



**CONESTOGA-ROVERS  
& ASSOCIATES**

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

## TRANSMITTAL

DATE: December 12, 2014 REFERENCE NO.: 311973  
 PROJECT NAME: Chevron 90121  
 TO: Mr. Mark Detterman ACEH RO#0284  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**RECEIVED**

*By Alameda County Environmental Health at 8:52 am, Dec 16, 2014*

Please find enclosed:  Draft  Final  
 Originals  Other  
 Prints  
 Sent via:  Mail  Same Day Courier  
 Overnight Courier  Other Alameda County FTP Upload and GeoTracker

QUANTITY	DESCRIPTION
1	Crawl Space, Indoor Ambient Air, Outdoor Air, and Sub-Slab Soil Gas Investigation Report

As Requested  For Review and Comment  
 For Your Use  \_\_\_\_\_  
 \_\_\_\_\_

**COMMENTS:**

Please contact Nathan Lee at (925)849-1003 or [nlee@croworld.com](mailto:nlee@croworld.com) with any questions or comments regarding the contents of this report.

Copy to: Mr. Brian A. Waite (Chevron)  
Diocese of Oakland  
Michael E. Delehunt Foley & Lardner  
William Spencer, FWS Highland LLC  
Nissian Saidian

Completed by: Nathan Lee  
 [Please Print]

Signed: *Nathan Lee*

Filing: **Correspondence File**



**Alexis Coulter**  
Project Manager  
Marketing Business Unit

**Chevron Environmental  
Management Company**  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
Tel (925) 790-6492  
acoulter@chevron.com

Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: Chevron Service Station No. 90121  
3026 Lakeshore Avenue  
Oakland, CA

I have reviewed the attached report entitled *Crawlspace, Indoor and Outdoor Ambient Air, and Sub-Slab Soil Gas Investigation Report*.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

A handwritten signature in blue ink that reads "Alex Coulter".

Alexis Coulter  
Project Manager

Attachment: *Crawlspace, Indoor Ambient Air, Outdoor Air, and Sub-Slab Soil Gas Investigation*.



# **CRAWL SPACE, INDOOR AND OUTDOOR AMBIENT AIR, AND SUB-SLAB SOIL GAS INVESTIGATION REPORT**

**FORMER CHEVRON SERVICE STATION 90121  
3026 LAKESHORE AVENUE  
OAKLAND, CALIFORNIA  
ACEH CASE RO# 0284**

**Prepared for:**

**Mr. Mark Detterman  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577**

**Prepared by:  
Conestoga-Rovers  
& Associates**

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

Office: (510) 420-0700  
Fax: (510) 420-9170

web: <http://www.CRAworld.com>

**DECEMBER 12, 2014  
REF. NO. 311973 (24)**



## **CRAWL SPACE, INDOOR AND OUTDOOR AMBIENT AIR, AND SUB-SLAB SOIL GAS INVESTIGATION REPORT**

**FORMER CHEVRON SERVICE STATION 90121  
3026 LAKESHORE AVENUE  
OAKLAND, CALIFORNIA  
ACEH CASE RO# 0284**

*Nathan Lee*



---

**Nathan S. Lee, PG 8684**

**DECEMBER 12, 2014  
REF. NO. 311973 (24)**

**Prepared by:  
Conestoga-Rovers  
& Associates**

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

Office: (510) 420-0700  
Fax: (510) 420-9170

web: <http://www.CRAworld.com>

## Table of Contents

	Page
<b>Section 1.0 Introduction.....</b>	<b>1</b>
<b>Section 2.0 Site Background .....</b>	<b>1</b>
2.1 Site Description.....	1
2.2 Previous Environmental Work.....	1
2.3 Site Geology.....	2
2.4 Site Hydrogeology.....	2
<b>Section 3.0 Crawl Space, Indoor, Ambient Air and Sub-Slab Vapor Investigation .....</b>	<b>2</b>
3.1 Site Health and Safety Plan.....	2
3.2 Permits.....	2
3.3 Crawl Space, Indoor, and Outdoor Ambient Air, and Sub-Slab Vapor Sampling.....	3
3.4 Chemical Analyses .....	5
<b>Section 4.0 Investigation Results .....</b>	<b>5</b>
4.1 Crawl Space, Indoor Air, and Ambient Air Analytical Results.....	5
4.2 Sub-Slab Analytical Results.....	6
4.3 Crawl Space, Indoor and Outdoor Ambient Air, and Sub-Slab Vapor Data Interpretation .....	7
<b>Section 5.0 Conclusions and Recommendations.....</b>	<b>10</b>
5.1 Conclusions.....	10
5.2 Recommendations and Upcoming Events.....	11

**List of Figures  
(Following Text)**

- Figure 1 Vicinity Map  
Figure 2 Site Plan with Sample Locations

**List of Tables  
(Following Text)**

- Table 1 Cumulative Air and Soil Gas Analytical Data  
Table 2 Aliphatic and Aromatic Hydrocarbon Analytical Data

**List of Appendices**

- Appendix A Regulatory Correspondences  
Appendix B Summary of Environmental Investigation and Remediation  
Appendix C Building Survey and Building Chemical Screening Forms  
Appendix D Soil Vapor Sampling Data Sheet  
Appendix E Laboratory Data

## Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) prepared this *Crawl Space, Indoor And Outdoor Ambient Air, And Sub-Slab Soil Gas Investigation Report* for the site referenced above (Figure 1) on behalf of Chevron Environmental Management Company (CEMC). CRA recommended that sub-slab soil gas, and crawl space, indoor, and outdoor (ambient) air samples be evaluated to confirm the results reported in CRA's *Subsurface Investigation Report* dated February 14, 2014. Alameda County Environmental Health (ACEH) concurred in its April 4, 2014 letter (Appendix A). The primary objective was to investigate potential vapor migration into buildings at 3008 and 3014 Lakeshore Avenue and assess the associated potential risks. Presented below are the site background, site geology, description of the methods, investigation results, and CRA's conclusions and recommendations.

## Section 2.0 Site Background

### 2.1 Site Description

The site is currently a vacant lot on the southern corner of Lakeshore Avenue and MacArthur Boulevard in Oakland, California (Figure 1) and utilized by the current owner as a parking lot. A retail service station was operated onsite from 1933 to 2009. The service station was demolished in August 2010, removing all site facilities, including 1 building, 1 kiosk, 3 dispenser islands, 4 10,000-gallon gasoline underground storage tanks (USTs), and product piping (Figure 2). The property was sold to FWS Highland LLC (FWS) in 2011. Surrounding land use is a mixture of commercial and residential.

A review of Sanborn Maps and city records produced by Environmental Data Resources Inc (EDR) indicates that a service station and automobile repair shop was formerly located at 3000 Lakeshore Avenue, which is at the corner of Lakeshore Avenue and Beacon Street (Figure 2). The service station operated from approximately 1933 to 1957 when the service station was replaced by an office building.

### 2.2 Previous Environmental Work

The site has been an open environmental case since 1990 under ACEH jurisdiction (Fuel Leak Case Number RO0000284 and GeoTracker Global ID T0600100328). A total of 22 monitoring wells (13 of which have been destroyed), 3 sub-slab vapor probes, and 16 soil borings have been installed/advanced (Figure 2). Remedial activities have consisted of at least 5 fueling facility upgrades, some of which included remedial excavations and light non-aqueous phase liquid (LNAPL) recovery. A summary of previous environmental investigation and remediation is included in Appendix B.

## 2.3 Site Geology

The site is approximately 7 feet above mean sea level (ft-amsl) with relatively flat topography. The site is located within the Oakland sub-area of the East Bay Plain groundwater basin.<sup>1</sup> This basin encompasses approximately 115 square miles and is bounded by San Pablo Bay to the north, northern boundary of the Alameda County Water District to the south, the Hayward Fault to the east, and the San Francisco Bay to the west. Sediments in the vicinity consist of Holocene-age estuarine deposits comprised of organic clay and silty clay (Bay Mud); overlying Holocene-age alluvial sand and silt, and Pleistocene-age interbedded clay, silt, sand, and gravel.<sup>2</sup> Locally, the site is underlain primarily by clays interbedded with silt, silty sand, fine sand, and gravel layers to the total depth explored of 35 feet below grade (fbg).

## 2.4 Site Hydrogeology

The site is located in the Santa Clara Valley Groundwater Basin, East Bay Plain Sub Basin, Oakland sub-area. Groundwater in this region has been designated for potential beneficial agricultural, municipal, and industrial uses.<sup>3</sup> The average historical groundwater elevation has ranged from approximately 2 to 14 feet below grade (fbg) and flows predominantly to the southwest. The nearest surface water body is Lake Merritt, approximately 900 feet to the southwest.

## Section 3.0 Crawl Space, Indoor, Ambient Air and Sub-Slab Vapor Investigation

The investigation objectives were to assess potential vapor migration risk to the adjacent properties using the same methods outlined in CRA's *Subsurface Investigation Report* dated February 14, 2014. Vapor assessment activities were also conducted in accordance with the Department of Toxic Substances Control California Environmental Protection Agency's *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)* dated October 2011 and is summarized below.

### 3.1 Site Health and Safety Plan

CRA performed all work under the guidelines set forth in a comprehensive site health and safety plan. The plan was reviewed and signed by all site workers and visitors and kept onsite at all times.

### 3.2 Permits

No county or city permits were needed for this scope of work.

<sup>1</sup> *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, Alameda and Contra Costa Counties, CA prepared by the California Regional Water Quality Control Board San Francisco Bay, August 4, 1999

<sup>2</sup> *California's Groundwater Bulletin 118*; The State of California Department of Water Resources Agency, February 27, 2004

<sup>3</sup> Table 2-2 *Existing and Potential Beneficial Uses in Groundwater in Identified Basins, Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basins*; California Regional Water Quality Control Board – San Francisco Bay Region, January 18, 2007.



### 3.3 Crawl Space, Indoor, and Outdoor Ambient Air, and Sub-Slab Vapor Sampling

Air sampling began on October 6, 2014 and concluded on October 7, 2014. Sampling of sub-slab probes SSVP-1, SSVP-2, and SSVP-3 were conducted on October 7, 2013.

Prior to air sampling, Building Survey and Building Chemical Screening forms were completed for the properties located at 3008 Lakeshore Avenue on October 3, 2014, and at 3014 Lakeshore Avenue on October 6, 2014 (Appendix C). The building survey and chemical screening at 3008 Lakeshore was conducted earlier in an effort to remove any products that had potentially volatile items 48 hours prior to conducting the sampling. The paint identified in the survey was removed by the time the sample occurred. The building survey and chemical screening at 3014 Lakeshore was conducted on the same day as the sampling event as the building has been empty and vacant for years.

At 3014 Lakeshore Avenue, five indoor air samples were collected (IA-1 in the front office, IA-2 in the office cubicle area, IA-3 in the back office, IA-4 in the office annex's main room, and IA-5 in the basement where the sump is located), one crawl space sample was collected (CS-1 in the office annex's crawl space), and one outdoor air sample was collected from the upwind location (OA-1) between the main building and annex office building. The sampling took place with all the windows and doors closed. One window on the second floor was broken, which allowed outside air into the build. Sample IA-5 was collected with the basement door closed (Soil Vapor Sampling Data Sheets Appendix D).

At 3008 Lakeshore Avenue, one indoor sample was collected (A-6 located in the buildings front within the first floor office space), one crawl space sample was collected (CS-2), and one outdoor up upwind air sample was collected (OA-2) in the northeast corner in between the buildings located at 3014 and 3008 Lakeshore. The sampling took place while all the windows and doors were closed, though the office door did open and close as people went in and out of the building (Appendix D).

The sample locations for both properties are shown on Figure 2.

A "shut-in" test was performed prior to collection of air and sub-slab vapor samples. This test was performed by sealing all openings to ambient air, opening canister to establish a vacuum inside the sampling train and waiting to ensure the vacuum remained stable for 10 minutes. The "shut-in" test reduces the potential for ambient air to infiltrate into the sub-slab soil vapor samples and verifies that ambient air first enters the sampling train through the flow controller.

After the "shut-in" test was completed, the crawl space, indoor and outdoor ambient air samples were collected in certified 6 liter Summa™ canisters, in accordance with the DTSC *Vapor Intrusion Guidance*

by using flow limiters set at 3.46 through 3.56 milliliters per minute (mL/min) to allow the desired sampled volume in approximately 24 hours.

Sub-slab vapor probes SSVP-1, SSVP-2, and SSVP-3 (Figure 2) were sampled after the “shut-in” test was completed. Prior to sampling the sub-slab vapor probes were connected to the sampling train and approximately three probe volumes of stagnant air were purged. After purging, the 1 liter sample Summa™ canister valve was opened to allow the canister vacuum to draw soil vapor through the flow controller at a flow rate of 167 mL/min and into the sample canister until a negative pressure of approximately 5-inches of mercury was observed on the vacuum gauge.

Leak testing was performed during the sub-slab soil vapor sampling by using laboratory grade helium to determine if ambient air was entering the Summa™ canisters during sampling. A shroud was used to surround the vapor sampling equipment and the connections between the sampling equipment and the vapor probe tubing. A helium detector was also placed inside the shroud to quantify helium concentrations inside the shroud. An atmosphere of approximately 40 percent helium was created and maintained for the duration of vapor sampling (Appendix D).

All air sampling locations at 3014 Lakeshore Avenue, except CS-1 and IA-5, were sampled specifically for naphthalene simultaneously using sorbent tubes by Environmental Protection Agency (EPA) Method TO-17.

Indoor and outdoor air sorbent tube samples were collected using a low flow air pump, calibrated at 10 mL/min. A mass flow controller was used to ensure that the pump’s flow rate is relatively constant. The sorbent tube was stabilized during sample collection using a stand that places the tube vertically, and facilitates a uniform and reliable flow through the tube during sampling. The tube and stand were connected to the mass flow controller, which then connects to the air pump using teflon tubing and stainless steel fittings. A 24-hour sorbent tube sample was collected simultaneously as the ambient air samples collected with Summa™ canisters. Initial flow rate, temperature, humidity, and final flow rate were recorded for each sorbent tube sample to properly allow the laboratory to calculate sample concentrations.

Sorbent tube samples were also collected from sub-slab vapor probes SSVP-1, SSVP-2, and SSVP-3. The sampling train consisted of a sorbent tube attached to the sub-slab probe using unions and fittings. A disposable syringe is then attached to the sorbent tube to allow for vapor to be pulled through the sorbent tube. The syringe pulls the air into the sorbet tube until the desired volume has been collected. Approximately 200 milliliters of vapor was collected for each sub-slab sorbent tube sample.

All samples were labeled, logged on a Chain of Custody (COC) form. Summa™ canister samples were stored at ambient temperature, while sorbent tubes were capped and preserved in ice. All samples were shipped to Eurofins Air Toxics, Inc. (EATI) of Folsom, California for analysis.

### 3.4 Chemical Analyses

Air and soil vapor samples were analyzed by EATI for the following constituents:

- TPHg, BTEX, MTBE, and naphthalene by modified EPA method TO-15 (GC/MS SIM) for the indoor, crawl space and ambient air samples and EPA Method TO-15 (GC/MS) Full Scan for the sub-slab vapor probes
- Air Phase Hydrocarbon (APH) Fractions (Sp) Aromatics C8-C12 and APH Fractions (Sp) Aliphatics C5-C12 by Modified TO-15 GC/MS Full Scan
- Naphthalene by Modified EPA Method TO-17
- Oxygen (O<sub>2</sub>), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrogen (N<sub>2</sub>) and helium by ASTM D-1946 (GC/TCD)

## Section 4.0 Investigation Results

### 4.1 Crawl Space, Indoor Air, and Ambient Air Analytical Results

Complete air and soil vapor results are included as Tables 1 and 2. The laboratory analytical reports are included in Appendix E. Crawl space, indoor, and ambient air analytical results are summarized in Table 4.1 below.

TABLE 4.1 CRAWL SPACE, INDOOR, AND AMBIENT AIR HYDROCARBON ANALYTICAL RESULTS								
	<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>m,p-Xylene</i>	<i>o-Xylene</i>	<i>MTBE</i>	<i>Naphthalene</i>
<b><i>Ambient Air and Indoor Air ESLs – Commercial/Industrial</i></b>	<b><i>2,500</i></b>	<b><i>0.42</i></b>	<b><i>1,300</i></b>	<b><i>4.9</i></b>	<b><i>440</i></b>	<b><i>440</i></b>	<b><i>47</i></b>	<b><i>0.36</i></b>
<b><i>Sample ID</i></b>	<b><i>All results reported in micrograms per cubic meter (µg/m<sup>3</sup>)</i></b>							
CS-1	<61	<b>0.56</b>	1.9	0.36	1.3	0.47	<0.54	<3.9/--
CS-2	<66	<b>0.64</b>	1.9	0.38	1.3	0.47	<0.58	<4.2/--
IA-1	<66	<b>0.54</b>	1.9	0.46	1.6	0.62	<0.58	<4.2/0.60
IA-2	<61	<b>0.50</b>	2.0	0.49	1.7	0.66	<0.54	<3.9/0.47
IA-3	<67	<b>0.55</b>	1.8	0.48	1.6	0.61	<0.59	<4.3/0.65
IA-4	<66	<b>0.55</b>	1.9	0.39	1.4	0.48	<0.58	<4.2/--
IA-5	<66	<b>0.60</b>	2.2	0.39	1.5	0.51	<0.58	<4.2/0.55
IA-6	<100	<b>0.66</b>	2.3	0.44	1.4	0.52	<0.91	<6.6/--

	<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>m,p-Xylene</i>	<i>o-Xylene</i>	<i>MTBE</i>	<i>Naphthalene</i>
<b>Ambient Air and Indoor Air ESLs – Commercial/Industrial</b>	<b>2,500</b>	<b>0.42</b>	<b>1,300</b>	<b>4.9</b>	<b>440</b>	<b>440</b>	<b>47</b>	<b>0.36</b>
<b>Sample ID</b>	<b>All results reported in micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>)</b>							
OA-1	<66	<b>0.89</b>	2.7	0.50	1.9	0.64	<0.58	<4.2/0.37
OA-1 DUP	<74	<b>0.99</b>	2.7	0.51	1.9	0.65	<0.65	<4.7/--
OA-2	<67	<b>0.56</b>	1.7	0.36	1.3	0.46	<0.59	<4.3/--
Notes:								
ESLs Environmental Screening Levels (ESLs) for shallow soil gas from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater prepared by the California Regional Water Quality Control Board, San Francisco Bay Region Interim Final November 2007, revised May 2008, revised May 2013, Table E-3.								
<b>bold</b> Concentrations exceed applicable ESLs								
-- Not analyzed								
x/x Naphthalene by EPA Method TO-15/Naphthalene by EPA Method TO-17 (VI Tubes)								

No aromatic (carcinogenic) and aliphatic (non-carcinogenic) hydrocarbons were detected in the APH Fraction analysis. APH Fraction analytical data is presented in Table 2, and summarized in Table 4.2 below.

	<b>C5-C6 Aliphatic Hydrocarbons</b>	<b>&gt;C6-C8 Aliphatic Hydrocarbons</b>	<b>&gt;C8- C10 Aliphatic Hydrocarbons</b>	<b>&gt;C10-C12 Aliphatic Hydrocarbons</b>	<b>&gt;C8-C10 Aromatic Hydrocarbons</b>	<b>&gt;C10-C12 Aromatic Hydrocarbons</b>
<b>Sample ID</b>	<b>All results reported in <math>\mu\text{g}/\text{m}^3</math></b>					
CS-1	<48	<61	<86	<100	<73	<81
CS-2	<52	<66	<94	<110	<80	<89
IA-1	<52	<66	<94	<110	<79	<88
IA-2	<48	<61	<87	<100	<74	<82
IA-3	<53	<68	<96	<110	<81	<90
IA-4	<52	<66	<94	<110	<79	<88
IA-5	<52	<66	<94	<110	<79	<88
IA-6	<82	<100	<150	<180	<120	<140
OA-1	<52	<66	<94	<110	<79	<88
OA-1 DUP	<59	<74	<100	<130	<89	<99
OA-2	<53	<67	<95	<110	<81	<90

#### 4.2 Sub-Slab Analytical Results

The Complete sub-slab vapor analytical results are included in Tables 1 and 2, and summarized in Table 4.3 below. Laboratory analytical report is included in Appendix E.

		<i>TPHg</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethyl-benzene</i>	<i>m,p-Xylene</i>	<i>o-Xylene</i>	<i>MTBE</i>	<i>Naphthalene</i>
<i>Sample ID</i>	<i>Depth</i>	<i>All results reported in micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>)</i>							
SSVP-1	0.7	<240	<3.8	<4.4	<5.1	<5.1	<5.1	<4.2	<25/<5.0
SSVP-2	0.7	320	<3.7	<4.4	5.1	11	<5.0	5.0	<24/<5.0
SSVP-2 DUP	0.7	<240	<3.7	<4.4	<5.0	<5.0	<5.0	<4.2	<24/--
SSVP-3	0.7	<250	5.5	<4.6	<5.3	<5.3	<5.3	<4.4	<25/<5.0
Notes: x/x Naphthalene by EPA Method TO-15/Naphthalene by EPA Method TO-17 (VI Tubes)									

Aromatic (carcinogenic) and aliphatic (non-carcinogenic) hydrocarbons APH Fraction analytical data for SSVP-1 through SSVP-3 is presented in Table 2, and summarized in Table 4.4 below.

	<i>C5-C6 Aliphatic Hydrocarbons</i>	<i>&gt;C6-C8 Aliphatic Hydrocarbons</i>	<i>&gt;C8- C10 Aliphatic Hydrocarbons</i>	<i>&gt;C10-C12 Aliphatic Hydrocarbons</i>	<i>&gt;C8-C10 Aromatic Hydrocarbons</i>	<i>&gt;C10-C12 Aromatic Hydrocarbons</i>
<i>Sample ID</i>	<i>All results reported in <math>\mu\text{g}/\text{m}^3</math></i>					
SSVP-1	<76	<97	<140	<160	<120	<130
SSVP-2	<75	<95	<130	<160	<110	<130
SSVP-2 DUP	<75	<95	<130	<160	<110	<130
SSVP-3	<79	<100	<140	<170	<120	<130

No helium was detected in samples SSVP-1, SVP-2 and SSVP-3 indicating that no ambient air entered the canisters during the sampling process.

#### **4.3 Crawl Space, Indoor and Outdoor Ambient Air, and Sub-Slab Vapor Data Interpretation**

Indoor air samples may measure BTEX and other petroleum hydrocarbon compounds within the concentration ranges commonly seen as background values measured at sites where no subsurface petroleum hydrocarbon contamination is present. There are many sources of background contamination inside buildings. Materials and substances commonly found in commercial and residential settings, such as paints, paint thinners, gasoline-powered machinery, building materials, cleaning products, dry cleaned clothing, and cigarette smoke, contain volatile organic compounds (VOCs) that may be detected by indoor air testing. Table 4.5 presents a summary of BTEX background indoor air concentrations based on the post-1990 studies evaluated in the U.S. Environmental Protection Agency (USEPA)'s *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990-2005): A compilation of Statistics for Assessing Vapor Intrusion*, June 2011.

<b>Chemical of Concern</b>	<b>Number of Studies</b>	<b>Number of Samples</b>	<b>Range % Detect</b>	<b>Total % Detects</b>	<b>RL Range (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Range of 50<sup>th</sup> % (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Range of 75<sup>th</sup> % (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Range of 90<sup>th</sup> % (<math>\mu\text{g}/\text{m}^3</math>)</b>
Benzene	14	2,615	31-100	91.1	0.05 – 1.6	<RL – 4.7	1.9 – 7.0	5.2 – 15
Toluene	12	2,065	86-100	96.4	0.03 – 1.9	4.8 – 24	12 – 41	25 – 77
Ethylbenzene	10	1,484	26-100	85.7	0.01 – 2.2	1 – 3.7	2 – 5.6	4.8 – 13
m,p – Xylene	10	1,920	52-100	92.9	0.4 – 2.2	1.5 – 14	4.6 – 21	12 – 56
o – Xylene	12	2,004	31-100	89.0	0.11 – 2.2	1.1 – 3.6	2.4 – 6.2	5.5 – 16

Notes:

1. USEPA, *Table ES-1 Ranges of Summary Statistics for Background Indoor Air Concentrations of Common VOCs Measured in North American Residences between 1990 and 2005, Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990-2005): A compilation of Statistics Assessing Vapor Intrusion*, June 2011

RL Reporting limit

For example, the range of normal background concentrations for benzene spans the 1.41 to 14.1  $\mu\text{g}/\text{m}^3$  range representing  $10^{-5}$  to  $10^{-4}$  incremental risk values published as part of the California Human Health Screening Levels (CHHSLs) by California EPA. Table 4.6 lists the Office of Environmental Health Hazard Assessment (OEHA) hazard quotient concentration values of 1 and excess cancer risk concentrations of  $10^{-6}$ .

<b>Chemical</b>	<b>Indoor Air Human Health Screening (<math>\mu\text{g}/\text{m}^3</math>)<sup>1</sup></b>	
	<b>Residential Land Use</b>	<b>Commercial/Industrial Land Use Only</b>
Benzene	8.40 E-02	1.41 E-01
Carbon Tetrachloride	5.79 E-02	9.73 E-02
1,2-Dichloroethane	1.16 E-01	1.95 E-01
cis-1,2-Dichloroethylene	3.65 E+01	5.11 E+01
trans-1,2-Dichloroethylene	7.30 E+01	1.02 E+02
Ethylbenzene	0.97 E+00 <sup>2</sup>	1.60 E+00 <sup>2</sup>
Mercury, elemental	9.40 E-02	1.31 E-01
Methyl tertiary-Butyl Ether	9.35 E+00	1.57 E+01
Naphthalene	7.20 E-02	1.20 E-01
Tetrachloroethylene	4.12 E-01	6.93 E-01
Tetraethyl Lead	3.65 E-04	5.11 E-04
Toluene	3.13 E+02	4.38 E+02
1,1,1-Trichloroethane	2.29 E+03	3.21 E+03
Trichloroethylene	1.22 E+00	2.04 E+00
Vinyl Chloride	3.11 E-02	5.24 E-02
m-Xylene	7.30 E+02 <sup>3</sup>	1.02 E+02 <sup>3</sup>

<b>TABLE 4.6 CALIFORNIA HUMAN HEALTH SCREENING LEVELS FOR INDOOR AIR AND SOIL GAS</b>		
<b>Chemical</b>	<b>Indoor Air Human Health Screening (<math>\mu\text{g}/\text{m}^3</math>)<sup>1</sup></b>	
	<b>Residential Land Use</b>	<b>Commercial/Industrial Land Use Only</b>
o-Xylene	7.30 E+02 <sup>3</sup>	1.02 E+02 <sup>3</sup>
p-Xylene	7.30 E+02 <sup>3</sup>	1.02 E+02 <sup>3</sup>

Notes:

- Reference: Appendix 1, OEHHA Target Indoor Air Concentrations and Soil-Gas Screening Numbers for Existing Building under Residential and Industrial/Commercial land uses
- Commercial/industrial properties should be evaluated using both residential and commercial/industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/industrial land use scenario only.
- Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present
- Carcinogens: CHSSLs based on target cancer risk of 10<sup>-6</sup>. Cal/EPA cancer slope factors used when available
- Noncarcinogens: CHHSLs based on target hazard quotient of 1.0
- Soil Gas: Screening levels based on soil gas data collected <1.5 meters (five feet) below a building foundation or the ground surface. Intended for evaluation of potential vapor intrusion into buildings and subsequent impacts to indoor-air. Soil gas data should be collected and evaluated at all sites with significant areas of VOC-impacted soil. Screening levels also apply to sites that overlie plumes of VOC-impacted groundwater.

1. "Residential Land Use" screening levels generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.)
2. Calculation of a screening number for the chemical outlined in OEHHA draft report, *California Human Health Screening Levels for Ethylbenzene*, November 2009
3. Representative Screening Numbers for mixed xylenes. The representative value for mixed xylene is based on the calculated lowest one amongst the three isomers.

As a result, it is not possible to interpret whether vapor migration is occurring by simply comparing indoor air concentration against the most conservative screening values, since these values do not account for background concentrations. Instead, indoor concentrations must be compared to both outdoor air and crawl space vapor concentrations to determine whether external or indoor sources are contributing to indoor air concentrations. A clear indication of active vapor migration would be a combination of indoor and outdoor air samples where indoor air contained significantly greater concentrations of petroleum hydrocarbon VOCs (e.g., BTEX) than outdoor air, and also contained significant lower concentrations of petroleum hydrocarbon VOCs than crawl space air.

Indoor air, outdoor air, and crawlspace concentrations will be evaluated in accordance with the above protocols. Criteria indicative of vapor migration should be:

1. Indoor air benzene concentrations significantly higher than outdoor air.
2. Indoor air benzene concentrations significantly higher than the range of normal background (rather than indoor air  $10^{-6}$  standard values presented in OEHHA Table 4.6 above, which are within the lower range of normal background).
3. Crawl space and/or sub-slab benzene concentrations significantly higher than indoor air.

Any other combination of concentrations, and concentration ratios, will likely indicate either an indoor or outdoor background source rather than vapor migration to the building.

This information is gathered from DTSC's October 2011 *Vapor Intrusion Guidance*.

## Section 5.0 Conclusions and Recommendations

### 5.1 Conclusions

Based on this investigation, the following conclusions can be made:

- No benzene was detected from the sub-slab vapor probes except for 5.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in SSVP-3,
- Indoor ambient air hydrocarbon concentrations detected were below Environmental Screening Levels (ESLs) except for benzene.<sup>4</sup> However the indoor benzene concentrations are similar to both outdoor and crawl space ambient air. The detected outside and crawl space ambient air concentrations likely have a significant contribution from vehicle emissions from the heavily traveled Lakeshore Avenue and Interstate 580.

If a vapor migration pathway existed, the benzene and other hydrocarbon concentrations in both the indoor and crawl space air would be higher than the concentrations in outside air.<sup>5</sup> Here concentrations of benzene and other hydrocarbon in indoor air are similar to both crawl space and outdoor air concentrations. Therefore, the concentrations detected in indoor air are likely due to sources other than sub-surface hydrocarbons.

<sup>4</sup> Environmental Screening Levels (ESLs) for shallow soil gas from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater prepared by the California Regional Water Quality Control Board, San Francisco Bay Region Interim Final November 2007, revised May 2008, revised May 2013, Table E-3.

<sup>5</sup> Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), prepared by Department of Toxic Substance Control California Environmental Protection Agency Final October 2011, page 34.



## 5.2 Recommendations and Upcoming Events

CRA recommends that no more crawl space, indoor and outdoor ambient air, and sub-slab vapor sampling is necessary as the sampling results documented in this report confirmed the results outlined in CRA's *Subsurface Investigation Report* dated February 14, 2014 and both of these sampling events indicate that no vapor migration from soil gas is occurring.

A Data Gap Investigation Plan and Focused Site Conceptual Model will be submitted to ACEH by February 6, 2015.

# Figures

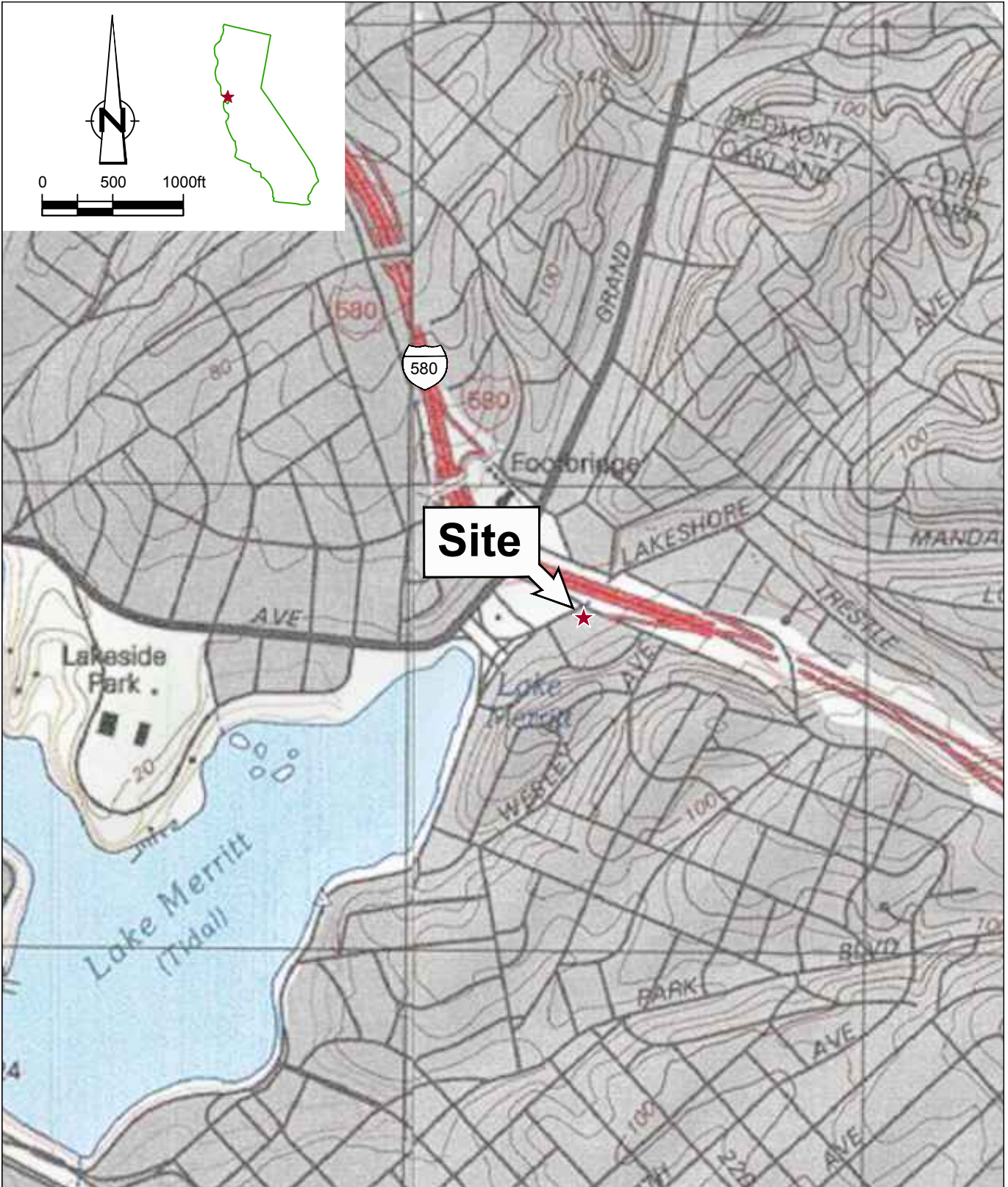
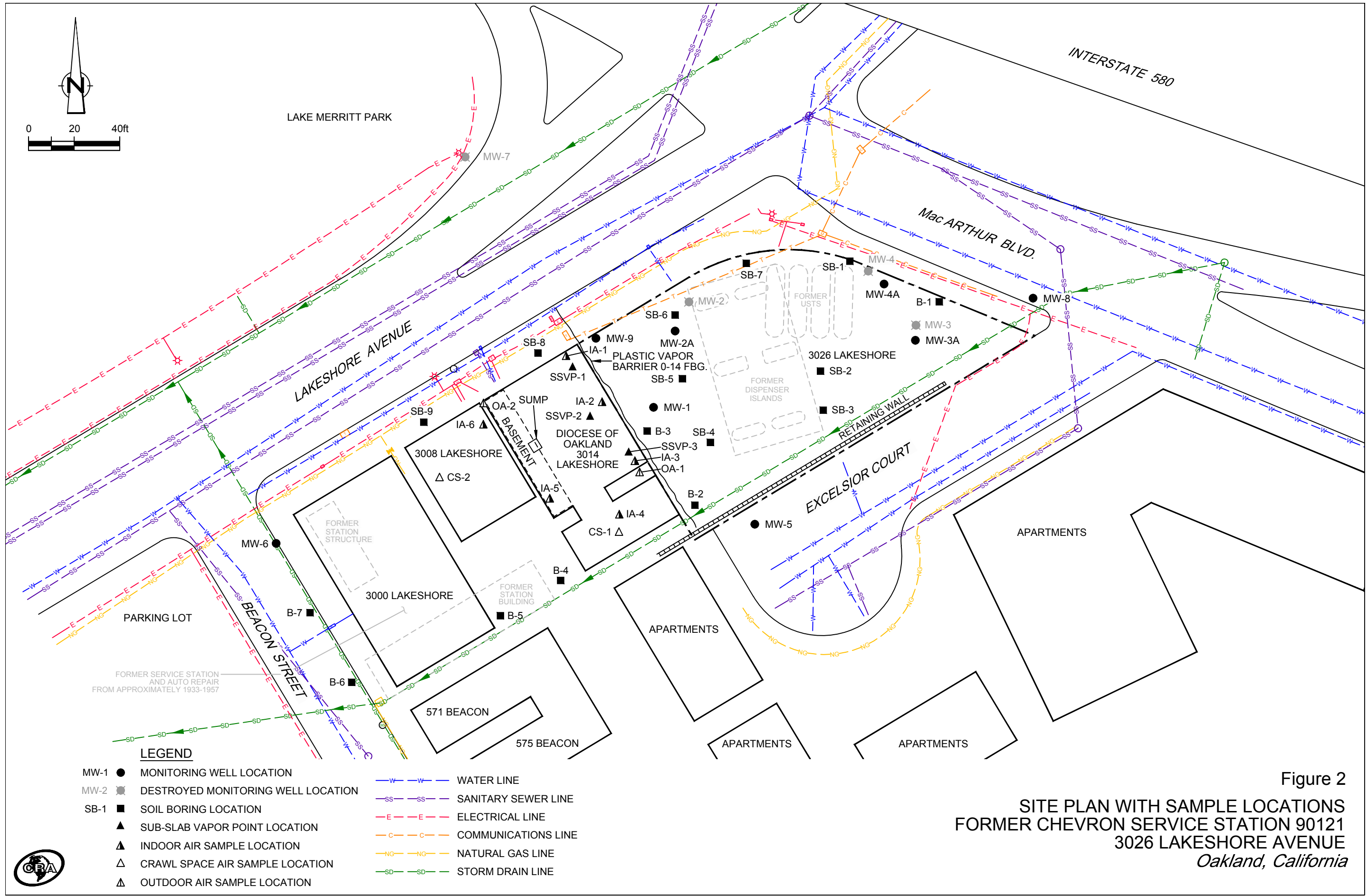


Figure 1  
 VICINITY MAP  
 FORMER CHEVRON SERVICE STATION 90121  
 3026 LAKESHORE AVENUE  
*Oakland, California*





**Figure 2**  
**SITE PLAN WITH SAMPLE LOCATIONS**  
**FORMER CHEVRON SERVICE STATION 90121**  
**3026 LAKESHORE AVENUE**  
*Oakland, California*

# Tables

TABLE 1

**CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA  
FORMER CHEVRON STATION 90121  
3026 LAKESHORE AVENUE,  
OAKLAND, CALIFORNIA**

Sample ID	Date	Sample Depth (fbg)	TPHg ( $\mu\text{g}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	Toluene ( $\mu\text{g}/\text{m}^3$ )	Ethyl- benzene ( $\mu\text{g}/\text{m}^3$ )	m,p- Xylene ( $\mu\text{g}/\text{m}^3$ )	o-Xylene ( $\mu\text{g}/\text{m}^3$ )	MTBE ( $\mu\text{g}/\text{m}^3$ )	Napthalene by TO-15 ( $\mu\text{g}/\text{m}^3$ )	Napthalene by TO-17 ( $\mu\text{g}/\text{m}^3$ )	Oxygen (% Vol)	N <sub>2</sub> (% Vol)	CO <sub>2</sub> (% Vol)	Methane (% Vol)	He (% Vol)
<i>ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Commercial/Industrial<sup>a</sup></i>			<b>2,500</b>	<b>0.42</b>	<b>1,300</b>	<b>4.9</b>	<b>440</b>	<b>440</b>	<b>47</b>	<b>0.36</b>	<b>0.36</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>
<b>2014 Indoor/Outdoor/Crawl Space Air and Soil Vapor Sampling</b>																
CS-1	10/06/14	--	<61	<b>0.56</b>	1.9	0.36	1.3	0.47	<0.54	<3.9	--	21	79	0.050	0.00026	<0.074
CS-2	10/06/14	--	<66	<b>0.64</b>	1.9	0.38	1.3	0.47	<0.58	<4.2	--	21	79	0.042	0.00047	<0.081
IA-1	10/06/14	--	<66	<b>0.54</b>	1.9	0.46	1.6	0.62	<0.58	<4.2	0.60	21	79	0.049	0.00024	<0.080
IA-2	10/06/14	--	<61	<b>0.50</b>	2.0	0.49	1.7	0.66	<0.54	<3.9	0.47	21	79	0.048	0.00022	<0.075
IA-3	10/06/14	--	<67	<b>0.55</b>	1.8	0.48	1.6	0.61	<0.59	<4.3	0.65	21	79	0.050	0.00023	<0.082
IA-4	10/06/14	--	<66	<b>0.55</b>	1.9	0.39	1.4	0.48	<0.58	<4.2	--	21	79	0.046	0.00021	<0.080
IA-5 <sup>c</sup>	10/06/14	--	<66	<b>0.60</b>	2.2	0.39	1.5	0.51	<0.58	<4.2	0.55	21	79	0.045	0.00022	<0.080
IA-6	10/06/14	--	<100	<b>0.66</b>	2.3	0.44	1.4	0.52	<0.91	<6.6	--	21	79	0.048	0.00039	<0.13
OA-1	10/06/14	--	<66	<b>0.89</b>	2.7	0.50	1.9	0.64	<0.58	<4.2	0.37	21	79	0.044	0.00017	<0.080
OA-1 DUP	10/06/14	--	<74	<b>0.99</b>	2.7	0.51	1.9	0.65	<0.65	<4.7	--	21	79	0.044	<0.00018	<0.090
OA-2	10/06/14	--	<67	<b>0.56</b>	1.7	0.36	1.3	0.46	<0.59	<4.3	--	21	79	0.045	0.00021	<0.082
SSVP-1	10/07/14	0.7	<240	<3.8	<4.4	<5.1	<5.1	<5.1	<4.2	<25	<5.0	20	79	0.74	<0.00024	<0.12
SSVP-2	10/07/14	0.7	320	<3.7	<4.4	5.1	11	<5.0	5.0	<24	<5.0	17	79	3.9	<0.00023	<0.12
SSVP-2 DUP	10/07/14	0.7	<240	<3.7	<4.4	<5.0	<5.0	<5.0	<4.2	<24	--	17	79	3.9	<0.00023	<0.12
SSVP-3	10/07/14	0.7	<250	5.5	<4.6	<5.3	<5.3	<5.3	<4.4	<25	<5.0	19	79	1.9	<0.00024	<0.12
<b>2013 Indoor/Outdoor/Crawl Space Air and Soil Vapor Sampling</b>																
CS-1	11/14/13	--	120	<b>0.79</b>	2.0	0.39	1.4	0.49	<0.61	<4.4	--	21	79	0.048	0.00092	<0.084
CS-2	11/14/14	--	94	<b>0.93</b>	2.7	0.57	2.1	0.71	<0.62	<4.5	--	21	79	0.045	0.00057	<0.086
IA-1	11/14/13	--	150	<b>0.80</b>	2.8	0.78	2.9	1.2	<0.61	<4.4	0.24	21	79	0.061	0.0013	<0.084
IA-2	11/14/13	--	230	<b>0.86</b>	5.0	0.77	3.0	1.1	<0.55	<4.0	0.098	21	79	0.063	0.0013	<0.076
IA-3	11/14/13	--	160	<b>0.79</b>	2.8	0.68	2.6	1.0	<0.60	<4.4	0.12	21	79	0.060	0.0013	<0.084
IA-4 <sup>c</sup>	11/14/13	--	150	<b>0.87</b>	2.1	0.36	1.1	0.34	<0.58	<4.2	0.055	21	79	0.047	0.0027	<0.081
IA-5	11/14/13	--	130	<b>0.80</b>	3.2	0.56	2.0	0.78	<0.51	<3.7	--	21	79	0.051	0.0010	<0.070
IA-6	11/14/13	--	410	<b>0.82</b>	2.4	0.53	2.0	0.70	<0.64	<4.7	--	21	79	0.046	0.00035	<0.089
OA-1	11/14/13	--	65	<b>1.0</b>	2.7	0.51	1.8	0.62	<0.54	<3.9	0.057	21	79	0.045	0.00024	<0.075
OA-1 DUP <sup>d</sup>	11/14/13	--	110	<1.4	3.7	<0.78	2.5	0.84	<3.2	<24	--	21	79	<0.090	<0.00090	<0.45
OA-2	11/14/13	--	90	<b>0.88</b>	2.9	0.64	2.4	0.85	<0.59	<4.3	--	21	79	0.042	0.00022	<0.082
SSVP-1	11/15/13	0.7	1,700	26	140	27	91	37	<4.2	<24	<2.5	20	80	0.39	<0.00023	<0.12

TABLE 1

**CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA  
FORMER CHEVRON STATION 90121  
3026 LAKESHORE AVENUE,  
OAKLAND, CALIFORNIA**

<i>Sample ID</i>	<i>Date</i>	<i>Sample Depth (fbg)</i>	<i>TPHg (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Benzene (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Toluene (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Ethyl- benzene (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>m,p- Xylene (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>o-Xylene (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>MTBE (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Naphthalene by TO-15 (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Naphthalene by TO-17 (<math>\mu\text{g}/\text{m}^3</math>)</i>	<i>Oxygen (% Vol)</i>	<i>N<sub>2</sub> (% Vol)</i>	<i>CO<sub>2</sub> (% Vol)</i>	<i>Methane (% Vol)</i>	<i>He (% Vol)</i>
<b>ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Commercial/Industrial<sup>a</sup></b>			<b>2,500</b>	<b>0.42</b>	<b>1,300</b>	<b>4.9</b>	<b>440</b>	<b>440</b>	<b>47</b>	<b>0.36</b>	<b>0.36</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>
SSVP-2	11/15/13	0.7	300	7.3	<4.5	<5.1	<5.1	<5.1	5.2	<25	<2.5	18	80	1.9	<0.00024	<0.12
SSVP-3	11/15/13	0.7	2,300	22	10	17	32	<5.2	<4.3	<25	12	19	80	0.34	<0.00024	0.22

**Abbreviations/Notes:**

Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method TO-15 or EPA Method TO-15 SIM

Benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method TO-15 or EPA Method TO-15 SIM

Naphthalene by EPA Method TO-15 or EPA Method TO-15 SIM or EPA Method TO-17 (VI Tubes)

Oxygen, nitrogen (N<sub>2</sub>), carbon dioxide (CO<sub>2</sub>), methane, and helium (He) by ASTM D-1946.

fbg = Feet below grade.

Micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).

Percent Volume (%).

<X = Not detected above stated laboratory method detection limit x.

-- = not analyzed or not applicable.

a = Environmental Screening Levels (ESLs) for shallow soil gas from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater prepared by the California Regional Water Quality Control Board, San Francisco Bay Region Interim Final November 2007, revised May 2008, revised May 2013, Table E-3.

b = Low-Threat Underground Storage Tank Case Closure Policy - Soil Gas Criteria No Bioattenuation Zone - prepared by the California State Water Resources Control Board, August 17, 2012.

c = Indoor air sample from the basement

d = Sample OA-1 DUP was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

**Bold** = Concentration exceeds applicable ESL.

TABLE 2

**ALIPHATIC AND AROMATIC HYDROCARBON ANALYTICAL DATA  
FORMER CHEVRON STATION 90121  
3026 LAKESHORE AVENUE,  
OAKLAND, CALIFORNIA**

Location	Date	Depth	C5-C6	>C6-C8	>C8-C10	>C10-C12	>C8-C10	>C10-C12
			Aliphatic	Aliphatic	Aliphatic	Aliphatic	Aromatic	Aromatic
Units	(fbg)		Hydrocarbons	Hydrocarbons	Hydrocarbons	Hydrocarbons	Hydrocarbons	Hydrocarbons
			Concentrations in $\mu\text{g}/\text{m}^3$					
<b>2014 Indoor/Outdoor/Crawl Space Air and Soil Vapor Sampling</b>								
CS-1	10/6/2014	--	<48	<61	<86	<100	<73	<81
CS-2	10/6/2014	--	<52	<66	<94	<110	<80	<89
IA-1	10/6/2014	--	<52	<66	<94	<110	<79	<88
IA-2	10/6/2014	--	<48	<61	<87	<100	<74	<82
IA-3	10/6/2014	--	<53	<68	<96	<110	<81	<90
IA-4	10/6/2014	--	<52	<66	<94	<110	<79	<88
IA-5	10/6/2014	--	<52	<66	<94	<110	<79	<88
IA-6	10/6/2014	--	<82	<100	<150	<180	<120	<140
OA-1	10/6/2014	--	<52	<66	<94	<110	<79	<88
OA-1 DUP	10/6/2014	--	<59	<74	<100	<130	<89	<99
OA-2	10/6/2014	--	<53	<67	<95	<110	<81	<90
SSVP-1	10/7/2014	0.7	<76	<97	<140	<160	<120	<130
SSVP-2	10/7/2014	0.7	<75	<95	<130	<160	<110	<130
SSVP-2 DUP	10/7/2014	0.7	<75	<95	<130	<160	<110	<130
SSVP-3	10/7/2014	0.7	<79	<100	<140	<170	<120	<130
<b>2013 Indoor/Outdoor/Crawl Space Air and Soil Vapor Sampling</b>								
CS-1	11/14/2013	--	<55	<69	<98	<120	<83	<93
CS-2	11/14/2013	--	<55	<70	<100	<120	<84	<94
IA-1	11/14/2013	--	<55	<69	<98	<120	<83	<93
IA-2	11/14/2013	--	<49	<62	<88	<100	<75	<83
IA-3	11/14/2013	--	<54	<68	<97	<120	<82	<92
IA-4	11/14/2013	--	<52	<66	<94	<110	<80	<89
IA-5	11/14/2013	--	<46	<58	<82	<98	<69	<77
IA-6	11/14/2013	--	<58	<73	<100	<120	<88	<98
OA-1	11/14/2013	--	<48	<61	<87	<100	<74	<82
OA-1 DUP <sup>b</sup>	11/14/2013	--	<290	<370	<530	<630	<440	<500
OA-2	11/14/2013	--	<53	<67	<95	<110	<81	<90
SSVP-1	11/15/2013	0.7	<75	<95	<130	190	200	<130
SSVP-2	11/15/2013	0.7	<77	<97	<140	<160	<120	<130
SSVP-3	11/15/2013	0.7	290	590	<140	570	<120	<130



**ALIPHATIC AND AROMATIC HYDROCARBON ANALYTICAL DATA  
FORMER CHEVRON STATION 90121  
3026 LAKESHORE AVENUE,  
OAKLAND, CALIFORNIA**

Notes:

Aliphatic and Aromatic Hydrocarbon analyses by EPA Method TO-15 GC/MS Full Scan.

fbg = Feet below grade.

mg/m<sup>3</sup> = Micrograms per cubic meter

<sup>a</sup> = Low-Threat Underground Storage Tank Case Closure Policy - Soil Gas Criteria No Bioattenuation Zone - prepared by the California

<sup>b</sup> = Sample OA-1 DUP was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

State Water Resources Board, August 17, 2012

NE = Not Established

<x = Not detected at reporting limit x.

-- = Not analyzed/not applicable.

# Appendix A

## Regulatory Correspondences



ENVIRONMENTAL HEALTH DEPARTMENT  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

April 4, 2014

Ms. Alexis Fischer  
Chevron Products Company  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
(sent via electronic mail to [AFischer@chevron.com](mailto:AFischer@chevron.com))

Subject: Request for Data Validation, a Focused Site Conceptual Model, and a Data Gap Work Plan;  
Fuel Leak Case No. RO0000284 and Geotracker Global ID T0600100328, Chevron #9-0121;  
3026 Lakeshore Avenue, Oakland, CA 94610

Dear Ms. Alexis Fischer:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Second Semi-Annual 2013 Groundwater Monitoring and Sampling Report*, dated November 20, 2013, and the *Subsurface Investigation Report*, dated February 14, 2014. The reports were submitted on your behalf by Conestoga-Rovers & Associates (CRA). Thank you for their submittal. The *Subsurface Investigation Report*, documents the installation of seven soil bores, the collection of soil and grab groundwater samples, and the collection of two crawl space vapor samples, six indoor air samples, two outdoor air samples, and three subslab vapor samples.

ACEH has evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACEH staff review, we have determined that the site fails to meet the LTCP General Criteria e (Site Conceptual Model), and the Media-Specific Criteria for Groundwater, the Media-Specific Criteria for Vapor Intrusion to Indoor Air, and the Media-Specific Criteria for Direct Contact (see Geotracker for a copy of the LTCP checklist).

Therefore, at this juncture ACEH requests that you prepare a Revised Data Gap Investigation Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below and discussed with you in a meeting with Chevron and ACEH staff on March 13, 2014.

#### TECHNICAL COMMENTS

1. **Comments on Subsurface Investigation Report** – ACEH has a number of comments relative to the referenced investigation report. These include the following:
  - a. **Data Validation Request** – The referenced *Subsurface Investigation Report* contains soil and grab groundwater analytical data that contains a significant number of footnote qualifiers indicating the data is poorly collected, and is potentially unusable to characterize the site. A data QA/QC discussion or section was not included in the report. In particular, laboratory analytical data qualifiers include the following:
    - i. Surrogate recovery in multiple soil analytical results did not meet quality control requirements.
    - ii. Reporting limits were raised due to foaming in both soil and groundwater samples.

- iii. All grab groundwater Total Petroleum Hydrocarbons (TPH) as motor oil (TPHmo) and TPH as diesel (TPHd) analysis were conducted outside hold times.
- iv. Footnotes state that preserved VOAs were used; however, the pH of three (of seven total) samples with low volatile compound detections contained a pH as high as 8.
- v. The uniformity of oxygen and nitrogen content, especially in the subslab vapor environment, warrants an evaluation of collection procedures in an effort to determine that sampling procedures or errors may have inadvertently contributed to the uniformity of results.

It appears that a review of Data Quality Objectives (DQO) and the appropriateness of the use of the data, including vapor analytical data, are warranted. Therefore ACEH requests the validation of analytical data prior to acceptance of the data for the characterization of the site, by the date identified below.

- b. **Soil Bore Log Descriptions** – A discrepancy exists between descriptions of Light Non-Aqueous Phase Liquids (LNAPL) included in the text of the report and descriptions contained on bore log B-7. The bore log does not include a note about the presence of LNAPL. At a minimum it appears appropriate to include these descriptions on the log for B-7.
2. **Low Threat Closure Policy Review** – As noted above the site has been reviewed under the LTCP and it is not eligible for closure under policy at this time. ACEH provides the following observations.

- a. **LTCP General Criteria e (Site Conceptual Model)** – According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

Our review of the case files indicates that insufficient data collection and analysis has not been presented to assess the nature, extent, and mobility of the release and to support compliance with Media Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure as described in Items b, c and d below, respectively.

- b. **LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

Our review of the case files indicates that insufficient data collection and analysis has been presented to support the requisite characteristics of plume stability or plume classification as follows:

- i. **Downgradient and Lateral Extent of Groundwater Plume** - The downgradient and lateral extent of the groundwater plume has not been adequately defined. As presently understood, there are three groundwater flow directions at the site; two (northerly and southwesterly) apparently created by the subterranean Visqueen plastic vertical sheet installed between the subject site and the adjacent downgradient property, belonging to the Archdiocese of Oakland. A third flow direction is located in the eastern corner of the site and appears to flow uphill towards Excelsior Court to the east. This area is in the vicinity of a source area and a storm drain conduit documented along the southern property boundary.

In the northerly flow direction, onsite groundwater well MW-2A is currently the most downgradient well. Well MW-2A, and the previous well MW-2, have historically contained

groundwater concentrations that LTCP technical support documents consider to be indicative of indirect evidence of LNAPL (concentrations up to 26,000 micrograms per liter [ $\mu\text{g/l}$ ] TPHg, and 5,700  $\mu\text{g/l}$  benzene). Concentrations of TPHd are not defined downgradient of the well(s) and Lake Merritt is also downgradient. The southwesterly gradient remains undefined as documented by TPHd concentrations in well MW-6. Additionally the storm drain conduit along the southern edge of the property by-passes the well network and may provide a conduit for discharge of contaminated water directly into Lake Merritt.

- ii. **Preferential Pathway and Sensitive Receptor Survey** – The *Sensitive Receptor and Preferential Pathway Survey, Response to Regulatory Comments, and Work Plan for Additional Assessment*, dated May 15, 2011 indicates there are multiple conduits in Lakeshore Avenue that may act as preferential pathways; including several large diameter sewer and storm drain trunk lines. A key reason for the collection of groundwater samples along the storm drain alignment on the eastern edge of the site and downgradient properties during the November 13, 2013 field investigation was to determine the extent this likely conduit is used in the offsite migration of petroleum contamination from the site. ACEH notes that the collection of groundwater at 25 and 20 feet, respectively in bores B-4 and B-5, does not define the downgradient extent of groundwater along this conduit; however, may, upon data validation as discussed above, define the vertical extent of groundwater contamination beneath the subject site and vicinity. Soil collected in these bores may, upon data validation, help define the downgradient extent of soil contamination along the conduit.

The referenced May 2011 report also indicates that other sensitive receptors, such as basements with basement sumps, also appear to exist within the currently undefined down- or lateral-gradient extent of the groundwater plume.

Further evaluation of potential preferential pathways and sensitive receptors appears appropriate.

- iii. **Historic Data Quality Review** – Review of groundwater analytical data from well couple MW-3 and MW-3A has not been conducted. A review of analytical data indicates that concentrations of contaminants in groundwater samples collected from well MW-3A (installed as a replacement well for MW-3) were substantially lower than samples collected from well MW-3 within a period of approximately one month (2,880 to  $<50$   $\mu\text{g/l}$  TPHg, 763 to 93  $\mu\text{g/l}$  TPHd, 355 to  $<0.5$   $\mu\text{g/l}$  benzene). Well MW-3A contains a longer screen interval that may allow dilution of hydrocarbon contaminants. An evaluation of the wells appears warranted to ensure that a source of residual hydrocarbons is not located near the storm drain line.

Please present a strategy in the Revised Data Gap Work Plan (described in Item 3 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Groundwater in the focused SCM described in Item 3 below.

- c. **LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

Our review of the case files indicates that the site data collection and analysis fail to support the requisite characteristics of one of the four scenarios. These comments apply to the subject site, which is no longer an active service station, and to the adjacent downgradient property containing a basement. Water level data indicates the site may not have a bioattenuation zone as defined by the LTCP, as the depth to groundwater is as shallow as the ground surface at times of the year. Additionally, concentrations greater than 100 mg/kg TPH are present in the 0 to 5 foot

depth interval at multiple locations on the subject site as well as immediately upgradient of the offsite basement with documented infiltration of contaminated groundwater. At present no onsite soil vapor samples have been collected at the former service station.

Subslab indoor air outdoor crawl space sampling was conducted at the site in Nov 2013. A review of the crawl space, outdoor air, and indoor air vapor data collected indicates very uniform TPHg, BTEX, MTBE, and naphthalene results in each environment. ACEH notes that all benzene vapor concentrations, including outdoor air samples, are above generic but conservative Environmental Screening Levels (ESLs) promulgated by the San Francisco Regional Water Quality Control Board (RWQCB). Concentrations below ESLs are generally considered to be protective of human health. ACEH also notes that the site is in a very busy area of Oakland, and is just west of an onramp to I-580 south, thus anticipates that air concentrations could be expected to be elevated above indoor ESLs.

Based on the data collected CRA recommends conducting an additional round of sampling to confirm the results of samples collected. ACEH notes that concentrations of B and ethylbenzene in groundwater indicate these constituents not pose a risk to indoor air. However, ACEH also notes that naphthalene, which is one of the criteria used in the LTCP, has not been evaluated in soil, groundwater, or air even though a significant source of diesel appears to exist. Therefore ACEH requests the addition of the analyte to groundwater and vapor samples collected in the future.

ACEH has a number of comments and observations in regards to the vapor sampling effort conducted at the site in November 2013, that are not discussed in the *Subsurface Investigation Report*, dated February 14, 2014. Clarification of sampling procedures and building conditions appears warranted to validate the sampling results.

- i. Indoor air sampling analytical data suggest that there is no difference between indoor and outdoor air; that they are equilibrated. This is atypical and suggests that the windows and doors may have been open during the sampling event or that the HVAC unit was on and had equilibrated or had entirely replaced indoor air with outside air. This is additionally indicated by the building survey form for 3008 Lakeshore Avenue that includes a note about an open door in the back storage area. ACEH would expect that keeping doors open is seasonally not a normal practice at the building, therefore please clarify if the door or windows were closed during the 24 hour collection time period, or if changes in door or window position occurred during the sampling period.
- ii. Review of the building survey forms indicates that indoor air sample IA-4 was collected on the first floor of the Archdiocese building, and not in the basement near the elevator sump as requested, and also stated in the text of the report. It appears that the basement was not included in the building survey, as the location of the elevator (on any floor) and the elevator sump in the basement is not depicted in the building diagram. This is critical as sump seepage water samples have consistently detected petroleum compounds (TPHd, with and without silica gel cleanup, TPHg, BTEX, and MTBE). Please clarify whether a sample was collected near the basement sump as requested.
- iii. A standard statement is included in the report that a shroud atmosphere of approximately 40% helium was created during vapor sampling; however, there are no helium concentrations reported for the shroud, either as meter readings or through laboratory analysis to validate the statement. Data validation, requested above, must include this detail.

Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Vapor Intrusion to Indoor Air in a SCM that assures that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to occupants of adjacent buildings.

- d. **LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria** – The LTCP describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses a low threat to human health. According to the policy, release sites

where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if the maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth bgs. Alternatively, the policy allows for a site specific risk assessment that demonstrates that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health, or controlling exposure through the use of mitigation measures, or institutional or engineering controls.

Our review of the case files indicates that insufficient data collection and analysis has been presented to satisfy the media-specific criteria for direct contact and outdoor air exposure. Specifically, the presence of TPHmo range hydrocarbons at the site and vicinity indicate that while a waste oil UST has not been reported at the site, the source of the TPHmo is unknown and may suggest the presence of an undocumented WO UST. At present, naphthalene soil analytical data is not documented to have been collected in a source area for motor oil at the site. It appears appropriate to determine the source of the TPHmo and collect soil analytical data for naphthalene and polycyclic aromatic hydrocarbons (PAHs) in the source area(s). The presence of TPHd at the site further indicates the collection of these analytical parameters is appropriate.

Additionally, several tank or product line removal reports document the presence of benzene concentrations at 2.5 feet bgs beneath product piping, and ranging between 23 to 40 mg/kg. Some of this area may have been vertically overexcavated; however, the lateral extent of the removal, or the presence of residual contamination that affects this criterion, has not been confirmed.

Therefore, please present a strategy as described in Item 3 below to collect sufficient data to satisfy the direct contact and outdoor air exposure criteria in source areas (dispenser locations, former waste oil locations, etc.). Sample and analyze soil at the five and ten foot intervals, at the groundwater interface, lithologic changes, and at areas of obvious impact. Also, collect a groundwater sample from each boring and propose the requisite analysis including naphthalene and PAH analysis.

Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Direct Contact and Outdoor Air Exposure in the focused SCM described in Item 3 below that assures that exposure to petroleum constituents in soil will have no significant risk of adversely affecting human health.

- 3. Data Gap Investigation Work Plan and Focused Site Conceptual Model** – Please prepare a Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (DQOs) that relate the data collection to each LTCP criteria. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to.

In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see Attachment A "Site Conceptual Model Requisite Elements". Please sequence activities in the proposed revised data gap investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

- 4. Missing Subsurface Investigation Report and Associated Data** – Soil bores SB-1 to SB-7 were installed at the site at some time in the past; however, an associated report and analytical data has not been submitted to ACEH or to Geotracker. The bore locations appear to have been installed in useful locations, and thus fill data gaps in the understanding of contaminant distribution in soil, and perhaps groundwater, at the site. Therefore ACEH requests the submittal of the report to the ACEH ftp site and to Geotracker. Depending on the date of the report, it may be uploadable without a perjury statement as a historic document (pre-2006).
- 5. Future Site Plans** – As of approximately August 2010 all fuel dispensing infrastructure was removed from the site. While the subject site is no longer an active service station, future plans for the site have not been provided. In order to help with a closure analysis under the LTCP, ACEH requests

Ms. Alexis Fischer  
RO0000284  
April 4, 2014, Page 6

that future site plans or intensions be provided in the requested Data Gap Work Plan and focused SCM.

### TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **April 25, 2014** – Missing Report (SB-1 to SB-7 data)  
File to be named: RO284\_SWI\_R\_yyyy-mm-dd
- **May 16, 2014** – First Semiannual 2014 Groundwater Monitoring Report  
File to be named: RO284\_GWM\_R\_yyyy-mm-dd
- **July 3, 2014** – Data Gap Investigation Plan and Focused Site Conceptual Model  
File to be named: RO284\_WP\_SCM\_R\_yyyy-mm-dd
- **November 21, 2014** – Second Semiannual 2014 Groundwater Monitoring Report  
File to be named: RO284\_GWM\_R\_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org).

Sincerely,



Digitally signed by Mark E. Detterman  
DN: cn=Mark E. Detterman, o, ou, email,  
c=US  
Date: 2014.04.04 15:13:02 -07'00'

Mark E. Detterman, P.G., C.E.G.  
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations  
Electronic Report Upload (ftp) Instructions

Attachment A – Site Conceptual Model Requisite Elements

cc: Nathan Lee, Conestoga-Rovers & Associates, Inc., 5900 Hollis Street, Suite A, Emeryville, CA 94608; (sent via electronic mail to [nlee@craworld.com](mailto:nlee@craworld.com))

Dilan Roe, ACEH (sent via electronic mail to [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
Mark Detterman (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))  
Electronic file, GeoTracker



## Attachment 1

### Responsible Party(ies) Legal Requirements/Obligations

#### REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements: ([http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)).

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

#### UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)</b>	REVISION DATE: July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

## REQUIREMENTS

- Please **do not** submit reports as attachments to electronic mail.
- Entire report including cover letter must be submitted to the ftp site as a **single Portable Document Format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

## Submission Instructions

- 1) Obtain User Name and Password
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i) Send an e-mail to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org)
  - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
    - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
  - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
  - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
  - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

**ATTACHMENT A**

**Site Conceptual Model Requisite Elements**

## ATTACHMENT A

### Site Conceptual Model

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 2 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

- a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.
- b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.
- c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

## ATTACHMENT A

### Site Conceptual Model (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

- d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.
- e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.
- f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.
- g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).
- h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).
- i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate.
- j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

TABLE 1  
INITIAL SITE CONCEPTUAL MODEL

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	<p>The site is in the northwest portion of the Livermore Valley, which consists of a structural trough within the Diablo Range and contains the Livermore Valley Groundwater Basin (referred to as "the Basin") (DWR, 2006). Several faults traverse the Basin, which act as barriers to groundwater flow, as evidenced by large differences in water levels between the upgradient and downgradient sides of these faults (DWR, 2006). The Basin is divided into 12 groundwater basins, which are defined by faults and non-water-bearing geologic units (DWR, 1974).</p> <p>The hydrogeology of the Basin consists of a thick sequence of fresh-water-bearing continental deposits from alluvial fans, outwash plains, and lacustrine environments to up to approximately 5,000 feet bgs (DWR, 2006). Three defined fresh-water bearing geologic units exist within the Basin: Holocene Valley Fill (up to approximately 400 feet bgs in the central portion of the Basin), the Plio-Pleistocene Livermore Formation (generally between approximately 400 and 4,000 feet bgs in the central portion of the Basin), and the Pliocene Tassajara Formation (generally between approximately 250 and 5,000 or more feet bgs) (DWR, 1974). The Valley Fill units in the western portion of the Basin are capped by up to 40 feet of clay (DWR, 2006).</p>	None	NA
	Site	<p><b>Geology:</b> Borings advanced at the site indicate that subsurface materials consist primarily of finer-grained deposits (clay, sandy clay, silt and sandy silt) with interbedded sand lenses to 20 feet below ground surface (bgs), the approximate depth to which these borings were advanced. The documented lithology for one on-site boring that was logged to approximately 45 feet bgs indicates that beyond approximately 20 feet bgs, fine-grained soils are present to approximately 45 feet bgs. A cone penetrometer technology test indicated the presence of sandier lenses from approximately 45 to 58 feet bgs and even coarser materials (interbedded with finer-grained materials) from approximately 58 feet to 75 feet bgs, the total depth drilled. The lithology documented at the site is similar to that reported at other nearby sites, specifically the Montgomery Ward site (7575 Dublin Boulevard), the Quest laboratory site (6511 Golden Gate Drive), the Shell-branded Service Station site (11989 Dublin Boulevard), and the Chevron site (7007 San Ramon Road).</p> <p><b>Hydrogeology:</b> Shallow groundwater has been encountered at depths of approximately 9 to 15 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site.</p>	<p>As noted, most borings at the site have been advanced to approximately 20 feet bgs, and one boring has been advanced and logged to 45 feet bgs; CPT data was collected to 75 feet bgs at one location. Lithologic data will be obtained from additional borings that will be advanced on site to further the understanding of the subsurface, especially with respect to deeper lithology.</p> <p>The on-site shallow groundwater horizontal gradient has not been confirmed. Additionally, it is not known if there may be a vertical component to the hydraulic gradient.</p>	<p>Two direct push borings and four multi-port wells will be advanced to depth (up to approximately 75 feet bgs) and soil lithology will be logged. See items 4 and 5 on Table 2.</p> <p>Shallow and deeper groundwater monitoring wells will be installed to provide information on lateral and vertical gradients. See Items 2 and 5 on Table 2.</p>
Surface Water Bodies		The closest surface water bodies are culverted creeks. Martin Canyon Creek flows from a gully west of the site, enters a culvert north of the site, and then bends to the south, passing approximately 1,000 feet east of the site before flowing into the Alamo Canal. Dublin Creek flows from a gully west of the site, enters a culvert approximately 750 feet south of the site, and then joins Martin Canyon Creek approximately 750 feet southeast of the site.	None	NA
Nearby Wells		The State Water Resources Control Board's GeoTracker GAMA website includes information regarding the approximate locations of water supply wells in California. In the vicinity of the site, the closest water supply wells presented on this website are depicted approximately 2 miles southeast of the site; the locations shown are approximate (within 1 mile of actual location for California Department of Public Health supply wells and 0.5 mile for other supply wells). No water-producing wells were identified within 1/4 mile of the site in the well survey conducted for the Quest Laboratory site (6511 Golden Gate Drive; documented in 2009); information documented in a 2005 report for the Chevron site at 7007 San Ramon Road indicates that a water-producing well may exist within 1/2 mile of the site.	A formal well survey is needed to identify water-producing, monitoring, cathodic protection, and dewatering wells.	Obtain data regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).

**TABLE 2**  
**DATA GAPS AND PROPOSED INVESTIGATION**

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Evaluate the possible presence of impacts to deeper groundwater.  Evaluate deeper groundwater concentration trends over time.  Obtain data regarding the vertical groundwater gradient.  Obtain more lithological data below 20 feet bgs.	Install four continuous multichannel tubing (CMT) groundwater monitoring wells (aka multi-port wells) to approximately 65 feet bgs in the northern parking lot with ports at three depths (monitoring well locations may be adjusted pending results of shallow grab groundwater samples; we will discuss any potential changes with ACEH before proceeding). Groundwater monitoring frequency to be determined. Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged. However, information regarding the moisture content of soil may not be reliable using sonic drilling technology (two borings will be logged using direct push technology; see Item 4, above).	One well is proposed at the western (upgradient) property boundary to confirm that there are no deeper groundwater impacts from upgradient. Two wells are proposed near the center of the northern parking lot to evaluate potential impacts in an area where deeper impacts, if any, would most likely to be found. One well is proposed at the eastern (downgradient) property boundary to confirm that there are no impacts extending off-site. Port depths will be chosen based on the locations of saturated soils (as logged in direct push borings; see Item 4, above), but are expected at approximately 15, 45, and 60 feet bgs.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
6	Evaluate possible off-site migration of impacted soil vapor in the downgradient direction (east).  Evaluate concentration trends over time.	Install 4 temporary nested soil vapor probes at approximately 4 and 8 feet bgs along the eastern property boundary. Based on the results of the sampling, two sets of nested probes will be converted to vapor monitoring wells to allow for evaluation of VOC concentration trends over time.	Available data indicate that PCE and TCE are present in soil vapor in the eastern portion of the northern parking lot. Samples are proposed on approximately 50-foot intervals along the eastern property boundary to provide a transect of concentrations through the vapor plume. The depths of 4 and 8 feet bgs are chosen to provide data closest to the source (i.e., groundwater) while avoiding saturated soil, and also provide shallower data to help evaluate potential attenuation within the soil column. Two sets of nested vapor probes will be converted into vapor monitoring wells (by installing well boxes at ground surface); the locations of the permanent wells will be chosen based on the results of samples from the temporary probes.	<i>Soil vapor:</i> VOCs by EPA Method TO-15.
7	Evaluate potential for off-site migration of impacted groundwater in the downgradient direction (east).	Advance two borings to approximately 20 feet bgs in the parking lot of the property east of the Crown site for collection of grab groundwater samples.	Two borings are proposed off-site, on the property east of the Crown site, just east of the building in the expected area of highest potential VOC concentrations.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
8	Evaluate VOC concentrations just north of the highest concentration area.	Advance two borings to approximately 20 feet bgs north of Building A for collection of soil and grab groundwater samples. Soil samples will be collected at two depths in the vadose zone. Soil samples will be collected based on field indications of impacts (PID readings, odor, staining) or, in the absence of field indications of impacts, at 5 and 10 feet bgs.	The highest concentrations of PCE in groundwater were detected at boring NM-B-32, just north of Building A. The nearest available data to the north are approximately 75 feet away. One of the borings will be advanced approximately 20 feet north of NM-B-32 to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and former boring NM-B-33 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.  <i>Soil:</i> VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
9	Evaluate VOC concentrations in soil vapor in the south parcel of the site.	Install four temporary soil vapor probes at approximately 5 feet bgs around boring SV-25, where PCE was detected in soil vapor at a low concentration.	PCE was detected in soil vapor sample SV-25 in the southern parcel, although was not detected in groundwater in that area. Three probes will be installed approximately 30 feet from of boring SV-25 to attempt to delineate the extent of impacts. A fourth probe is proposed west of the original sample, close to the property boundary and the location of mapped utility lines, which may be a potential conduit, to evaluate potential impacts from the west.	<i>Soil vapor:</i> VOCs by EPA Method TO-15.
10	Obtain additional information regarding subsurface structures and utilities to further evaluate migration pathways and sources.	Ground penetrating radar (GPR) and other utility locating methodologies will be used, as appropriate, to further evaluate the presence of unknown utilities and structures at the site.	Utilities have been identified at the site that include an on-site sewer lateral and drain line, and shallow water, electric, and gas lines. Given the current understanding of the distribution of PCE in groundwater at the site, it is possible that other subsurface utilities, and specifically sewer laterals, exist that may act as a source or migration pathway for distribution of VOCs in the subsurface.	NA

## Lee, Nathan

---

**From:** Detterman, Mark, Env. Health [Mark.Detterman@acgov.org]  
**Sent:** Friday, November 21, 2014 9:40 AM  
**To:** Lee, Nathan  
**Cc:** Roe, Dilan, Env. Health; Coulter, Alexis N  
**Subject:** RE: Case No. RO0000284, Former Chevron 9-0121; 3026 Lakeshore Ave, Oakland - Data Validation, a Focused Site Conceptual Model, and a Data Gap Work Plan - Extension Request

Nathan,

Please use this email to document a revised delivery date of February 6, 2014 for the report. This is shorter than requested; however, in reviewing the case history extensions have previously been provided from the original date of July 3, 2014.

*Mark Detterman*

*Senior Hazardous Materials Specialist, PG, CEG*

*Alameda County Environmental Health*

*1131 Harbor Bay Parkway*

*Alameda, CA 94502*

*Direct: 510.567.6876*

*Fax: 510.337.9335*

*Email: [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org)*

*PDF copies of case files can be downloaded at:*

*<http://www.acgov.org/aceh/lop/ust.htm>*

---

**From:** Lee, Nathan [<mailto:nlee@croworld.com>]  
**Sent:** Thursday, November 20, 2014 2:51 PM  
**To:** Detterman, Mark, Env. Health  
**Cc:** Roe, Dilan, Env. Health; Coulter, Alexis N  
**Subject:** Case No. RO0000284, Former Chevron 9-0121; 3026 Lakeshore Ave, Oakland - Data Validation, a Focused Site Conceptual Model, and a Data Gap Work Plan - Extension Request

Mark and Dilan,

Conestoga-Rovers and Associates (CRA) on behalf of Chevron Environmental Management Company (EMC) would like to request an extension for the request for *Data Validation, a Focused Site Conceptual Model, and a Data Gap Work Plan* which was requested by Alameda County Environmental Health (ACEH) in their letter dated April 4, 2014. As discussed in the meeting with ACEH, and EMC at the ACEH offices on November 20, 2014 we are requesting an extension of **March 27, 2014** for the submittal of the *Data Validation, a Focused Site Conceptual Model, and a Data Gap Work Plan* is requested. The results from the sub-slab, crawl space and ambient air sampling will be submitted in a *Vapor Assessment Report* that will be submitted by December 12, 2014.

Thanks,

**Nathan Lee, P.G.**  
**Conestoga-Rovers & Associates (CRA)**

2300 Clayton Road, Suite 920

Concord, CA 94520

Phone: 925.849.1003



Fax: 510.420.9170  
Cell: 510.385.2499  
Email: [nlee@CRAworld.com](mailto:nlee@CRAworld.com)

---

**CRA and GHD have merged! To learn more, visit [www.CRAworld.com/ghd](http://www.CRAworld.com/ghd)**

# Appendix B

## Summary of Environmental Investigation and Remediation

## SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

*Former Chevron Service Station 90121*

*3026 Lakeshore Avenue*

*Oakland, California*

### **1967 Source Leak**

In July 1967, a 2,000-gallon inventory loss was discovered. The steel underground storage tanks (USTs) were removed and replaced with new USTs double wrapped in asphalt. A 32-inch long gash was observed in one of the removed tanks. This information was reported in Pacific Environmental Group, Inc.'s (PEG) October 4, 1993 *Remedial Feasibility Study*.

### **Prior to 1981 Monitoring Well Installation**

Six monitoring wells were installed between late the late 1970's and 1981 and used as recovery wells to recover light non aqueous-phase liquids (LNAPL). Installation dates and well construction logs were unavailable. This information was reported in PEG's October 4, 1993 *Remedial Feasibility Study*.

### **1980 Tank Replacement**

A tank tightness test indicated that one of the USTs may have had a leak and was subsequently replaced with a fiberglass UST. An undocumented quantity of soil was removed from the site during UST replacement. A plastic impermeable barrier extending to approximately 14 to 16 feet below grade (fbg) was installed along the southwestern property line. This information was reported in PEG's October 4, 1993 *Remedial Feasibility Study*.

### **1981 Monitoring Well Installation**

Four additional 8-inch diameter monitoring wells were installed in July 1981. In August 1981, a pump test was performed to determine groundwater draw down and production rates. Additional information is available in Groundwater Technology, Inc.'s (GTI) *Considerations on Retrieval of Product from Groundwater*. The report is not dated.

### **1984 Station Rebuild and UST Abandonment**

In 1984, the station was torn down and completely rebuilt. During renovation two USTs, approximately 500 to 1,000 gallons, were discovered beneath the sidewalk. The USTs were abandoned in place by filling them with grout. Approximately 740 cubic yards of soil related to the site redevelopment were over-excavated and disposed of offsite. This information was reported in PEG's October 4, 1993 *Remedial Feasibility Study*.

### ***1984 Basement Inspections***

The building tenants at 3014 Lakeshore Avenue complained of petroleum odors in the building. No odor or sheen was noted in the basement. A letter was sent to the property owner by Chevron stating that Chevron had been monitoring the basement during the two previous years (1982 and 1983) and did not find any evidence of hydrocarbons. This information was reported in PEG's October 4, 1993 *Remedial Feasibility Study*.

### ***1990 UST Repair***

A hole created by repetitive tank volume gauging with a stick was discovered in the unleaded gasoline UST. The hole was repaired and the UST was put back in service. This information was reported in PEG's October 4, 1993 *Remedial Feasibility Study*.

### ***1991 Monitoring Well Destruction***

In March 1991 six monitoring wells were destroyed and in April 1991 two monitoring wells were destroyed. Additional information available in GTI's April 25, 1991 *Destruction of Five Groundwater Monitoring Wells and Three Groundwater Extraction Wells*.

### ***1991 Monitoring Well Installation***

On August 7 and 13, 1991 monitoring wells MW-1 through MW-4 were installed. Additional information is available in GTI's October 18, 1991 *Well Installation Report*.

### ***1992 Monitoring Well Installation and Destruction***

In June 1992, offsite monitoring wells MW-5 through MW-8 were installed and onsite well MW-1 was destroyed. Additional information is available in GTI's July 31, 1992 *Environmental Assessment Report*.

### ***1993 Feasibility Study***

In October 1993, PEG completed a remedial feasibility study and recommended natural attenuation as the cleanup method. Additional information is available in PEG's October 4, 1993 *Remedial Feasibility Study*.

### ***1996 Product Piping and Dispenser Replacement***

In September 1996, the product piping and dispensers were replaced. Soil samples were collected from beneath the dispensers and product piping at depths ranging from 2 to 3 fbg. Approximately 100 cubic yards of soil was removed and disposed of offsite. Additional information is available in Touchstone Development's November 1, 1996 *Product Piping Removal and Soil Sampling Report*.

**1996 Well Destruction**

In October 1996 one well was destroyed. Additional information is available in RRM Engineering Contracting Firm's October 2, 1996 *Well 1S/3W25R80 Abandonment Document Letter*.

**1999 Well Installation**

In April 1999, onsite monitoring well MW-9 was installed, and ¾-inch diameter wells MW-2 through MW-4 were destroyed and replaced with 2-inch diameter wells MW-2A through MW-4A. Additional information is available in Gettler-Ryan's May 26, 1999 *Monitoring Well Destruction and Installation Report*.

**2001 Site Conceptual Model**

In October 2001, Delta Environmental Consultants, Inc. (Delta) completed a site conceptual model and recommended further offsite, downgradient delineation of dissolved hydrocarbons by installing additional monitoring wells to the southwest. Additional information is available in Delta's October 15, 2001 *Site Conceptual Model*.

**2006 Offsite Borings**

In August 2006, Cambria Environmental Technology, Inc. (Cambria) supervised the advancement of offsite borings SB-8 and SB-9 as part of the ongoing site assessment. Boring SB-10 was not advanced due to refusal and boring SB-11 was not advanced due to its location on the opposite side of a newly installed culvert. Additional information is available in Cambria's October 20, 2006 *Additional Subsurface Investigation Report*.

**2007 Offsite Sump Sampling**

In May 2007, CRA collected a single grab-groundwater sample from the sump located downgradient in the Diocese of Oakland office building basement. CRA agreed with ACEH to add sump monitoring to the semi-annual groundwater monitoring and sampling schedule once an access agreement was in place to allow regularly scheduled sump sampling. Additional information is available in CRA's July 12, 2007 *Offsite Sampling Report*.

**2010 Station Demolition and Fueling Facilities Removal**

On August 10, 2010, CRA observed Musco Excavators, Inc. remove the USTs and associated fuel piping. CRA collected soil samples EX-1 through EX-6 beneath the former USTs at 9.5 fbg, P-1 through P-14 beneath the former product piping at 4 and 6 fbg, and soil stockpile samples SS-1 through SS-3. Groundwater sample GW-1 was collected from the UST excavation. Additional information is available in CRA's September 9, 2010 *Underground Storage Tank Removal and Soil Sampling Report*.

***2013 Subsurface Investigation***

On November 11 through 13, 2013, CRA observed Vapor Tech Services advanced soil borings B-1 through B-7 onsite and offsite to depths between 11 to 27.5 fbg to assess downgradient delineation of petroleum hydrocarbons. CRA also observed the installation of sub-slab vapor probes SSVP-1 through SSVP-3 in the adjacent property located at 3014 Lakeshore Avenue to assess vapor intrusion risk. CRA sampled indoor, outdoor, and crawl space air, and sub-slab soil vapor at adjacent properties downgradient to the site. Additional information is available in CRA's February 14, 2014 *Subsurface Investigation Report*.

# Appendix C

## Building Survey and Building Chemical Screening Forms

### APPENDIX L - BUILDING SURVEY FORM

Preparer's Name: OLIVER YAN Date/Time Prepared: 10/6/14 @ 10:00  
Affiliation: CONESTOGA-ROVERS & ASSOCIATES. Phone Number: (510) 420-3372

#### Occupant Information

Occupant Name: The Roman Catholic Bishop of Oakland (vacant) Interviewed:  Yes  No  
Mailing Address: 3014 Lakeshore Avenue  
City: Oakland State: California Zip Code: 94610  
Phone: N/A Email: N/A

#### Owner/Landlord Information (Check if same as occupant )

Occupant Name: The Roman Catholic Bishop of Oakland Interviewed:  Yes  No  
Mailing Address: 2121 Harrison Street, Suite 100  
City: Oakland State: California Zip Code: 94612  
Phone: N/A Email: N/A

#### Building Type (Check appropriate boxes)

- Residential  Residential Duplex  Apartment Building  Mobile Home  Commercial (office)  
 Commercial (warehouse)  Industrial  Strip Mall  Split Level  Church  School

#### Building Characteristics

Approximate Building Age (years): DID NOT KNOW Number of Stories: 2  
Approximate Building Area (square feet): 8,500 sq ft Number of Elevators: 0

#### Foundation Type (Check appropriate boxes)

- Slab-on-Grade  Crawl Space  Basement

#### Basement Characteristics (Check appropriate boxes)

- Dirt Floor  Sealed  Wet Surfaces  Sump Pump  Concrete Cracks  Floor Drains

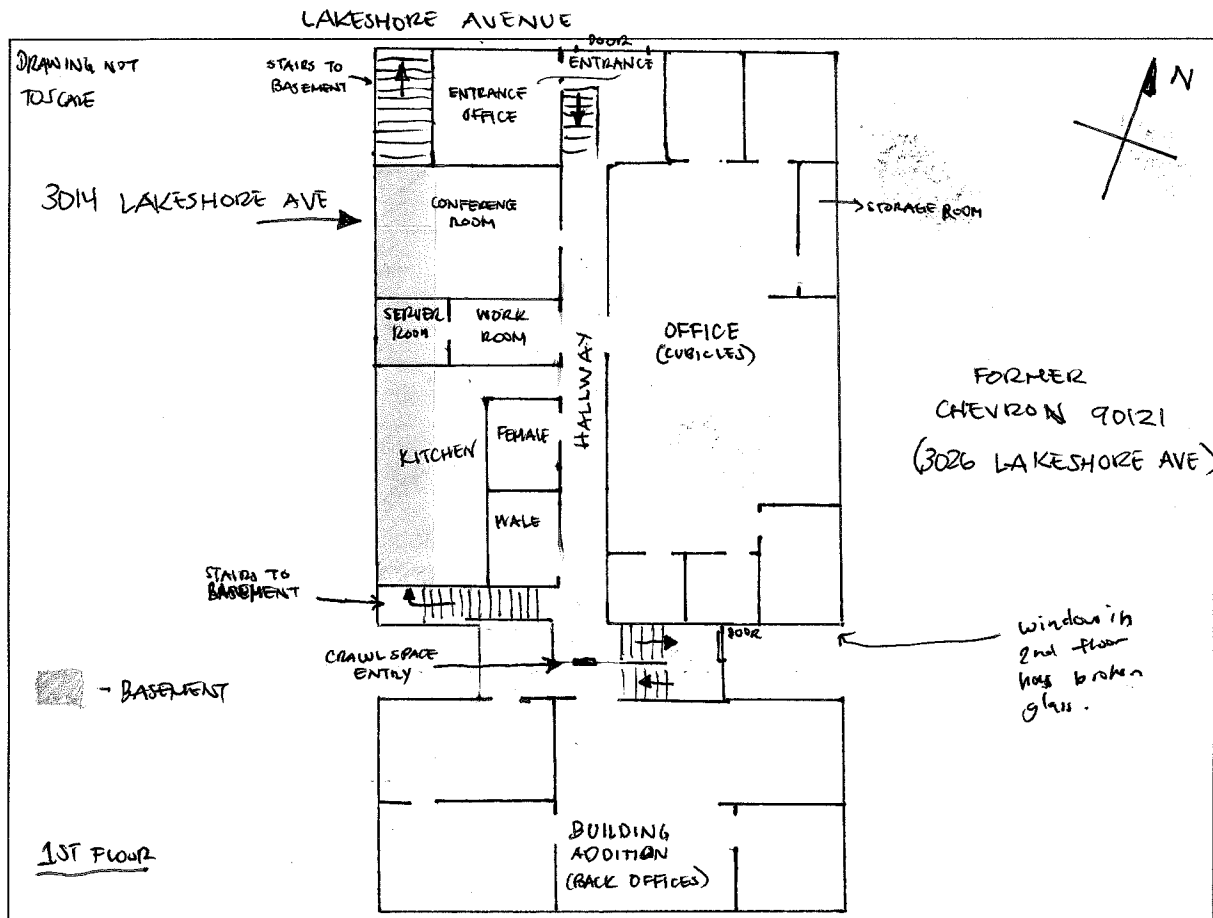
#### Factors Influencing Indoor Air Quality

- |  |   |
|--|---|
| Is there an attached garage?                                   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Is there smoking in the building?                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Is there new carpet or furniture?                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Have clothes or drapes been recently dry cleaned?              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Has painting or staining been done with the last six months?   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Has the building been recently remodeled?                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Has the building ever had a fire?                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Is there a hobby or craft area in the building?                | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Is gun cleaner stored in the building?                         | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Is there a fuel oil tank on the property?                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Is there a septic tank on the property?                        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                 |
| Has the building been fumigated or sprayed for pests recently? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |
| Do any building occupants use solvents at work?                | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____ |



### Sampling Locations

Draw the general floor plan of the building and denote locations of sample collection. Indicate locations of doors, windows, indoor air contaminant sources and field instrument readings.



Primary Type of Energy Used (Check appropriate boxes)

- Natural Gas  Fuel Oil  Propane  Electricity  Wood  Kerosene

### Meteorological Conditions

Describe the general weather conditions during the indoor air sampling event.

WGRM → 75°F + → Sunny; no clouds

### General Comments

Provide any other information that may be of importance in understanding the indoor air quality of this building.

Building has been unoccupied for at least 4 years according to Diocese consultant. Doors are closed; one window above in the 2nd floor is open; due to broken glass window; not replaced by Diocese. Doors and windows on the first floor are all closed. Basement door is closed; so sampling occurred in the basement w/ the door closed.

APPENDIX M – BUILDING SCREENING FORM

Occupant of Building Valant (The Roman Catholic Bishop of Oakland)

Address 3014 Lakeshore Avenue,

City Oakland, CA

Field Investigator Yan, Oliver Date \_\_\_\_\_

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
0.0 ppm	Entry way/Entry way office	bag of mail; white spray paint can.
"	conference room	None; just old desks.
"	Hallway	Air filters; Box that's wet, but dry now
"	Hallway bathroom - male	3 trash bags; no chemicals
"	Hallway bathroom - female	none
"	Building Addition - back offices	fire extinguisher.
	Kitchen	fire extinguisher
	Kitchen	roach killer 1 can
	Kitchen - cabinets	None.
	Work room	2 fire extinguishers
	Work room - closet (server room)	battery → car battery.
<u>2nd Floor</u>		
	2nd floor bathroom	garum leaves air freshener
	2nd floor - side office	ink cartridges
	2nd floor	2 printers.
	2nd floor - back offices	none
	Crawl space	fire extinguisher.

Comments:

1st floor bathroom → female looks clean; men's room has trash bags (3)  
smells bad; doors are open.



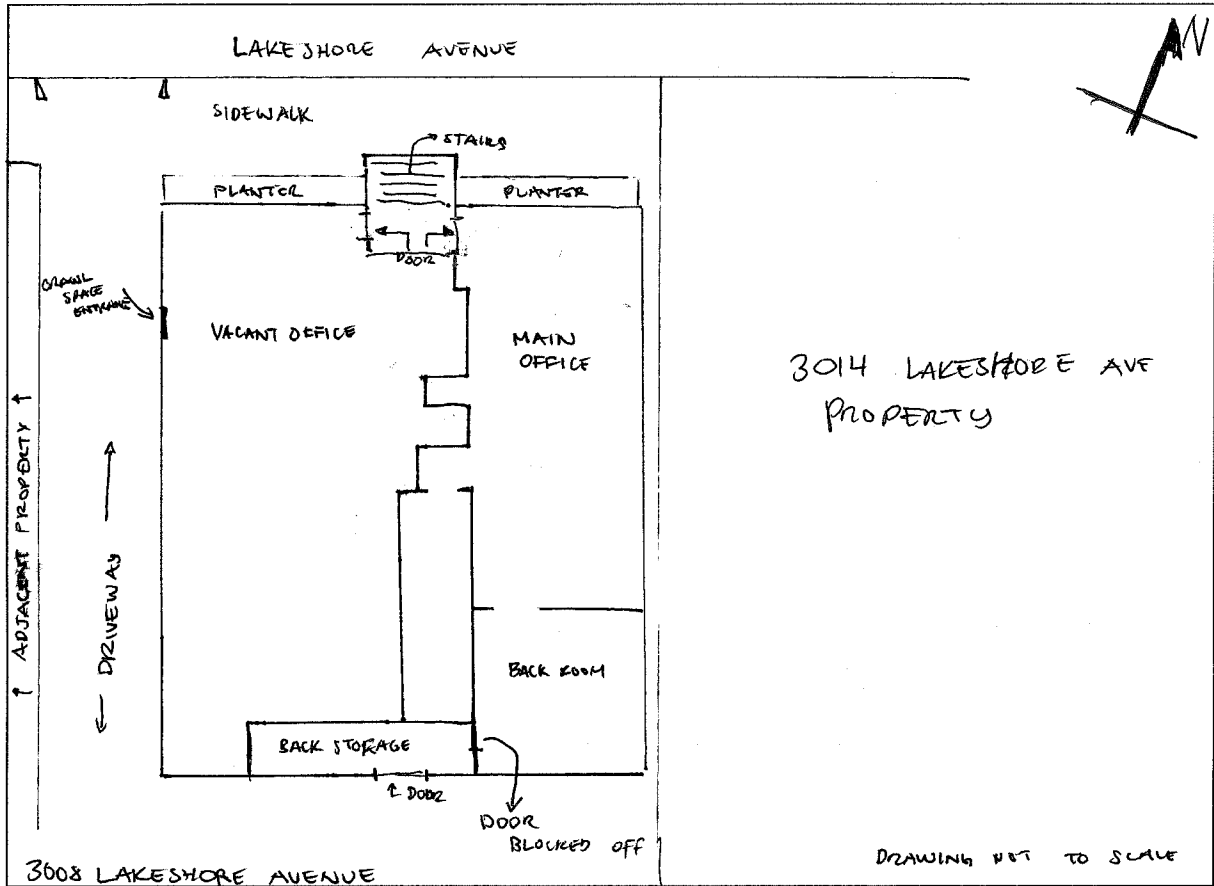






**Sampling Locations**

Draw the general floor plan of the building and denote locations of sample collection. Indicate locations of doors, windows, indoor air contaminant sources and field instrument readings.



**Primary Type of Energy Used** (Check appropriate boxes)

- Natural Gas    Fuel Oil    Propane    Electricity    Wood    Kerosene

**Meteorological Conditions**

Describe the general weather conditions during the indoor air sampling event.

Sunny, clear skies; warm ~ 70°F → no wind.

**General Comments**

Provide any other information that may be of importance in understanding the indoor air quality of this building.

OFFICES ON THE 1ST FLOOR. APARTMENTS ON THE 2ND & 3RD FLOORS. CRAWL SPACE AREA BELOW THE 1ST FLOOR, APPROXIMATELY 2-2.5 FEET HIGH. 1ST FLOOR OFFICE IS ONE LONG ROOM WITH A BACK ROOM, BATHROOM, AND BACK STORAGE AREA. DOOR AT FRONT IS CLOSED THROUGHOUT THE DAY, EXCEPT WHEN ENTERING/EXITING. OWNER LEAVES BACK DOOR AT STORAGE AREA DURING BUSINESS HOURS (SO WHEN OWNER IS IN THE OFFICE).

**APPENDIX M – BUILDING SCREENING FORM**

Occupant of Building NISSAN AND CAROL M. SAIDIAN TRUSTEES

Address 3008 LAKESHORE AVE

City OAKLAND, CA

Field Investigator YAN, OLIVER Date OCT. 3, 2014

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
	<u>main office</u>	
<u>0.0 ppm</u>	<u>Aveeno - Daily Moisturizing Lotion. refrigerator - brought in.</u>	
	<u>Bathroom</u>	
<u>0.0 ppm</u>	<u>Walgreens disinfectant spray</u>	<u>aromat</u>
	<u>Liquid hand soap (2 bottles)</u>	
	<u>JK Watkins All Purpose Cleaner -</u>	
	<u>OLGy moisturizer, (2 bottles)</u>	
	<u>speed stick deodorant.</u>	
	<u>toothpaste (2 tubes)</u>	
	<u>Dove shampoo ; conditioner - (2 bottles)</u>	
	<u>Face wash (Neutrogena/Neutrogena) - 2 bottles</u>	
	<u>Backroom</u>	
	<u>Splish on - original fragrance.</u>	
	<u>Convent for men hair spray</u>	<u>aromat -</u>
	<u>edge styling cream.</u>	
	<u>Fire extinguisher.</u>	
	<u>Rejuvenier moisturizer.</u>	

Comments:

BACK ROOM STORAGE AREA IS NOW CLOSED; THEY NO LONGER  
 USE IT, AND ACCESSED ONLY THROUGH THE BACK DOOR.









# Appendix D

## Soil Vapor Sampling Data Sheet

# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: OA-1  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

G0145558

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments

Sample Collection 3.48  
 Flow Control Setting: ~~3.48~~ ml/min Summa Canister ID: 3744  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1505</u>	<u>-30</u>	<u>1510</u>	<u>-5</u>	

Notes: TD-17 @ 15:04; weather at 78°F, humidity @ 60%  
pumps set @ ~10 scfm  
Revised

Soil Vapor Sampling Point ID: OA-1 DUP  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments

Sample Collection 3.42  
 Flow Control Setting: ~~3.42~~ ml/min Summa Canister ID: 34270  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1505</u>	<u>-30</u>	<u>1510</u>	<u>-8.5</u>	

Notes: Duplicate sample.

# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: IA-1 90121  
 Project Name: Former Chevron Service Station Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

G0145565

**Purge Volume**

Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments

**Sample Collection**

Flow Control Setting: ~~4.0~~ 3.6 ml/min Summa Canister ID: 1696  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1453	-30	1430	-5	

**Notes:**

TD-17 started @ 1453 @ 74° @ 65% humidity.  
 pump set @ ~10 scfm ; windows are closed in the 1st floor.

Soil Vapor Sampling Point ID: IA-2 90121  
 Project Name: Former Chevron Service Station Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

G0140142

**Purge Volume**

Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments

**Sample Collection**

Flow Control Setting: ~~4.0~~ 3.6 ml/min Summa Canister ID: 34223  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1438	-28	1425	-5	

**Notes:**

TD-17 started @ 1444 @ 74° @ 65% Humidity  
 pump set @ ~10 scfm ; windows are closed in 1st floor.

73° / 65%

# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: IA-3  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: OLIVER YAN  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

Purge Volume  
 Calculated Purge Volume: N/A

G0155240 SSV<sup>HP</sup>-3 → IA-3  
 G015519

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: \_\_\_\_\_ Summa Canister ID: 12707  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>15:01</u>	<u>-30</u>	<u>1447</u>	<u>-6</u>	

**Notes:**

TO-17 sample started @ 15:03 ; weather at 74°F, 65% humidity.  
 pumps set @ ~10scm ; windows are closed in 1st floor

Soil Vapor Sampling Point ID: IA-4  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: OLIVER YAN  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: 3.49ml/min Summa Canister ID: ~~34183~~ 34183  
 Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1515</u>	<u>-30</u>	<u>1522</u>	<u>-6</u>	

**Notes:**

NO TO-17 sample ; windows are closed in the 1st floor.

# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: IA-5  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

G0135640

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: ~~200~~ 205 mL/min Summa Canister ID: can # 12013  
 Summa Canister Size: 6 L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1510</u>	<u>-30</u>	<u>1440</u>	<u>-5.5</u>	

**Notes:**

TO-17 @ 1312, Temp @ 75°F; humidity @ 60%.  
 pump set @ NW sec; windows are closed; closed the door for the basement.

Soil Vapor Sampling Point ID: CS-1  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: Oliver Yan  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: Nate Lee

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: ~~200~~ 205 mL/min Summa Canister ID: can # 33877  
 Summa Canister Size: 6 L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1505</u>	<u>-30</u>	<u>1504</u>	<u>-5</u>	

**Notes:**

NO TO-17; 15 FT INTO CRAWL SPACE; CEMENTED FLOOR ~ 3 FT HIGH  
 closed door for the crawl space.



# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: CS-2

Flow controller: 33934

Project Name: Former Chevron Service Station 70121

Date: 10/6/14

Project No: 311973

Sampler: Oliver Yan

Site Address: 3026 Lakeshore Ave, Oakland, CA

Project Mgr: Nate Lee

**Purge Volume**

Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: 3.5 mL/min Summa Canister ID: 13653

Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>1533</u>	<u>-29</u>	<u>1506</u>	<u>-5</u>	

**Notes:**

NO TO-17 sample; ~ 4 FT INTO CRAWL SPACE; LOCATION SET AT 3008 LAKESHORE AVE; PETROLEUM GEAR;

Soil Vapor Sampling Point ID: IA-6

Flow controller: 1593

Project Name: Former Chevron Service Station 90121

Date: 10/6/14

Project No: 311973

Sampler: Oliver Yan

Site Address: 3026 Lakeshore Ave, Oakland, CA

Project Mgr: Nate Lee

**Purge Volume**

Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments
_____			

**Sample Collection**

Flow Control Setting: 3.5 mL/min Summa Canister ID: 2336

Summa Canister Size: 6L Analysis: TD-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
<u>14:29</u>	<u>-30</u>	<u>1409</u>	<u>-15</u>	

**Notes:**

NO TO-17 sample. LOCATION AT 3008 LAKESHORE AVE WINDOWS CLOSED; BUT TENANTS WILL CLOSE/OPEN THE DOOR WHEN ENTERING THE OFFICE; PAINT REMOVED AT THE BACK OF THE OFFICE STORAGE ROOM.

# Conestoga-Rovers & Associates

## SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: OA-2  
 Project Name: Former Chevron Service Station 90121 Date: 10/6/14  
 Project No: 311973 Sampler: OLIVER YAN  
 Site Address: 3026 Lakeshore Ave, Oakland, CA Project Mgr: NATE LEE

Purge Volume  
 Calculated Purge Volume: N/A

Time	Flow Rate	Volume	Comments

Sample Collection  
 Flow Control Setting: 3.6 ml/min Summa Canister ID: 34399 FLOW CONTROLLER # 946  
 Summa Canister Size: 6L Analysis: TO-15

Time – Begin Sampling	Canister Vacuum	Time – End Sampling	Canister Vacuum	Sampling Time
<u>14:31</u>	<u>-30</u>	<u>14:10</u>	<u>-5</u>	

Notes: NO TO-17 ; LOCATION @ 3008 LAKESHORE AVE, MOVED LOCATION TO THE FRONT CURB TO THE STREET.

Soil Vapor Sampling Point ID: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Project No: \_\_\_\_\_ Sampler: \_\_\_\_\_  
 Site Address: \_\_\_\_\_ Project Mgr: \_\_\_\_\_

Purge Volume  
 Calculated Purge Volume: \_\_\_\_\_

Time	Flow Rate	Volume	Comments

Sample Collection  
 Flow Control Setting: \_\_\_\_\_ Summa Canister ID: \_\_\_\_\_  
 Summa Canister Size: \_\_\_\_\_ Analysis: \_\_\_\_\_

Time – Begin Sampling	Canister Vacuum	Time – End Sampling	Canister Vacuum	Sampling Time

Notes:

SOIL VAPOR SAMPLING DATA SHEET

CONESTOGA-ROVERS & ASSOCIATES

Project Name: Chevron ~~31173~~ 90121 Date: 10/7/14  
 Project No: 31173 Sampler: \_\_\_\_\_  
 Site Address: 3026 Lakeshore Avenue, Oakland PM: Nathan Lee

Soil Vapor Sampling Point ID: SSVP-1

Leak Test (Shut-In)

Start Time:	End Time:
<u>11:30</u>	<u>11:40</u>

TO-17 START: 1205  
 G0147087 END: 1209  
 65% 75° VOLUME: 185 mL  
 → initial pressure is -30

1  
55  
55  
55  
20  
185

Purge Volume

Calculated Purge Volume: \_\_\_\_\_

Time	Flow Rate	Purged Volume	Comments
<u>11:41</u>	<u>200 mL/min</u>		<u>~ 10 mercury (11:42)</u>

Sample Collection

Flow Control Setting: 1.57 Summa Canister ID: 36447  
 Summa Canister Size: ~~2L~~ 1L Analysis: TO-15

Time Begin Sampling	Start Canister Vacuum	Time End Sampling	End Canister Vacuum	Total Time
<u>11:49</u>	<u>-30</u>	<u>11:57</u>	<u>-5</u>	<u>8 min.</u>

Tracer Compound

Tracer Compound Name: Helium

Time	11:48	11:49	11:51	11:53	11:56		
Tracer Compound %	<u>32.6</u>	<u>40.4</u>	<u>45.8</u>	<u>56.7%</u>	<u>56.7</u>		
Ambient Temp	Atmospheric pressure			Humidity			

Notes:

Soil Vapor Sampling Point ID: SSVP-2

Leak Test (Shut-In)

Start Time:	End Time:
<u>12:30</u>	<u>12:38</u>

TO-17 START: 1310f  
 G0141580 END: 1319  
 VOLUME: 180 mL  
 65% 75°

Purge Volume

Calculated Purge Volume: \_\_\_\_\_

Time	Flow Rate	Purged Volume	Comments
<u>1240</u>	<u>10</u>		

Sample Collection 1241

Flow Control Setting: \_\_\_\_\_ Summa Canister ID: 30811  
 Summa Canister Size: 1L Analysis: TO-15

Time Begin Sampling	Start Canister Vacuum	Time End Sampling	End Canister Vacuum	Total Time
<u>12:48</u>	<u>-30</u>	<u>1300</u>	<u>-5</u>	

Tracer Compound

Tracer Compound Name: Helium

Time	1247	<del>1248</del>	12:55	1258	1302		
Tracer Compound %	<u>20.5%</u>	<u>58.6%</u>	<u>68.3</u>	<u>71.8</u>	<u>66.0</u>		
Ambient Temp	Atmospheric pressure			Humidity			

Notes:

**SOIL VAPOR SAMPLING DATA SHEET**

CONESTOGA-ROVERS & ASSOCIATES

Project Name: Chevron ~~311973~~ 90121

Date: 10/7/14

Project No: 311973

Sampler: \_\_\_\_\_

Site Address: 3026 Lakeshore Ave, Oakland, CA

PM: Nathan Lee

Soil Vapor Sampling Point ID: SSVP-3

Leak Test (Shut-In)

Start Time:	End Time:
<u>1357</u>	<u>1404</u>

Purge Volume

Calculated Purge Volume: \_\_\_\_\_

90155340  
↳ START: 1500  
1504  
  
65% 75°

Time	Flow Rate	Purged Volume	Comments
<u>1415</u>	<u>200 mL/min</u>		

**Sample Collection**

Flow Control Setting: \_\_\_\_\_ Summa Canister ID: 34623

Summa Canister Size: 1L Analysis: \_\_\_\_\_

Time Begin Sampling	Start Canister Vacuum	Time End Sampling	End Canister Vacuum	Total Time
<u>1429</u>	<u>-29</u>	<u>1442</u>	<u>-5</u>	

**Tracer Compound**

Tracer Compound Name: \_\_\_\_\_

Time	Tracer Compound %	Ambient Temp	Atmospheric pressure	Humidity
<u>1429</u>	<u>43%</u>			
<u>1435</u>	<u>67%</u>			

Notes:

Soil Vapor Sampling Point ID: SSVP-2 DUP

Leak Test (Shut-In)

Start Time:	End Time:
<u>12:30</u>	

Purge Volume

Calculated Purge Volume: \_\_\_\_\_

Time	Flow Rate	Purged Volume	Comments

**Sample Collection**

Flow Control Setting: \_\_\_\_\_ Summa Canister ID: 36437

Summa Canister Size: 1L Analysis: TO-15 SM

Time Begin Sampling	Start Canister Vacuum	Time End Sampling	End Canister Vacuum	Total Time
<u>1248</u>	<u>-29.5</u>	<u>1305</u>	<u>-5</u>	

**Tracer Compound**

Tracer Compound Name: Helium

Time	Tracer Compound %	Ambient Temp	Atmospheric pressure	Humidity
<u>SEE</u>	<u>SSVP-2</u>			
	<u>SAMPLE</u>			

Notes:

# Appendix E

## Laboratory Data

10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410134

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410134**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	IA-1	Modified TO-17 VI
02A	IA-2	Modified TO-17 VI
03A	IA-3	Modified TO-17 VI
04A	IA-5	Modified TO-17 VI
05A	OA-1	Modified TO-17 VI
06A	SSVP-1	Modified TO-17 VI
07A	SSVP-2	Modified TO-17 VI
08A	SSVP-3	Modified TO-17 VI
09A	Lab Blank	Modified TO-17 VI
09B	Lab Blank	Modified TO-17 VI
10A	CCV	Modified TO-17 VI
10B	CCV	Modified TO-17 VI
11A	LCS	Modified TO-17 VI
11AA	LCS	Modified TO-17 VI
11B	LCS	Modified TO-17 VI
11BB	LCS	Modified TO-17 VI

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.  
 Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.  
 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9562  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified EPA Method TO-17 (VI Tubes)**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410134**

Eight TO-17 VI Tube samples were received on October 08, 2014. The laboratory performed the analysis via modified EPA Method TO-17 using GC/MS in the full scan mode. TO-17 'VI' sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

A modification that may be applied to EPA Method TO-17 at the client's discretion is the requirement to transport sorbent tubes at 4 deg C. Laboratory studies demonstrate a high level of stability for VOCs on the TO-17 'VI' tube at room temperature for periods of up to 14 days. Tubes can be shipped to and from the field site at ambient conditions as long as the 14-day sample hold time is upheld. Trip blanks and field surrogate spikes are used as additional control measures to monitor recovery and background contribution during tube transport.

Since the TO-17 VI application significantly extends the scope of target compounds addressed in EPA Method TO-15 and TO-17, the laboratory has implemented several method modifications outlined in the table below. Specific project requirements may over-ride the laboratory modifications.

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Initial Calibration	%RSD<math>\leq 30\%</math> with 2 allowed out up to 40%	VOC list: %RSD<math>\leq 30\%</math> with 2 allowed out up to 40% SVOC list: %RSD<math>\leq 30\%</math> with 2 allowed out up to 40%
Daily Calibration	%D for each target compound within +/-30%.	Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene within +/-40%D
Audit Accuracy	70-130%	Second source recovery limits for Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene = 60-140%.
Distributed Volume Pairs	Collection of distributed volume pairs required for monitoring ambient air to insure high quality.	If site is well-characterized or performance previously verified, single tube sampling may be appropriate. Distributed pairs may be impractical for soil gas collection due to configuration and volume constraints.

### **Receiving Notes**

A Temperature Blank was included with the shipment. Temperature was measured and was not within 4±2 °C. Coolant in the form of blue ice was present. Analysis proceeded.

Sample identification for sample IA-5 was not provided on the sample tag. Therefore the information on the Chain of Custody was used to process and report the sample.

### **Analytical Notes**

A sampling volume of 14.1 L was used to convert ng to ug/m<sup>3</sup> for the associated Lab Blank.

The recovery of internal standard Bromofluorobenzene in sample IA-3 was outside method acceptance limits



---

of 60-140%. Recovery was high at 167%. The associated field surrogates recovered within expected limits. The field surrogate recovery suggests that the high internal standard recovery resulted in increased sensitivity across all compounds, and the accuracy of the reported data is not greatly affected. Reanalysis of a back-up tube sample confirmed results.

### **Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in blank (subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

## Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: IA-1

Lab ID#: 1410134-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	8.4	0.60

Client Sample ID: IA-2

Lab ID#: 1410134-02A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	6.6	0.47

Client Sample ID: IA-3

Lab ID#: 1410134-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.075	8.7	0.65

Client Sample ID: IA-5

Lab ID#: 1410134-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	7.7	0.55

Client Sample ID: OA-1

Lab ID#: 1410134-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	5.2	0.37

Client Sample ID: SSVP-1

Lab ID#: 1410134-06A

No Detections Were Found.



## **Summary of Detected Compounds EPA METHOD TO-17**

**Client Sample ID: SSVP-2**

**Lab ID#: 1410134-07A**

No Detections Were Found.

**Client Sample ID: SSVP-3**

**Lab ID#: 1410134-08A**

No Detections Were Found.



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410134-01A

EPA METHOD TO-17

File Name:	18100920	Date of Extraction: NA	Date of Collection: 10/6/14 2:30:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/10/14 12:48 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	8.4	0.60

Air Sample Volume(L): 14.0  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	97	50-150



Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410134-02A

EPA METHOD TO-17

File Name:	18101320	Date of Extraction: NA	Date of Collection: 10/6/14 2:25:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 12:39 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	6.6	0.47

Air Sample Volume(L): 14.0  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	102	50-150



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410134-03A

EPA METHOD TO-17

File Name:	18101321	Date of Extraction: NA	Date of Collection: 10/6/14 2:48:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 01:21 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.075	8.7	0.65

Air Sample Volume(L): 13.3  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	84	50-150



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410134-04A

EPA METHOD TO-17

File Name:	18101322	Date of Extraction: NA	Date of Collection: 10/6/14 2:40:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 02:03 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	7.7	0.55

Air Sample Volume(L): 14.0  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	90	50-150



Air Toxics

Client Sample ID: OA-1

Lab ID#: 1410134-05A

EPA METHOD TO-17

File Name:	18101323	Date of Extraction: NA	Date of Collection: 10/6/14 3:10:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 02:45 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	5.2	0.37

Air Sample Volume(L): 14.1  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	77	50-150





Air Toxics

Client Sample ID: SSVP-1

Lab ID#: 1410134-06A

EPA METHOD TO-17

File Name:	18101324	Date of Extraction: NA	Date of Collection: 10/7/14 12:05:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 03:26 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	5.0	Not Detected	Not Detected

Air Sample Volume(L): 0.200  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	87	50-150



Air Toxics

Client Sample ID: SSVP-2

Lab ID#: 1410134-07A

EPA METHOD TO-17

File Name:	18101325	Date of Extraction: NA	Date of Collection: 10/7/14 1:14:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 04:08 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	5.0	Not Detected	Not Detected

Air Sample Volume(L): 0.200  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	98	50-150



Air Toxics

Client Sample ID: SSVP-3

Lab ID#: 1410134-08A

EPA METHOD TO-17

File Name:	18101326	Date of Extraction: NA	Date of Collection: 10/7/14 3:00:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/14/14 04:50 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	5.0	Not Detected	Not Detected

Air Sample Volume(L): 0.200  
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	97	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410134-09A

EPA METHOD TO-17

File Name:	18100912	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/9/14 05:47 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	Not Detected	Not Detected

Air Sample Volume(L): 14.1  
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	108	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410134-09B

EPA METHOD TO-17

File Name:	18101311	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 05:03 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	Not Detected	Not Detected

Air Sample Volume(L): 14.1

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	113	50-150

Client Sample ID: CCV  
 Lab ID#: 1410134-10A  
 EPA METHOD TO-17

File Name:	18100903	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/9/14 07:55 AM	

Compound	%Recovery
Naphthalene	102

Air Sample Volume(L): 1.00  
 Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	90	50-150

Client Sample ID: CCV  
 Lab ID#: 1410134-10B  
 EPA METHOD TO-17

File Name:	18101303	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 10:30 AM	

Compound	%Recovery
Naphthalene	101

Air Sample Volume(L): 1.00  
 Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	111	50-150



Air Toxics

Client Sample ID: LCS  
Lab ID#: 1410134-11A  
EPA METHOD TO-17

File Name:	18100906	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/9/14 12:10 PM	

Compound	%Recovery	Method Limits
Naphthalene	100	70-130

Air Sample Volume(L): 1.00  
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	124	50-150





Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410134-11AA

EPA METHOD TO-17

File Name:	18100907	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/9/14 12:52 PM	

Compound	%Recovery	Method Limits
Naphthalene	99	70-130

Air Sample Volume(L): 1.00  
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	128	50-150



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410134-11B

EPA METHOD TO-17

File Name:	18101305	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 11:54 AM	

Compound	%Recovery	Method Limits
Naphthalene	105	70-130

Air Sample Volume(L): 1.00  
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	112	50-150



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410134-11BB

EPA METHOD TO-17

File Name:	18101306	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 12:36 PM	

Compound	%Recovery	Method Limits
Naphthalene	102	70-130

Air Sample Volume(L): 1.00  
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	124	50-150

TO-17 SAMPLE COLLECTION



Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, cost and, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-9222.

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630  
(916) 985-1000 FAX (916) 985-1020

Page \_\_\_\_ of \_\_\_\_

Project Manager: NATHAN LEE (CRA)  
 Collected by: (Print and Sign) OLIVER YAN  
 Company CONSTRUCTION ASSOCIATED Email OYAN@CRAWORLD.COM  
 Address 5900 HOLLISS STREET, SUITE A CITY ENERGY State CA Zip 94607  
 Phone (Site) 420-3332 Fax (Site) 420-9170

Project Info: P.O. # 5531738 Turn Around Time:  Normal  Rush  
 Project # 511973 Reporting Units:  ppmv  ppbv  ug/m3  mg/m3  
 Project Name Chevron 90121

Lab I.D.	Field Sample I.D. (Location)	Engraved or Stamped Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor/Outdoor		Indoor Air	Outdoor Air	Soil Vapors	Other
									% RH	Temp				
IA-1		G0145565	10/6/14	1453	1430	~10 scfm	9.90 scfm		65%	74°F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IA-2		G0140142	10/6/14	1438	1425	~10 scfm	9.83 scfm		65%	74°F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IA-3		G0145519	10/6/14	1501	1448	~10 scfm	9.34 scfm		65%	74°F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IA-5		G0135640	10/6/14	1510	1440	~10 scfm	9.91 scfm		65%	74°F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OA-1		G0145558	10/6/14	1505	1510	~10 scfm	9.75 scfm		60%	78°F	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SSVP-1		G0147087	10/7/14	1205	-	-	-	200ml	65%	75°F	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SSVP-2		G0141580	10/7/14	1314	-	-	-	200ml	65%	75°F	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SSVP-3		G0155340	10/7/14	1500	-	-	-	200ml	65%	75°F	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature) [Signature] Date/Time 10/10/14 1104  
 Relinquished by: (signature) \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Relinquished by: (signature) \_\_\_\_\_ Date/Time \_\_\_\_\_

Received by: (signature) [Signature] Date/Time 10-8-14 1104  
 Received by: (signature) \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received by: (signature) \_\_\_\_\_ Date/Time \_\_\_\_\_

Notes:  
 \* SCFM = mL/min  
 \* Run samples for TO-17, NAPHTHALENE ONLY

Lab Use Only	Shipper Name	Air Bill #	Temp (C)	Condition	Custody Seals Intact?	Work Order #
	BATL Run		9.8	Sealed SDR	Yes No None	1410134

10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410150A

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410150A**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	IA-1	Modified TO-15	5.1 "Hg	5 psi
01B	IA-1	Modified TO-15	5.1 "Hg	5 psi
02A	IA-2	Modified TO-15	3.3 "Hg	4.9 psi
02B	IA-2	Modified TO-15	3.3 "Hg	4.9 psi
03A	IA-3	Modified TO-15	5.5 "Hg	5.1 psi
03B	IA-3	Modified TO-15	5.5 "Hg	5.1 psi
04A	IA-4	Modified TO-15	5.1 "Hg	5 psi
04B	IA-4	Modified TO-15	5.1 "Hg	5 psi
05A	IA-5	Modified TO-15	5.1 "Hg	4.9 psi
05B	IA-5	Modified TO-15	5.1 "Hg	4.9 psi
06A	IA-6	Modified TO-15	14.3 "Hg	4.8 psi
06B	IA-6	Modified TO-15	14.3 "Hg	4.8 psi
07A	CS-1	Modified TO-15	2.8 "Hg	5.1 psi
07B	CS-1	Modified TO-15	2.8 "Hg	5.1 psi
08A	CS-2	Modified TO-15	5.3 "Hg	4.9 psi
08B	CS-2	Modified TO-15	5.3 "Hg	4.9 psi
09A	OA-1	Modified TO-15	5.1 "Hg	4.9 psi
09B	OA-1	Modified TO-15	5.1 "Hg	4.9 psi
10A	OA-1 DUP	Modified TO-15	7.6 "Hg	5.2 psi
10B	OA-1 DUP	Modified TO-15	7.6 "Hg	5.2 psi
11A	OA-2	Modified TO-15	5.5 "Hg	5 psi
11B	OA-2	Modified TO-15	5.5 "Hg	5 psi
12A	Lab Blank	Modified TO-15	NA	NA

Continued on next page

**WORK ORDER #: 1410150A**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
12B	Lab Blank	Modified TO-15	NA	NA
12C	Lab Blank	Modified TO-15	NA	NA
12D	Lab Blank	Modified TO-15	NA	NA
13A	CCV	Modified TO-15	NA	NA
13B	CCV	Modified TO-15	NA	NA
13C	CCV	Modified TO-15	NA	NA
13D	CCV	Modified TO-15	NA	NA
14A	LCS	Modified TO-15	NA	NA
14AA	LCSD	Modified TO-15	NA	NA
14B	LCS	Modified TO-15	NA	NA
14BB	LCSD	Modified TO-15	NA	NA
14C	LCS	Modified TO-15	NA	NA
14CC	LCSD	Modified TO-15	NA	NA
14D	LCS	Modified TO-15	NA	NA
14DD	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified TO-15 Std Full Scan/SIM**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410150A**

Eleven 6 Liter Summa Canister (SIM Certified) samples were received on October 08, 2014. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	<math>\leq 30\%</math> RSD with 2 compounds allowed out to <math>\leq 40\%</math> RSD	For SIM only: Project specific; default criteria is <math>\leq 30\%</math> RSD with 10% of compounds allowed out to <math>\leq 40\%</math> RSD
Daily Calibration	+/- 30% Difference	For Std. Full Scan: <math>\leq 30\%</math> Difference with two allowed out up to <math>\leq 40\%</math>; flag and narrate outliers  For SIM: Project specific; default criteria is <math>\leq 30\%</math> Difference with 10% of compounds allowed out up to <math>\leq 40\%</math>; flag and narrate outliers
Blank and standards	Zero air	For SIM only: Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.



**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

**Client Sample ID: IA-1**

**Lab ID#: 1410150A-01A**

No Detections Were Found.

**Client Sample ID: IA-1**

**Lab ID#: 1410150A-01B**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Benzene	0.080	0.17	0.26	0.54
Toluene	0.032	0.51	0.12	1.9
Ethyl Benzene	0.032	0.10	0.14	0.46
m,p-Xylene	0.064	0.38	0.28	1.6
o-Xylene	0.032	0.14	0.14	0.62

**Client Sample ID: IA-2**

**Lab ID#: 1410150A-02A**

No Detections Were Found.

**Client Sample ID: IA-2**

**Lab ID#: 1410150A-02B**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Benzene	0.075	0.16	0.24	0.50
Toluene	0.030	0.52	0.11	2.0
Ethyl Benzene	0.030	0.11	0.13	0.49
m,p-Xylene	0.060	0.40	0.26	1.7
o-Xylene	0.030	0.15	0.13	0.66

**Client Sample ID: IA-3**

**Lab ID#: 1410150A-03A**

No Detections Were Found.

**Client Sample ID: IA-3**

**Lab ID#: 1410150A-03B**

## Summary of Detected Compounds

### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: IA-3**

**Lab ID#: 1410150A-03B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.082	0.17	0.26	0.55
Toluene	0.033	0.49	0.12	1.8
Ethyl Benzene	0.033	0.11	0.14	0.48
m,p-Xylene	0.066	0.38	0.29	1.6
o-Xylene	0.033	0.14	0.14	0.61

**Client Sample ID: IA-4**

**Lab ID#: 1410150A-04A**

No Detections Were Found.

**Client Sample ID: IA-4**

**Lab ID#: 1410150A-04B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.17	0.26	0.55
Toluene	0.032	0.50	0.12	1.9
Ethyl Benzene	0.032	0.089	0.14	0.39
m,p-Xylene	0.064	0.31	0.28	1.4
o-Xylene	0.032	0.11	0.14	0.48

**Client Sample ID: IA-5**

**Lab ID#: 1410150A-05A**

No Detections Were Found.

**Client Sample ID: IA-5**

**Lab ID#: 1410150A-05B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.19	0.26	0.60
Toluene	0.032	0.58	0.12	2.2
Ethyl Benzene	0.032	0.090	0.14	0.39
m,p-Xylene	0.064	0.34	0.28	1.5

**Summary of Detected Compounds**  
**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

**Client Sample ID: IA-5**

**Lab ID#: 1410150A-05B**

o-Xylene	0.032	0.12	0.14	0.51
----------	-------	------	------	------

**Client Sample ID: IA-6**

**Lab ID#: 1410150A-06A**

No Detections Were Found.

**Client Sample ID: IA-6**

**Lab ID#: 1410150A-06B**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Benzene	0.13	0.21	0.40	0.66
Toluene	0.051	0.61	0.19	2.3
Ethyl Benzene	0.051	0.10	0.22	0.44
m,p-Xylene	0.10	0.33	0.44	1.4
o-Xylene	0.051	0.12	0.22	0.52

**Client Sample ID: CS-1**

**Lab ID#: 1410150A-07A**

No Detections Were Found.

**Client Sample ID: CS-1**

**Lab ID#: 1410150A-07B**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Benzene	0.074	0.18	0.24	0.56
Toluene	0.030	0.51	0.11	1.9
Ethyl Benzene	0.030	0.083	0.13	0.36
m,p-Xylene	0.060	0.31	0.26	1.3
o-Xylene	0.030	0.11	0.13	0.47

**Client Sample ID: CS-2**

**Lab ID#: 1410150A-08A**

No Detections Were Found.

## Summary of Detected Compounds

### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: CS-2**

**Lab ID#: 1410150A-08B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.081	0.20	0.26	0.64
Toluene	0.032	0.50	0.12	1.9
Ethyl Benzene	0.032	0.088	0.14	0.38
m,p-Xylene	0.065	0.31	0.28	1.3
o-Xylene	0.032	0.11	0.14	0.47

**Client Sample ID: OA-1**

**Lab ID#: 1410150A-09A**

No Detections Were Found.

**Client Sample ID: OA-1**

**Lab ID#: 1410150A-09B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.28	0.26	0.89
Toluene	0.032	0.71	0.12	2.7
Ethyl Benzene	0.032	0.11	0.14	0.50
m,p-Xylene	0.064	0.43	0.28	1.9
o-Xylene	0.032	0.15	0.14	0.64

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150A-10A**

No Detections Were Found.

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150A-10B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.090	0.31	0.29	0.99
Toluene	0.036	0.73	0.14	2.7
Ethyl Benzene	0.036	0.12	0.16	0.51
m,p-Xylene	0.072	0.44	0.31	1.9

**Summary of Detected Compounds  
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150A-10B**

o-Xylene	0.036	0.15	0.16	0.65
----------	-------	------	------	------

**Client Sample ID: OA-2**

**Lab ID#: 1410150A-11A**

No Detections Were Found.

**Client Sample ID: OA-2**

**Lab ID#: 1410150A-11B**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.082	0.18	0.26	0.56
Toluene	0.033	0.44	0.12	1.7
Ethyl Benzene	0.033	0.084	0.14	0.36
m,p-Xylene	0.066	0.29	0.28	1.3
o-Xylene	0.033	0.10	0.14	0.46



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410150A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101418	Date of Collection:	10/6/14 2:53:00 PM	
Dil. Factor:	1.61	Date of Analysis:	10/14/14 09:52 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.80	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410150A-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101418sim	Date of Collection:	10/6/14 2:53:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/14/14 09:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
Benzene	0.080	0.17	0.26	0.54
Toluene	0.032	0.51	0.12	1.9
Ethyl Benzene	0.032	0.10	0.14	0.46
m,p-Xylene	0.064	0.38	0.28	1.6
o-Xylene	0.032	0.14	0.14	0.62

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	99	70-130





Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410150A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101419	Date of Collection:	10/6/14 2:38:00 PM
Dil. Factor:	1.50	Date of Analysis:	10/14/14 10:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.75	Not Detected	3.9	Not Detected
TPH ref. to Gasoline (MW=100)	15	Not Detected	61	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410150A-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101419sim	Date of Collection:	10/6/14 2:38:00 PM
Dil. Factor:	1.50	Date of Analysis:	10/14/14 10:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
Benzene	0.075	0.16	0.24	0.50
Toluene	0.030	0.52	0.11	2.0
Ethyl Benzene	0.030	0.11	0.13	0.49
m,p-Xylene	0.060	0.40	0.26	1.7
o-Xylene	0.030	0.15	0.13	0.66

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410150A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101508	Date of Collection:	10/6/14 3:01:00 PM	
Dil. Factor:	1.65	Date of Analysis:	10/15/14 02:35 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.82	Not Detected	4.3	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	67	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410150A-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101508sim	Date of Collection:	10/6/14 3:01:00 PM
Dil. Factor:	1.65	Date of Analysis:	10/15/14 02:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.59	Not Detected
Benzene	0.082	0.17	0.26	0.55
Toluene	0.033	0.49	0.12	1.8
Ethyl Benzene	0.033	0.11	0.14	0.48
m,p-Xylene	0.066	0.38	0.29	1.6
o-Xylene	0.033	0.14	0.14	0.61

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: IA-4

Lab ID#: 1410150A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101510	Date of Collection:	10/6/14 3:15:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 04:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.80	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: IA-4

Lab ID#: 1410150A-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101510sim	Date of Collection:	10/6/14 3:15:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 04:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
Benzene	0.080	0.17	0.26	0.55
Toluene	0.032	0.50	0.12	1.9
Ethyl Benzene	0.032	0.089	0.14	0.39
m,p-Xylene	0.064	0.31	0.28	1.4
o-Xylene	0.032	0.11	0.14	0.48

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410150A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101511	Date of Collection:	10/6/14 3:10:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 05:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.80	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410150A-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101511sim	Date of Collection:	10/6/14 3:10:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 05:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
Benzene	0.080	0.19	0.26	0.60
Toluene	0.032	0.58	0.12	2.2
Ethyl Benzene	0.032	0.090	0.14	0.39
m,p-Xylene	0.064	0.34	0.28	1.5
o-Xylene	0.032	0.12	0.14	0.51

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130





Air Toxics

Client Sample ID: IA-6

Lab ID#: 1410150A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101412	Date of Collection:	10/6/14 2:29:00 PM	
Dil. Factor:	2.53	Date of Analysis:	10/14/14 04:39 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	1.3	Not Detected	6.6	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: IA-6

Lab ID#: 1410150A-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101412sim	Date of Collection:	10/6/14 2:29:00 PM
Dil. Factor:	2.53	Date of Analysis:	10/14/14 04:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.25	Not Detected	0.91	Not Detected
Benzene	0.13	0.21	0.40	0.66
Toluene	0.051	0.61	0.19	2.3
Ethyl Benzene	0.051	0.10	0.22	0.44
m,p-Xylene	0.10	0.33	0.44	1.4
o-Xylene	0.051	0.12	0.22	0.52

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: CS-1

Lab ID#: 1410150A-07A

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v101414	Date of Collection:	10/6/14 3:25:00 PM
Dil. Factor:	1.49	Date of Analysis:	10/14/14 06:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.74	Not Detected	3.9	Not Detected
TPH ref. to Gasoline (MW=100)	15	Not Detected	61	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: CS-1

Lab ID#: 1410150A-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101414sim	Date of Collection:	10/6/14 3:25:00 PM
Dil. Factor:	1.49	Date of Analysis:	10/14/14 06:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
Benzene	0.074	0.18	0.24	0.56
Toluene	0.030	0.51	0.11	1.9
Ethyl Benzene	0.030	0.083	0.13	0.36
m,p-Xylene	0.060	0.31	0.26	1.3
o-Xylene	0.030	0.11	0.13	0.47

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: CS-2

Lab ID#: 1410150A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101415	Date of Collection:	10/6/14 3:33:00 PM
Dil. Factor:	1.62	Date of Analysis:	10/14/14 07:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.81	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: CS-2

Lab ID#: 1410150A-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101415sim	Date of Collection:	10/6/14 3:33:00 PM
Dil. Factor:	1.62	Date of Analysis:	10/14/14 07:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
Benzene	0.081	0.20	0.26	0.64
Toluene	0.032	0.50	0.12	1.9
Ethyl Benzene	0.032	0.088	0.14	0.38
m,p-Xylene	0.065	0.31	0.28	1.3
o-Xylene	0.032	0.11	0.14	0.47

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: OA-1

Lab ID#: 1410150A-09A

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v101416	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/14/14 08:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.80	Not Detected	4.2	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: OA-1

Lab ID#: 1410150A-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101416sim	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/14/14 08:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
Benzene	0.080	0.28	0.26	0.89
Toluene	0.032	0.71	0.12	2.7
Ethyl Benzene	0.032	0.11	0.14	0.50
m,p-Xylene	0.064	0.43	0.28	1.9
o-Xylene	0.032	0.15	0.14	0.64

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	104	70-130



Client Sample ID: OA-1 DUP

Lab ID#: 1410150A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101417	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.81	Date of Analysis:	10/14/14 09:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.90	Not Detected	4.7	Not Detected
TPH ref. to Gasoline (MW=100)	18	Not Detected	74	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1410150A-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101417sim	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.81	Date of Analysis:	10/14/14 09:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.18	Not Detected	0.65	Not Detected
Benzene	0.090	0.31	0.29	0.99
Toluene	0.036	0.73	0.14	2.7
Ethyl Benzene	0.036	0.12	0.16	0.51
m,p-Xylene	0.072	0.44	0.31	1.9
o-Xylene	0.036	0.15	0.16	0.65

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: OA-2

Lab ID#: 1410150A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101512	Date of Collection:	10/6/14 2:31:00 PM
Dil. Factor:	1.64	Date of Analysis:	10/15/14 06:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.82	Not Detected	4.3	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	67	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: OA-2

Lab ID#: 1410150A-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101512sim	Date of Collection:	10/6/14 2:31:00 PM
Dil. Factor:	1.64	Date of Analysis:	10/15/14 06:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	Not Detected	0.59	Not Detected
Benzene	0.082	0.18	0.26	0.56
Toluene	0.033	0.44	0.12	1.7
Ethyl Benzene	0.033	0.084	0.14	0.36
m,p-Xylene	0.066	0.29	0.28	1.3
o-Xylene	0.033	0.10	0.14	0.46

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: Lab Blank

Lab ID#: 1410150A-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101406	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/14/14 11:45 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.50	Not Detected	2.6	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150A-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101406sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/14/14 11:45 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: Lab Blank

Lab ID#: 1410150A-12C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101507	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/15/14 01:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.50	Not Detected	2.6	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150A-12D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101507sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/15/14 01:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	99	70-130



Client Sample ID: CCV

Lab ID#: 1410150A-13A

## MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 08:47 AM

Compound	%Recovery
Naphthalene	98
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410150A-13B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101402sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 08:47 AM

Compound	%Recovery
Methyl tert-butyl ether	100
Benzene	76
Toluene	85
Ethyl Benzene	90
m,p-Xylene	92
o-Xylene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: CCV

Lab ID#: 1410150A-13C

## MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 08:44 AM

Compound	%Recovery
Naphthalene	94
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	113	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410150A-13D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101502sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 08:44 AM

Compound	%Recovery
Methyl tert-butyl ether	98
Benzene	76
Toluene	86
Ethyl Benzene	91
m,p-Xylene	96
o-Xylene	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410150A-14A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 09:27 AM

Compound	%Recovery	Method Limits
Naphthalene	67	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: LCSD

Lab ID#: 1410150A-14AA

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v101404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 10:08 AM

Compound	%Recovery	Method Limits
Naphthalene	73	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410150A-14B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101403sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 09:27 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	101	70-130
Benzene	79	70-130
Toluene	88	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	96	70-130
o-Xylene	97	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410150A-14BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101404sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/14 10:08 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	100	70-130
Benzene	78	70-130
Toluene	88	70-130
Ethyl Benzene	91	70-130
m,p-Xylene	96	70-130
o-Xylene	96	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	105	70-130



Client Sample ID: LCS

Lab ID#: 1410150A-14C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 09:33 AM

Compound	%Recovery	Method Limits
Naphthalene	72	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410150A-14CC

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 10:18 AM

Compound	%Recovery	Method Limits
Naphthalene	72	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410150A-14D

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101503sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 09:33 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	98	70-130
Benzene	77	70-130
Toluene	86	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	98	70-130
o-Xylene	98	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410150A-14DD

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v101504sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 10:18 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	97	70-130
Benzene	77	70-130
Toluene	86	70-130
Ethyl Benzene	91	70-130
m,p-Xylene	96	70-130
o-Xylene	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	107	70-130



Air Toxics

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 1 of     

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER YAN  
 Company CONSTRUCTION ROVERS ASSOCIATES Email OYAN@CRAWORLD.COM  
 Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

<b>Project Info:</b>		<b>Turn Around Time:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small>	
P.O. # <u>5531738</u>	Project # <u>311973</u>		Pressurized by:	
Project Name <u>Chevron 90121</u>		Date:		
		Pressurization Gas: <u>N<sub>2</sub></u> <u>He</u>		

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	IA-1	1696	10/06/14	1453	TO-15 - TPHg/BTEX/MTBE/NAPHTHALENE; ASTM D-1446 FOR O <sub>2</sub> /N <sub>2</sub> , CO <sub>2</sub> /CH <sub>4</sub> /H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
02A	IA-2	34223	10/06/14	1438		-28	-5		
03A	IA-3	12707	10/06/14	1501		-30	-6		
04A	IA-4	34183	10/06/14	1515	FOR ALL THESE SAMPLES	-30	-6		
05A	IA-5	12013	10/06/14	1510		-30	-5.5		
06A	IA-6	2336	10/06/14	1429		-30	-15		
07A	CS-1	33877	10/06/14	1525		-30	-5		
08A	CS-2	13653	10/06/14	1533		-29	-5		
09A	OA-1	3744	10/06/14	1505		-30	-5		
10A	OA-1 DUP	34270	10/06/14	1505		-30	-8.5		

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/8/14 1104</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10-8-14 1104</u>	Notes: email results to: <u>NLEE@CRAWORLD.COM</u>  INCLUDE EDD'S FOR THESE SAMPLES
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>EATL - Rom</u>		<u>NA</u>	<u>Good</u>	Yes No None	<u>1410150</u>

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page \_\_\_ of \_\_\_

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER JAN  
 Company CONESTOGA-ROVER & ASSOCIATES Email OJAN@CRAWORLD.COM  
 Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

<b>Project Info:</b> P.O. # <u>SS31738</u> Project # <u>311973</u> Project Name <u>Chevron 9021</u>	<b>Turn Around Time:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush specify _____	Lab Use Only Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
--	--	--

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
11A	OA-2	34399	10/6/14	1431	TO-15 - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
<del>12A</del>	SSVP-1	36447	10/7/14	1149	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
13A	SSVP-2	30811	10/7/14	1230	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
14A	SSVP-2 DUP	36437	10/7/14	1248	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29.5	-5		
15A	SSVP-3	34623	10/7/14	1429	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29	-5		
16A	TRIP BLANK (1L)	98199	10/7/14	1515	TO-15 - TPHs/BTEX/MTBE/NAPHTHALES; ASTM D-1946	-30			
<del>17A</del>	<del>TRIP BLANK (6L)</del>		<del>10/6/14</del>	<del>1300</del>		<del>-30</del>			<del>09/10/8/14</del>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/8/14 1104</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10-8-14 1104</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____

**Notes:**  
 email results to: NLEE@CRAWORLD.COM  
 INCLUDE BOD'S FOR THESE SAMPLES

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	EATL-Ron		NA	Good	Yes No None	1410150



10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410150B

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410150B**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	IA-1	Modified ASTM D-1946	5.1 "Hg	5 psi
02A	IA-2	Modified ASTM D-1946	3.3 "Hg	4.9 psi
03A	IA-3	Modified ASTM D-1946	5.5 "Hg	5.1 psi
04A	IA-4	Modified ASTM D-1946	5.1 "Hg	5 psi
05A	IA-5	Modified ASTM D-1946	5.1 "Hg	4.9 psi
06A	IA-6	Modified ASTM D-1946	14.3 "Hg	4.8 psi
07A	CS-1	Modified ASTM D-1946	2.8 "Hg	5.1 psi
08A	CS-2	Modified ASTM D-1946	5.3 "Hg	4.9 psi
09A	OA-1	Modified ASTM D-1946	5.1 "Hg	4.9 psi
10A	OA-1 DUP	Modified ASTM D-1946	7.6 "Hg	5.2 psi
11A	OA-2	Modified ASTM D-1946	5.5 "Hg	5 psi
12A	Lab Blank	Modified ASTM D-1946	NA	NA
12B	Lab Blank	Modified ASTM D-1946	NA	NA
13A	LCS	Modified ASTM D-1946	NA	NA
13AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020



**LABORATORY NARRATIVE**  
**Modified ASTM D-1946**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410150B**

Eleven 6 Liter Summa Canister (SIM Certified) samples were received on October 08, 2014. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 X$ 's the RL.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID: IA-1**

**Lab ID#: 1410150B-01A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.049
Methane	0.00016	0.00024

**Client Sample ID: IA-2**

**Lab ID#: 1410150B-02A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.15	21
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.048
Methane	0.00015	0.00022

**Client Sample ID: IA-3**

**Lab ID#: 1410150B-03A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.050
Methane	0.00016	0.00023

**Client Sample ID: IA-4**

**Lab ID#: 1410150B-04A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.046
Methane	0.00016	0.00021

**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID: IA-5**

**Lab ID#: 1410150B-05A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.045
Methane	0.00016	0.00022

**Client Sample ID: IA-6**

**Lab ID#: 1410150B-06A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.25	21
Nitrogen	0.25	79
Carbon Dioxide	0.025	0.048
Methane	0.00025	0.00039

**Client Sample ID: CS-1**

**Lab ID#: 1410150B-07A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.15	21
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.050
Methane	0.00015	0.00026

**Client Sample ID: CS-2**

**Lab ID#: 1410150B-08A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.042
Methane	0.00016	0.00047

**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID: OA-1**

**Lab ID#: 1410150B-09A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.044
Methane	0.00016	0.00017

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150B-10A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.18	21
Nitrogen	0.18	79
Carbon Dioxide	0.018	0.044

**Client Sample ID: OA-2**

**Lab ID#: 1410150B-11A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.045
Methane	0.00016	0.00021



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410150B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102112	Date of Collection:	10/6/14 2:53:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/21/14 02:42 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.049
Methane	0.00016	0.00024
Helium	0.080	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410150B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102113	Date of Collection:	10/6/14 2:38:00 PM
Dil. Factor:	1.50	Date of Analysis:	10/21/14 03:58 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	21
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.048
Methane	0.00015	0.00022
Helium	0.075	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410150B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102114	Date of Collection:	10/6/14 3:01:00 PM
Dil. Factor:	1.65	Date of Analysis:	10/21/14 04:30 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.050
Methane	0.00016	0.00023
Helium	0.082	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)





Air Toxics

Client Sample ID: IA-4

Lab ID#: 1410150B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102115	Date of Collection:	10/6/14 3:15:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/21/14 04:56 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.046
Methane	0.00016	0.00021
Helium	0.080	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410150B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102116	Date of Collection:	10/6/14 3:10:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/21/14 06:04 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.045
Methane	0.00016	0.00022
Helium	0.080	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-6

Lab ID#: 1410150B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102117	Date of Collection:	10/6/14 2:29:00 PM
Dil. Factor:	2.53	Date of Analysis:	10/21/14 06:30 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	21
Nitrogen	0.25	79
Carbon Dioxide	0.025	0.048
Methane	0.00025	0.00039
Helium	0.13	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-1

Lab ID#: 1410150B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102118	Date of Collection:	10/6/14 3:25:00 PM
Dil. Factor:	1.49	Date of Analysis:	10/21/14 06:53 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	21
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.050
Methane	0.00015	0.00026
Helium	0.074	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-2

Lab ID#: 1410150B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102119	Date of Collection:	10/6/14 3:33:00 PM
Dil. Factor:	1.62	Date of Analysis:	10/21/14 07:17 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.042
Methane	0.00016	0.00047
Helium	0.081	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1

Lab ID#: 1410150B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102120	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/21/14 07:40 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.044
Methane	0.00016	0.00017
Helium	0.080	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1410150B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102121	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.81	Date of Analysis:	10/21/14 08:02 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	21
Nitrogen	0.18	79
Carbon Dioxide	0.018	0.044
Methane	0.00018	Not Detected
Helium	0.090	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-2

Lab ID#: 1410150B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102122	Date of Collection:	10/6/14 2:31:00 PM
Dil. Factor:	1.64	Date of Analysis:	10/21/14 09:15 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.045
Methane	0.00016	0.00021
Helium	0.082	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)





Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150B-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102105	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/14 10:14 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150B-12B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102104c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/14 09:27 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410150B-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/14 08:00 AM

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	94	85-115
Carbon Dioxide	100	85-115
Methane	103	85-115
Helium	99	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410150B-13AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/14 08:42 AM

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	94	85-115
Carbon Dioxide	100	85-115
Methane	105	85-115
Helium	99	85-115

Container Type: NA - Not Applicable



Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of

Project Manager NATHAN LEE
Collected by: (Print and Sign) OLIVER YAN
Company CONSTRUCTION ROVERS ASSOCIATES
Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608
Phone (510) 420-3372 Fax (510) 420-9170

Project Info:
P.O. # 5531738
Project # 311973
Project Name Chevron 90121

Turn Around Time:
Normal
Rush
Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N2 He

Table with columns: Lab I.D., Field Sample I.D. (Location), Can #, Date of Collection, Time of Collection, Analyses Requested, Canister Pressure/Vacuum (Initial, Final, Receipt, Final (psi)). Rows include samples IA-1 through IA-6, CS-1 through CS-2, and OA-1.

Relinquished by: (signature) Date/Time
Received by: (signature) Date/Time

Notes:
email results to: NLEE@CRAWORLD.COM
INCLUDE EDD'S FOR THESE SAMPLES

Table with columns: Lab Use Only, Shipper Name, Air Bill #, Temp (°C), Condition, Custody Seals Intact?, Work Order #.

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page \_\_\_\_ of \_\_\_\_

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER JAN  
 Company CONESTOGA-ROVER & ASSOCIATES Email OJAN@CRAWORLD.COM  
 Address 5900 HOWLS CT, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

<b>Project Info:</b> P.O. # <u>5531738</u> Project # <u>311973</u> Project Name <u>Chevron 9021</u>	<b>Turn Around Time:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush specify _____	Lab Use Only Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
--	--	--

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
11A	OA-2	34399	10/6/14	1431	TO-15 - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
<del>12A</del>	SSVP-1	36447	10/7/14	1149	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
13A	SSVP-2	30811	10/7/14	1230	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
14A	SSVP-2 DUP	36437	10/7/14	1248	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29.5	-5		
15A	SSVP-3	34623	10/7/14	1429	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29	-5		
16A	TRIP BLANK (1L)	98199	10/7/14	1515	TO-15 - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946	-30			
<del>17A</del>	<del>TRIP BLANK (6L)</del>		<del>10/6/14</del>	<del>1300</del>		<del>-30</del>			<del>09/10/8/14</del>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/8/14 1104</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10-8-14 1104</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____

**Notes:**  
 email results to: NLEE@CRAWORLD.COM  
 INCLUDE BOD'S FOR THESE SAMPLES

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	EATL-Ron		NA	Good	Yes No None	1410150

10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410150C

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager



**WORK ORDER #: 1410150C**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	IA-1	Modified TO-15 APH	5.1 "Hg	5 psi
01B	IA-1	Modified TO-15 APH	5.1 "Hg	5 psi
02A	IA-2	Modified TO-15 APH	3.3 "Hg	4.9 psi
02B	IA-2	Modified TO-15 APH	3.3 "Hg	4.9 psi
03A	IA-3	Modified TO-15 APH	5.5 "Hg	5.1 psi
03B	IA-3	Modified TO-15 APH	5.5 "Hg	5.1 psi
04A	IA-4	Modified TO-15 APH	5.1 "Hg	5 psi
04B	IA-4	Modified TO-15 APH	5.1 "Hg	5 psi
05A	IA-5	Modified TO-15 APH	5.1 "Hg	4.9 psi
05B	IA-5	Modified TO-15 APH	5.1 "Hg	4.9 psi
06A	IA-6	Modified TO-15 APH	14.3 "Hg	4.8 psi
06B	IA-6	Modified TO-15 APH	14.3 "Hg	4.8 psi
07A	CS-1	Modified TO-15 APH	2.8 "Hg	5.1 psi
07B	CS-1	Modified TO-15 APH	2.8 "Hg	5.1 psi
08A	CS-2	Modified TO-15 APH	5.3 "Hg	4.9 psi
08B	CS-2	Modified TO-15 APH	5.3 "Hg	4.9 psi
09A	OA-1	Modified TO-15 APH	5.1 "Hg	4.9 psi
09B	OA-1	Modified TO-15 APH	5.1 "Hg	4.9 psi
10A	OA-1 DUP	Modified TO-15 APH	7.6 "Hg	5.2 psi
10B	OA-1 DUP	Modified TO-15 APH	7.6 "Hg	5.2 psi
11A	OA-2	Modified TO-15 APH	5.5 "Hg	5 psi
11B	OA-2	Modified TO-15 APH	5.5 "Hg	5 psi
12A	Lab Blank	Modified TO-15 APH	NA	NA

Continued on next page



**WORK ORDER #: 1410150C**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
12B	Lab Blank	Modified TO-15 APH	NA	NA
13A	CCV	Modified TO-15 APH	NA	NA
13B	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.  
 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified TO-15 & VPH Fractions**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410150C**

Eleven 6 Liter Summa Canister (SIM Certified) and four 1 Liter Summa Canister (100% Certified) samples were received on October 08, 2014. The laboratory performed analysis via EPA Method TO-15 and Air Toxics VPH (Volatile Petroleum Hydrocarbon) methods for the Determination of VPH Fractions using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. Air Toxics VPH method is a hybrid of EPA TO-15, MADEP APH and WSDE VPH methods. Chromatographic peaks were identified via mass spectrum as either aliphatic or aromatic petroleum hydrocarbons and included in the appropriate range as defined by the method. The volatile Aliphatic hydrocarbons are collectively quantified within the C5 to C6 range, C6 to C8 range, C8 to C10 range and the C10 to C12 range. Additionally, the volatile Aromatic hydrocarbons are collectively quantified within the C8 to C10 range and the C10 to C12 range. The Aromatic ranges refer to the equivalent carbon (EC) ranges.

Aliphatic data is calculated from the Total Ion chromatogram which has been reprocessed in a duplicate file differentiated from the original by the addition of an alphanumeric extension. The Aromatic calculation also uses the information contained in the associated Extracted Ion file.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**MODIFIED METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: IA-1**

**Lab ID#: 1410150C-01A**

No Detections Were Found.

**Client Sample ID: IA-1**

**Lab ID#: 1410150C-01B**

No Detections Were Found.

**Client Sample ID: IA-2**

**Lab ID#: 1410150C-02A**

No Detections Were Found.

**Client Sample ID: IA-2**

**Lab ID#: 1410150C-02B**

No Detections Were Found.

**Client Sample ID: IA-3**

**Lab ID#: 1410150C-03A**

No Detections Were Found.

**Client Sample ID: IA-3**

**Lab ID#: 1410150C-03B**

No Detections Were Found.

**Client Sample ID: IA-4**

**Lab ID#: 1410150C-04A**

No Detections Were Found.

**Client Sample ID: IA-4**

**Lab ID#: 1410150C-04B**

No Detections Were Found.

**Client Sample ID: IA-5**

**Lab ID#: 1410150C-05A**

## Summary of Detected Compounds MODIFIED METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: IA-5**

**Lab ID#: 1410150C-05A**

No Detections Were Found.

**Client Sample ID: IA-5**

**Lab ID#: 1410150C-05B**

No Detections Were Found.

**Client Sample ID: IA-6**

**Lab ID#: 1410150C-06A**

No Detections Were Found.

**Client Sample ID: IA-6**

**Lab ID#: 1410150C-06B**

No Detections Were Found.

**Client Sample ID: CS-1**

**Lab ID#: 1410150C-07A**

No Detections Were Found.

**Client Sample ID: CS-1**

**Lab ID#: 1410150C-07B**

No Detections Were Found.

**Client Sample ID: CS-2**

**Lab ID#: 1410150C-08A**

No Detections Were Found.

**Client Sample ID: CS-2**

**Lab ID#: 1410150C-08B**

No Detections Were Found.

**Client Sample ID: OA-1**

**Lab ID#: 1410150C-09A**

**Summary of Detected Compounds  
MODIFIED METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: OA-1**

**Lab ID#: 1410150C-09A**

No Detections Were Found.

**Client Sample ID: OA-1**

**Lab ID#: 1410150C-09B**

No Detections Were Found.

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150C-10A**

No Detections Were Found.

**Client Sample ID: OA-1 DUP**

**Lab ID#: 1410150C-10B**

No Detections Were Found.

**Client Sample ID: OA-2**

**Lab ID#: 1410150C-11A**

No Detections Were Found.

**Client Sample ID: OA-2**

**Lab ID#: 1410150C-11B**

No Detections Were Found.



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410150C-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101516a	Date of Collection:	10/6/14 2:53:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 06:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	52	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	66	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	94	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-1

Lab ID#: 1410150C-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101516c	Date of Collection:	10/6/14 2:53:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 06:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	79	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	88	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)





Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410150C-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101517a	Date of Collection:	10/6/14 2:38:00 PM
Dil. Factor:	1.50	Date of Analysis:	10/15/14 06:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	15	Not Detected	48	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	15	Not Detected	61	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	15	Not Detected	87	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	15	Not Detected	100	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-2

Lab ID#: 1410150C-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101517c	Date of Collection:	10/6/14 2:38:00 PM	
Dil. Factor:	1.50	Date of Analysis:	10/15/14 06:52 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	15	Not Detected	74	Not Detected
>C10-C12 Aromatic Hydrocarbons	15	Not Detected	82	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410150C-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101518a	Date of Collection:	10/6/14 3:01:00 PM
Dil. Factor:	1.65	Date of Analysis:	10/15/14 07:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	53	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	68	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	96	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-3

Lab ID#: 1410150C-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101518c	Date of Collection:	10/6/14 3:01:00 PM	
Dil. Factor:	1.65	Date of Analysis:	10/15/14 07:18 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	81	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	90	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-4

Lab ID#: 1410150C-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101519a	Date of Collection:	10/6/14 3:15:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 07:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	52	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	66	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	94	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-4

Lab ID#: 1410150C-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101519c	Date of Collection:	10/6/14 3:15:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 07:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	79	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	88	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410150C-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101520a	Date of Collection:	10/6/14 3:10:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 08:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	52	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	66	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	94	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-5

Lab ID#: 1410150C-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101520c	Date of Collection:	10/6/14 3:10:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 08:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	79	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	88	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)





Air Toxics

Client Sample ID: IA-6

Lab ID#: 1410150C-06A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101521a	Date of Collection:	10/6/14 2:29:00 PM
Dil. Factor:	2.53	Date of Analysis:	10/15/14 08:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	25	Not Detected	82	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	25	Not Detected	100	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	25	Not Detected	150	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	25	Not Detected	180	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: IA-6

Lab ID#: 1410150C-06B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101521c	Date of Collection:	10/6/14 2:29:00 PM
Dil. Factor:	2.53	Date of Analysis:	10/15/14 08:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	25	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	25	Not Detected	140	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-1

Lab ID#: 1410150C-07A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101522a	Date of Collection:	10/6/14 3:25:00 PM
Dil. Factor:	1.48	Date of Analysis:	10/15/14 09:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	15	Not Detected	48	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	15	Not Detected	61	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	15	Not Detected	86	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	15	Not Detected	100	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-1

Lab ID#: 1410150C-07B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101522c	Date of Collection:	10/6/14 3:25:00 PM	
Dil. Factor:	1.48	Date of Analysis:	10/15/14 09:04 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	15	Not Detected	73	Not Detected
>C10-C12 Aromatic Hydrocarbons	15	Not Detected	81	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-2

Lab ID#: 1410150C-08A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101523a	Date of Collection:	10/6/14 3:33:00 PM
Dil. Factor:	1.62	Date of Analysis:	10/15/14 09:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	52	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	66	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	94	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: CS-2

Lab ID#: 1410150C-08B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101523c	Date of Collection:	10/6/14 3:33:00 PM
Dil. Factor:	1.62	Date of Analysis:	10/15/14 09:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	80	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1

Lab ID#: 1410150C-09A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101524a	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/15/14 09:57 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	52	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	66	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	94	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1

Lab ID#: 1410150C-09B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101524c	Date of Collection:	10/6/14 3:05:00 PM	
Dil. Factor:	1.61	Date of Analysis:	10/15/14 09:57 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	79	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	88	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)





Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1410150C-10A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101525a	Date of Collection:	10/6/14 3:05:00 PM
Dil. Factor:	1.81	Date of Analysis:	10/15/14 10:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	18	Not Detected	59	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	18	Not Detected	74	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	18	Not Detected	100	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	18	Not Detected	130	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1410150C-10B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101525c	Date of Collection:	10/6/14 3:05:00 PM	
Dil. Factor:	1.81	Date of Analysis:	10/15/14 10:23 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	18	Not Detected	89	Not Detected
>C10-C12 Aromatic Hydrocarbons	18	Not Detected	99	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-2

Lab ID#: 1410150C-11A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101526a	Date of Collection:	10/6/14 2:31:00 PM
Dil. Factor:	1.64	Date of Analysis:	10/15/14 10:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	16	Not Detected	53	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	16	Not Detected	67	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	16	Not Detected	95	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	16	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-2

Lab ID#: 1410150C-11B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101526c	Date of Collection:	10/6/14 2:31:00 PM
Dil. Factor:	1.64	Date of Analysis:	10/15/14 10:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	16	Not Detected	81	Not Detected
>C10-C12 Aromatic Hydrocarbons	16	Not Detected	90	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150C-12A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101506a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/15/14 10:09 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410150C-12B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101506c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/15/14 10:09 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410150C-13A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101505a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 09:35 AM

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	79
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	90
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	109
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	85

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410150C-13B

**MODIFIED METHOD TO-15 GC/MS FULL SCAN**

File Name:	3101505c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/14 09:35 AM

<b>Compound</b>	<b>%Recovery</b>
-----------------	------------------

>C8-C10 Aromatic Hydrocarbons	96
-------------------------------	----

>C10-C12 Aromatic Hydrocarbons	93
--------------------------------	----

Container Type: NA - Not Applicable





Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of

Project Manager NATHAN LEE
Collected by: (Print and Sign) OLIVER YAN
Company CONSTRUCTION-RIVERS ASSOCIATES
Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608
Phone (510) 420-3372 Fax (510) 420-9170

Project Info: P.O. # 5531738, Project # 311973, Project Name Chevron 90121
Turn Around Time: [X] Normal, [ ] Rush
Lab Use Only: Pressurized by: Date: Pressurization Gas: N2 He

Table with columns: Lab I.D., Field Sample I.D. (Location), Can #, Date of Collection, Time of Collection, Analyses Requested, Canister Pressure/Vacuum (Initial, Final, Receipt, Final (psi)). Rows include samples IA-1 through OA-1 DUP.

Relinquished by: (signature) Date/Time 10/8/14 1104
Received by: (signature) Date/Time 10-8-14 1104
Notes: email results to: NLEE@CRAWORLD.COM
INCLUDE EDD'S FOR THESE SAMPLES

Lab Use Only: Shipper Name EATL-Rom, Air Bill #, Temp (C) NA, Condition Good, Custody Seals Intact? Yes No None, Work Order # 1410150

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page \_\_\_ of \_\_\_

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER JAN  
 Company CONESTOGA-ROVER ASSOCIATES Email OJAN@CRAWORLD.COM  
 Address 5900 HOWLS CT, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

<b>Project Info:</b> P.O. # <u>5531738</u> Project # <u>311973</u> Project Name <u>Chevron 9021</u>	<b>Turn Around Time:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush specify _____	<b>Lab Use Only</b> Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
--	--	---

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
11A	OA-2	34399	10/6/14	1431	TO-15 - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
<del>12A</del>	SSVP-1	36447	10/7/14	1149	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
13A	SSVP-2	30811	10/7/14	1248	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
14A	SSVP-2 DUP	36437	10/7/14	1248	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29.5	-5		
15A	SSVP-3	34623	10/7/14	1429	TO-15 (GC/MS) FULL SCAN - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-29	-5		
16A	TRIP BLANK (1L)	98199	10/7/14	1515	TO-15 - TPHs/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub>	-30			
<del>17A</del>	<del>TRIP BLANK (6L)</del>		<del>10/6/14</del>	<del>1300</del>		<del>-30</del>			<del>09 10/8/14</del>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/8/14 1104</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10-8-14 1104</u>	<b>Notes:</b> email results to: NLEE@CRAWORLD.COM  INCLUDE BOD'S FOR THESE SAMPLES
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	EATL-Ron		NA	Good	Yes No None	1410150

10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410160B

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410160B**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SSVP-1	Modified TO-15 APH	4.3 "Hg	15 psi
01B	SSVP-1	Modified TO-15 APH	4.3 "Hg	15 psi
02A	SSVP-2	Modified TO-15 APH	3.9 "Hg	14.9 psi
02B	SSVP-2	Modified TO-15 APH	3.9 "Hg	14.9 psi
03A	SSVP-2 DUP	Modified TO-15 APH	3.9 "Hg	14.8 psi
03B	SSVP-2 DUP	Modified TO-15 APH	3.9 "Hg	14.8 psi
04A	SSVP-3	Modified TO-15 APH	5.1 "Hg	14.9 psi
04B	SSVP-3	Modified TO-15 APH	5.1 "Hg	14.9 psi
05A	Lab Blank	Modified TO-15 APH	NA	NA
05B	Lab Blank	Modified TO-15 APH	NA	NA
06A	CCV	Modified TO-15 APH	NA	NA
06B	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020



**LABORATORY NARRATIVE  
Modified TO-15 & VPH Fractions  
Conestoga-Rovers Associates (CRA)  
Workorder# 1410160B**

Four 1 Liter Summa Canister (100% Certified) samples were received on October 08, 2014. The laboratory performed analysis via EPA Method TO-15 and Air Toxics VPH (Volatile Petroleum Hydrocarbon) methods for the Determination of VPH Fractions using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. Air Toxics VPH method is a hybrid of EPA TO-15, MADEP APH and WSDE VPH methods. Chromatographic peaks were identified via mass spectrum as either aliphatic or aromatic petroleum hydrocarbons and included in the appropriate range as defined by the method. The volatile Aliphatic hydrocarbons are collectively quantified within the C5 to C6 range, C6 to C8 range, C8 to C10 range and the C10 to C12 range. Additionally, the volatile Aromatic hydrocarbons are collectively quantified within the C8 to C10 range and the C10 to C12 range. The Aromatic ranges refer to the equivalent carbon (EC) ranges.

Aliphatic data is calculated from the Total Ion chromatogram which has been reprocessed in a duplicate file differentiated from the original by the addition of an alphanumeric extension. The Aromatic calculation also uses the information contained in the associated Extracted Ion file.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**MODIFIED METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: SSVP-1**

**Lab ID#: 1410160B-01A**

No Detections Were Found.

**Client Sample ID: SSVP-1**

**Lab ID#: 1410160B-01B**

No Detections Were Found.

**Client Sample ID: SSVP-2**

**Lab ID#: 1410160B-02A**

No Detections Were Found.

**Client Sample ID: SSVP-2**

**Lab ID#: 1410160B-02B**

No Detections Were Found.

**Client Sample ID: SSVP-2 DUP**

**Lab ID#: 1410160B-03A**

No Detections Were Found.

**Client Sample ID: SSVP-2 DUP**

**Lab ID#: 1410160B-03B**

No Detections Were Found.

**Client Sample ID: SSVP-3**

**Lab ID#: 1410160B-04A**

No Detections Were Found.

**Client Sample ID: SSVP-3**

**Lab ID#: 1410160B-04B**

No Detections Were Found.



Air Toxics

Client Sample ID: SSVP-1

Lab ID#: 1410160B-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101327a	Date of Collection:	10/7/14 11:49:00 AM
Dil. Factor:	2.36	Date of Analysis:	10/14/14 01:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	Not Detected	76	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	24	Not Detected	97	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	24	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	24	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)





Air Toxics

Client Sample ID: SSVP-1

Lab ID#: 1410160B-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101327c	Date of Collection:	10/7/14 11:49:00 AM	
Dil. Factor:	2.36	Date of Analysis:	10/14/14 01:25 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	24	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	24	Not Detected	130	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2

Lab ID#: 1410160B-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101328a	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.31	Date of Analysis:	10/14/14 01:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	75	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	95	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	130	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2

Lab ID#: 1410160B-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101328c	Date of Collection:	10/7/14 12:48:00 PM	
Dil. Factor:	2.31	Date of Analysis:	10/14/14 01:51 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	23	Not Detected	110	Not Detected
>C10-C12 Aromatic Hydrocarbons	23	Not Detected	130	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2 DUP

Lab ID#: 1410160B-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101329a	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.31	Date of Analysis:	10/14/14 02:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	75	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	95	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	130	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	Not Detected	160	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2 DUP

Lab ID#: 1410160B-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101329c	Date of Collection:	10/7/14 12:48:00 PM	
Dil. Factor:	2.31	Date of Analysis:	10/14/14 02:17 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	23	Not Detected	110	Not Detected
>C10-C12 Aromatic Hydrocarbons	23	Not Detected	130	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-3

Lab ID#: 1410160B-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101330a	Date of Collection:	10/7/14 2:29:00 PM
Dil. Factor:	2.43	Date of Analysis:	10/14/14 02:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	Not Detected	79	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	24	Not Detected	100	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	24	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	24	Not Detected	170	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-3

Lab ID#: 1410160B-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101330c	Date of Collection:	10/7/14 2:29:00 PM	
Dil. Factor:	2.43	Date of Analysis:	10/14/14 02:44 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	24	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	24	Not Detected	130	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410160B-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101308a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/13/14 01:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: NA - Not Applicable





Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410160B-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	3101308c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/13/14 01:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410160B-06A

**MODIFIED METHOD TO-15 GC/MS FULL SCAN**

File Name:	3101305a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 11:24 AM

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	80
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	91
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	106
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	93

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 1410160B-06B

**MODIFIED METHOD TO-15 GC/MS FULL SCAN**

File Name:	3101305c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 11:24 AM

<b>Compound</b>	<b>%Recovery</b>
-----------------	------------------

>C8-C10 Aromatic Hydrocarbons	96
-------------------------------	----

>C10-C12 Aromatic Hydrocarbons	96
--------------------------------	----

Container Type: NA - Not Applicable



**Air Toxics**

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RavINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page      of     

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER JAN   
 Company CONESTOGA-ROVERS ASSOCIATES Email OJAN@CRAWORLD.COM  
 Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

<b>Project Info:</b> P.O. # <u>5531738</u> Project # <u>311973</u> Project Name <u>Chevron 9021</u>	<b>Turn Around Time:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small> Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
--	---	---

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
<del>11A</del>	<del>0A-2</del>	<del>34399</del>	<del>10/6/14</del>	<del>1431</del>	<del>TO-15 - TPH3/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O2, N2, CO2, CH4, H2; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN</del>	<del>-30</del>	<del>-5</del>		
01A 02A 03A 04A 05A 06A 07A 08A 09A 10A 11A 12A 13A 14A 15A 16A 17A 18A 19A 20A	SSVP-1	36447	10/7/14	1149	↑ TO-15 (GC/MS) FULL SCAN - TPH3/BTEX/MTBE/NAPHTHALENE; ASTM D-1946 FOR O2, N2, CO2, CH4, H2; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
	SSVP-2	30811	10/7/14	1230	↓	-30	-5		
	SSVP-2 DUP	36437	10/7/14	1248		-29.5	-5		
	SSVP-3	34623	10/7/14	1429		-29	-5		
	TRIP BLANK (1L)	98199	10/7/14	1515	↑ TO-15 - TPH3/BTEX/MTBE/NAPHTHALENE; O2, N2, CO2, CH4, H2; ASTM D-1946	-30			
	TRIP BLANK (6L)		10/6/14	1300	↓	-30			04 10/8/14

Relinquished by: (signature)  Date/Time <u>10/8/14 1104</u>	Received by: (signature)  Date/Time <u>10-8-14 1104</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____

**Notes:**  
 email results to: NLEE@CRAWORLD.COM  
 INCLUDE BODS FOR THESE SAMPLES

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>EATL-Ron</u>		<u>NA</u>	<u>Cool</u>	Yes No None	<u>1410150</u> <u>1410160</u>

10/22/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410160C

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410160C**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/22/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SSVP-1	Modified ASTM D-1946	4.3 "Hg	15 psi
02A	SSVP-2	Modified ASTM D-1946	3.9 "Hg	14.9 psi
03A	SSVP-2 DUP	Modified ASTM D-1946	3.9 "Hg	14.8 psi
04A	SSVP-3	Modified ASTM D-1946	5.1 "Hg	14.9 psi
05A	TRIP BLANK (1L)	Modified ASTM D-1946	29.8 "Hg	14.8 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	LCS	Modified ASTM D-1946	NA	NA
07AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 10/22/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified ASTM D-1946**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410160C**

Five 1 Liter Summa Canister (100% Certified) samples were received on October 08, 2014. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 X$ 's the RL.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID: SSV-1**

**Lab ID#: 1410160C-01A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.24	20
Nitrogen	0.24	79
Carbon Dioxide	0.024	0.74

**Client Sample ID: SSV-2**

**Lab ID#: 1410160C-02A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	17
Nitrogen	0.23	79
Carbon Dioxide	0.023	3.9

**Client Sample ID: SSV-2 DUP**

**Lab ID#: 1410160C-03A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	17
Nitrogen	0.23	79
Carbon Dioxide	0.023	3.9

**Client Sample ID: SSV-3**

**Lab ID#: 1410160C-04A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.24	19
Nitrogen	0.24	79
Carbon Dioxide	0.024	1.9

**Client Sample ID: TRIP BLANK (1L)**

**Lab ID#: 1410160C-05A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
-----------------	-----------------------	-------------------

**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID:** TRIP BLANK (1L)

**Lab ID#:** 1410160C-05A

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Nitrogen	0.10	100



Air Toxics

Client Sample ID: SSVP-1

Lab ID#: 1410160C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102107	Date of Collection:	10/7/14 11:49:00 AM
Dil. Factor:	2.36	Date of Analysis:	10/21/14 11:37 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	20
Nitrogen	0.24	79
Carbon Dioxide	0.024	0.74
Methane	0.00024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2

Lab ID#: 1410160C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102108	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.31	Date of Analysis:	10/21/14 12:05 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	17
Nitrogen	0.23	79
Carbon Dioxide	0.023	3.9
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-2 DUP

Lab ID#: 1410160C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102109	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.30	Date of Analysis:	10/21/14 12:39 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	17
Nitrogen	0.23	79
Carbon Dioxide	0.023	3.9
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: SSVP-3

Lab ID#: 1410160C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102110	Date of Collection:	10/7/14 2:29:00 PM
Dil. Factor:	2.43	Date of Analysis:	10/21/14 01:26 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	19
Nitrogen	0.24	79
Carbon Dioxide	0.024	1.9
Methane	0.00024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1410160C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102106	Date of Collection:	10/7/14 3:15:00 PM
Dil. Factor:	1.00	Date of Analysis:	10/21/14 11:09 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	100
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected
Helium	0.050	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410160C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/14 10:14 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable





Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1410160C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102104c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/14 09:27 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1410160C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/14 08:00 AM

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	94	85-115
Carbon Dioxide	100	85-115
Methane	103	85-115
Helium	99	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1410160C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10102103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/14 08:42 AM

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	94	85-115
Carbon Dioxide	100	85-115
Methane	105	85-115
Helium	99	85-115

Container Type: NA - Not Applicable



Air Toxics

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RavINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page \_\_\_ of \_\_\_

Project Manager NATHAN LEE  
 Collected by: (Print and Sign) OLIVER JAN  
 Company CONESTOGA-ROVERS ASSOCIATES Email OJAN@CRAWORLD.COM  
 Address 5900 HOLLIS ST, SUITE A City EMERYVILLE State CA Zip 94608  
 Phone (510) 420-3372 Fax (510) 420-9170

Project Info:	Turn Around Time:	Lab Use Only
	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
P.O. # <u>5531738</u>		
Project # <u>311973</u>		
Project Name <u>Chevron 9021</u>		

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
<del>11A</del>	<del>0A-2</del>	<del>34399</del>	<del>10/6/14</del>	<del>1431</del>	<del>TO-15 - TPHs /BTEX /MTBE /NAPHTHALENE ; ASTM D-1746 FOR O<sub>2</sub>, N<sub>2</sub>, CO<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN</del>	<del>-30</del>	<del>-5</del>		
01A 02A 03A 04A 05A 06A 12A	SSVP-1	36447	10/7/14	1149	TO-15 (GC/MS) FULL SCAN - TPHs / BTEX /MTBE /NAPHTHALENE ;	-30	-5		
13A	SSVP-2	30811	10/7/14	1230	ASTM D-1746 FOR O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ; AROMATICS AND ALIPHATICS BY TO-15 APH FULL SCAN	-30	-5		
14A	SSVP-2 DUP	36437	10/7/14	1248		-29.5	-5		
15A	SSVP-3	34623	10/7/14	1429		-29	-5		
16A	TRIP BLANK (1L)	98199	10/7/14	1515	TO-15 -TPHs /BTEX /MTBE /NAPHTHALENE O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> ASTM D-1746	-30			
<del>17A</del>	<del>TRIP BLANK (6L)</del>		<del>10/6/14</del>	<del>1300</del>		<del>-30</del>			<del>04 10/8/14</del>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/8/14</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10-8-14</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____

Notes:  
 email results to: NLEE@CRAWORLD.COM  
 INCLUDE BODS FOR THESE SAMPLES

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	EATL-Ron		NA	Good	Yes No None	1410150 1410160

11/3/2014  
Mr. Oliver Yan  
Conestoga-Rovers Associates (CRA)  
5900 Hollis Street  
Suite A  
Emeryville CA 94608

Project Name: Chevron 90121  
Project #: 311973  
Workorder #: 1410160AR1

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 10/8/2014 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1410160AR1**

Work Order Summary

<b>CLIENT:</b>	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	<b>BILL TO:</b>	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
<b>PHONE:</b>	510-420-0700	<b>P.O. #</b>	SS31738
<b>FAX:</b>	510-420-9170	<b>PROJECT #</b>	311973 Chevron 90121
<b>DATE RECEIVED:</b>	10/08/2014	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	10/16/2014		
<b>DATE REISSUED:</b>	11/03/2014		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SSVP-1	TO-15	4.3 "Hg	15 psi
02A	SSVP-2	TO-15	3.9 "Hg	14.9 psi
03A	SSVP-2 DUP	TO-15	3.9 "Hg	14.8 psi
04A	SSVP-3	TO-15	5.1 "Hg	14.9 psi
05A	TRIP BLANK (1L)	TO-15	29.8 "Hg	14.8 psi
06A	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 11/03/14

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**EPA Method TO-15**  
**Conestoga-Rovers Associates (CRA)**  
**Workorder# 1410160AR1**

Five 1 Liter Summa Canister (100% Certified) samples were received on October 08, 2014. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

DUE TO LABORATORY ERROR, THE WORKORDER WAS REISSUED ON NOVEMBER 3, 2014 TO REPORT RESULTS IN PPBV AND UG/M3.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds  
EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: SSVP-1**

**Lab ID#: 1410160AR1-01A**

No Detections Were Found.

**Client Sample ID: SSVP-2**

**Lab ID#: 1410160AR1-02A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Methyl tert-butyl ether	1.2	1.4	4.2	5.0
Ethyl Benzene	1.2	1.2	5.0	5.1
m,p-Xylene	1.2	2.5	5.0	11
TPH ref. to Gasoline (MW=100)	58	79	240	320

**Client Sample ID: SSVP-2 DUP**

**Lab ID#: 1410160AR1-03A**

No Detections Were Found.

**Client Sample ID: SSVP-3**

**Lab ID#: 1410160AR1-04A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Benzene	1.2	1.7	3.9	5.5

**Client Sample ID: TRIP BLANK (1L)**

**Lab ID#: 1410160AR1-05A**

No Detections Were Found.





Air Toxics

Client Sample ID: SSVP-1

Lab ID#: 1410160AR1-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101327	Date of Collection:	10/7/14 11:49:00 AM
Dil. Factor:	2.36	Date of Analysis:	10/14/14 01:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
TPH ref. to Gasoline (MW=100)	59	Not Detected	240	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: SSVP-2

Lab ID#: 1410160AR1-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101328	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.31	Date of Analysis:	10/14/14 01:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	1.2	1.4	4.2	5.0
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
Ethyl Benzene	1.2	1.2	5.0	5.1
m,p-Xylene	1.2	2.5	5.0	11
o-Xylene	1.2	Not Detected	5.0	Not Detected
Naphthalene	4.6	Not Detected	24	Not Detected
TPH ref. to Gasoline (MW=100)	58	79	240	320

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	101	70-130



Client Sample ID: SSVP-2 DUP

Lab ID#: 1410160AR1-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101329	Date of Collection:	10/7/14 12:48:00 PM
Dil. Factor:	2.31	Date of Analysis:	10/14/14 02:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Naphthalene	4.6	Not Detected	24	Not Detected
TPH ref. to Gasoline (MW=100)	58	Not Detected	240	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SSVP-3

Lab ID#: 1410160AR1-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101330	Date of Collection:	10/7/14 2:29:00 PM
Dil. Factor:	2.43	Date of Analysis:	10/14/14 02:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Benzene	1.2	1.7	3.9	5.5
Toluene	1.2	Not Detected	4.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.3	Not Detected
m,p-Xylene	1.2	Not Detected	5.3	Not Detected
o-Xylene	1.2	Not Detected	5.3	Not Detected
Naphthalene	4.9	Not Detected	25	Not Detected
TPH ref. to Gasoline (MW=100)	61	Not Detected	250	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1410160AR1-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101331	Date of Collection:	10/7/14 3:15:00 PM
Dil. Factor:	1.00	Date of Analysis:	10/14/14 03:10 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: Lab Blank

Lab ID#: 1410160AR1-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101308	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 01:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: CCV

Lab ID#: 1410160AR1-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 09:53 AM

Compound	%Recovery
Methyl tert-butyl ether	89
Benzene	97
Toluene	106
Ethyl Benzene	94
m,p-Xylene	94
o-Xylene	96
Naphthalene	134
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1410160AR1-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101303	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 10:18 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	83	70-130
Benzene	91	70-130
Toluene	99	70-130
Ethyl Benzene	86	70-130
m,p-Xylene	89	70-130
o-Xylene	89	70-130
Naphthalene	106	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	100	70-130



Client Sample ID: LCSD

Lab ID#: 1410160AR1-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3101304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/13/14 10:43 AM

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	82	70-130
Benzene	91	70-130
Toluene	97	70-130
Ethyl Benzene	87	70-130
m,p-Xylene	88	70-130
o-Xylene	88	70-130
Naphthalene	108	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	100	70-130