CAMBRIA

JAN 0 2 2002

To:	Robert C. Duggins
Organization:	Shiloh Christian Fellowship
Address:	3295 School Street
	Oakland, California 94602
Phone:	(510) 261-2052 x 161

To:	Alameda County Health Care Services Agency
Address:	1131 Harbor Bay Parkway, Suite 250
	Alameda, California 94502

From:	Bob Clark-Riddell
Phone:	510-420-3341
Date:	December 6, 2001
Re:	Subsurface Investigation Report

Transmittal

Dear Mr. Duggins:

Please find enclosed the Subsurface Investigation Report. As discussed, a copy of the report has also been transmitted to the Alameda County Health Care Services Agency.

Upon approval Cambria is ready to assist with any environmental tasks required by the Agency or Shiloh Christian Fellowship. Please feel free to call me with any questions or comments. Thank you.

Sincerely,

Bob Clark-Riddell

Bob Clark-Riddell, PE

CAMBRIA

December 6, 2001

Mr. Robert C. Duggins
Shiloh Christian Fellowship
3295 School Street
Oakland, California 94602

Re: **Subsurface Investigation Report**
3520 School Street, STID 4907
Oakland, California

Dear Mr. Duggins:

Cambria Environmental Technology, Inc. has prepared this *Subsurface Investigation Report* for the above-referenced site. The scope of work for this investigation was described in an August 1998 *Additional Investigation Work Plan* by Subsurface Consultants, Inc. The site background, investigation activities, investigation results, and our conclusions and recommendations are described below.

SITE BACKGROUND

The site is currently a fenced, vacant lot and is used as an auxiliary parking lot by the Shiloh Christian Fellowship. It is located at the intersection of School Street and Maple Avenue. The site is a former gasoline service station that was demolished in preparation of the construction of the parking lot. The service station had two gasoline and one waste oil underground tanks (USTs), which were removed in May 1995. Approximately 60 cubic yards of impacted soil were over-excavated during the tank removal.

SUBSURFACE INVESTIGATION ACTIVITIES

Scope of Work: To further assess the extent of subsurface petroleum hydrocarbons in the vicinity of the former USTs, Cambria sampled site soil and groundwater on June 22, 2001. Cambria advanced one boring (CB-2) to 28 feet below ground surface (bgs) using hydraulic-push (Geoprobe) technology. The other boring (CB-1) proposed in the *Work Plan* met with refusal at 1.5 feet bgs during hand augering. Cambria collected soil samples at five-foot intervals, and collected one grab groundwater sample at 10-12 feet bgs. Cambria's standard field procedures for soil borings are presented in Appendix A.

Drilling Date: June 22, 2001.

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

Utility Survey: Prior to the sampling activities, Cambria marked the site vicinity for utility by Underground Service Alert (USA).

Personnel Present: Sara Dwight, Cambria Scientist, working under the supervision of California Professional Engineer Bob Clark-Riddell.

Permits: According to the Oakland Department of Public Works, no permits are required for "geological test borings on private property."

Drilling Company: Precision Sampling, Inc. of Richmond, California (C-57 License #636-387).

Drilling Method: Direct-push Geoprobe.

Number of Borings: One boring (CB-2) was completed. Boring CB-1 met refusal at 1.5 ft bgs, and, after several attempts at clearing the boring, it was abandoned in the interest of time and safety. The boring locations are shown on Figure 1.

Boring Depths: Boring CB-2 was advanced and sampled to a depth of 28 ft bgs. Attempted boring CB-1 met refusal at 1.5 ft bgs.

Soil Types Encountered: The site is underlain by gravelly sand, presumed to be fill material, to 10 feet bgs, and silty sand to the total depth explored of approximately 28 feet bgs (see Appendix B). The soil became increasingly more stiff with depth, and Precision had difficulty the retrieving the liner containing the soil core from the boring at greater depths. For this reason, the maximum depth attainable was 28 feet bgs.

Groundwater Sampling: A grab groundwater sample was collected from boring CB-2 during sampling activities. **Water was encountered in the tank backfill area at 12 feet bgs and rose to 10 feet bgs by the time the groundwater sample was taken.** Groundwater was not encountered in deeper soil. Efforts to encounter and sample deeper groundwater were halted at 28 ft bgs due to difficulty retrieving the drilling liner from the boring.

Chemical Analysis: Soil samples were sent to McCampbell Analytical, Inc. (McCampbell) of Pacheco, California, and analyzed for total petroleum hydrocarbons as gasoline (TPHg) using modified EPA Method 8015, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA Method 8020. McCampbell analyzed the groundwater sample for TPHg, BTEX, MTBE, and poly nuclear aromatics (PNAs) using EPA Method 8270.

Backfill Method: Borings were backfilled to existing grade with bentonite-cement grout.

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INVESTIGATION RESULTS

Soil Analytical Data: Soil samples were analyzed for TPHg, BTEX, and MTBE. TPHg was detected in CB-2 at concentrations ranging from 6.2 milligrams per kilogram (mg/kg) to 41 mg/kg. Benzene was detected in one sample only, at a concentration of 0.007 mg/kg at 15.5 ft bgs. Toluene was detected at a concentration of 0.005 mg/kg at 11.5 ft bgs, and ethylbenzene was detected at a concentration of 0.091 mg/kg at 11.5 ft bgs and 0.014 mg/kg at 15.5 ft bgs. No hydrocarbons were detected in deeper soil (23.5 and 27.5 ft bgs), and no MTBE was detected in any of the soil samples, The soil analytical results are summarized in Table 1, and the laboratory analytical report is presented in Appendix C.

Groundwater Analytical Data: The groundwater sample was analyzed for TPHg, BTEX, MTBE, and PNAs. TPHg was detected at a concentration of 110 µg/L. Ethylbenzene and xylenes were detected at concentrations of 1.6 µg/L and 9.6 µg/L, respectively. No MTBE, benzene, toluene, or PNAs were detected in the groundwater sample. The groundwater analytical results are summarized in Table 2, and the laboratory analytical report is presented in Appendix C.

CONCLUSIONS AND RECOMMENDATIONS

Cambria offers the following conclusions and recommendations:

- MTBE does not appear to be present in site soil or shallow groundwater.
- Residual hydrocarbons are present in site soil and shallow groundwater.
- With no petroleum hydrocarbons detected in soil at 23.5 and 27.5 ft bgs, analytical results suggest that the vertical extent of petroleum hydrocarbons is defined beneath the location of the former USTs.
- Additional grab sampling is recommended to determine if released hydrocarbons have impacted deeper site groundwater. Cambria suspects that the groundwater encountered at 10-12 ft bgs in boring CB-2 was groundwater perched in the former UST cavity. Additional shallow soil sampling could be conducted during future grab groundwater sampling to confirm the results of boring CB-2 and to provide additional lateral hydrocarbon delineation.
- The residual hydrocarbon concentrations should be compared to the risk-based screening levels (RBSLs) established by the City of Oakland's Urban Land Redevelopment Program.
- Consistent with requirements from the Alameda County Care Services Agency, a risk management plan (RMP) should be prepared to safeguard human health from potential exposure to residual hydrocarbons, especially if site redevelopment is planned for the site.

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Sonoma, CA

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CLOSING

Cambria appreciates this opportunity to assist the Shiloh Christian Fellowship. Cambria understands that the Shiloh Christian Fellowship wishes to comply with environmental regulations pertaining to the site, and will seek full reimbursement for compliance activities from the California Underground Storage Tank Cleanup Fund.

If you have any questions, please feel free to contact me at (510) 420-3303.

Sincerely,
Cambria Environmental Technology, Inc.

Bob Clark-Riddell, PE
Principal Engineer

ATTACHMENTS

Figure 1 – Site Map

Table 1 – Soil Analytical Results
Table 2 – Groundwater Analytical Results

Appendix A – Standard Field Procedures for Geoprobe® Sampling
Appendix B - Soil Boring Log
Appendix C – Analytical Reports

Cc: Thomas Peacock, Alameda County Health Care Services Agency,
1131 Harbor Bay Parkway, Suite 250, Alameda, California 94502

H:\Sb-2004 (UST Fund)\Shiloh\Geoprobe.doc

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San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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Suite B
Oakland, CA 94608
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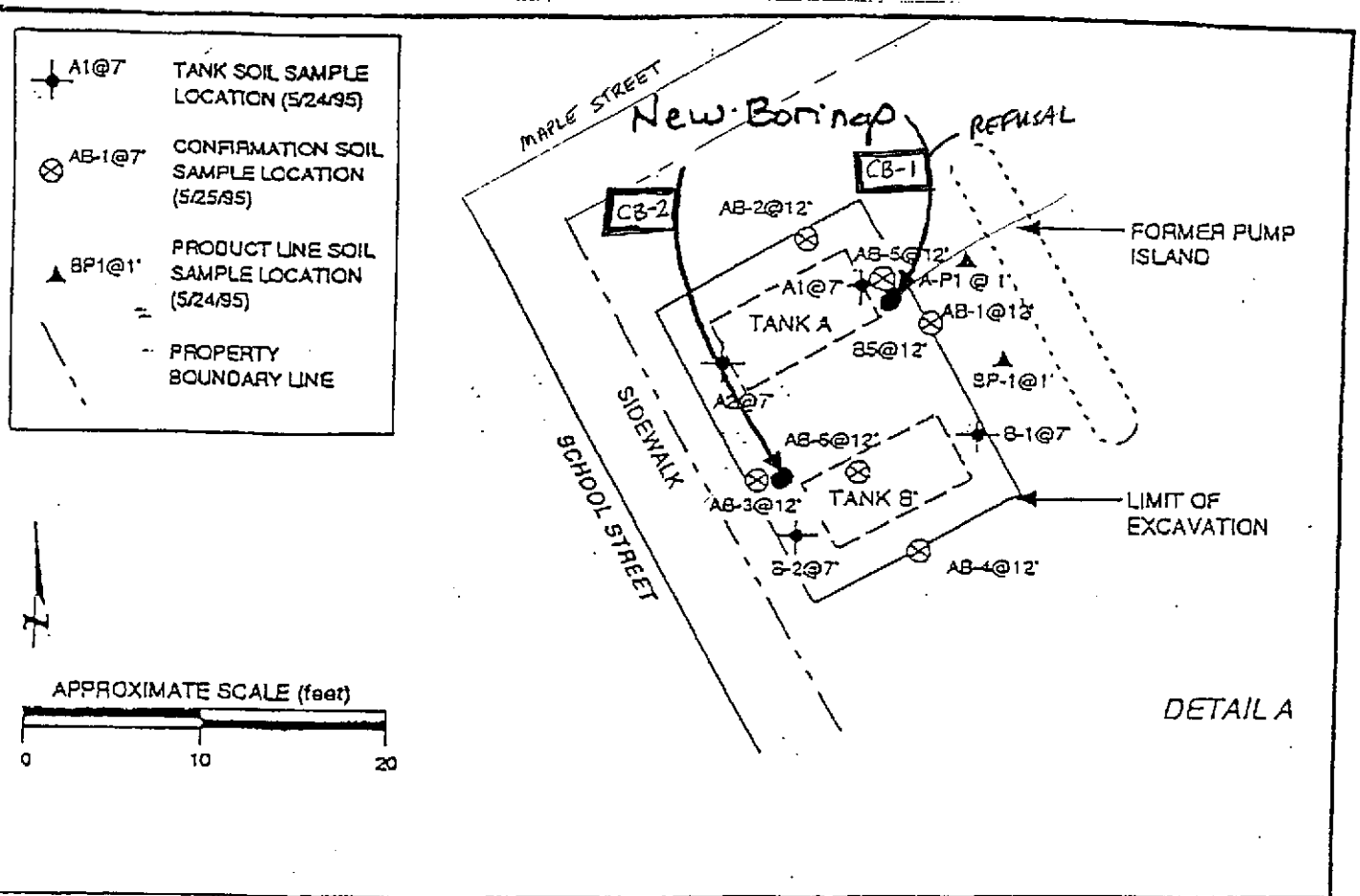

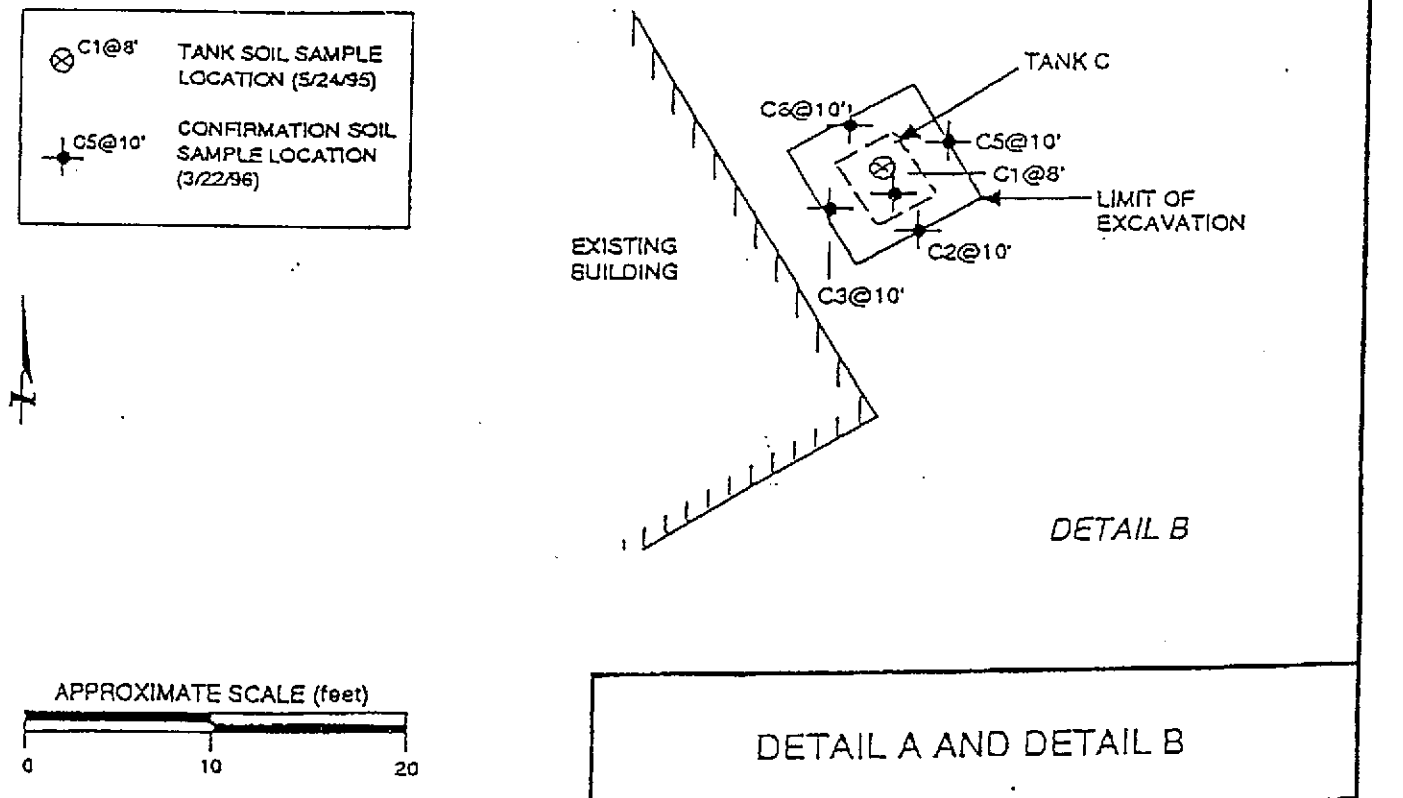

DETAIL A AND DETAIL B

Subsurface Consultants

SHILOH CHRISTIAN FELLOWSHIP
OAKLAND, CA

DATE
5/7/96

FIGURE
1

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Table 1. **Soil Analytical Data** - Shiloh Christian Fellowship
3295 School Street, Oakland, California

Borehole	Sample ID	Date Sampled	TPHg mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	MTBE mg/kg
		EPA Method:	**8015m**	**8020**	**8020**	**8020**	**8020**	**8020**
CB-2	CB-2-11.5	6/22/01	**41 a**	<0.005	**0.005**	**0.091**	<0.005	<0.05
	CB-2-15.5	6/22/01	**10 a**	**0.007**	<0.005	**0.014**	<0.005	<0.05
	CB-2-19.5	6/22/01	**6.2 a**	<0.005	<0.005	<0.005	<0.005	<0.05
	CB-2-23.5	6/22/01	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
	CB-2-27.5	6/22/01	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
mg/kg = Milligrams per kilogram
a = no recognizeable pattern

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Table 2. **Groundwater Analytical Data** - Shiloh Christian Fellowship
3295 School Street, Oakland, California

Borehole	Sample ID	Date Sampled	TPHg (µg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	PNAs (µg/kg)
		EPA Method:	**8015m**	**8020**	**8020**	**8020**	**8020**	**8020**	**8270**
CB-2	CB-2-10W	6/22/01	**110 a,b**	<0.5	<0.5	**1.6**	**9.6**	<5.0	<10

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
PNAs = Poly nuclear aromatics
ug/L = micrograms per liter
a = unmodified or weakly modified gasoline is significant
b = liquid sample that contains greater than ~5 vol. % sediment

APPENDIX A

Standard Field Procedures for Geoprobe® Sampling

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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.

APPENDIX B

Soil Boring Log

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

BORING/WELL LOG

CLIENT NAME	Shiloh Christian Fellowship	**BORING/WELL NAME**	CB-2
JOB/SITE NAME	Shiloh Oakland	**DRILLING STARTED**	22-Jun-01
LOCATION	3295 School Street	**DRILLING COMPLETED**	22-Jun-01
PROJECT NUMBER	474-1693	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Precision	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Dwight	**DEPTH TO WATER (First Encountered)**	12.0 ft (22-Jun-01)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5 feet bgs.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							Gravelly SAND (SPG); brown; dry to damp; 55% fine to coarse grained sand, 45% gravel; low plasticity; high estimated permeability.		
				5			very soft; low recovery	7.0	
							Gravelly SAND (SPG); brown; damp to moist; 10% silt, 50% fine to coarse grained sand, 40% gravel; low plasticity; high estimated permeability.	10.0	
127		CB-2-11.5		10	SM		Silty SAND (SM); light brown; dry; 5% clay, 30% silt, 60% fine to medium grained sand, 5% gravel; low plasticity; high estimated permeability; occasional gravel up to 1" in diameter; oxidation; hydrocarbon odor.	12.0	
303					SM		Silty SAND (SM); light brown mottled with grey; dry; 5% clay, 30% silt; 60% fine to medium grained sand; 5% gravel; low plasticity; moderate estimated permeability; medium stiff; hydrocarbon staining and odor.	15.0	
78		CB-2-15.5		15	SM		Silty SAND (SM); light brown; dry; 30% silt, 70% fine to medium grained sand; low plasticity; moderate estimated permeability; very stiff.	16.0	
					SM		Silty SAND (SM); brown mottled with grey; dry; 25% silt, 65% medium to coarse grained sand, 10% fine gravel; low plasticity; high estimated permeability; oxidation; hydrocarbon odor.	18.0	
219		CB-2-19.5		20	SM		Silty SAND (SM); brown; dry to damp; 5% clay, 25% silt, 65% medium grained sand, 5% gravel; medium plasticity; moderate estimated permeability; hydrocarbon staining and odor.	20.0	
					SM			21.0	
5					SM		Silty SAND (SM); greyish brown; damp; 5% clay, 30% silt, 60% fine to medium grained sand, 5% gravel; medium plasticity; moderate estimated permeability; hard.	22.0	
		CB-2-23.5		25	SM		Gravelly SAND (SPG); greyish brown mottled with red, black, and white; dry; 10% silt, 50% medium to coarse grained sand, 40% gravel; low plasticity; high estimated permeability.	24.0	
3					SM		Silty SAND (SM); reddish brown; dry; 20% silt; 70% medium to coarse grained sand, 10% gravel up to 1" in diameter; low plasticity; high estimated permeability; hard.	28.0	
		CB-2-27.5					Silty SAND (SM); light brown; dry; 15% silt, 70% fine to coarse grained sand, 15% gravel; low plasticity; high estimated permeability; hard.		Bottom of Boring @ 28 ft

WELL LOG (PID) H:\SB-200-1\SHILOH\SHILOH.GPJ DEFAULT.GDT 7/17/01

APPENDIX C

Analytical Reports

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology	Client Project ID: #474-1693-001; Shiloh Oakland	Date Sampled: 06/22/01
1144 65th Street, Suite C		Date Received: 06/25/01
Oakland, CA 94608	Client Contact: Bob Clark-Riddell	Date Extracted: 06/25-06/27/01
	Client P.O:	Date Analyzed: 06/25-06/27/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
70770	CB-2-11.5	S	41,j	ND	ND	0.005	0.091	ND	91
70771	CB-2-15.5	S	10,j	ND	0.007	ND	0.014	ND	114
70772	CB-2-19.5	S	6.2,j	ND	ND	ND	ND	ND	107
70773	CB-2-23.5	S	ND	ND	ND	ND	ND	ND	104
70774	CB-2-27.5	S	ND	ND	ND	ND	ND	ND	104
70775	CB-2-10W	W	110,a,i	ND	ND	ND	1.6	9.6	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: #474-1693-001; Shiloh Oakland	Date Sampled: 06/22/01
		Date Received: 06/25/01
	Client Contact: Bob Clark-Riddell	Date Extracted: 06/25/01
	Client P.O:	Date Analyzed: 06/26/01

Polynuclear Aromatic Hydrocarbons (PAH / PNA) by GC-MS

EPA methods 625 (modified 610) and 3510 or 8270 (modified 8100) and 3550

Lab ID	70775					Reporting Limit	
Client ID	CB-2-10W					S	W, STLC TCLP
Matrix	W						
Compound	Concentration*					mg/kg	ug/L
Acenaphthene	ND					0.062	10
Acenaphthylne	ND					0.062	10
Anthracene	ND					0.062	10
Benzo(a)anthracene	ND					0.062	10
Benzo(b)fluoranthene	ND					0.062	10
Benzo(k)fluoranthene	ND					0.062	10
Benzo(g,h,i)perylene	ND					0.062	10
Benzo(a)pyrene	ND					0.062	10
Chrysene	ND					0.062	10
Dibenzo(a,h)anthracene	ND					0.062	10
Fluoranthene	ND					0.062	10
Fluorene	ND					0.062	10
Indeno(1,2,3-cd)pyrene	ND					0.062	10
Naphthalene	ND					0.062	10
Phenanthrene	ND					0.062	10
Pyrene	ND					0.062	10
% Recovery Surrogate 1	108						
% Recovery Surrogate 2	119						
Comments	i						

* water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

surrogate diluted out of range or surrogate coelutes with another peak

(h) a lighter than water immiscible sheen is present; (i) liquid sample that contains >~5 vol. % sediment; (j) sample diluted due to high organic content.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
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QC REPORT

EPA 8015m + 8020

Date: 06/24/01-06/25/01 **Matrix:** Soil

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 62501	Extraction: EPA 5030				Instrument: GC-7		
Surrogate1	ND	93.000	92.000	100.00	93	92	1.1
Xylenes	ND	0.331	0.331	0.30	110	110	0.0
Ethylbenzene	ND	0.103	0.102	0.10	103	102	1.0
Toluene	ND	0.098	0.098	0.10	98	98	0.0
Benzene	ND	0.088	0.088	0.10	88	88	0.0
MTBE	ND	0.108	0.106	0.10	108	106	1.9
TPH (gas)	ND	1.143	1.153	1.00	114	115	0.9
SampleID: 62201	Extraction: EPA 3550				Instrument: GC-2 A		
Surrogate1	ND	96.000	96.000	100.00	96	96	0.0
TPH (diesel)	ND	147.500	148.000	150.00	98	99	0.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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Telephone : 925-798-1620 Fax : 925-798-1622
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QC REPORT

EPA 8015m + 8020

Date: 06/24/01-06/25/01 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 62001	Extraction: EPA 5030				Instrument: GC-7		
Surrogate1	ND	102.0	93.0	100.00	102	93	9.2
Xylenes	ND	34.9	32.9	30.00	116	110	5.9
Ethylbenzene	ND	11.0	9.9	10.00	110	99	10.5
Toluene	ND	10.8	9.6	10.00	108	96	11.8
Benzene	ND	10.1	8.8	10.00	101	88	13.8
MTBE	ND	10.2	9.1	10.00	102	91	11.4
TPH (gas)	ND	113.0	114.2	100.00	113	114	1.1
SampleID: 62201	Extraction: EPA 3510				Instrument: GC-2 A		
Surrogate1	ND	97.0	93.0	100.00	97	93	4.2
TPH (diesel)	ND	7375.0	7600.0	7500.00	98	101	3.0

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
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http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

SVOCs (EPA 8270/625/525)

Date: 06/26/01-06/27/01 **Extraction:** N/A **Matrix:** Water/Oil

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 62201					Instrument:	GC-8	
Surrogate1	ND	490.0	460.0	1000.00	49	46	6.3
Pyrene	ND	470.0	450.0	1000.00	47	45	4.3
Pentachlorophenol	ND	640.0	630.0	2000.00	32	32	1.6
2,4-Dinitrotoluene	ND	380.0	400.0	1000.00	38	40	5.1
4-Nitrophenol	ND	620.0	610.0	2000.00	31	31	1.6
Acenaphtene	ND	440.0	430.0	1000.00	44	43	2.3
4-Chloro-3-metylphenol	ND	960.0	940.0	2000.00	48	47	2.1
1,2,4-trichlorobenzene	ND	440.0	420.0	1000.00	44	42	4.7
N-nitroso-di-n-propyl	ND	480.0	460.0	1000.00	48	46	4.3
1,4-Dichlorobenzene	ND	400.0	380.0	1000.00	40	38	5.1
2-Chlorophenol	ND	810.0	790.0	2000.00	41	40	2.5
Phenol	ND	620.0	600.0	2000.00	31	30	3.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

26485 ZC415

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Bob Clark-Riddell Bill To: Same
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) 420-0700 Fax: (510) 420-9170
Project #: 474-1693-001 Project Name: Shiloh Oakland
Project Location: 3295 School St, Oakland CA
Sampler Signature: Sara Dwight

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's (PNA's) by EPA 625 (8270) 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
CB-2-11.5	CB-2	6/22/01	11:00a	1			X				X				X																70770
CB-2-15.5			12:15p	1			X				X				X																70771
CB-2-19.5			12:40p	1			X				X				X																70772
CB-2-23.5			1:10p	1			X				X				X																70773
CB-2-27.5			1:40p	1			X				X				X																70774
CB-2-10W			11:45a	5	4 Vgs, 1 Amb	X					X	Vgs			X									X								70775+5

Relinquished By:	Date:	Time:	Received By:
Sara Dwight	6/25/01	17:10	T. Stewart #266
T. Stewart	6/25	5:26	
Relinquished By:	Date:	Time:	Received By:

Analysis Request

Other

Comments

Remarks: