 Time: 1238
Relinquished By (signature):	Printed Name:	Date: 3-22-99 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: 3/18/99
Page 3 of 3

Site Address: 285 Hegenberger, Oakland
WIC#:

Shell Engineer: Karen Petryna
Phone No.: 551 645-9300
Fax #: 645-5043

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

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

Comments:

Sampled by:

Printed Name: MICHAEL PAVES

LAB: SEQUOIA

UST AGENCY: Alameda County DEH

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	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1	3/18/99			X		3	P903		14-15			X		40ml VOA	HCl		Confirm the highest MTBE concentration by EPA 8260	
SB-2	3/18/99			X		3			-16			X		40ml VOA	HCl			
SB-3	3/18/99			X		3			-17			X		40ml VOA	HCl			
SB-1	3/18/99	✓		X		1		X	-15					1l	None			
SB-2	3/18/99	✓		X		1		X	-16					1l	None			
SB-3	3/18/99	✓		X		1		X	-17					1l	None			

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
	MIKE PAVES	Date: 3.19.99 Time: 1100		LANCE A. DAVIDSON	Date: 3.19.99 Time: 1100
	LANCE DAVIDSON	Date: 3.19.99 Time: 1227		Noelle Lane	Date: 3/19/99 Time: 1227
		Date: Time:			Date: Time:

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

CHECK ONE (1) BOX ONLY — C1/D1

G.W. Monitoring	[ ]	4461
Site Investigation	[X]	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 [ ]
- 96 days [X] (Normal)
- Other [ ] .....

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

19 12 37

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**	SB-1
JOB/SITE NAME	Oakland 285	**DRILLING STARTED**	18-Mar-99
LOCATION	285 Hegenberger Road, Oakland, California	**DRILLING COMPLETED**	18-Mar-99
PROJECT NUMBER	241-0734	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	M. Paves	**DEPTH TO WATER (First Encountered)**	6.0 ft (18-Mar-99) ▽
REVIEWED BY		**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 9.5' bgs.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
		SB-1 -5.5'		5	SC		**Gravelly Clayey SAND**; (SC); brown; 20% clay, 10% silt, 50% sand, 20% gravel; low plasticity; high estimated permeability. @ 5' - wet. ▽	7.0	Portland Type I/II
		SB-1 -10.0'		10	CL		**Sandy CLAY**; (CL); green to brown; wet; 50% clay, 10% silt, 30% sand, 10% gravel; medium plasticity; low estimated permeability.	11.5	Bottom of Boring @ 11.5 ft

BOR LOG (TPH-G) G:\OA191C~1\GINT\OKLND285.GPJ DEFAULT.GDT 4/26/00

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-2
JOB/SITE NAME	Oakland 285	**DRILLING STARTED**	18-Mar-99
LOCATION	285 Hegenberger Road, Oakland, California	**DRILLING COMPLETED**	18-Mar-99
PROJECT NUMBER	241-0734	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	M. Paves	**DEPTH TO WATER (First Encountered)**	5.0 ft (18-Mar-99)
REVIEWED BY		**DEPTH TO WATER (Static)**	6.50 ft
REMARKS	Hand augered to 6' bgs.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
							ASPHALT.	0.5	
							SAND; (FILL); brown. @ 1' - Silty SAND (FILL).	3.0	
					SP		**Gravelly SAND**; (SP); greenish brown; moist; 10% clay, 10% silt, 50% sand, 30% gravel; low plasticity; high estimated permeability.	3.5	
					CL		**Gravelly Sandy CLAY**; (CL); greenish brown; moist; 50% clay, 10% silt, 20% sand, 20% gravel; medium plasticity; moderate estimated permeability.	5.0	
		SB-2 -6.0'		5	SP		**Gravelly Silty SAND**; (SP); dark brown; wet; 10% clay, 20% silt, 50% sand, 20% gravel; low plasticity; high estimated permeability.	7.5	Portland Type I/II
		SB-2 -7.5'			SP		**Gravelly SAND**; (SP); light brown; wet; 10% clay, 10% silt; 50% sand, 30% gravel; low plasticity; high estimated permeability.	9.5	
		SB-2 -10.0'		10	CH		**Silty CLAY**; (CH); gray; moist; 60% clay, 30% silt, 10% sand; high plasticity; low estimated permeability.	12.0	
		SB-2 -11.5'					No Recovery.		
				15				15.0	Bottom of Boring @ 15 ft

BOR LOG (TPH-G) G:\OA191C--1\GINTKOL\N2285.GPJ DEFAULT.GDT 4/26/00

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-3
JOB/SITE NAME	Oakland 285	**DRILLING STARTED**	18-Mar-99
LOCATION	285 Hegenberger Road, Oakland, California	**DRILLING COMPLETED**	18-Mar-99
PROJECT NUMBER	241-0734	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	M. Paves	**DEPTH TO WATER (First Encountered)**	6.0 ft (18-Mar-99) ▽
REVIEWED BY		**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5' bgs.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	BORING BACKFILL
							ASPHALT.	0.4	
							Sandy FILL; (FILL); dry; light brown.		
							@ 2' - green; 10% clay, 10% silt, 50% sand, 30% gravel; low plasticity; high estimated permeability.	3.5	
					GP		**Sandy GRAVEL**; (GP); dry; 10% silt, 30% sand, 60% gravel; low plasticity; high estimated permeability.	5.0	
				5			No recovery. ▽	6.0	
					SP		**Gravelly SAND**; (GP); green; wet; 5% clay, 10% silt, 50% sand, 35% gravel; low plasticity; high estimated permeability.	7.3	
		SB-3 -7.0'			CL		**Sandy Gravelly CLAY**; (CL); greenish gray; wet; 50% clay, 10% silt, 20% sand, 20% gravel; medium plasticity; moderate estimated permeability.	8.8	◄ Portland Type I/II
		SB-3 -8.5'			SP		**Gravelly SAND**; (SP); wet.	10.3	
		SB-3 -10.0'		10	CL		**Silty Sandy CLAY**; (CL); greenish gray; wet; 50% clay, 20% silt, 20% sand, 10% gravel; medium plasticity; moderate estimated permeability.	11.0	
		SB-3 -11.0'			CH		**Silty CLAY**; (CL); gray; stiff; moist; 60% clay, 30% silt, 10% sand; high plasticity; low estimated permeability.	14.0	
		SB-3 -14.5'		15	CL		**Gravelly Sandy CLAY**; (CL); brownish gray; moist; 50% clay, 30% sand, 20% gravel; low plasticity; low to moderate estimated permeability.	16.0	
		SB-3 -16.5'			CH		**Silty CLAY**; (CH); green brown; moist; 60% clay, 30% silt, 10% sand; high plasticity; low estimated permeability.	17.0	Bottom of Boring @ 17 ft

BOR LOG (TPH-G) G:\OA191C~1\GINT\OKLND285.GPJ DEFAULT.GDT 4/26/00

Attachment C

Standard Field Procedures for Geoprobe Sampling

CAMBRIA

STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Cambria Environmental Technology's standard field methods for GeoProbe® soil and ground water sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed 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 Storage, Handling and Transport

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

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Grab Ground Water Sampling

Ground water samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting ground water using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. 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.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also 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.

Attachment D

Soil Boring and Encroachment Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5548 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 285 Hegenberger Rd. Oakland CA

California Coordinate Source ____ ft. Accuracy ± ____ ft.
CCN ____ ft. CCE ____ ft.
APN ____

CLIENT
Name Equiva Services, LLC
Address P.O. Box 6249 Phone 559 645 9306
City Carson CA Zip 90749-6249

APPLICANT
Name Cambria Env. Tech. (Troy Buggle)
Fax 510 420 9170
Address 1144 65th St. Suite B Phone 510 420 3333
City Oakland, CA 94608 Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☒
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	☒	Geoprobe	

DRILLER'S LICENSE NO. C57-485765

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS
Number of Borings 1 or 2 Maximum
Hole Diameter 2" in. Depth 15 ft.

ESTIMATED STARTING DATE 3.1.99
ESTIMATED COMPLETION DATE 3.1.99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Troy A Bugle DATE 2.17.99

FOR OFFICE USE

PERMIT NUMBER 99WR066
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, neat cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED Andreas Godfrey DATE 2-24-

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PERMIT NUMBER	SITE ADDRESS/LOCATION
X9900158	285 Hegenberger Rd.
APPROX. START DATE / APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS	CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: _____

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Signature of Permittee ☐ Agent for ☒ Contractor ☐ Owner — Date 2/23/99

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED?	HOLIDAY RESTRICTION? (NOV 1 - JAN 1)	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM)
90	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO

ISSUED BY	DATE ISSUED
M. Miller	3/1/99

Attachment E

Analytical Results for Soil Vapor

Sequoia Analytical

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

November 10, 1999

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

RE: Shell(1)/L911088

Dear Darryk Ataid

Enclosed are the results of analyses for sample(s) received by the laboratory on November 8, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tim Costello
Lab Director

CA ELAP Certificate Number 2245

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled:	11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received:	11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

ANALYTICAL REPORT FOR L911088

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
VW-1A	L911088-01	Air	11/4/99
VW-1B	L911088-02	Air	11/4/99
VW-1/VW-4	L911088-03	Air	11/4/99

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled:	11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received:	11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - San Carlos

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
VW-1A			**L911088-01**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110033	11/7/99	11/7/99		284	**1410**	ppmV	1
Benzene	"	"	"		3.13	**24.5**	"	
Toluene	"	"	"		2.66	ND	"	
Ethylbenzene	"	"	"		2.31	ND	"	
Xylenes (total)	"	"	"		2.31	ND	"	
Methyl tert-butyl ether	"	"	"		27.8	**40.6**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*84.3*	%	
VW-1B			**L911088-02**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110034	11/7/99	11/7/99		284	**1350**	ppmV	2
Benzene	"	"	"		3.13	**32.3**	"	
Toluene	"	"	"		2.66	**2.74**	"	
Ethylbenzene	"	"	"		2.31	ND	"	
Xylenes (total)	"	"	"		2.31	ND	"	
Methyl tert-butyl ether	"	"	"		27.8	**44.2**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*112*	%	
VW-1/VW-4			**L911088-03**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110035	11/7/99	11/7/99		35.5	**355**	ppmV	2
Benzene	"	"	"		0.392	**3.32**	"	
Toluene	"	"	"		0.332	ND	"	
Ethylbenzene	"	"	"		0.288	ND	"	
Xylenes (total)	"	"	"		0.288	ND	"	
Methyl tert-butyl ether	"	"	"		3.47	**37.8**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*140*	%	3

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled: 11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received: 11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9110033	**Date Prepared: 11/5/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110033-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/5/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.98*	"	*70.0-130*	*89.8*			
Blank	**9110033-BLK3**									
Purgeable Hydrocarbons as Gasoline	11/7/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.99*	"	*70.0-130*	*99.9*			
LCS	**9110033-BS1**									
Benzene	11/5/99	10.0		7.81	ug/l	70.0-130	78.1			
Toluene	"	10.0		7.72	"	70.0-130	77.2			
Ethylbenzene	"	10.0		7.69	"	70.0-130	76.9			
Xylenes (total)	"	30.0		22.9	"	70.0-130	76.3			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.10*	"	*70.0-130*	*91.0*			
LCS	**9110033-BS2**									
Purgeable Hydrocarbons as Gasoline	11/5/99	250		250	ug/l	70.0-130	100			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.66*	"	*70.0-130*	*76.6*			
LCS	**9110033-BS3**									
Benzene	11/7/99	10.0		8.53	ug/l	70.0-130	85.3			
Toluene	"	10.0		8.63	"	70.0-130	86.3			
Ethylbenzene	"	10.0		8.42	"	70.0-130	84.2			
Xylenes (total)	"	30.0		25.9	"	70.0-130	86.3			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.62*	"	*70.0-130*	*96.2*			
LCS	**9110033-BS4**									
Purgeable Hydrocarbons as Gasoline	11/7/99	250		242	ug/l	70.0-130	96.8			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.97*	"	*70.0-130*	*89.7*			

Sequoia Analytical

1551 Industrial Road
San Carlos, CA 94070-4111
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Cambria Environmental	Project:	Shell(1)	Sampled: 11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received: 11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	**9110033-MS1**		**L910198-02**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	246	ug/l	60.0-140	**98.4**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.18*	"	*70.0-130*	*71.8*			
Matrix Spike Dup	**9110033-MSD1**		**L910198-02**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	215	ug/l	60.0-140	**86.0**	25.0	**13.4**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.93*	"	*70.0-130*	*79.3*			
Batch: 9110034	**Date Prepared: 11/5/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110034-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/5/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.84*	"	*70.0-130*	*98.4*			
Blank	**9110034-BLK2**									
Purgeable Hydrocarbons as Gasoline	11/7/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.4*	"	*70.0-130*	*104*			
LCS	**9110034-BS1**									
Benzene	11/5/99	10.0		8.45	ug/l	70.0-130	84.5			
Toluene	"	10.0		8.53	"	70.0-130	85.3			
Ethylbenzene	"	10.0		8.80	"	70.0-130	88.0			
Xylenes (total)	"	30.0		26.4	"	70.0-130	88.0			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.62*	"	*70.0-130*	*86.2*			
LCS	**9110034-BS2**									
Purgeable Hydrocarbons as Gasoline	11/5/99	250		261	ug/l	70.0-130	104			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.72*	"	*70.0-130*	*77.2*			
LCS	**9110034-BS3**									
Benzene	11/7/99	10.0		9.47	ug/l	70.0-130	94.7			
Toluene	"	10.0		9.86	"	70.0-130	98.6			
Ethylbenzene	"	10.0		9.90	"	70.0-130	99.0			

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Cambria Environmental	Project:	Shell(1)	Sampled: 11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received: 11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**9110034-BS3**									
Xylenes (total)	11/7/99	30.0		29.9	ug/l	70.0-130	99.7			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.3*	"	*70.0-130*	*103*			
LCS	**9110034-BS4**									
Purgeable Hydrocarbons as Gasoline	11/7/99	250		262	ug/l	70.0-130	105			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.50*	"	*70.0-130*	*95.0*			
Matrix Spike	**9110034-MS1**		**L910241-01**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	259	ug/l	60.0-140	**104**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.48*	"	*70.0-130*	*84.8*			
Matrix Spike Dup	**9110034-MSD1**		**L910241-01**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	256	ug/l	60.0-140	**102**	25.0	**1.94**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.69*	"	*70.0-130*	*76.9*			
Batch: 9110035	**Date Prepared: 11/5/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110035-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/5/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.8*	"	*70.0-130*	*108*			
Blank	**9110035-BLK3**									
Purgeable Hydrocarbons as Gasoline	11/7/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.4*	"	*70.0-130*	*114*			
LCS	**9110035-BS1**									
Benzene	11/5/99	10.0		9.15	ug/l	70.0-130	91.5			
Toluene	"	10.0		8.92	"	70.0-130	89.2			
Ethylbenzene	"	10.0		9.13	"	70.0-130	91.3			
Xylenes (total)	"	30.0		27.0	"	70.0-130	90.0			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.6*	"	*70.0-130*	*106*			

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Cambria Environmental	Project:	Shell(1)	Sampled: 11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received: 11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS	**9110035-BS2**									
Purgeable Hydrocarbons as Gasoline	11/5/99	250		291	ug/l	70.0-130	116			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.8*	"	*70.0-130*	*108*			
LCS	**9110035-BS3**									
Benzene	11/7/99	10.0		8.64	ug/l	70.0-130	86.4			
Toluene	"	10.0		8.74	"	70.0-130	87.4			
Ethylbenzene	"	10.0		8.61	"	70.0-130	86.1			
Xylenes (total)	"	30.0		25.7	"	70.0-130	85.7			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.9*	"	*70.0-130*	*119*			
LCS	**9110035-BS4**									
Purgeable Hydrocarbons as Gasoline	11/7/99	250		291	ug/l	70.0-130	116			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*13.6*	"	*70.0-130*	*136*			
Matrix Spike	**9110035-MS1**		**L910232-08**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	305	ug/l	60.0-140	**122**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*12.2*	"	*70.0-130*	*122*			
Matrix Spike Dup	**9110035-MSD1**		**L910232-08**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	311	ug/l	60.0-140	**124**	25.0	**1.63**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.9*	"	*70.0-130*	*119*			

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Cambria Environmental	Project:	Shell(1)	Sampled:	11/4/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger, Oakland	Received:	11/8/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

Notes and Definitions

#	Note
1	Chromatogram Pattern: Weathered Gasoline C6-C12
2	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
3	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference
Note:	A molecular weight of 86.2 was used for Purgeable hydrocarbons as Gasoline.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 11/5/99
Page 1 of 1

Site Address: 285 Hegenberger, Oakland
~~WIC #~~: Incident # 98995749

Shell Engineer: Karen Petryna
Phone No.: (554) 645-9306
Fax #: 645-5643

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

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

Comments:

Sampled by: D. Ataide

Printed Name: D. Ataide

LAB: SEQ

UST AGENCY: _____

CHECK ONE (1) BOX ONLY	C1/D1
G.W. Monitoring	4441
Site Investigation	X 4441
Soil Classify/Disposal	4442
Water Classify/Disposal	4443
Soil/Air Remt. or Sys. O & M	4452
Water Remt. or Sys. O & M	4453
Other	

TURN AROUND TIME
24 hours
48 hours
15 days X (Normal)
Other _____

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

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			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
VW-1A	11/4/99	01			✓	1						X							L911088	
VW-1B	"	02			✓	1						X								
VW-1/VW-4	↓	03			✓	1						X								

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
D. Ataide	D. Ataide	11/5/99 1:40	Steve Tan	Steve Tan	11/5/99 11:4
Steve Tan	Steve Tan	11/5/99			
		11/5/99	Nicole Lane	Nicole Lane	11/8/99 0535

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

11/91

Sequoia Analytical

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November 10, 1999

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

RE: Shell(1)/L911080

Dear Darryk Ataid

Enclosed are the results of analyses for sample(s) received by the laboratory on November 4, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tim Costello
Lab Director

CA ELAP Certificate Number 2245

Sequoia Analytical

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Cambria Environmental	Project:	Shell(1)	Sampled:	11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received:	11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

ANALYTICAL REPORT FOR L911080

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
VW-4A	L911080-01	Air	11/3/99
VW-4B	L911080-02	Air	11/3/99

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Cambria Environmental	Project:	Shell(1)	Sampled:	11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received:	11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - San Carlos

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
VW-4A			**L911080-01**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110035	11/7/99	11/7/99		35.5	**259**	ppmV	1
Benzene	"	"	"		0.392	**2.30**	"	
Toluene	"	"	"		0.332	**0.516**	"	
Ethylbenzene	"	"	"		0.288	ND	"	
Xylenes (total)	"	"	"		0.288	ND	"	
Methyl tert-butyl ether	"	"	"		3.47	**26.4**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*146*	%	2
VW-4B			**L911080-02**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110033	11/7/99	11/7/99		35.5	**366**	ppmV	3
Benzene	"	"	"		0.392	**6.05**	"	
Toluene	"	"	"		0.332	ND	"	
Ethylbenzene	"	"	"		0.288	ND	"	
Xylenes (total)	"	"	"		0.288	ND	"	
Methyl tert-butyl ether	"	"	"		3.47	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*88.9*	%	

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Cambria Environmental	Project:	Shell(1)	Sampled: 11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received: 11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9110033	**Date Prepared: 11/5/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110033-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/5/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.98*	"	*70.0-130*	*89.8*			
Blank	**9110033-BLK3**									
Purgeable Hydrocarbons as Gasoline	11/7/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.99*	"	*70.0-130*	*99.9*			
LCS	**9110033-BS1**									
Benzene	11/5/99	10.0		7.81	ug/l	70.0-130	78.1			
Toluene	"	10.0		7.72	"	70.0-130	77.2			
Ethylbenzene	"	10.0		7.69	"	70.0-130	76.9			
Xylenes (total)	"	30.0		22.9	"	70.0-130	76.3			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.10*	"	*70.0-130*	*91.0*			
LCS	**9110033-BS2**									
Purgeable Hydrocarbons as Gasoline	11/5/99	250		250	ug/l	70.0-130	100			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.66*	"	*70.0-130*	*76.6*			
LCS	**9110033-BS3**									
Benzene	11/7/99	10.0		8.53	ug/l	70.0-130	85.3			
Toluene	"	10.0		8.63	"	70.0-130	86.3			
Ethylbenzene	"	10.0		8.42	"	70.0-130	84.2			
Xylenes (total)	"	30.0		25.9	"	70.0-130	86.3			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.62*	"	*70.0-130*	*96.2*			
LCS	**9110033-BS4**									
Purgeable Hydrocarbons as Gasoline	11/7/99	250		242	ug/l	70.0-130	96.8			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*8.97*	"	*70.0-130*	*89.7*			

Sequoia Analytical

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Cambria Environmental	Project:	Shell(1)	Sampled: 11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received: 11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	**9110033-MS1**		**L910198-02**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	246	ug/l	60.0-140	**98.4**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.18*	"	*70.0-130*	*71.8*			
Matrix Spike Dup	**9110033-MSD1**		**L910198-02**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	215	ug/l	60.0-140	**86.0**	25.0	**13.4**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*7.93*	"	*70.0-130*	*79.3*			
Batch: 9110035	**Date Prepared: 11/5/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110035-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/5/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.8*	"	*70.0-130*	*108*			
Blank	**9110035-BLK3**									
Purgeable Hydrocarbons as Gasoline	11/7/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.4*	"	*70.0-130*	*114*			
LCS	**9110035-BS1**									
Benzene	11/5/99	10.0		9.15	ug/l	70.0-130	91.5			
Toluene	"	10.0		8.92	"	70.0-130	89.2			
Ethylbenzene	"	10.0		9.13	"	70.0-130	91.3			
Xylenes (total)	"	30.0		27.0	"	70.0-130	90.0			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.6*	"	*70.0-130*	*106*			
LCS	**9110035-BS2**									
Purgeable Hydrocarbons as Gasoline	11/5/99	250		291	ug/l	70.0-130	116			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.8*	"	*70.0-130*	*108*			
LCS	**9110035-BS3**									
Benzene	11/7/99	10.0		8.64	ug/l	70.0-130	86.4			
Toluene	"	10.0		8.74	"	70.0-130	87.4			
Ethylbenzene	"	10.0		8.61	"	70.0-130	86.1			

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled: 11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received: 11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported: 11/10/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**9110035-BS3**									
Xylenes (total)	11/7/99	30.0		25.7	ug/l	70.0-130	85.7			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.9*	"	*70.0-130*	*119*			
LCS	**9110035-BS4**									
Purgeable Hydrocarbons as Gasoline	11/7/99	250		291	ug/l	70.0-130	116			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*13.6*	"	*70.0-130*	*136*			2
Matrix Spike	**9110035-MS1**		**L910232-08**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	305	ug/l	60.0-140	**122**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*12.2*	"	*70.0-130*	*122*			
Matrix Spike Dup	**9110035-MSD1**		**L910232-08**							
Purgeable Hydrocarbons as Gasoline	11/5/99	250	ND	311	ug/l	60.0-140	**124**	25.0	**1.63**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.9*	"	*70.0-130*	*119*			

Sequoia Analytical

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Cambria Environmental	Project:	Shell(1)	Sampled:	11/3/99
1144 65th St., Suite C.	Project Number:	Shell 285 Hegenberger Rd	Received:	11/4/99
Oakland, CA 94608	Project Manager:	Darryk Ataid	Reported:	11/10/99

Notes and Definitions

#	Note
1	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
2	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
3	Chromatogram Pattern: Weathered Gasoline C6-C12
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: ________

Date: 11/3/99
Page 1 of 1

Site Address: 285 Hegenberger, Oakland

~~WIC#~~: Incident # 98995749 / L911080

Shell Engineer: Karen Petryna
Phone No.: (559) 645-9306
Fax #: 645-5643

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

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

Comments:

Sampled by: D. Ataide

Printed Name: D. Ataide

LAB: SEQ

CHECK ONE (1) BOX ONLY		CT/DT
G.W. Monitoring	[ ]	4461
Site Investigation	[X]	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 [ ] 15 days [X] (Normal) Other [ ] ______

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

UST AGENCY: ________

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			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
VW-4A	11/3/99				✓	1						X								
VW-4B	11/3/99				✓	1						X								

Relinquished By (signature):	Printed Name:	Date: / Time:	Received (signature):	Printed Name:	Date: / Time:
[signature]	D. Ataide	Date: Time:	[signature]	C. Mainar...	Date: 11-4-99 Time: 1415
Relinquished By (signature): [signature]	Printed Name: C. Mainar...	Date: 11-4-99 Time: 1630	Received (signature): [signature]	Printed Name: Paul Burton	Date: 11-4 Time: 1640
Relinquished By (signature): [signature]	Printed Name: Paul Burton	Date: 11-5 Time:	Received (signature): [signature]	Printed Name:	Date: 11/5/99 Time: 1800

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

Sequoia Analytical

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

November 22, 1999

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

RE: Shell(1)/L911160

Dear Barbara Jakub

Enclosed are the results of analyses for sample(s) received by the laboratory on November 12, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tim Costello
Lab Director

CA ELAP Certificate Number I-2360

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled: 11/9/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger Rd. Oakland	Received: 11/12/99
Oakland, CA 94608	Project Manager:	Barbara Jakub	Reported: 11/22/99

ANALYTICAL REPORT FOR L911160

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
EFF CARBON	L911160-01	Air	11/9/99
VW-1/VW-4	L911160-02	Air	11/9/99

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Cambria Environmental	Project:	Shell(1)	Sampled:	11/9/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger Rd. Oakland	Received:	11/12/99
Oakland, CA 94608	Project Manager:	Barbara Jakub	Reported:	11/22/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - San Carlos

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
EFF CARBON			**L911160-01**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110072	11/12/99	11/12/99		2.84	ND	ppmV	
Benzene	"	"	"		0.0313	ND	"	
Toluene	"	"	"		0.0266	ND	"	
Ethylbenzene	"	"	"		0.0231	ND	"	
Xylenes (total)	"	"	"		0.0231	ND	"	
Methyl tert-butyl ether	"	"	"		0.278	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*128*	%	
VW-1/VW-4			**L911160-02**				**Air**	
Purgeable Hydrocarbons as Gasoline	9110072	11/12/99	11/12/99		142	**1030**	ppmV	1
Benzene	"	"	"		1.57	**29.7**	"	
Toluene	"	"	"		1.33	**9.38**	"	
Ethylbenzene	"	"	"		1.15	ND	"	
Xylenes (total)	"	"	"		1.15	**6.50**	"	
Methyl tert-butyl ether	"	"	"		13.9	**129**	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*70.0-130*		*174*	%	2

Sequoia Analytical

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Cambria Environmental	Project:	Shell(1)	Sampled: 11/9/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger Rd. Oakland	Received: 11/12/99
Oakland, CA 94608	Project Manager:	Barbara Jakub	Reported: 11/22/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 9110072	**Date Prepared: 11/12/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9110072-BLK1**									
Purgeable Hydrocarbons as Gasoline	11/12/99			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**5.00**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.1*	"	*70.0-130*	*101*			
LCS	**9110072-BS1**									
Benzene	11/12/99	10.0		8.93	ug/l	70.0-130	89.3			
Toluene	"	10.0		8.71	"	70.0-130	87.1			
Ethylbenzene	"	10.0		8.92	"	70.0-130	89.2			
Xylenes (total)	"	30.0		26.4	"	70.0-130	88.0			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.33*	"	*70.0-130*	*93.3*			
LCS	**9110072-BS2**									
Purgeable Hydrocarbons as Gasoline	11/12/99	250		257	ug/l	70.0-130	103			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.1*	"	*70.0-130*	*111*			
Matrix Spike	**9110072-MS1**		**L911151-05**							
Benzene	11/12/99	10.0	ND	9.44	ug/l	60.0-140	**94.4**			
Toluene	"	10.0	ND	9.71	"	60.0-140	**97.1**			
Ethylbenzene	"	10.0	ND	10.2	"	60.0-140	**102**			
Xylenes (total)	"	30.0	ND	30.5	"	60.0-140	**102**			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.5*	"	*70.0-130*	*105*			
Matrix Spike Dup	**9110072-MSD1**		**L911151-05**							
Benzene	11/12/99	10.0	ND	9.95	ug/l	60.0-140	**99.5**	25.0	**5.26**	
Toluene	"	10.0	ND	10.2	"	60.0-140	**102**	25.0	**4.92**	
Ethylbenzene	"	10.0	ND	10.8	"	60.0-140	**108**	25.0	**5.71**	
Xylenes (total)	"	30.0	ND	33.3	"	60.0-140	**111**	25.0	**8.45**	
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*9.83*	"	*70.0-130*	*98.3*			

Sequoia Analytical

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

Cambria Environmental	Project:	Shell(1)	Sampled:	11/9/99
1144 65th St., Suite C.	Project Number:	Shell, 285 Hegenberger Rd. Oakland	Received:	11/12/99
Oakland, CA 94608	Project Manager:	Barbara Jakub	Reported:	11/22/99

Notes and Definitions

#	Note
1	Chromatogram Pattern: Gasoline C6-C12
2	The surrogate recovery was above established control limits due to sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference
Note:	A molecular weight of 86.2 was used to calculate ppmV for Purgeable Hydrocarbons as Gasoline.

VW H

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date: 11/9/99
Page 1 of 1

Site Address: 285 Hegenberger, Oakland
~~WIC#~~: Incident # 98995749

Shell Engineer: Karen Petryna
Phone No.: (559) 645-9306
Fax #: 645-5643

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

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

Comments:

Sampled by: D. Atalde

Printed Name: D. Atalde

LAB: SEQ

CHECK ONE (1) BOX ONLY — C1/D1

G.W. Monitoring	☐	4441
Site Investigation	☒	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Remt. or Sys. O & M	☐	4452
Water Remt. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ _____

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

UST AGENCY: _____

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			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
EFF Carbon	11/9/99				✓	1						X								
VW-1/VW-4	11/9/99				✓	1						X							SC	L911160

Relinquished By (signature): D. Atalde
Printed Name: D. Atalde
Date: 11-10
Time: 1630
Received (signature):
Printed Name: C. Marinas
Date: 11-10
Time: 1450

Relinquished By (signature):
Printed Name: C. Marinas PET
Date: 11-11
Time:
Received (signature):
Printed Name: Fed Ex
Date:
Time:

Relinquished By (signature):
Printed Name:
Date:
Time:
Received (signature):
Printed Name: Nell McLane
Date: 11/12/99
Time: 1100

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