CONESTOGA-ROVERS & ASSOCIATES

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
www.CRAworld.com

TRANSMITTAL

DATE: May 2, 2011

REFERENCE NO.: 240414

PROJECT NAME: 540 Hegenberger Road, Oakland

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

RECEIVED
11:07 am, May 03, 2011
Alameda County
Environmental Health

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

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- ☐ Mail
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- ☒ Other GeoTracker and Alameda County FTP

QUANTITY	DESCRIPTION
1	Soil Vapor Probe Installation and Sampling Report

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

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

Copy to: Denis Brown, Shell Oil Products US (electronic copy)
SF Data Room (electronic copy)

Completed by: Peter Schaefer Signed: Peter Schaefer

Filing: **Correspondence File**

Denis L. Brown
Shell Oil Products US
HSE – Environmental Services
20945 S. Wilmington Ave.
Carson, CA 90810-1039
Tel (707) 865 0251
Fax (707) 865 2542
Email denis.l.brown@shell.com

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

Re: Shell-branded Service Station
540 Hegenberger Road
Oakland, California
SAP Code 135694
Incident No. 98995752
ACEH Case No. RO0000223

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 PROBE INSTALLATION AND SAMPLING REPORT

SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

SAP CODE	135694
INCIDENT NO.	98995752
AGENCY NO.	RO0000223

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

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web: http://www.CRAworld.com

MAY 2, 2011
REF. NO. 240414 (9)
This report is printed on recycled paper.

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EXECUTIVE SUMMARY

- Three sub-slab soil vapor probes (SVP-1 through SVP-3) were installed.
- CRA collected two rounds of soil vapor samples from the three new sub-slab soil vapor probes. The highest COC concentrations were detected in SVP-3 which contained up to 17,000,000 $\mu g/m^3$ TPHg, 640 $\mu g/m^3$ ethylbenzene, and 1,400 $\mu g/m^3$ xylenes. Benzene, toluene, MTBE, TBA, and naphthalene were not detected in the samples.
- All soil vapor COC concentrations in SVP-2 were below ESLs and all BTEX, MTBE, TBA, and naphthalene detections were below ESLs in all sub-slab probes.
- TPHg concentrations exceeded ESLs in SVP-1 and SVP-3. 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 they were not detected at concentrations above ESLs.
- The laboratory reporting limits were above ESLs for benzene and naphthalene in SVP-3 due to the presence of other hydrocarbons in the soil vapor sample.
- No further soil vapor sampling is recommended.

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) to document the recent sub-slab soil vapor probe installation and sampling. The purpose of the investigation was to assess the potential for soil gas migration to indoor air in the service station kiosk. CRA followed the scope of work and procedures presented in our December 16, 2010 work plan, which was approved by Alameda County Environmental Health in their January 4, 2011 letter.

The subject site is an active Shell-branded service station located on the southeast corner of the Hegenberger Road and Edes Avenue intersection in a commercial area of Oakland, California (Figure 1). The site layout (Figure 2) includes one station building, two dispenser islands, four underground storage tanks, and a car wash.

A summary of previous work performed at the site and additional background information is presented in CRA's February 26, 2010 *Closure Request* and is not repeated herein.

2.0 SOIL VAPOR PROBE INSTALLATION AND SAMPLING

2.1 PERMIT

Alameda County Public Works Agency did not require a permit for the sub-slab soil vapor probe installation.

2.2 FIELD DATES

February 17, 2011 (sub-slab soil vapor probe installation) and March 9, 2011 and March 31, 2011 (sub-slab soil vapor probe sampling).

2.3 DRILING COMPANY

Vapor Tech Services, Inc.

2.4 PERSONNEL PRESENT

Geologist Erin Swan directed the probe installation working under the supervision of California Professional Geologist Peter Schaefer.

2.5 DRILLING METHOD

Hammer drill.

2.6 NUMBER OF PROBES

CRA installed three sub-slab soil vapor probe (SVP-1 through SVP-3) as described below at the probe locations shown on Figure 2.

2.7 VAPOR PROBE MATERIALS

CRA cut stainless steel tubing to a length that allows the probe to float within the sidewalk thickness to avoid obstruction of the probe with base material. The tubing was approximately 1/4-inch diameter with stainless steel compression fittings. The sub-slab soil vapor probe was placed in the borehole so that the top of the probe is flush with the floor. The top of the probe has a recessed stainless steel plug.

2.8 PROBE DEPTH

6 inches below grade.

2.9 SOIL VAPOR SAMPLING PROCEDURE

On March 9, 2011 and March 31, 2011, CRA sampled soil vapor probes SVP-1 through SVP-3. All soil vapor samples were collected using a lung box and Tedlar® bags.

CRA collected soil vapor samples using laboratory-supplied Tedlar® bags. During sampling, CRA connected the Teflon® tubing for each vapor probe to a lung box containing the Tedlar® bag, and the lung box chamber was connected to the vacuum pump. CRA then drew the sample into the Tedlar® bag by reducing the pressure in the lung box with the vacuum pump. Each sample was 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, CRA placed a containment unit (or shroud) over the soil vapor probe surface casing and sampling manifold. Prior to soil vapor probe purging, CRA introduced helium into the containment unit to obtain a minimum 50 percent helium content level. CRA confirmed the helium content within the containment unit using a helium meter. The helium meter readings are presented in Section 3.2. All samples were analyzed by the laboratory for helium, and CRA presents the results in Section 3.2 and on Table 1.

2.10 SOIL VAPOR SAMPLING ANALYSES

Soil vapor samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by EPA Method TO-3 (modified); for benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary-butyl ether (MTBE), tertiary-butyl alcohol (TBA), and naphthalene by modified EPA Method 8260B; for oxygen and argon, carbon dioxide, and methane by ASTM D-1946; and for helium by ASTM D-1946 (M).

3.0 FINDINGS

3.1 SOIL VAPOR

The soil vapor chemical analytical data are summarized in Table 1, and TPHg and BTEX analytical results are presented on Figure 2. The laboratory analytical report is presented in Appendix A.

3.2 LEAK TESTING

CRA performed leak testing as described above, and up to 4.70 percent by volume (*%v*) helium was detected in the samples. As shown in the following table, the detections are less than 10 percent of the concentration detected in the shroud, and the samples are considered valid.

Probe ID	*Date*	*Helium concentration in sample (%v)*	*Helium detected in shroud (%v)*	*Maximum acceptable helium concentration in sample (%v)*
SVP-1	3/9/11	2.31	60	6.0
SVP-1	3/31/11	<0.0100	68	6.8

Probe ID	*Date*	*Helium concentration in sample (%v)*	*Helium detected in shroud (%v)*	*Maximum acceptable helium concentration in sample (%v)*
SVP-2	3/9/11	4.70	55	5.5
SVP-2	3/31/11	<0.0100	68	6.8
SVP-3	3/9/11	<0.0100	50	5.0
SVP-3	3/31/11	3.05	62	6.2

The laboratory analytical report for helium is presented in Appendix A, and CRA includes the results on Table 1.

4.0 CONCLUSIONS

CRA collected two rounds of soil vapor samples from the three new sub-slab soil vapor probes. The highest concentrations of chemicals of concern (COCs) were detected in SVP-3 which contained up to 17,000,000 micrograms per cubic meter ($\mu g/m^3$) TPHg, 640 $\mu g/m^3$ ethylbenzene, and 1,400 $\mu g/m^3$ xylenes. Benzene, toluene, MTBE, TBA, and naphthalene were not detected in any of the samples.

All soil vapor COC concentrations in SVP-2 were below San Francisco Bay Regional Water Quality Control Board's (RWQCB's) environmental screening levels (ESLs) for commercial land use[1], and all BTEX, MTBE, TBA, and naphthalene detections were below ESLs in all sub-slab probes. Only TPHg concentrations exceeded ESLs in SVP-1 and SVP-3.

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 they were not detected at concentrations above ESLs. The laboratory reporting limits were above ESLs for benzene and naphthalene in SVP-3 due to the presence of other hydrocarbons in the soil vapor sample.

5.0 RECOMMENDATIONS

Since all results for BTEX, MTBE, TBA, and naphthalene are below ESLs, no further soil vapor sampling is recommended.

---

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

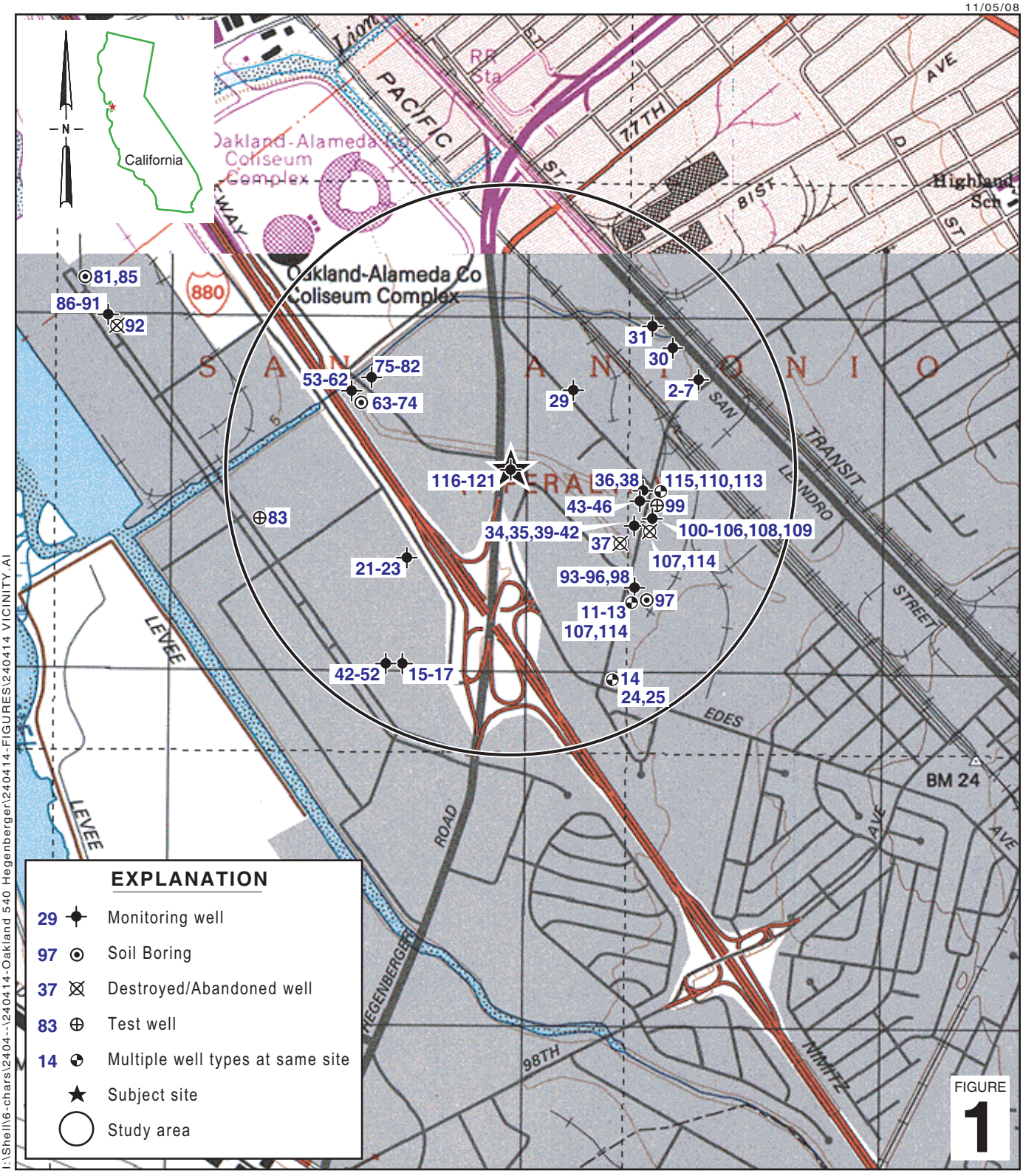
All of which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Peter Schaefer, CEG, CHG

Aubrey K. Cool, PG

FIGURES

11/05/08



I:\Shell\6-chars\2404-\240414-Oakland 540 Hegenberger\240414-FIGURES\240414 VICINITY.AI

0 1/8 1/4 1/2 1

SCALE 1:1/4 MILES

FIGURE 1

Shell-branded Service Station

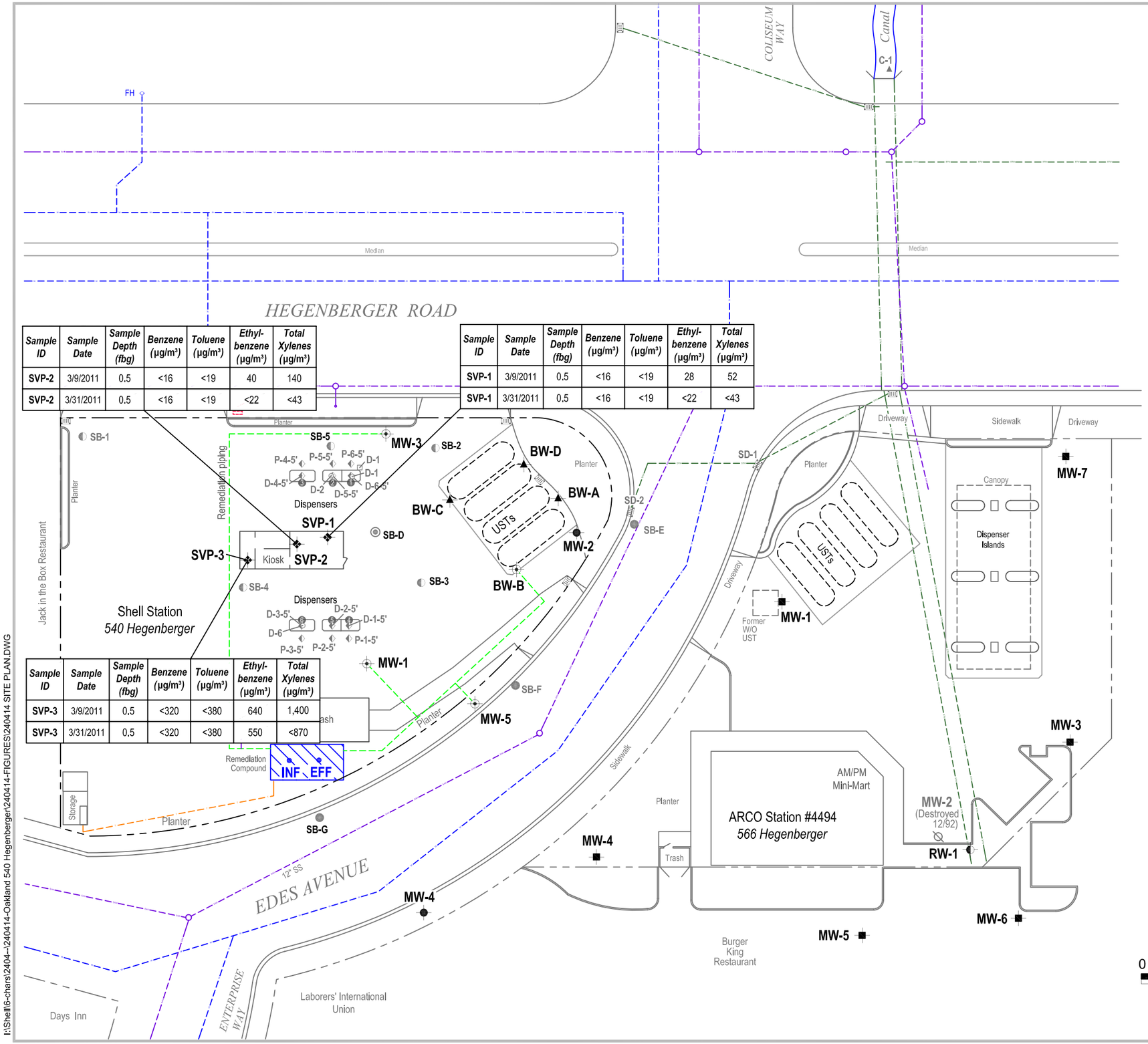
540 Hegenberger Road

Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

04/26/2011



Sample ID	Sample Date	Sample Depth (fbg)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)
SVP-2	3/9/2011	0.5	<16	<19	40	140
SVP-2	3/31/2011	0.5	<16	<19	<22	<43

Sample ID	Sample Date	Sample Depth (fbg)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)
SVP-1	3/9/2011	0.5	<16	<19	28	52
SVP-1	3/31/2011	0.5	<16	<19	<22	<43

Sample ID	Sample Date	Sample Depth (fbg)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)
SVP-3	3/9/2011	0.5	<320	<380	640	1,400
SVP-3	3/31/2011	0.5	<320	<380	550	<870

EXPLANATION

- SVP-1 — Sub-slab soil vapor probe location (Shell)
- MW-2 — Monitoring well location (Shell)
- BW-A — Tank backfill well location (Shell)
- MW-1 — Groundwater extraction well location (Shell)
- MW-1 — Monitoring well location (ARCO)
- RW-1 — Recovery well location (ARCO)
- MW-2 — Destroyed well location (ARCO)
- D-1-5' — Soil sample location (04/04)
- C-1 — Canal sampling location (2001)
- SB-E — Soil boring location (08/00)
- SB-D — Soil boring location (07/98)
- SB-1 — Soil boring location (03/98)
- D-1 — Soil sample location (01/98)
- D-1 — Soil sample location (08/96)
- INF — GWE system sample location
- Electrical line (E)
- Telecommunication line (T)
- Storm drain line (STM)
- Sanitary sewer line (SAN)
- Water line (W)
- FH — Fire hydrant

Sample ID	Sample Date	Sample Depth (fbg)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)
SVP-1	3/9/2011	0.5	<16	<19	28	52
SVP-1	3/31/2011	0.5	<16	<19	<22	<43

Notes:
Soil vapor sample ID, date, depth in feet below grade (fbg), and concentrations in micrograms per cubic meter (µg/m³)
<X = Not detected at reporting limit X

0 20 40 80
Scale (ft)

FIGURE
2

Soil Vapor Data Map

March 9 and 31, 2011

CONESTOGA-ROVERS & ASSOCIATES

Shell-branded Service Station
540 Hegenberger Road
Oakland, California

I:\Shell\6-chars\2404--\240414-Oakland 540 Hegenberger\240414-FIGURES\240414 SITE PLAN.DWG

TABLE

TABLE 1

SOIL VAPOR ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*TBA*	*Naphthalene*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*	*Helium (%v)*
SVP-1	3/9/2011	0.5	**74,000**	<16	<19	28	52	<36	<30	<52	<0.500	8.59	10.2	2.31
SVP-1	3/31/2011	0.5	**180,000**	<16	<19	<22	<43	<36	<30	<52	<0.500	12.7	2.92	<0.0100
SVP-2	3/9/2011	0.5	14,000	<16	<19	40	140	<36	<30	<52	<0.500	3.19	16.8	4.70
SVP-2	3/31/2011	0.5	<7,000	<16	<19	<22	<43	<36	<30	<52	<0.500	5.62	11.7	<0.0100
SVP-3	3/9/2011	0.5	**11,000,000**	<320	<380	640	1,400	<720	<610	<1,000	2.11	4.71	10.6	<0.0100
SVP-3	3/31/2011	0.5	**17,000,000**	<320	<380	550	<870	<720	<610	<1,000	2.75	7.07	3.03	3.05
ESLs [a]			*29,000*	*280*	*180,000*	*3,300*	*58,000*	*31,000*	*NA*	*240*	*NA*	*NA*	*NA*	*NA*

Notes:

All results in micrograms per cubic meter ($\mu g/m^3$) unless otherwise indicated.
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method TO-3M
Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B (M)
MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B (M)
TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B (M)
Naphthalene analyzed by EPA Method 8260B (M)
Methane, carbon dioxide, and oxygen + argon analyzed by ASTM D-1946
Helium analyzed by ASTM D-1946 (M)
fbg = Feet below grade
%*v* = Percentage by volume
<x = Not detected at reporting limit x
ESL = Environmental screening level
NA = No applicable ESL
Results in **bold** exceed environmental screening level

a = San Francisco Bay Regional Water Quality Control Board (RWQCB) shallow soil gas screening level for evaluation of potential vapor intrusion concerns - commercial/industrial land use from RWQCB's *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, Interim Final - November 2007 (Revised May 2008).

APPENDIX A

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC. - CERTIFIED ANALYTICAL REPORTS

Calscience
Environmental
Laboratories, Inc.

March 21, 2011

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

Subject: **Calscience Work Order No.: 11-03-0832**
Client Reference: 540 Hegenberger Rd., Oakland, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/11/2011 and analyzed in accordance with the attached chain-of-custody.

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

For

Calscience Environmental
Laboratories, Inc.
Xuan Dang
Project Manager

Case Narrative

Work Order # 11-03-0832

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.

Analytical Report

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

Date Received: 03/11/11
Work Order No: 11-03-0832
Preparation: N/A
Method: ASTM D-1946
Units: %v

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-03-0832-1-A**	**03/09/11 15:52**	**Air**	**GC 36**	**N/A**	**03/11/11 10:24**	**110311L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	10.2	0.500	1	
Carbon Dioxide	8.59	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	**11-03-0832-2-A**	**03/09/11 16:27**	**Air**	**GC 36**	**N/A**	**03/11/11 10:40**	**110311L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	16.8	0.500	1	
Carbon Dioxide	3.19	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	**11-03-0832-3-A**	**03/09/11 15:37**	**Air**	**GC 36**	**N/A**	**03/11/11 11:07**	**110311L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	2.11	0.500	1		Oxygen + Argon	10.6	0.500	1	
Carbon Dioxide	4.71	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,252**	**N/A**	**Air**	**GC 36**	**N/A**	**03/11/11 08:53**	**110311L01**

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		Nitrogen	ND	0.500	1	
Carbon Monoxide	ND	0.500	1						

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: 03/11/11
Work Order No: 11-03-0832
Preparation: N/A
Method: EPA TO-3M

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-03-0832-1-A**	**03/09/11 15:52**	**Air**	**GC 13**	**N/A**	**03/11/11 11:06**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	74000	7000	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	**11-03-0832-2-A**	**03/09/11 16:27**	**Air**	**GC 13**	**N/A**	**03/11/11 11:16**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	14000	7000	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	**11-03-0832-3-A**	**03/09/11 15:37**	**Air**	**GC 13**	**N/A**	**03/11/11 14:31**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	11000000	70000	10		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**098-01-005-2,983**	**N/A**	**Air**	**GC 13**	**N/A**	**03/11/11 08:51**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	7000	1		ug/m3

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: 03/11/11
Work Order No: 11-03-0832
Preparation: N/A
Method: ASTM D-1946 (M)

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-03-0832-1-A**	**03/09/11 15:52**	**Air**	**GC 55**	**N/A**	**03/11/11 14:26**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
Helium	2.31	0.0200	2		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	**11-03-0832-2-A**	**03/09/11 16:27**	**Air**	**GC 55**	**N/A**	**03/11/11 14:48**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
Helium	4.70	0.0400	4		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	**11-03-0832-3-A**	**03/09/11 15:37**	**Air**	**GC 55**	**N/A**	**03/11/11 12:53**	**110311L01**

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	**099-12-872-84**	**N/A**	**Air**	**GC 55**	**N/A**	**03/11/11 11:50**	**110311L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v
Hydrogen	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: 03/11/11
Work Order No: 11-03-0832
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	11-03-0832-1-A	03/09/11 15:52	Air	GC/MS ZZ	N/A	03/12/11 13:41	110312L01

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	28	22	1		Naphthalene	ND	52	1	
Xylenes (total)	52	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	47-156			1,2-Dichloroethane-d4	103	47-156		
Toluene-d8	43	47-156		2					

SVP-2	11-03-0832-2-A	03/09/11 16:27	Air	GC/MS ZZ	N/A	03/12/11 14:34	110312L01

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	40	22	1		Naphthalene	ND	52	1	
Xylenes (total)	140	43	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	98	47-156			1,2-Dichloroethane-d4	99	47-156		
Toluene-d8	82	47-156							

SVP-3	11-03-0832-3-A	03/09/11 15:37	Air	GC/MS ZZ	N/A	03/12/11 16:43	110312L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	320	20		Methyl-t-Butyl Ether (MTBE)	ND	720	20	
Toluene	ND	380	20		Tert-Butyl Alcohol (TBA)	ND	610	20	
Ethylbenzene	640	430	20		Naphthalene	ND	1000	20	
Xylenes (total)	1400	870	20						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	162	47-156		2	1,2-Dichloroethane-d4	100	47-156		
Toluene-d8	34	47-156		2					

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: 03/11/11
Work Order No: 11-03-0832
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-13-041-412**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**03/12/11 12:36**	**110312L01**

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	96	47-156			1,2-Dichloroethane-d4	106	47-156		
Toluene-d8	95	47-156							

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Conestoga-Rovers & Associates	Date Received: 03/11/11
5900 Hollis Street, Suite A	Work Order No: 11-03-0832
Emeryville, CA 94608-2008	Preparation: N/A
	Method: EPA TO-3M

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
11-03-0833-4	Air	GC 13	N/A	03/11/11	110311D01

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	1809000	1787000	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Conestoga-Rovers & Associates	Date Received: N/A
5900 Hollis Street, Suite A	Work Order No: 11-03-0832
Emeryville, CA 94608-2008	Preparation: N/A
	Method: ASTM D-1946

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,252	Air	GC 36	N/A	03/11/11	110311L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	105	103	80-120	2	0-30	
Oxygen + Argon	90	90	80-120	0	0-30	
Nitrogen	93	93	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 11-03-0832
Preparation: N/A
Method: ASTM D-1946 (M)

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-872-84	Air	GC 55	N/A	03/11/11	110311L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Helium	102	103	80-120	1	0-30	
Hydrogen	101	101	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 11-03-0832
Preparation: N/A
Method: EPA 8260B (M)

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-13-041-412	Air	GC/MS ZZ	N/A	03/12/11	110312L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	100	100	60-156	0	0-40	
Toluene	102	103	56-146	1	0-43	
Ethylbenzene	103	105	52-154	1	0-38	
Xylenes (total)	104	105	52-148	1	0-38	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 11-03-0832

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.
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.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS 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.
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.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
- ☑ CALSCIENCE ( )
- ☐ SPL ( )
- ☐ XENCO ( )
- ☐ TEST AMERICA ( )
- ☐ OTHER ( )

Please Check Appropriate Box:
- ☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
- ☐ MOTIVA SD&CM ☑ CONSULTANT ☐ LUBES
- ☐ SHELL PIPELINE ☐ OTHER ____

Print Bill To Contact Name: Peter Schaefer

INCIDENT # (ENV SERVICES): 9 8 9 9 5 7 5 2 ☐ CHECK IF NO INCIDENT # APPLIES

DATE: 3/9/11

PAGE: 1 of 1

PO #:

SAP #: 1 3 5 6 9 4

SAMPLING COMPANY: Conestoga-Rovers & Associates

LOG CODE: CRAW

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

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

TELEPHONE: 510-420-3319 FAX: 510-420-9170 E-MAIL: pschaefer@craworld.com

SITE ADDRESS: Street and City: 540 Hegenberger Rd, Oakland,

State: CA

GLOBAL ID NO.: TO600101261

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

PHONE NO.: 510-420-3343

E-MAIL: shelledf@craworld.com

CONSULTANT PROJECT NO.: 2404114-95

SAMPLER NAME(S) (Print): Erin Swan

LAB USE ONLY: 11-03-0832

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☐ RECEIPT VERIFICATION REQUESTED

SPECIAL INSTRUCTIONS OR NOTES :

Must be analysis within 72 hours.

Please report results in µg/m3 for 8260, and report results in % by volume for ASTM D 1946(M).

REQUESTED ANALYSIS

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPHg (8260B)	BTEX, MTBE, TBA, & Naphthalene (8260B)	Oxygen plus argon, Carbon Dioxide, Methane, & Helium (ASTM D 1946 M)	Container PID Readings or Laboratory Notes
1	SVP-1	3/9/11	3:52	Vapor					X	1	X	X	X	Tedlar Bag
2	SVP-2	3/9/11	4:27	Vapor					X	1	X	X	X	
3	SVP-3	3/9/11	3:37	Vapor					X	1	X	X	X	

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Erin Swan	Secure location	3/9/11	5:30
[signature]	To Omally CEL	3/10/11	1220
To Omalley TO GSO 3/10/11 1730	Wobatu CEL	3/11/11	1000

05/2/06 Revision

0832

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:
PARSONS, CRA

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 516123944

NPS

ORC

D

GARDEN GROVE

D92843A

89361930

Print Date : 03/10/11 16:59 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 #: 11-03-0832

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CRA DATE: 03/11/11

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature ____.____ °C + 0.5 °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:** UB

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Initial:** UB

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

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 / Residual Chlorine / Dissolved Sulfide 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 ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** NC

Calscience
Environmental
Laboratories, Inc.

April 13, 2011

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

Subject: **Calscience Work Order No.: 11-04-0012**
Client Reference: 540 Hegenberger Rd., Oakland, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/1/2011 and analyzed in accordance with the attached chain-of-custody.

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Xuan Dang
Project Manager

Case Narrative

Work Order # 11-04-0012

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.

Analytical Report

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

Date Received: 04/01/11
Work Order No: 11-04-0012
Preparation: N/A
Method: ASTM D-1946
Units: %v

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-04-0012-1-A**	**03/31/11 11:21**	**Air**	**GC 36**	**N/A**	**04/01/11 12:26**	**110401L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	2.92	0.500	1	
Carbon Dioxide	12.7	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	**11-04-0012-2-A**	**03/31/11 11:00**	**Air**	**GC 36**	**N/A**	**04/01/11 12:46**	**110401L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	11.7	0.500	1	
Carbon Dioxide	5.62	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	**11-04-0012-3-A**	**03/31/11 10:45**	**Air**	**GC 36**	**N/A**	**04/01/11 13:11**	**110401L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	2.75	0.500	1		Oxygen + Argon	3.03	0.500	1	
Carbon Dioxide	7.07	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,270**	**N/A**	**Air**	**GC 36**	**N/A**	**04/01/11 08:42**	**110401L01**

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

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

Date Received: 04/01/11
Work Order No: 11-04-0012
Preparation: N/A
Method: EPA TO-3M

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-04-0012-1-A**	**03/31/11 11:21**	**Air**	**GC 13**	**N/A**	**04/01/11 13:31**	**110401L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	180000	7000	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	**11-04-0012-2-A**	**03/31/11 11:00**	**Air**	**GC 13**	**N/A**	**04/01/11 13:41**	**110401L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	7000	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	**11-04-0012-3-A**	**03/31/11 10:45**	**Air**	**GC 13**	**N/A**	**04/01/11 14:06**	**110401L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	17000000	70000	10		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**098-01-005-3,032**	**N/A**	**Air**	**GC 13**	**N/A**	**04/01/11 08:39**	**110401L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	7000	1		ug/m3

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: 04/01/11
Work Order No: 11-04-0012
Preparation: N/A
Method: ASTM D-1946 (M)

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	**11-04-0012-1-A**	**03/31/11 11:21**	**Air**	**GC 55**	**N/A**	**04/01/11 13:27**	**110401L01**

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

SVP-2	**11-04-0012-2-A**	**03/31/11 11:00**	**Air**	**GC 55**	**N/A**	**04/01/11 13:48**	**110401L01**

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

SVP-3	**11-04-0012-3-A**	**03/31/11 10:45**	**Air**	**GC 55**	**N/A**	**04/01/11 14:16**	**110401L01**

Parameter	Result	RL	DF	Qual	Units
Helium	3.05	0.0200	2		%v

Method Blank	**099-12-872-88**	**N/A**	**Air**	**GC 55**	**N/A**	**04/01/11 13:07**	**110401L01**

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: 04/01/11
Work Order No: 11-04-0012
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	11-04-0012-1-A	03/31/11 11:21	Air	GC/MS YY	N/A	04/01/11 19:21	110401L01

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	99	47-156		
Toluene-d8	19	47-156		2					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	11-04-0012-2-A	03/31/11 11:00	Air	GC/MS YY	N/A	04/01/11 16:17	110401L01

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	95	47-156		
Toluene-d8	100	47-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	11-04-0012-3-A	03/31/11 10:45	Air	GC/MS YY	N/A	04/01/11 20:49	110401L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	320	20		Methyl-t-Butyl Ether (MTBE)	ND	720	20	
Toluene	ND	380	20		Tert-Butyl Alcohol (TBA)	ND	610	20	
Ethylbenzene	550	430	20		Naphthalene	ND	1000	20	
Xylenes (total)	ND	870	20						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	216	47-156		2	1,2-Dichloroethane-d4	99	47-156		
Toluene-d8	14	47-156		2					

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: 04/01/11
Work Order No: 11-04-0012
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 540 Hegenberger Rd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-13-041-430**	**N/A**	**Air**	**GC/MS YY**	**N/A**	**04/01/11 13:56**	**110401L01**

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	101	47-156			1,2-Dichloroethane-d4	99	47-156		
Toluene-d8	98	47-156							

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Conestoga-Rovers & Associates	Date Received: 04/01/11
5900 Hollis Street, Suite A	Work Order No: 11-04-0012
Emeryville, CA 94608-2008	Preparation: N/A
	Method: EPA TO-3M

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
11-04-0011-1	Air	GC 13	N/A	04/01/11	110401D01

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	161300	173600	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 11-04-0012
Preparation: N/A
Method: ASTM D-1946

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,270	Air	GC 36	N/A	04/01/11	110401L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	94	93	80-120	0	0-30	
Carbon Dioxide	100	97	80-120	2	0-30	
Carbon Monoxide	101	101	80-120	0	0-30	
Oxygen + Argon	91	91	80-120	0	0-30	
Nitrogen	97	97	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Conestoga-Rovers & Associates	Date Received: N/A
5900 Hollis Street, Suite A	Work Order No: 11-04-0012
Emeryville, CA 94608-2008	Preparation: N/A
	Method: ASTM D-1946 (M)

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-872-88	Air	GC 55	N/A	04/01/11	110401L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Helium	91	92	80-120	2	0-30	
Hydrogen	102	104	80-120	2	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 11-04-0012
Preparation: N/A
Method: EPA 8260B (M)

Project: 540 Hegenberger Rd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-13-041-430	Air	GC/MS YY	N/A	04/01/11	110401L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	103	104	60-156	1	0-40	
Toluene	105	105	56-146	0	0-43	
Ethylbenzene	109	109	52-154	0	0-38	
Xylenes (total)	110	110	52-148	0	0-38	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 11-04-0012

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.
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.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS 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.
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.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
- ☑ CALSCIENCE (_____)
- ☐ SPL (_____)
- ☐ XENCO (_____)
- ☐ TEST AMERICA (_____)
- ☐ OTHER (_____)

Please Check Appropriate Box:
☐ [redacted] ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☑ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Peter Schaefer 240414
PO #

INCIDENT # (ENV SERVICES) ☐ CHECK IF NO INCIDENT # APPLIES: 9 8 9 9 5 7 5 2
SAP #: 1 3 5 6 9 4
DATE: [redacted] 3/31/11
PAGE: 1 of 1

SAMPLING COMPANY: Conestoga-Rovers & Associates	LOG CODE: CRAW	SITE ADDRESS: Street and City: 540 Hegenberger Rd, Oakland,	State: CA
ADDRESS: 5900 Hollis Street, Suite A, Emeryville, CA 94608		EDF DELIVERABLE TO (Name, Company, Office Location): Brenda Carter, CRA, Emeryville	PHONE NO.: 510-420-3343
PROJECT CONTACT (Hardcopy or PDF Report to): Peter Schaefer		E-MAIL: shelledf@craworld.com	CONSULTANT PROJECT NO: 240414-95 [redacted]
TELEPHONE: 510-420-3319 / FAX: 510-420-9170 / E-MAIL: pschaefer@craworld.com		SAMPLER NAME(S) (Print): Erin Swan	GLOBAL ID NO.: TO600101261
			LAB USE ONLY: 11-04-0012

TURNAROUND TIME (CALENDAR DAYS): ☑ 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 :

Must be analysis within 72 hours.

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☐ RECEIPT VERIFICATION REQUESTED

Please report results in µg/m3 for 8260, and report results in % by volume for ASTM D 1946(M).

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPHg (8260B)	BTEX, MTBE, TBA, & Naphthalene (8260B)	Oxygen plus argon, Carbon Dioxide, Methane, & Helium (ASTM D 1946 M)	TEMPERATURE ON RECEIPT C°	Container PID Readings or Laboratory Notes
1	SVP-1	3/31/11	11:21	Vapor					X	1	X	X	X		Tedlar Bag
2	SVP-2	[redacted]	11:00	Vapor					X	1	X	X	X		
3	SVP-3	[redacted]	10:45	Vapor					X	1	X	X	X		

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Erin Swan	Sean Location	3/31/11	12:10
[redacted]	[redacted] CEL	3/31/11	12:25
[redacted] 3/31/11 1730	[redacted] CA	04/01/11	1030

05/2/06 Revision

Page 1 of 1

0012

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, PARSONS

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 516268043

NPS

ORC

D

GARDEN GROVE

D92843A

89924057

Print Date : 03/31/11 15:03 PM

Package 1 of 1

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-04-0012

SAMPLE RECEIPT FORM

Box 1 of 1

CLIENT: CRA DATE: 04/01/11

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature _____.___ °C + 0.5 °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: NC

CUSTODY SEALS INTACT:

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

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

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 ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** ____