CONESTOGA-ROVERS & ASSOCIATES

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TRANSMITTAL

DATE: April 22, 2013

REFERENCE NO.: 240897

PROJECT NAME: 4411 Foothill Boulevard, Oakland

TO: Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

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- ☐ Mail
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QUANTITY	DESCRIPTION
1	Soil Vapor Sampling Report and Subsurface Investigation Work Plan

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
If you have any questions regarding the contents of this document, please call Peter Schaefer at (510) 420-3319.

Copy to: Denis Brown, Shell Oil Products US (electronic copy)
Laura Wong, Phua Management (property owner representative) (electronic copy)

Completed by: Peter Schaefer Signed: Peter Schaefer

Filing: **Correspondence File**

Denis L. Brown
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HSE – Environmental Services
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Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Former Shell Service Station
4411 Foothill Boulevard
Oakland, California
SAP Code 135686
Incident No. 98995746
ACEH Case No. RO0000415

Dear Mr. Wickham:

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

If you have any questions or concerns, please call me at (707) 865-0251.

Sincerely,

Denis L. Brown
Senior Program Manager

SOIL VAPOR SAMPLING REPORT AND SUBSURFACE INVESTIGATION WORK PLAN

FORMER SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SAP CODE 135686
INCIDENT NO. 98995746
AGENCY NO. RO0000415

Prepared by:
Conestoga-Rovers & Associates

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APRIL 22, 2013
REF. NO. 240897 (22)
This report is printed on recycled paper.

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EXECUTIVE SUMMARY

- On February 20, 2013, CRA sampled sub-slab soil vapor probes SSV-1 through SSV-7 and soil vapor probes V-9 through V-11 for TPHg, BTEX, MTBE, TBA, and naphthalene.
- No COCs were detected in the soil vapor samples, with the exception of 3,400,000 $\mu g/m^3$ TPHg in the near sub-slab soil vapor sample SSV-3, located adjacent to the former music store. RWQCB ESL guidance advises that "TPH ESLs must be used in conjunction with ESLs for related chemicals." In this case, BTEX, naphthalene, MTBE, and TBA would be the appropriate related chemicals, and none of these were detected.
- CRA proposes to install one sub-slab soil vapor probe inside the on-site building adjacent to near sub-slab soil vapor probe SSV-3, install two groundwater monitoring wells along the southwestern edge of the site, and conduct a well survey of adjacent down-gradient properties located southwest of the site.

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this report and work plan on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) as requested in Alameda County Environmental Health's (ACEH's) February 13, 2013 letter. ACEH's letter requested an additional round of sampling seven sub-slab soil vapor probes (SSV-1 through SSV-7) and three soil vapor probes (V-9, V-10, and V-11), a work plan for additional groundwater investigation down gradient and off site to the southwest, and a work plan for an updated well survey. The additional soil vapor sampling has been completed, and the results are presented in this report. The work plan is also included below.

The site is a former Shell service station located on the southern corner of the intersection of Foothill Boulevard and High Street in Oakland, California (Figure 1). The former station layout included three first-generation underground storage tanks (USTs) (1958 to 1971), three second-generation USTs (1971 to 1984), three third-generation gasoline USTs (1984 to 2002), a waste oil UST (removed 1992), and four product dispensers (removed 2002) as shown on Figure 2. Land use in the vicinity of the site is a mix of commercial and residential, with gasoline service stations occupying the northern and western corners of the intersection. The subject property is currently developed as a strip mall with a variety of commercial and retail uses.

A summary of previous work performed at the site and additional background information is contained in Appendix A.

2.0 SOIL VAPOR SAMPLING REPORT

2.1 SAMPLING ACTIVITIES

2.1.1 SAMPLING DATE

CRA Staff Scientist Scott Lewis sampled sub-slab soil vapor probes SSV-1 through SSV-7 and soil vapor probes V-9, V-10, and V-11 under the supervision of California Professional Geologist Peter Schaefer.

2.1.2 SAMPLING DATE

February 20, 2013.

2.1.3 SOIL VAPOR SAMPLING

CRA sampled soil vapor probes sub-slab soil vapor probes SSV-1 through SSV-7 and soil vapor probes V-9, V-10, and V-11 using a lung box and Tedlar® bag. Prior to sampling, CRA purged at least three tubing volumes of air from each vapor probe using a vacuum pump. No purging was conducted on the sub-slab soil vapor probes due to negligible tubing volume. During sampling, the Teflon® tubing for each vapor probe was connected to a lung box containing a laboratory-supplied Tedlar® bag, and the lung box chamber was connected to a vacuum pump. Each sample was then drawn into the Tedlar® bag by reducing the pressure in the lung box with the vacuum pump. The samples were labeled, documented on a chain-of-custody, and submitted to Calscience Environmental Laboratories, Inc. of Garden Grove, California for analysis within 72 hours.

To check the system for leaks, a containment unit (or shroud) was placed to cover the soil gas probe surface casing and sampling manifold. Prior to soil gas probe purging, helium was introduced into the containment unit to obtain a minimum 50 percent (%) helium content level. The helium content within the containment unit was confirmed using a helium meter. The helium meter reading is presented in Section 2.2.2. The samples were analyzed by the laboratory for helium, and CRA presents the results in Section 2.2.2 and on Table 1.

2.2 FINDINGS

2.2.1 SOIL VAPOR

No total petroleum hydrocarbons as gasoline (TPHg), benzene, ethylbenzene, toluene, and total xylenes (BTEX), naphthalene, methyl tertiary-butyl ether (MTBE), or tertiary-butyl alcohol (TBA) was detected in the soil vapor samples collected February 20, 2013, with the exception of 3,400,000 micrograms per cubic meter ($\mu g/m^3$) TPHg detected in the near sub-slab soil vapor sample SSV-3, located adjacent to the former music store.

Table 1 summarizes historical soil vapor analytical data. TPHg, BTEX, MTBE, and TBA results are shown on Figure 3, and the laboratory analytical report is presented in Appendix B.

2.2.2 LEAK TESTING

CRA performed leak testing as described above, and up to 0.200 percent by volume (%v) helium was detected in the samples. As shown in the following table, all helium detections are less than 10% of the concentration detected in the shroud, and the samples are considered valid.

Probe ID	*Helium concentration in sample (%v)*	*Minimum helium detected in shroud (%v)*	*Maximum acceptable helium concentration in sample (%v)*
SSV-1	0.0150	59.0	5.90
SSV-2	<0.0100	57.3	5.73
SSV-3	0.0192	61.3	6.13
SSV-4	<0.0100	60.4	6.04
SSV-5	0.200	54.9	5.49
SSV-6	<0.0100	54.3	5.43
SSV-7	0.0416	59.1	5.91
V-9	<0.0100	56.0	5.60
V-10	0.0726	57.8	5.78
V-11	<0.0100	58.0	5.80

The laboratory analytical reports for helium are presented in Appendix B, and CRA includes the results on Table 1.

2.3 CONCLUSIONS AND RECOMMENDATIONS

No BTEX, MTBE, TBA, or naphthalene was detected in vapor samples collected during the February 20, 2013 sampling event, and only one sample contained TPHg. The TPHg concentration in the sample collected from near sub-slab soil vapor probe SSV-3 exceeded the San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening level (ESL) for soil gas (Table E)[1] for commercial land use. It should be noted that RWQCB ESL guidance advises that "TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g. BTEX, polynuclear aromatic hydrocarbons, oxidizers, etc.)." In this case, BTEX, MTBE, TBA, and naphthalene would be the appropriate related chemicals, and none of these chemicals were detected in soil vapor from SSV-3. Further, CRA notes that the reporting limits for these constituents were below ESLs, with the exception of naphthalene.

1 Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater, California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008] - Updated February 2013

With the exception of TPHg in SSV-3, sampling results from this event confirm previous results. Based on the results from near sub-slab soil vapor probe SSV-3, which slightly exceeded the commercial ESL for TPHg of 3,100,000 µg/m³, CRA recommends resampling SSV-3 and installing a sub-slab soil vapor probe within the former on-site music store to further assess the extent of soil vapor impacts. These activities are proposed below.

3.0 SUBSURFACE INVESTIGATION WORK PLAN

CRA proposes to install one sub-slab soil vapor probe inside the on-site building adjacent to near sub-slab soil vapor probe SSV-3 to further evaluate the potential for soil vapor intrusion and two groundwater monitoring wells along the southwestern edge of the site to further delineate the current extent of petroleum hydrocarbons in groundwater.

No off-site groundwater investigation is proposed at this time. Based on the analytical results from groundwater samples collected from the new wells, we will evaluate the need for additional off-site groundwater investigation. We note that groundwater impacts are delineated down gradient to the southwest by wells C-7 and C-9, associated with Chevron Station 9-0076 located at 4265 Foothill Boulevard, Oakland. We also propose to conduct a well survey.

Proposed sub-slab vapor probe and well locations are shown on Figure 2. Specific tasks are described below.

3.1 WORK TASKS

3.1.1 PERMITS

CRA will obtain drilling permits for the well installations from Alameda County Public Works Agency (ACPWA). No permit is required for sub-slab soil vapor probe installation.

3.1.2 HEALTH AND SAFETY PLAN (HASP)

CRA will prepare a HASP to protect site workers. The plan will be kept on site during field activities and will be reviewed and signed by each site worker.

3.1.3 UTILITY CLEARANCE

CRA will mark the proposed drilling locations, and the locations will be cleared through Underground Service Alert and a private line locator service prior to drilling.

3.1.4 SUB-SLAB SOIL VAPOR PROBE INSTALLATION

CRA proposes to install one sub-slab soil vapor probe (SSV-8) into the concrete slab beneath the on-site building in the area of the former music store (Figure 2).

Assuming the absence of subsurface obstructions, a rotary hammer drill will be used to drill a "shallow" (approximately 1-inch deep) outer borehole (approximately 7/8-inch diameter) that partially penetrates the floor slab. Cuttings will be removed using a towel moistened with distilled water or a portable vacuum cleaner.

The rotary hammer drill will then be used to drill a smaller diameter inner borehole within the center of the outer borehole (approximately 3/8-inch diameter) through the floor material and approximately 3 inches into the sub-slab bedding material to create an open cavity. The outer borehole will be cleaned a second time with a moistened towel or a portable vacuum cleaner.

Stainless steel tubing will be cut to a length that allows the probe to float within the slab thickness to avoid obstruction of the probe with sub-slab bedding material. The tubing will be approximately 1/4-inch diameter. Where necessary, the compression fittings will be stainless steel (approximately 1/4-inch outside diameter and 1/8-inch National Pipe Thread) Swagelok® female thread connectors. The probe will be constructed prior to drilling to minimize exposure time, or venting, of the sub-slab bedding material through the open borehole.

The sub-slab soil vapor probe will be placed in the borehole so that the top of the probe is flush with the top of the floor. The top of the probe will have a recessed stainless steel plug. A quick-drying, Portland cement slurry will be injected or pushed into the annular space between the probe and the outer borehole. The cement will be allowed to dry for at least 24 hours prior to sampling.

CRA will perform this work under the supervision of a professional geologist or engineer.

3.1.5 SOIL VAPOR PROBE SAMPLING

At least 24 hours following probe installation, CRA will collect a soil vapor sample from the sampling point. Sampling is affected by rain. CRA's standard procedure is to allow 2 days or more after a heavy rain event prior to collecting soil vapor samples.

CRA will sample soil vapor probes SSV-3 and SSV-8 using a vacuum pump and Tedlar® bags. CRA will attach a sealed "lung sampler" containing a 1-liter Tedlar® bag to each probe and attach the vacuum pump to the box. The vacuum pump will lower the pressure in the "lung sampler" and draw air from the probe into the Tedlar® bag. To avoid breakage, CRA will fill the bags no more than two-thirds full. Each sample will be labeled, entered onto a chain-of-custody, and placed into a protective box at room temperature for transport to a State of California-certified laboratory for analysis within 72 hours.

3.1.6 LEAK TESTING

To check the system for leaks, CRA will cover the soil gas probe surface casing and sampling equipment with a containment unit (or shroud). Prior to soil gas probe purging, CRA will introduce helium into the containment unit to obtain a minimum 50% helium content level. CRA will confirm the helium content within the containment unit using a helium meter and will record the helium meter readings in our field notes. Helium will continue to be introduced to the containment unit during soil gas probe purging and sampling.

All samples will be analyzed in a laboratory for helium. In the event that the soil vapor samples contain a helium content of greater than 10% of the source concentration (i.e., 10% of the helium content measured within the containment unit), the soil gas sample will be considered invalid.

3.1.7 GROUNDWATER MONITORING WELL INSTALLATION

To further investigate the extent of petroleum hydrocarbon and fuel oxygenate impact to groundwater and evaluate the potential for vapor intrusion, two borings will be drilled using hollow-stem augers and converted to groundwater monitoring wells (S-13 and

S-14) along the southwestern edge of the site. Figure 2 shows the proposed well locations.

A CRA geologist will supervise the drilling and describe encountered soils using the Unified Soil Classification System and Munsell Soil Color Charts. After clearing the boring to 5 feet below grade (fbg) with an air- or water-knife, soil samples will be collected continuously for soil description, screening in the field for organic vapors using a photo-ionization detector (PID), and possible laboratory analyses. Soil sample selection will be based on field observations (including PID readings and soil types). CRA will prepare a boring log for each well boring, and PID measurements will be recorded on the boring logs.

Soil samples designated for chemical analyses will be retained in stainless steel or brass sample tubes. The tubes will be covered on both ends with Teflon® sheets and plastic end caps. Soil samples will be labeled, entered onto a chain-of-custody record, and placed into a cooler with ice for transport to a State of California certified laboratory for analyses. CRA will request a standard 2-week turn around time for laboratory results.

CRA will perform this work under the supervision of a professional geologist or engineer.

3.1.8 MONITORING WELL CONSTRUCTION

Wells S-13 and S-14 will be completed to approximately 10 feet below first-encountered groundwater and will be screened from approximately 5 feet above to 10 feet below groundwater. Based on groundwater monitoring data, depth to groundwater ranges from approximately 6 to 12 fbg. The wells will be constructed using 4-inch-diameter Schedule 40 PVC casing, a filter pack that will be placed from the bottom of the well screen up to 1 foot above the top of the well screen, followed by a 1-foot-thick bentonite seal, and cement grout to grade. Actual well construction details will be based on soil types and field conditions encountered during drilling. The wells will be secured with a locking cap under a traffic-rated well box.

3.1.9 WELL DEVELOPMENT AND SAMPLING

Upon waiting at least 72 hours after well installations, Blaine Tech Services, Inc. (Blaine) of San Jose, California will develop the new groundwater monitoring wells. At least

72 hours after well development, Blaine will sample the site's groundwater monitoring wells according to the existing sampling schedule and chemical analysis protocol.

3.1.10 CHEMICAL ANALYSES

Vapor samples will be analyzed for TPHg by EPA Method TO-3M, for BTEX and naphthalene by EPA Method 8260B (M), for methane, carbon dioxide, and oxygen + argon by ASTM D Method 1946, and for helium by ASTM D Method 1946 (M). Selected soil samples from the well borings and the groundwater samples from new wells S-13 and S-14 will be analyzed for TPHg, BTEX, and fuel oxygenates using EPA Method 8260B. Groundwater samples from the existing wells will be analyzed per the existing protocol.

3.1.11 WELLHEAD SURVEY

A licensed surveyor will survey the wellhead and soil vapor points' elevations relative to mean sea level and the wells' and soil vapor points' latitudes and longitudes.

3.1.12 DOMESTIC AND IRRIGATION WELL SURVEY

CRA will conduct a well survey including a review of California Department of Water Resources and ACPWA well records and a door-to-door survey of the three properties located directly southwest of the site listed below to identify any existing domestic or irrigation wells:

- 1724/1726/1728 High Street, Oakland;
- 4320 Bond Street, Oakland; and
- 1718 High Street, Oakland.

3.1.13 REPORT PREPARATION

Following the receipt of analytical results from the laboratory, CRA will prepare a written report which will include field procedures, laboratory results, boring logs, and well survey results. Oakland.

3.2 SCHEDULE

CRA will begin work upon receiving ACEH's written approval of this work plan and the appropriate drilling permits.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Peter Schaefer, CEG, CHG

Aubrey K. Cool, PG

FIGURES

11/03/08

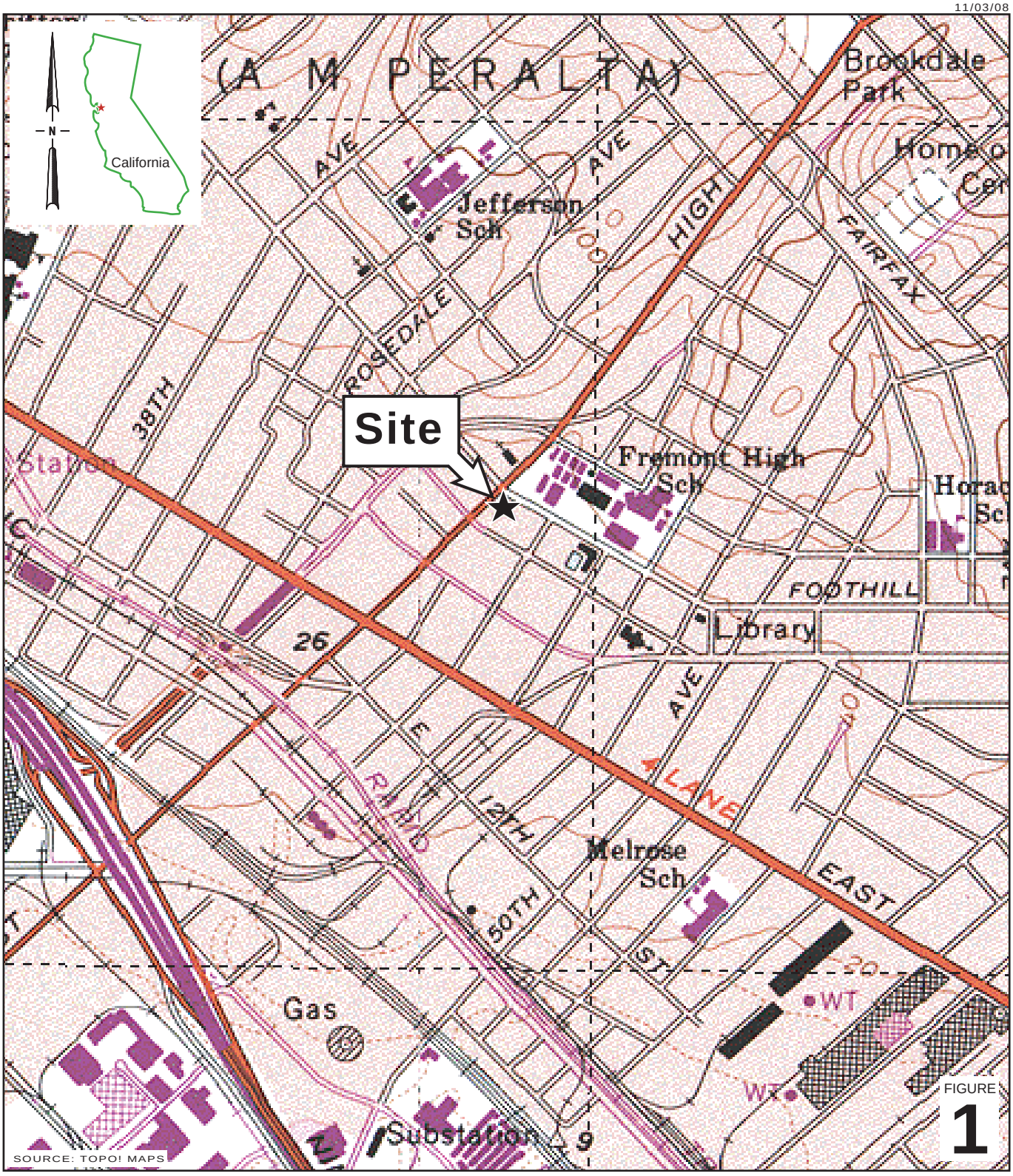

FIGURE 1

0 1/6 1/3 1/2 1

SCALE : 1" = 1/6 MILE

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Former Shell Service Station
4411 Foothill Boulevard
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

EXPLANATION

- S-13 — Proposed monitoring well location
- SSV-8 — Proposed sub-slab soil vapor probe location
- SSV-1 — Sub-slab soil vapor probe location
- S-6 — Monitoring well location
- V-1 — Soil vapor probe location
- S-1 — Destroyed monitoring well location
- BW-A — Destroyed tank backfill well location
- Electrical line (E)
- Telecommunications line (T)
- Gas line (GAS)
- Water line (W)
- Sanitary Sewer line (SAN)
- Storm drain line (STM)
- Unknown utility line
- Fire hydrant
- Catch basin
- Manhole
- Power pole
- Flow direction

C-5
C-3
C-2
C-4
C-7
C-8
C-9

Chevron Service Station #9-0076
4265 Foothill Blvd.

House w/Basement

Apts w/o Basement

Apts w/o Basement
1724-28 High

Apartment House w/Basement
1718 High

House w/Basement
4320 Bond

Residential
4320 Bond St.

Parking Lot

HIGH STREET
FOOTHILL BOULEVARD
BOND STREET
BOND STREET
EAST 17TH STREET

Former Shell Station
4411 Foothill

BLDG. A
BLDG. B
Former W/O UST (removed 2002)
Former Dispenser Islands
Former Building
Former Pump
Former Trench
Former Sump
Former Planter
Former Tank Pit
Former Vent Pipe
Former Fill Pipe
Former Product Piping
Former Vapor Piping
Former Water Piping
Former Sanitary Sewer Piping
Former Storm Drain Piping
Former Electrical Conduit
Former Telecommunications Conduit
Former Gas Line
Former Water Line
Former Sanitary Sewer Line
Former Storm Drain Line
Former Unknown Utility Line
Former Fire Hydrant
Former Catch Basin
Former Manhole
Former Power Pole
Former Flow Direction
Three-Generation USTs (1964 to 2002)
Five- and Second-Generation USTs (~1959 to 1964)

Metro PCS *4411 Foothill*
El Indito Music Store *4413 Foothill*
Lavanderia Laundromat
Subway Restaurant *4415 Foothill*
Clothing Store *4417 Foothill*
Arbol de Vida *4419 Foothill*
Jackson & Hewitt Tax Services *4421 Foothill*
Nail Tek *4423 Foothill*
China Express Restaurant

S-1 S-2 S-3 S-4 S-5 S-6 S-7 S-8 S-9 S-10 S-11 S-12 S-13 S-14
SSV-1 SSV-2 SSV-3 SSV-4 SSV-5 SSV-6 SSV-7 SSV-8
V-1 V-2 V-3 V-4 V-5 V-6 V-7 V-8 V-9 V-10 V-11 V-12
BW-A

N

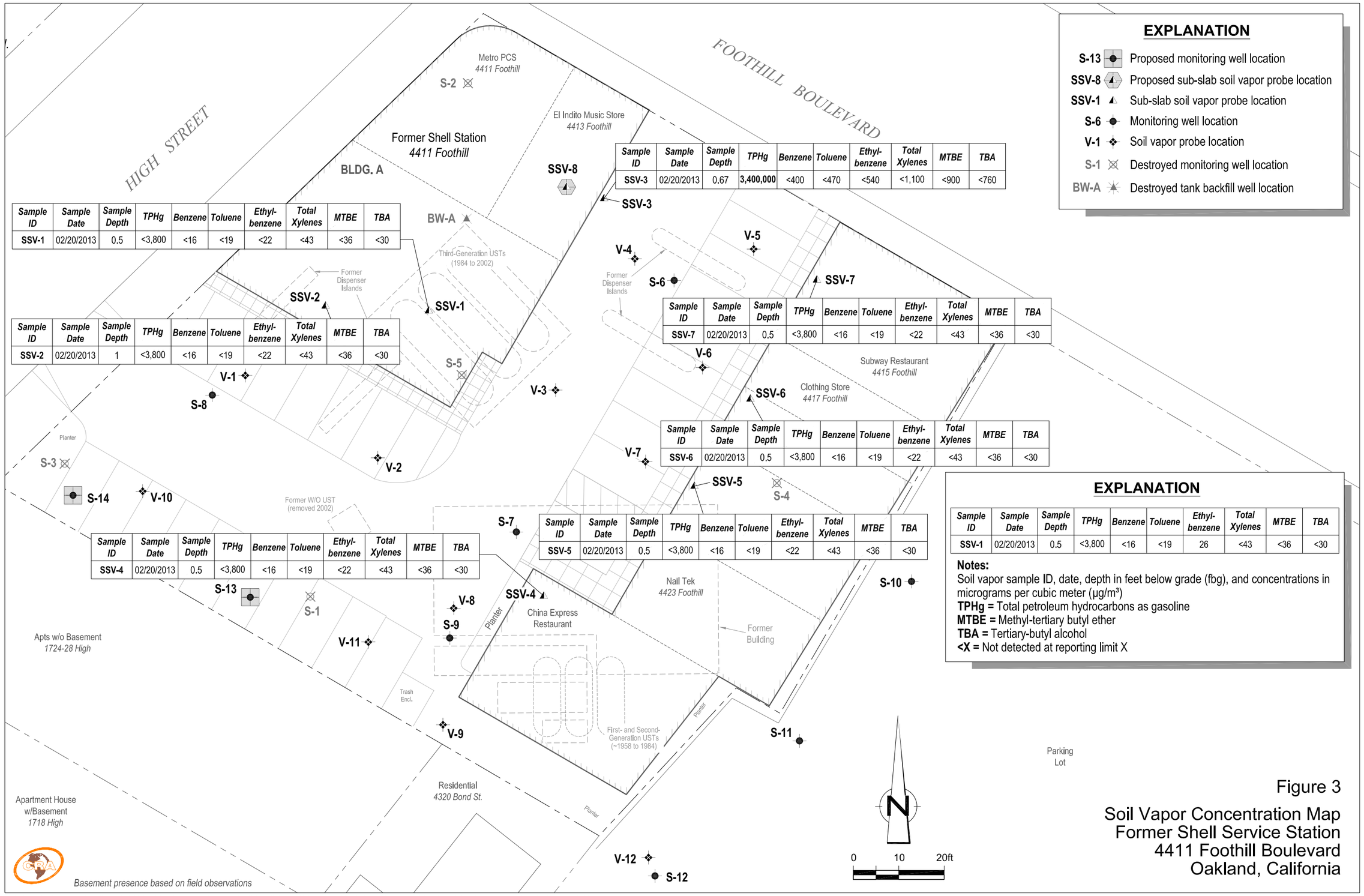
0 20 40ft

Basement presence based on field observations

Figure 2

Site Plan
Former Shell Service Station
4411 Foothill Boulevard
Oakland, California

I:\Shell\6-chars\2408--\240897-Oakland 4411 Foothill\240897-FIGURES\240897 SITE PLAN (EXT).DWG (04/10/2013)



Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-1	02/20/2013	0.5	<3,800	<16	<19	<22	<43	<36	<30

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-2	02/20/2013	1	<3,800	<16	<19	<22	<43	<36	<30

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-3	02/20/2013	0.67	**3,400,000**	<400	<470	<540	<1,100	<900	<760

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-7	02/20/2013	0.5	<3,800	<16	<19	<22	<43	<36	<30

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-6	02/20/2013	0.5	<3,800	<16	<19	<22	<43	<36	<30

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-5	02/20/2013	0.5	<3,800	<16	<19	<22	<43	<36	<30

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-4	02/20/2013	0.5	<3,800	<16	<19	<22	<43	<36	<30

EXPLANATION

- **S-13** Proposed monitoring well location
- **SSV-8** Proposed sub-slab soil vapor probe location
- **SSV-1** Sub-slab soil vapor probe location
- **S-6** Monitoring well location
- **V-1** Soil vapor probe location
- **S-1** Destroyed monitoring well location
- **BW-A** Destroyed tank backfill well location

EXPLANATION

Sample ID	Sample Date	Sample Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA
SSV-1	02/20/2013	0.5	<3,800	<16	<19	26	<43	<36	<30

Notes:
Soil vapor sample ID, date, depth in feet below grade (fbg), and concentrations in micrograms per cubic meter (µg/m³)
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl-tertiary butyl ether
TBA = Tertiary-butyl alcohol
<X = Not detected at reporting limit X

Figure 3

Soil Vapor Concentration Map
Former Shell Service Station
4411 Foothill Boulevard
Oakland, California

I:\Shell\6-chars\2408--\240897-Oakland 4411 Foothill\240897-FIGURES\240897 SITE PLAN.DWG (soil vapor data) (04/17/2013)

TABLE

TABLE 1

HISTORICAL SOIL VAPOR ANALYTICAL DATA
FORMER SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Sample ID	*Depth (fbg)*	*Date*	*TPHg ($\mu g/m^3$)*	*B ($\mu g/m^3$)*	*T ($\mu g/m^3$)*	*E ($\mu g/m^3$)*	*X ($\mu g/m^3$)*	*MTBE ($\mu g/m^3$)*	*TBA ($\mu g/m^3$)*	*Naphthalene ($\mu g/m^3$)*	*Helium (%v)*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*
V-1	4.5-4.8	1/14/2008	**16,000,000**	<1,200	<1,400	<1,700	<5,000	<5,500	<4,600	---	---	---	---	---
V-1	4.5-4.8	6/26/2008	1,000,000	<160	<190	<220	<220	<180	<610	---	---	---	---	---
V-1	4.5-4.8	10/22/2008	340,000	<45	<53	<61	<120	<51	<170	---	---	---	---	---
V-1	4.5-4.8	4/21/2009 b	---	58	<38	49	<170	---	---	---	<0.0100	---	---	---
V-1	4.5-4.8	5/9/2011 b	<7,000	<16	<19	110	160	<36	<30	---	<0.0100	<0.500	16.2	3.01
V-2	4.5-4.8	1/14/2008	**15,000,000**	**9,000**	<1,100	**20,000**	7,700	<4,100	<3,500	---	---	---	---	---
V-2	4.5-4.8	5/22/2008	**8,300,000**	**7,000**	2,400	**5,600**	<1,400	<1,200	<4,000	---	---	---	---	---
V-2	4.5-4.8	10/22/2008	**5,000,000 a**	**8,300**	<380	**9,800**	7,700	<360	<1,200	---	---	---	---	---
V-2	4.5-4.8	4/21/2009 b	---	**7,100**	2,900	3,100	<6,100	---	---	---	<0.0100	---	---	---
V-2	4.5-4.8	5/9/2011 b	**36,000,000**	**2,400**	<940	<1,100	<2,200	<1,800	<1,500	---	0.0161	<0.500	14.7	2.30
V-3	4.5-4.8	1/14/2008	**20,000,000**	**3,800**	<2,800	<3,300	<9,800	<11,000	<9,100	---	---	---	---	---
V-3	4.5-4.8	5/22/2008	**22,000,000**	**1,600**	1,700	<1,300	<1,300	<1,100	<3,700	---	---	---	---	---
V-3	4.5-4.8	10/22/2008	**51,000,000 a**	**4,200**	<4,600	<5,200	<10,000	<4,400	<15,000	---	---	---	---	---
V-3	4.5-4.8	4/21/2009 b	---	**25,000**	17,000	<8,700	<35,000	---	---	---	0.0205	---	---	---
V-3	4.5-4.8	5/9/2011 b	**66,000,000**	**8,100**	<3,800	<4,300	<8,700	<7,200	<6,100	---	<0.0100	4.59	13.7	2.14
V-4	4.5-4.8	1/14/2008	1,300,000	<150	<180	<210	<620	<680	<570	---	---	---	---	---
V-4	4.5-4.8	6/26/2008	980,000	<160	<190	<220	<220	<180	<620	---	---	---	---	---
V-4	4.5-4.8	10/22/2008	**4,300,000**	270	<240	<280	<560	<230	<780	---	---	---	---	---
V-4	4.5-4.8	4/21/2009 b	---	65	<75	360	520	---	---	---	0.0171	---	---	---
V-4	4.5-4.8	5/9/2011 b	2,700,000	<320	<380	<430	<870	<720	<610	---	<0.0100	0.964	7.98	2.18
V-5	4.5-4.8	1/14/2008	2,500,000	<290	<340	<400	<1,190	<1,300	<1,100	---	---	---	---	---
V-5	4.5-4.8	5/22/2008	**3,300,000**	<1,600	3,100	<2,200	<2,200	<1,800	<6,100	---	---	---	---	---
V-5	4.5-4.8	10/22/2008	2,400,000	<340	<400	<460	<920	<380	<1,300	---	---	---	---	---
V-5	4.5-4.8	4/21/2009 b	---	<64	110	350	510	---	---	---	1.24	---	---	---
V-5	4.5-4.8	5/9/2011 b	960,000	<130	<150	220	<350	<290	<240	---	<0.0100	<0.500	9.30	3.29

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HISTORICAL SOIL VAPOR ANALYTICAL DATA
FORMER SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Sample ID	*Depth (fbg)*	*Date*	*TPHg ($\mu g/m^3$)*	*B ($\mu g/m^3$)*	*T ($\mu g/m^3$)*	*E ($\mu g/m^3$)*	*X ($\mu g/m^3$)*	*MTBE ($\mu g/m^3$)*	*TBA ($\mu g/m^3$)*	*Naphthalene ($\mu g/m^3$)*	*Helium (%v)*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*
V-6	4.5-4.8	1/14/2008	**15,000,000**	**9,100**	<270	<310	<930	<1,000	<860	---	---	---	---	---
V-6	4.5-4.8	5/22/2008	2,300,000	<130	<150	<180	<180	<140	<490	---	---	---	---	---
V-6	4.5-4.8	10/22/2008	**5,400,000**	<970	<1,100	<1,300	<2,600	<1,100	<3,700	---	---	---	---	---
V-6	4.5-4.8	4/21/2009 b	---	<20	34	55	<110	---	---	---	<0.0100	---	---	---
V-6	4.5-4.8	5/9/2011 b	240,000	<40	<47	170	280	<90	<76	---	<0.0100	<0.500	8.67	6.92
V-7	4.5-4.8	1/14/2008	170,000	<19	<22	<25	<76	<84	<71	---	---	---	---	---
V-7	4.5-4.8	5/22/2008	790	<4.2	<5.0	<5.7	<5.7	<4.8	<16	---	---	---	---	---
V-7	4.5-4.8	10/22/2008	3,700	<2.6	<3.0	26	120	<2.9	<9.8	---	---	---	---	---
V-7	4.5-4.8	5/9/2011 b	<7,000	<16	<19	42	48	<36	<30	---	<0.0100	<0.500	4.95	15.2
V-8	5.0-5.2	10/23/2008	7,000	<3.8	<4.5	<5.2	<10	<4.3	<14	---	---	---	---	---
V-8	5.0-5.2	5/9/2011 b	250,000	<64	<75	150	<170	<140	<120	---	<0.0100	<0.500	13.9	6.39
V-9	5.0-5.2	10/23/2008	870	<3.7	<4.4	<5.0	<10	<4.2	>14	---	---	---	---	---
V-9	5.0-5.2	5/9/2011 b	<7,000	<16	<19	130	170	<36	<30	---	<0.0100	<0.500	6.75	16.4
V-9	5.0-5.2	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	<0.0100	<0.500	6.18	16.4
V-10	4.5-4.8	1/14/2008	Unable to sample due to water in sample tube					---	---	---	---	---	---	---
V-10	4.5-4.8	5/22/2008	750	<4.1	<4.9	<5.6	<5.6	<4.6	<16	---	---	---	---	---
V-10	4.5-4.8	10/23/2008	280	<4.2	<5.0	<5.7	<11	<4.8	<16	---	---	---	---	---
V-10	4.5-4.8	5/9/2011	Unable to sample due to water in sample tube					---	---	---	---	---	---	---
V-10	4.5-4.8	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	0.0726	<0.500	7.09	13.3
V-11	4.5-4.8	1/14/2008	18,000	<2.2	5	<3.0	<8.9	<9.8	<8.2	---	---	---	---	---
V-11	4.5-4.8	6/26/2008	<260	<4.0	<4.8	<5.5	<5.5	<4.6	<15	---	---	---	---	---
V-11	4.5-4.8	10/23/2008	<220	<3.5	<4.1	<4.8	<9.6	<4.0	<13	---	---	---	---	---
V-11	4.5-4.8	5/9/2011	<7,000	<16	<19	43	49	<36	<30	---	<0.0100	<0.500	7.76	12.6
V-11	4.5-4.8	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	<0.0100	<0.500	6.40	14.5

TABLE 1

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FORMER SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Sample ID	*Depth (fbg)*	*Date*	*TPHg ($\mu g/m^3$)*	*B ($\mu g/m^3$)*	*T ($\mu g/m^3$)*	*E ($\mu g/m^3$)*	*X ($\mu g/m^3$)*	*MTBE ($\mu g/m^3$)*	*TBA ($\mu g/m^3$)*	*Naphthalene ($\mu g/m^3$)*	*Helium (%v)*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*
V-12	4.2-4.3	10/1/2009	Unable to sample due to water in sample tube					---	---	---	---	---	---	---
V-12	4.2-4.3	11/19/2009	Unable to sample due to water in sample tube					---	---	---	---	---	---	---
V-12	4.2-4.3	7/29/2010 c	<5,700	<32	<38	<43	<87	<72	<61	---	<0.0100	---	---	---
V-12	4.2-4.3	5/9/2011	Unable to sample due to water in sample tube					---	---	---	---	---	---	---
SSV-1	0.58	5/19/2009	---	8.8	11	4.4	<12	---	---	---	0.251	---	---	---
SSV-1	0.5	10/23/2012 b	<3,800	<16	<19	26	<43	<36	63	---	0.0339	<0.500	<0.500	15.6
SSV-1	0.5	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	0.0150	<0.500	<0.500	17.6
SSV-2	1	5/15/2009	---	<2.1	<2.4	<2.8	<11	---	---	---	0.261	---	---	---
SSV-2	1	10/23/2012 b	<3,800	<16	<19	<22	<43	<36	<30	---	<0.0100	<0.500	<0.500	21.1
SSV-2	1	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	<0.0100	<0.500	<0.500	20.8
SSV-3	0.67	10/23/2012 b	<3,800	<16	<19	<22	<43	<36	<30	---	<0.0100	<0.500	<0.500	19.8
SSV-3	0.67	2/20/2013	**3,400,000**	<400	<470	<540	<1,100	<900	<760	<1,300	0.0192	0.883	5.52	2.81
SSV-4	0.5	10/23/2012 b	<3,800	<16	<19	<22	<43	<36	<30	---	0.0621	<0.500	<0.500	21.3
SSV-4	0.5	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	<0.0100	<0.500	<0.500	21.0
SSV-5	0.5	10/23/2012 b	<3,800	<16	<19	30	<43	<36	37	---	0.235	<0.500	<0.500	21.8
SSV-5	0.5	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	0.200	<0.500	<0.500	21.3
SSV-6	0.5	10/23/2012 b	<3,800	<16	<19	<22	<43	<36	<30	---	0.107	<0.500	<0.500	20.3
SSV-6	0.5	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	<0.0100	<0.500	<0.500	20.3
SSV-7	0.5	10/23/2012 b	<3,800	<16	<19	25	<43	<36	44	---	<0.0100	<0.500	<0.500	21.4
SSV-7	0.5	2/20/2013	<3,800	<16	<19	<22	<43	<36	<30	<52	0.0416	<0.500	<0.500	21.2
Ambient Air	---	1/14/2008	<17,000	<2.4	4	<3.2	<9.7	<11	<9.0	---	---	---	---	---

TABLE 1

HISTORICAL SOIL VAPOR ANALYTICAL DATA
FORMER SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Sample ID	*Depth (fbg)*	*Date*	*TPHg ($\mu g/m^3$)*	*B ($\mu g/m^3$)*	*T ($\mu g/m^3$)*	*E ($\mu g/m^3$)*	*X ($\mu g/m^3$)*	*MTBE ($\mu g/m^3$)*	*TBA ($\mu g/m^3$)*	*Naphthalene ($\mu g/m^3$)*	*Helium (%v)*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*
RWQCB ESLs for		*Commercial Land Use*	***3,100,000***	***420***	***1,300,000***	***4,900***	***440,000***	***47,000***	*NA*	***360***	*NA*	*NA*	*NA*	*NA*
Soil Gas [d]		*Residential Land Use*	***37,000***	***42***	***160,000***	***490***	***52,000***	***4,700***	*NA*	***36***	*NA*	*NA*	*NA*	*NA*

Notes:
TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method TO-3M; before 5/9/11, analyzed by modified EPA Method TO-3 GC/FID.
BTEX = Benzene, toluene, ethylbenzene and total xylenes analyzed by EPA Method 8260B (M); before 7/29/09, analyzed by modified EPA Method TO-15.
MTBE = Methyl-tertiary butyl ether analyzed by EPA Method 8260B (M); before 7/29/09, analyzed by modified EPA Method TO-15.
TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B (M); before 7/29/09, analyzed by Modified EPA Method TO-15.
Naphthalene analyzed by EPA Method 8260B (M)
Helium analyzed by ASTM D-1946 (M)
Methane, carbon dioxide, and oxygen + argon analyzed by ASTM D-1946
fbg = Feet below grade
$\mu g/m^3$ = Micrograms per cubic meter
%v = Percent by volume
<x = Not detected at reporting limit x
--- = Not analyzed
ESL = Environmental screening level
RWQCB = San Francisco Bay Regional Water Quality Control Board
NA = No applicable ESL
Results in **bold** exceed ESL for commercial land use
All samples were collected in Summa canisters unless otherwise noted.

a = Exceeds quality control limits, possibly due to matrix effects.
b = Samples collected in Tedlar bags.
c = Sample received by laboratory with very low volume.
d = From Table E of RWQCB ESLs. Ref: Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final - November 2007 (Revised May 2008) - Updated February 2013.

APPENDIX A

SITE HISTORY

SITE HISTORY

1958 Underground Storage Tank (UST) Piping Leak: On April 19, 1958, a gasoline shortage was discovered at the operating Shell-branded service station. It was determined that there was a piping leak into a concrete pump pit and then into the soil in the vicinity of the storage tanks. Separate phase hydrocarbons (SPHs) were found in an irrigation well located at 4320 Bond Street, adjacent to the Shell site. Shell Oil Products US (Shell) installed 22 8-inch diameter wells to depths of 15 feet below grade (fbg) along the property boundary and 1 well within the tank complex. Groundwater was pumped from the wells, and the extracted water was transported to a separator. Though the volume of the release is not known, Shell reported in a June 2, 1958 letter to Traveler's Insurance Company that they recovered 650 gallons of gasoline from the wells.

1971 UST Removal and Replacement: A Shell document dated July 15, 1971 notes plans to remove the then-existing 6,000-gallon USTs. An invoice dated September 17, 1971 indicates the delivery of one 10,000-gallon UST, one 8,000-gallon UST, and one 550-gallon underground waste oil tank.

1977 Dispenser Piping Leak: A Shell Oil Company *Oil Spill Report* dated October 19, 1977 documents the release of 2,000 gallons of gasoline from a leaking pipe that ran from the USTs to the dispenser located closest to High Street. The report noted that the damaged section of pipe was replaced and that leak detectors were installed on all systems.

1984 UST Removal and Replacement: A Shell purchase order dated October 1, 1984 indicates the removal of the then-existing USTs and installation of three 10,000-gallon fiberglass USTs.

1991 Waste Oil Tank Leak: On June 5, 1991, Shell submitted an Underground Storage Tank Unauthorized Release (Leak)/Site Contamination Report (Unauthorized Release Report) detailing a release from the 550-gallon waste oil tank at the site. The report stated that the release was caused by tank failure, that the volume of release was unknown, and that the contents of the tank had been removed.

1992 Waste Oil Tank Removal: In February 1992, Delta/Bay Builders, Inc. removed the 550-gallon waste oil tank. GeoStrategies Inc. (GeoStrategies) collected a soil sample from the bottom of the excavation at a depth of approximately 11 fbg. No total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), oil and grease, halogenated

volatile organic compounds, or cadmium were detected in the sample. The soil sample contained 79 milligrams per kilogram (mg/kg) chromium, 6.7 mg/kg lead, 180 mg/kg nickel, and 56 mg/kg zinc. Details of the waste oil tank removal and sampling activities are presented in GeoStrategies' March 26, 1992 report.

1992 Subsurface Investigation: In November 1992, GeoStrategies installed one groundwater monitoring well (S-1) in the vicinity of the waste oil UST. Soil samples collected from the well boring contained up to 390 mg/kg total petroleum hydrocarbons as motor oil (TPHmo), 180 mg/kg TPHd, 110 mg/kg TPHg, 0.45 mg/kg benzene, 0.51 mg/kg toluene, 2.2 mg/kg ethylbenzene, and 8 mg/kg total xylenes. GeoStrategies' January 19, 1993 *Monitoring Well Installation Report* provides well installation details.

1993 Subsurface Investigation: In May 1993, Hydro Environmental Technologies, Inc. (HETI) installed two groundwater monitoring wells (S-2 and S-3). Soil samples collected from the well borings contained up to 36 mg/kg TPHd, 1,300 mg/kg TPHg, 0.019 mg/kg toluene, 35 mg/kg ethylbenzene, and 200 mg/kg total xylenes. No benzene was detected in soil samples from the well borings. Well installation details are presented in HETI's July 22, 1993 report.

1995 Subsurface Investigation: In June 1995, Pacific Environmental Group (PEG) drilled eight on-site soil borings and two off-site borings. Soil samples collected from the borings contained up to 380 mg/kg TPHd, 840 mg/kg TPHg, 0.13 mg/kg benzene, 6.0 kg/kg toluene, 20 mg/kg ethylbenzene, and 98 mg/kg total xylenes. Grab groundwater samples collected from borings GP-2 and GP-10 contained up to 820 micrograms per liter (µg/L) TPHmo, 850 µg/L TPHd, 1,100 µg/L TPHg, 34 µg/L benzene, 41 µg/L ethylbenzene, and 71 µg/L total xylenes. No toluene was detected in the grab groundwater samples. PEG's September 12, 1995 *Site Investigation* report presents investigation details.

1998 Fuel System Upgrades: In November 1998, Paradiso Mechanical (Paradiso) upgraded the service station by adding secondary containment to the gasoline turbines and dispensers. Cambria Environmental Technology Inc. (Cambria) collected soil samples (D-1 through D-4) from beneath each of the dispensers. These soil samples contained up to 1,500 mg/kg TPHg, 9.2 mg/kg benzene, 4.3 mg/kg toluene, 15 mg/kg ethylbenzene, 61 mg/kg total xylenes, and 13 mg/kg methyl tertiary-butyl ether (MTBE). Details of dispenser upgrade and sampling activities are presented in Cambria's November 30, 1998 *Dispenser Soil Sampling Report.*

1999 - 2000 Oxygen Releasing Compound (ORC) Remediation: In September 1999, Cambria purged well BW-A with a vacuum truck and installed ORC socks in wells S-1, S-2, and BW-A. These activities are detailed in Cambria's October 15, 1999 *Second Quarter 1999 Monitoring Report.* According to field notes attached to Blaine Tech Services, Inc.'s (Blaine's) January 23, 2001 *Fourth Quarter 2000 Groundwater Monitoring* report, Blaine removed the ORC socks in December 2000.

1999 Site Conceptual Model (SCM) and Conduit Study: In December 1999, Cambria conducted a subsurface conduit study which identified several conduits that may provide limited preferential groundwater flow at times of shallow groundwater depth. Cambria also submitted additional data and analysis to complete the SCM for the site. Cambria's December 13, 1999 *Letter Response and Work Plan* presents the conduit study results and the additional portions of the SCM.

2000 Subsurface Investigation: In January 2000, Cambria installed one well (S-4) adjacent to the southeast corner of the station building and drilled one soil boring (SB-4) northwest of the station building. Soil samples contained up to 244 mg/kg TPHd, 786 mg/kg TPHg, 2.27 mg/kg benzene, 4.35 mg/kg toluene, 8.1 mg/kg ethylbenzene, 26.5 mg/kg total xylenes, and 0.893 mg/kg MTBE. Grab groundwater samples collected from boring SB-4 contained up to 180,000 µg/L TPHg, 31,000 µg/L benzene, 6,900 µg/L toluene, 5,900 µg/L ethylbenzene, 26,000 µg/L total xylenes, and 7,100 µg/L MTBE. Investigation details are contained in Cambria's November 17, 2000 *Site Investigation Report.*

2000 Sensitive Receptor Survey (SRS): In February 2000, Cambria conducted an SRS which identified 58 monitoring, test, or industrial wells located within a ½-mile radius of the site. No municipal, domestic, or irrigation wells were identified. The SRS is included in Cambria's November 17, 2000 *Site Investigation Report.*

2001 Mobile Dual-Phase Extraction (DPE): From April to September 2001, Cambria conducted monthly mobile DPE from wells BW-A and S-2. Mobile DPE removed approximately 18,588 gallons of groundwater containing approximately 1.05 pounds of TPHg and 0.39 pounds of MTBE. Mobile DPE results are summarized in Cambria's November 7, 2001 *Third Quarter 2001 Monitoring Report.*

2001 Preferential Pathway Analysis: In June 2001, Cambria conducted a preferential pathway analysis using a San Francisco Bay Regional Water Quality Control Board (RWQCB) dilution attenuation factor (DAF) analysis originally developed for a similar analysis at San Francisco International Airport in 1998. The analysis determined that

groundwater containing approximately 10 µg/L benzene and 218 µg/L MTBE could potentially reach San Francisco Bay (the nearest groundwater receptor). The DAF analysis is summarized in Cambria's June 26, 2001 First Quarter 2001 *Monitoring Report and Letter Response.*

2001 Corrective Action Plan (CAP): In November 2001, Cambria submitted a CAP in preparation for impending site demolition and fueling facility removal which recommended over-excavation following removal of the underground facilities, removing groundwater from the excavation, and placing ORC at the base of the excavation to enhance biological degradation of residual-impacted soil and groundwater. Cambria's November 12, 2001 CAP details these recommendations.

2002 UST Removal: In February 2002, Paradiso removed the gasoline USTs and hydraulic hoists and over-excavated approximately 1,250 cubic yards of impacted soil around and beneath the USTs, product dispenser islands, and hydraulic hoists. Phillips Services Corporation extracted approximately 16,000 gallons of groundwater from the excavations. Cambria collected 54 soil samples and 2 grab groundwater samples from the excavation. Soil samples collected following the over-excavation contained up to 230 mg/kg hydraulic oil, 1,800 mg/kg TPHg, 9.6 mg/kg benzene, 42 mg/kg toluene, 100 mg/kg ethylbenzene, 590 mg/kg total xylenes, and 0.48 mg/kg MTBE. The grab groundwater sample collected following over-excavation contained 590 µg/L TPHg, 2.7 µg/L benzene, 2.3 µg/L toluene, 6.4 µg/L total xylenes, and 1,900 µg/L MTBE. No ethylbenzene, di-isopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), tertiary butyl alcohol (TBA), or ethanol was detected in this sample. Following over-excavation, Paradiso placed 810 pounds of ORC powder on the bottom of the excavation. Details of the fuel facilities removal and corrective action are presented in Cambria's February 25, 2002 *Underground Storage Tank Closure Report.*

2002 Subsurface Investigation: In May 2002, Cambria installed one groundwater monitoring well (S-5). The well installation is described in Cambria's July 2, 2002 *Monitoring Well Installation Report.*

2005 SCM: In August 2005, Cambria submitted an SCM which recommended destroying all on-site wells and replacing them after site development was completed, defining the horizontal extent of soil and groundwater impacts southeast of well S-4 and south of the 1958 fuel release, and continued groundwater monitoring. Cambria's August 16, 2005 *Subsurface Investigation Work Plan and Site Conceptual Model* details these recommendations.

2005 Well Destructions: In anticipation of redevelopment of the site, Cambria properly destroyed five wells (S-1 through S-5) in July 2005. The well destructions are described in Cambria's August 19, 2005 *Well Destruction Report.*

2005 Subsurface Investigation and Over-Excavation: In August 2005, Cambria drilled two soil borings (TB-1 and TB-3) to investigate the extent of petroleum-hydrocarbon-impacted soil and groundwater from the 1958 piping leak. Soil samples from the borings contained up to 1,600 mg/kg TPHg, 2.2 mg/kg benzene, 11 mg/kg ethylbenzene, 48 mg/kg total xylenes, 0.0062 mg/kg MTBE, 0.021 mg/kg TBA, and 291 mg/kg lead. No toluene, DIPE, ETBE, TAME, 1,2-dichloroethane (1,2-DCA), or ethylene dibromide (EDB) was detected in the soil samples from the borings. Grab groundwater samples from the borings contained up to 180,000 µg/L TPHg, 22,000 µg/L benzene, 9,700 µg/L toluene, 5,200 µg/L ethylbenzene, 25,000 µg/L total xylenes, 890 µg/L MTBE, 1,600 µg/L DIPE, and 13.4 µg/L lead. No TBA, ETBE, TAME, 1,2-DCA, or EDB was detected in the samples. Because the former UST area was located within the proposed footprint of a new building to be constructed at the site, K.E. Curtis Construction excavated soil to the extent feasible in order to remove hydrocarbon-impacted soil beneath the building prior to site redevelopment. The excavation was completed to dimensions of 20 feet long by 25 feet wide by 20 feet deep. Following excavation, Cambria collected one confirmation soil sample from each sidewall and two soil samples from the excavation base. The excavation soil samples contained up to 0.050 mg/kg benzene, 0.0083 mg/kg ethylbenzene, 0.040 mg/kg xylenes, 0.029 mg/kg TBA, and 0.023 mg/kg DIPE. No TPHg, toluene, MTBE, ETBE, or TAME was detected in the excavation samples. No water was observed in the bottom of the excavation. The activities are described in their entirety in Cambria's November 16, 2005 *Subsurface Investigation and Over-Excavation Report.*

2006 Subsurface Investigation: In May 2006, Cambria drilled five soil borings (SB-5 through SB-8, and SB-12) to assess the vertical extent of soil and groundwater impacts. Soil samples collected from the borings contained up to 110 mg/kg TPHd, 3,000 mg/kg TPHg, 3.7 mg/kg benzene, 60 mg/kg toluene, 47 mg/kg ethylbenzene, 270 mg/kg total xylenes, and 0.46 mg/kg MTBE. Grab groundwater samples contained up to 2,400 µg/L TPHd, 5,900 µg/L TPHg, 3,300 µg/L benzene, 470 µg/L toluene, 260 µg/L ethylbenzene, 420 µg/L total xylenes, 880 µg/L MTBE, and 630 µg/L TBA. The vertical extent of petroleum constituents in groundwater at the site was defined by the groundwater results from boring SB-12, located down gradient of the first- and second-generation USTs. The results from the grab groundwater sample from 31 to 35 fbg in this boring indicated that the petroleum constituent concentrations attenuate by one to two orders

of magnitude with depth. The activities are described in Cambria's July 25, 2006 *Subsurface Investigation Report and Monitoring Well Installation Work Plan.*

2007 Subsurface Investigation: In February 2007, Cambria installed four replacement wells (S-6 through S-9). Soil samples collected from the well borings contained up to 62 mg/kg TPHd, 230 mg/kg TPHg, 2.6 mg/kg benzene, 2.5 mg/kg toluene, 7.1 mg/kg ethylbenzene, 24 mg/kg total xylenes, 0.28 mg/kg MTBE, 1.6 mg/kg TBA, and 12 mg/kg lead. No 1,2-DCA or EDB was detected in the soil samples. The well reinstallation activities are described in Conestoga-Rovers & Associates' (CRA's) April 19, 2007 *Site Investigation and First Quarter 2007 Groundwater Monitoring Report.*

2007 Soil Vapor Investigation: In December 2007, CRA installed nine on-site soil vapor probes (V-1 through V-7, V-10, and V-11) at depths of approximately 5 fbg. The probe installation details are presented in CRA's March 13, 2008 *Soil Vapor Probe Installation and Sampling Report.*

2008 Soil Vapor Monitoring: In January, June, and October 2008, CRA conducted soil vapor monitoring from the on-site soil vapor probes. TPHg, benzene, and ethylbenzene were detected at concentrations exceeding RWQCB environmental screening levels (ESLs) for soil gas with commercial land use[1]. The monitoring results are presented in CRA's November 10, 2008 *Soil Vapor Probe Installation and Sampling Report.*

2009 Sub-Slab Soil Vapor Investigation: In March 2009, CRA installed two sub-slab soil vapor probes (SSV-1 and SSV-2) into the subsurface beneath the on-site laundromat's building footprint to further assess soil vapor concentrations beneath the site. The sub-slab soil vapor probe sample collected from SSV-2 did not contain BTEX, and BTEX detections in SSV-1 were below ESLs. Details of this investigation are presented in CRA's June 22, 2009 *Sub-Slab Soil Vapor Probe Installation and Sampling Report.*

2009 Subsurface Investigation: In August and September 2009, CRA installed three off-site groundwater monitoring wells (S-10 though S-12) and one off-site soil vapor probe (V-12) and destroyed two on-site sub-slab soil vapor probes (SSV-1 and SSV-2). BTEX, fuel oxygenates, and lead scavengers were not detected in soil samples collected during this investigation. All TPHg detections in soil samples collected during this investigation were below RWQCB ESLs. Only one TPHd detection in soil exceeded ESLs (S-12-5.5'; 880 mg/kg). The laboratory noted that the TPHd reported does not

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1 Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater, California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008] - Updated February 2013

match the diesel standard chromatographic pattern. The soil vapor probe could not be sampled because water was present in the probe's Teflon® tubing. CRA's January 5, 2010 *Subsurface Investigation Report* provides investigation details.

2010 Soil Vapor Monitoring: In July 2010, CRA conducted soil vapor monitoring from off-site soil vapor probe V-12. No TPHg, BTEX, MTBE, or TBA was detected in the soil vapor sample. The monitoring results are presented in CRA's August 16, 2010 *Soil Vapor Sampling Report.*

2011 Soil Vapor Monitoring: In May 2011, CRA conducted soil vapor monitoring from soil vapor probes V-1 through V-9 and V-11. Soil vapor probes V-10 and V-12 could not be sampled due to water in the sampling tubing. No toluene, ethylbenzene, total xylenes, MTBE, or TBA was detected at concentrations exceeding RWQCB ESLs for soil gas with commercial land use. Soil vapor probes V-2 and V-3 contained TPHg at concentrations exceeding RWQCB ESLs. It should be noted that RWQCB ESL guidance advises that "TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g. BTEX, polynuclear aromatic hydrocarbons, oxidizers, etc.)." In this case, BTEX, MTBE, and TBA would be the appropriate related chemicals. Soil vapor probes V-2 and V-3 contained benzene at concentrations exceeding RWQCB ESLs for commercial land use. The monitoring results are presented in CRA's August 3, 2011 *Soil Vapor Sampling Report.*

2012 Sub-Slab Soil Vapor Investigation: In October 2012, CRA installed seven sub-slab soil vapor probes (SSV-1 through SSV-7) into the subsurface beneath the on-site buildings to further assess soil vapor concentrations beneath the site. Due to access issues, one of the probes (SSV-3) had to be installed outside the building adjacent to the proposed indoor location. The soil vapor samples contained up to 30 micrograms per cubic meter ($\mu g/m^3$) ethylbenzene and 63 $\mu g/m^3$ TBA. TPHg, benzene, toluene, total xylenes, and MTBE were not detected in the samples. No soil vapor concentrations exceeded ESLs. CRA's December 10, 2012 *Subsurface Investigation Report* presents investigation details.

Groundwater Monitoring Program: Groundwater has been monitored at the site since December 1992. Groundwater depths have ranged from approximately 6 to 12 fbg. The calculated groundwater gradient typically trends southwesterly.

APPENDIX B

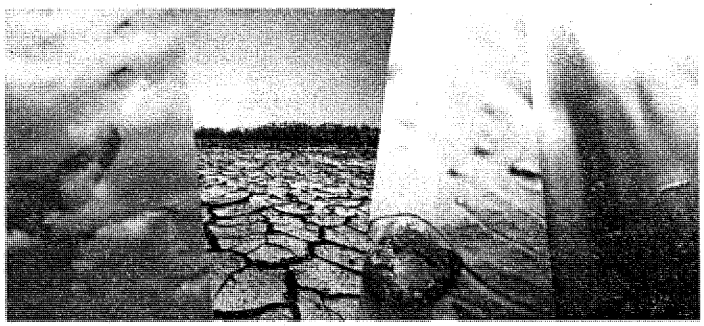
CALSCIENCE ENVIRONMENTAL LABORATORIES, INC. – ANALYTICAL REPORT

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-02-1268

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Conestoga-Rovers & Associates

Client Project Name: 4411 Foothill Blvd., Oakland, CA

Attention: Peter Schaefer
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Approved for release on 02/28/2013 by:
Xuan Dang
Project Manager

ResultLink ▸

Email your PM ▸

ACCREDITED IN ACCORDANCE WITH nelac

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 4411 Foothill Blvd., Oakland, CA
Work Order Number: 13-02-1268

Calscience Environmental Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Case Narrative

Work Order # 13-02-1268

Modified EPA 8260 in Air

This method is used to determine the concentration of BTEX/Oxygenates/Naphthalene having a vapor pressure greater than 10^{-1} torr at 25°C at standard pressure in an air matrix. The method is similar to EPA TO-15 and uses air standards for calibration. Method specifics are listed in the table below. A known volume of sample is directed from the container (Summa® canister or Tedlar™ bag) through a solid multi-module (glass beads, tenex, cryofocuser) concentrator. Following concentration, the VOCs are thermally desorbed onto a gas chromatographic column for separation and then detected on a mass selective detector.

Comparison of CalscienceTO-15(Modified) versus EPA 8260 (Modified) in Air

Requirement	Calscience TO-15(M)	Calscience EPA 8260(M) in Air
BFB Acceptance Criteria	SW846 Protocol	SW846 Protocol
Initial Calibration	Allowable % RSD for each Target Analyte <= 30%, 10% of analytes allowed <=40%	Allowable % RSD for each Target Analyte <= 30%, 10% of analytes allowed <= 40%
Initial Calibration Verification (ICV) - Second Source Standard (LCS)	Analytes contained in the LCS standard evaluated against historical control limits for the LCS	BTEX and MTBE only - <= 30%D
Daily Calibration Verification (CCV)	**Full List Analysis:** Allowable % Difference for each CCC analyte is <= 30%	BTEX and MTBE only - <= 30%D
	Target List Analysis: Allowable % Difference for each target analytes is <= 30%	
Daily Calibration Verification (CCV) - Internal Standard Area Response	Allowable +/- 50% (Range: 50% to 150%)	Allowable +/- 50% (Range: 50% to 150%)
Method Blank, Laboratory Control Sample and Sample - Internal Standard Area Response	Allowable +/- 50% of the mean area response of most recent Calibration Verification (Range: 50% to 150%)	Allowable +/- 50% of the mean area response of the most recent Calibration Verification (Range: 50% to 150%)
Surrogates	1,4-Bromoflurobenzene, 1,2-Dichloroethane-d4 and Toluene-d8 - % Recoveries based upon historical control limits +/-3S	1,4-Bromoflurobenzene, 1,2-Dichloroethane-d4 and Toluene-d8 - % Recoveries based upon historical control limits +/-3S

Calscience Environmental Laboratories, Inc.

Client:	Conestoga-Rovers & Associates	Work Order:	13-02-1268
	5900 Hollis Street, Suite A	Project name:	4411 Foothill Blvd., Oakland, CA
	Emeryville, CA 94608-2008	Received:	02/21/13 10:30
Attn:	Peter Schaefer		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
SSV-1 (13-02-1268-1)						
Oxygen + Argon	**17.6**		0.500	%v	ASTM D-1946	N/A
Helium	**0.0150**		0.0100	%v	ASTM D-1946 (M)	N/A
SSV-2 (13-02-1268-2)						
Oxygen + Argon	**20.8**		0.500	%v	ASTM D-1946	N/A
SSV-3 (13-02-1268-3)						
Methane	**0.883**		0.500	%v	ASTM D-1946	N/A
Carbon Dioxide	**5.52**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**2.81**		0.500	%v	ASTM D-1946	N/A
Helium	**0.0192**		0.0100	%v	ASTM D-1946 (M)	N/A
Gasoline Range Organics (C6-C12)	**3400000**		38000	ug/m3	EPA TO-3M	N/A
SSV-4 (13-02-1268-4)						
Oxygen + Argon	**21.0**		0.500	%v	ASTM D-1946	N/A
SSV-5 (13-02-1268-5)						
Oxygen + Argon	**21.3**		0.500	%v	ASTM D-1946	N/A
Helium	**0.200**		0.0100	%v	ASTM D-1946 (M)	N/A
SSV-6 (13-02-1268-6)						
Oxygen + Argon	**20.3**		0.500	%v	ASTM D-1946	N/A
SSV-7 (13-02-1268-7)						
Oxygen + Argon	**21.2**		0.500	%v	ASTM D-1946	N/A
Helium	**0.0416**		0.0100	%v	ASTM D-1946 (M)	N/A
V-9 (13-02-1268-8)						
Carbon Dioxide	**6.18**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**16.4**		0.500	%v	ASTM D-1946	N/A
V-10 (13-02-1268-9)						
Carbon Dioxide	**7.09**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**13.3**		0.500	%v	ASTM D-1946	N/A
Helium	**0.0726**		0.0100	%v	ASTM D-1946 (M)	N/A

*MDL is shown.

Calscience Environmental Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Client:	Conestoga-Rovers & Associates	Work Order:	13-02-1268
	5900 Hollis Street, Suite A	Project name:	4411 Foothill Blvd., Oakland, CA
	Emeryville, CA 94608-2008	Received:	02/21/13 10:30
Attn:	Peter Schaefer		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
V-11 (13-02-1268-10)						
Carbon Dioxide	**6.40**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**14.5**		0.500	%v	ASTM D-1946	N/A

Subcontracted analyses, if any, are not included in this summary.

*MDL is shown.

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 02/21/13
Work Order No: 13-02-1268
Preparation: N/A
Method: ASTM D-1946
Units: %v

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-1	**13-02-1268-1-A**	**02/20/13 07:11**	**Air**	**GC 65**	**N/A**	**02/21/13 14:19**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	17.6	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-2	**13-02-1268-2-A**	**02/20/13 07:51**	**Air**	**GC 65**	**N/A**	**02/21/13 15:25**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	20.8	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-3	**13-02-1268-3-A**	**02/20/13 13:20**	**Air**	**GC 65**	**N/A**	**02/21/13 15:44**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	0.883	0.500	1		Oxygen + Argon	2.81	0.500	1	
Carbon Dioxide	5.52	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-4	**13-02-1268-4-A**	**02/20/13 10:25**	**Air**	**GC 65**	**N/A**	**02/21/13 16:35**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.0	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-5	**13-02-1268-5-A**	**02/20/13 09:52**	**Air**	**GC 65**	**N/A**	**02/21/13 16:54**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.3	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-6	**13-02-1268-6-A**	**02/20/13 08:38**	**Air**	**GC 65**	**N/A**	**02/21/13 17:18**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	20.3	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-7	**13-02-1268-7-A**	**02/20/13 09:12**	**Air**	**GC 65**	**N/A**	**02/21/13 17:37**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.2	0.500	1	
Carbon Dioxide	ND	0.500	1						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-9	**13-02-1268-8-A**	**02/20/13 11:59**	**Air**	**GC 65**	**N/A**	**02/21/13 17:58**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	16.4	0.500	1	
Carbon Dioxide	6.18	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-10	**13-02-1268-9-A**	**02/20/13 12:47**	**Air**	**GC 65**	**N/A**	**02/21/13 18:15**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	13.3	0.500	1	
Carbon Dioxide	7.09	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-11	**13-02-1268-10-A**	**02/20/13 11:27**	**Air**	**GC 65**	**N/A**	**02/21/13 18:33**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	14.5	0.500	1	
Carbon Dioxide	6.40	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,749**	**N/A**	**Air**	**GC 65**	**N/A**	**02/21/13 11:29**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 02/21/13
Work Order No: 13-02-1268
Preparation: N/A
Method: ASTM D-1946 (M)

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-1	**13-02-1268-1-A**	**02/20/13 07:11**	**Air**	**GC 55**	**N/A**	**02/21/13 14:10**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.0150	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-2	**13-02-1268-2-A**	**02/20/13 07:51**	**Air**	**GC 55**	**N/A**	**02/21/13 14:46**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-3	**13-02-1268-3-A**	**02/20/13 13:20**	**Air**	**GC 55**	**N/A**	**02/21/13 15:10**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.0192	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-4	**13-02-1268-4-A**	**02/20/13 10:25**	**Air**	**GC 55**	**N/A**	**02/21/13 15:32**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-5	**13-02-1268-5-A**	**02/20/13 09:52**	**Air**	**GC 55**	**N/A**	**02/21/13 15:53**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.200	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-6	**13-02-1268-6-A**	**02/20/13 08:38**	**Air**	**GC 55**	**N/A**	**02/21/13 16:14**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946 (M)

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-7	**13-02-1268-7-A**	**02/20/13 09:12**	**Air**	**GC 55**	**N/A**	**02/21/13 16:34**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.0416	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-9	**13-02-1268-8-A**	**02/20/13 11:59**	**Air**	**GC 55**	**N/A**	**02/21/13 17:02**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-10	**13-02-1268-9-A**	**02/20/13 12:47**	**Air**	**GC 55**	**N/A**	**02/21/13 17:28**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.0726	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-11	**13-02-1268-10-A**	**02/20/13 11:27**	**Air**	**GC 55**	**N/A**	**02/21/13 17:49**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-872-386**	**N/A**	**Air**	**GC 55**	**N/A**	**02/21/13 09:59**	**13021L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 02/21/13
Work Order No: 13-02-1268
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-1	**13-02-1268-1-A**	**02/20/13 07:11**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 04:33**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	47-156			1,2-Dichloroethane-d4	112	47-156		
Toluene-d8	105	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-2	**13-02-1268-2-A**	**02/20/13 07:51**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 05:23**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	102	47-156			1,2-Dichloroethane-d4	113	47-156		
Toluene-d8	104	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-3	**13-02-1268-3-A**	**02/20/13 13:20**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 20:48**	**130222L01**

Comment(s): -Reporting limit is elevated due to high levels of non-target hydrocarbons.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	400	25		Methyl-t-Butyl Ether (MTBE)	ND	900	25	
Toluene	ND	470	25		Tert-Butyl Alcohol (TBA)	ND	760	25	
Ethylbenzene	ND	540	25		Naphthalene	ND	1300	25	
Xylenes (total)	ND	1100	25						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	124	47-156			1,2-Dichloroethane-d4	135	47-156		
Toluene-d8	84	47-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA 8260B (M)
	Units:	ug/m3

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-4	**13-02-1268-4-A**	**02/20/13 10:25**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 07:01**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	102	47-156			1,2-Dichloroethane-d4	113	47-156		
Toluene-d8	105	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-5	**13-02-1268-5-A**	**02/20/13 09:52**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 07:51**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	99	47-156			1,2-Dichloroethane-d4	112	47-156		
Toluene-d8	104	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-6	**13-02-1268-6-A**	**02/20/13 08:38**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 08:40**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	100	47-156			1,2-Dichloroethane-d4	113	47-156		
Toluene-d8	104	47-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA 8260B (M)
	Units:	ug/m3

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-7	**13-02-1268-7-A**	**02/20/13 09:12**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 09:29**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	102	47-156			1,2-Dichloroethane-d4	114	47-156		
Toluene-d8	104	47-156							

V-9	**13-02-1268-8-A**	**02/20/13 11:59**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 10:18**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	108	47-156			1,2-Dichloroethane-d4	122	47-156		
Toluene-d8	112	47-156							

V-10	**13-02-1268-9-A**	**02/20/13 12:47**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 19:11**	**130222L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	110	47-156			1,2-Dichloroethane-d4	121	47-156		
Toluene-d8	112	47-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA 8260B (M)
	Units:	ug/m3

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-11	**13-02-1268-10-A**	**02/20/13 11:27**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 20:02**	**130222L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	109	47-156			1,2-Dichloroethane-d4	123	47-156		
Toluene-d8	113	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-13-041-1,204**	**N/A**	**Air**	**GC/MS KKK**	**N/A**	**02/21/13 22:28**	**130221L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	105	47-156			1,2-Dichloroethane-d4	118	47-156		
Toluene-d8	106	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-13-041-1,205**	**N/A**	**Air**	**GC/MS KKK**	**N/A**	**02/22/13 18:15**	**130222L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	16	1		Methyl-t-Butyl Ether (MTBE)	ND	36	1	
Toluene	ND	19	1		Tert-Butyl Alcohol (TBA)	ND	30	1	
Ethylbenzene	ND	22	1		Naphthalene	ND	52	1	
Xylenes (total)	ND	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	47-156			1,2-Dichloroethane-d4	114	47-156		
Toluene-d8	104	47-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 02/21/13
Work Order No: 13-02-1268
Preparation: N/A
Method: EPA TO-3M

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-1	**13-02-1268-1-A**	**02/20/13 07:11**	**Air**	**GC 38**	**N/A**	**02/21/13 18:00**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-2	**13-02-1268-2-A**	**02/20/13 07:51**	**Air**	**GC 38**	**N/A**	**02/21/13 18:47**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-3	**13-02-1268-3-A**	**02/20/13 13:20**	**Air**	**GC 38**	**N/A**	**02/22/13 04:25**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	3400000	38000	10		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-4	**13-02-1268-4-A**	**02/20/13 10:25**	**Air**	**GC 38**	**N/A**	**02/21/13 22:04**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-5	**13-02-1268-5-A**	**02/20/13 09:52**	**Air**	**GC 38**	**N/A**	**02/21/13 22:44**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-6	**13-02-1268-6-A**	**02/20/13 08:38**	**Air**	**GC 38**	**N/A**	**02/21/13 23:50**	**130221L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA TO-3M

Project: 4411 Foothill Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SSV-7	13-02-1268-7-A	02/20/13 09:12	Air	GC 38	N/A	02/22/13 00:42	130221L01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3600	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-9	13-02-1268-8-A	02/20/13 11:59	Air	GC 38	N/A	02/22/13 01:35	130221L01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3600	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-10	13-02-1268-9-A	02/20/13 12:47	Air	GC 38	N/A	02/22/13 02:41	130221L01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3600	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V-11	13-02-1268-10-A	02/20/13 11:27	Air	GC 38	N/A	02/22/13 03:34	130221L01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3600	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-431-100	N/A	Air	GC 38	N/A	02/21/13 10:03	130221L01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3600	1		ug/m3

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	02/21/13
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA TO-3M

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
13-02-1239-1	Air	GC 38	N/A	02/21/13	130221D01

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	9280000	10130000	9	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	N/A
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,749	Air	GC 65	N/A	02/21/13	130221L01

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	4.510	4.027	89	4.116	91	80-120	2	0-30	
Carbon Dioxide	15.02	14.61	97	14.95	100	80-120	2	0-30	
Carbon Monoxide	7.010	7.180	102	7.343	105	80-120	2	0-30	
Oxygen + Argon	4.010	4.511	113	4.180	104	80-120	8	0-30	
Nitrogen	69.45	70.35	101	70.33	101	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	N/A
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946 (M)

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-672-386	Air	GC 55	N/A	02/21/13	130221L01

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Helium	1.000	0.8665	87	0.9304	93	80-120	7	0-30	
Hydrogen	1.000	0.8242	82	0.8842	88	80-120	7	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	N/A
5900 Hollis Street, Suite A	Work Order No:	13-02-1268
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	EPA 8260B (M)

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-13-041-1,204	Air	GC/MS KKK	N/A	02/21/13	130221L01

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	79.87	74.82	94	73.15	92	60-156	44-172	2	0-40	
Toluene	94.21	95.46	101	94.50	100	56-148	41-161	1	0-43	
Ethylbenzene	108.6	112.1	103	110.0	101	52-154	35-171	2	0-38	
Xylenes (total)	325.7	346.4	106	339.9	104	42-156	23-175	2	0-41	
Methyl-t-Butyl Ether (MTBE)	90.13	81.95	91	79.61	88	45-147	28-164	3	0-25	
Tert-Butyl Alcohol (TBA)	151.6	179.3	118	167.8	111	60-140	47-153	7	0-35	
Diisopropyl Ether (DIPE)	104.5	97.01	93	94.44	90	60-140	47-153	3	0-35	
Ethyl-t-Butyl Ether (ETBE)	104.5	94.52	90	92.43	88	60-140	47-153	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	104.5	104.3	100	101.3	97	60-140	47-153	3	0-35	
Naphthalene	131.1	88.71	68	90.75	69	60-140	47-153	2	0-30	
Ethanol	188.4	142.0	75	130.8	69	47-137	32-152	8	0-35	
1,1-Difluoroethane	67.54	70.58	105	68.32	101	78-156	65-169	3	0-35	
Isopropanol	61.45	59.04	96	55.65	91	78-156	65-169	6	0-35	

Total number of LCS compounds : 13
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates		Date Received:	N/A
5900 Hollis Street, Suite A		Work Order No:	13-02-1268
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA 8260B (M)

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-13-041-1,205	Air	GC/MS KKK	N/A	02/22/13	130222L01

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	79.87	68.26	85	68.47	86	60-156	44-172	0	0-40	
Toluene	94.21	88.44	94	86.71	92	56-146	41-161	2	0-43	
Ethylbenzene	108.6	101.9	94	101.3	93	52-154	35-171	1	0-38	
Xylenes (total)	325.7	309.2	95	310.4	95	42-156	23-175	0	0-41	
Methyl-t-Butyl Ether (MTBE)	90.13	73.60	82	73.62	82	45-147	28-164	0	0-25	
Tert-Butyl Alcohol (TBA)	151.6	161.4	106	160.6	106	60-140	47-153	0	0-35	
Diisopropyl Ether (DIPE)	104.5	88.14	84	87.31	84	60-140	47-153	1	0-35	
Ethyl-t-Butyl Ether (ETBE)	104.5	85.55	82	84.80	81	60-140	47-153	1	0-35	
Tert-Amyl-Methyl Ether (TAME)	104.5	93.02	89	92.97	89	60-140	47-153	0	0-35	
Naphthalene	131.1	64.14	49	76.50	58	60-140	47-153	18	0-30	ME
Ethanol	188.4	122.0	65	121.9	65	47-137	32-152	0	0-35	
1,1-Difluoroethane	67.54	63.11	93	62.75	93	78-156	65-169	1	0-35	
Isopropanol	61.45	54.26	88	54.42	89	78-156	65-169	0	0-35	

Total number of LCS compounds : 13
Total number of ME compounds : 1
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates		Date Received:	N/A
5900 Hollis Street, Suite A		Work Order No:	13-02-1268
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA TO-3M

Project: 4411 Foothill Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-14-431-100	Air	GC 38	02/21/13	13022102	130221L01

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Gasoline Range Organics (C6-C12)	382400	389400	102	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 13-02-1268

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
- [x] CALSCIENCE (_____)
- [ ] SRL (_____)
- [ ] XENCO (_____)
- [ ] TEST AMERICA (_____)
- [ ] OTHER (_____)

Please Check Appropriate Box:
- [ ] ENV. SERVICES
- [ ] MOTIVA RETAIL
- [ ] SHELL RETAIL
- [ ] MOTIVA SOR/OM
- [x] CONSULTANT
- [ ] LUBES
- [ ] SHELL PIPELINE
- [ ] OTHER

Print Bill To Contact Name: Peter Schaefer 240897

INCIDENT # (ENV SERVICES):

[ ] CHECK IF NO INCIDENT # APPLIES

DATE:

PAGE: 1 of 1

PO #:

SAP #:

SHIPPING COMPANY: Conestoga-Rovers & Associates

LOG CODE: CRAW

ADDRESS: 5900 Hollis Street, Suite A, Emeryville, CA 94608

SITE ADDRESS: Street and City: 4411 Foothill Boulevard, Oakland

State: CA

GLOBAL ID NO.: T0600101085

PROJECT CONTACT (Hardcopy or PDF Report to): Peter Schaefer

EDF DELIVERABLE TO (Name, Company, Office Location): Brenda Carter, CRA, Emeryville

PHONE NO.: 510-420-3343

E-MAIL: shell.em.edf@craworld.com

CONSULTANT PROJECT NO.: 240897-95-12.02

TELEPHONE: 510-420-3319

FAX: 510-420-9170

E-MAIL: pschaefer@craworld.com

SAMPLER NAME(S) (Print): Scott Lewis

13-02-1268

TURNAROUND TIME (CALENDAR DAYS):
- [x] STANDARD (14 DAY)
- [ ] 5 DAYS
- [ ] 3 DAYS
- [ ] 2 DAYS
- [ ] 24 HOURS
- [ ] RESULTS NEEDED ON WEEKEND

- [ ] LA – RWQCB REPORT FORMAT
- [ ] UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES:

Copy final report to Shell.Lab.Billing@craworld.com

Report results in µg/m³

- [x] SHELL CONTRACT RATE APPLIES
- [ ] STATE REIMBURSEMENT RATE APPLIES
- [ ] EDD NOT NEEDED
- [x] RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPH -GRO, Purgeable TO3	TPH -DRO, Extractable (8015M)	TPHg (8015M)	BTEX (8260B)	BTEX + MTBE (8260B)	BTEX + MTBE + TBA (TO-15)	BTEX + 5 OXYs (MTBE, TBA, DIPE, TAME, ETBE) 8260B	Full VOC list (8260B)	Single Compounds: _____ (8260B)	1,2-DCA (8260B)	EDB (8260B)	Ethanol (8380B)	CH4 ASTMD 1946	O2 + Argon ASTMD 1946	Helium ASTMD 1946 (H)	CO2 ASTMD 1946	Naphthalene 8260	TEMPERATURE ON RECEIPT C°	Container PID Readings or Laboratory Notes
1	SSV-1	2/20/13	0711	Vapor						1	X					X							X	X	X	X	X		
2	SSV-2	2/20/13	0751	Vapor						1	X					X							X	X	X	X	X		
3	SSV-3	2/20/13	1320	Vapor						1	X					X							X	X	X	X	X		
4	SSV-4	2/20/13	1025	Vapor						1	X					X							X	X	X	X	X		
5	SSV-5	2/20/13	0952	Vapor						1	X					X							X	X	X	X	X		
6	SSV-6	2/20/13	0838	Vapor						1	X					X							X	X	X	X	X		
7	SSV-7	2/20/13	0912	Vapor						1	X					X							X	X	X	X	X		
8	V-9	2/20/13	1159	Vapor						1	X					X							X	X	X	X	X		
9	V-10	2/20/13	1277	Vapor						1	X					X							X	X	X	X	X		
10	V-11	2/20/13	1127	Vapor						1	X					X							X	X	X	X	X		

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Scott Lewis	CER	2-20-13	1425
TO CRA 2/20/13 1730	CER	02/21/13	1030

(5/2/08) Revision

(268)

GSO

< WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
CRA

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 521140929

NPS

ORC

A

GARDEN GROVE

D92841A

9416390

Print Date : 02/20/13 16:12 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, If you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-02-1268

SAMPLE RECEIPT FORM

Box 1 of 1

CLIENT: CRA DATE: 02/21/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature ____.____ °C - 0.2 °C (CF) = ____.____ °C ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☑ Air ☐ Filter Initial: MC

CUSTODY SEALS INTACT:

☑ Box ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: MC

☐ Sample ☐ _____ ☐ No (Not Intact) ☑ Not Present Initial: JS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☑	☐	☐

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☑Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** JS

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** JL

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered **Scanned by:** VL