CONESTOGA-ROVERS & ASSOCIATES

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Emeryville, California 94608
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www.CRAworld.com

TRANSMITTAL

DATE: December 20, 2013

REFERENCE NO.: 311642

PROJECT NAME: Chevron 91153

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

ACEH RO#0341

RECEIVED
By Alameda County Environmental Health at 8:55 am, Dec 27, 2013

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

Sent via:
- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other Alameda County FTP Upload and GeoTracker

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

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

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

Copy to: Mr. Brian A. Waite (Chevron)
Mr. Mark Hom (Property Owner)

Completed by: Nathan Lee [Please Print]

Signed: Nathan Lee

Filing: **Correspondence File**

Brian A. Waite, P.G.
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6486
bwaite@chevron.com

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

Re: Chevron Service Station No. 91153
3135 Gibbons Drive (3126 Fernside Blvd)
Alameda, CA

I have reviewed the attached report titled *Crawl Space, Indoor Ambient Air and Sub-Slab Gas Investigation 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,

Brian A. Waite

Digitally signed by Brian A. Waite
DN: cn=Brian A. Waite, o=Chevron Environmental Management Company, ou, email=bwaite@chevron.com, c=US
Date: 2013.12.20 15:05:43 -08'00'

Brian A. Waite, P.G.
Project Manager

Attachment: *Crawl Space, Indoor Ambient Air and Sub-Slab Gas Investigation Report*

CRAWL SPACE, INDOOR AMBIENT AIR AND SUB-SLAB SOIL GAS INVESTAGATION REPORT

FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD)
ALAMEDA, CALIFORNIA
ACEH CASE RO #0341

Prepared For:

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

Prepared by:
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DECEMBER 20, 2013
REF. NO. 311642 (24)

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

FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE (3126 FERNSIDE BOULEVARD)
ALAMEDA, CALIFORNIA
ACEH CASE RO #0341

Nathan Lee

Nathan Lee PG 8486

Prepared by:
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DECEMBER 20, 2013
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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 SITE BACKGROUND 1
2.1 SITE DESCRIPTION 1
2.2 PREVIOUS ENVIRONMENTAL WORK 1
2.3 SITE GEOLOGY 2
2.4 SITE HYDROGEOLOGY 2

3.0 CRAWL SPACE, INDOOR, AMBIENT AIR SUB-SLAB VAPOR INVESTIGATION 2

4.0 AIR AND VAPOR INVESTIGATION RESULTS 6
4.1 CRAWL SPACE, INDOOR AND AMBIENT AIR ANALYTICAL RESULTS 6
4.2 SUB-SLAB ANALYTCAL RESULTS 7
4.3 AMBIENT AIR AND SUB SLAB VAPOR DATA INTERPRETATION 8

5.0 CONCLUSIONS AND RECOMMENDATIONS 10

LIST OF FIGURES
(Following Text)

FIGURE 1 VICINITY MAP

FIGURE 2 SITE PLAN

FIGURE 3 VAPOR AND AMBIENT AIR SAMPLING 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 CORRESPONDENCE

APPENDIX B SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

APPENDIX C BUILDING SURVEY FORM

APPENDIX D LABORATORY ANALYTICAL REPORTS

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Crawl Space, Indoor Ambient Air and Sub-Slab Soil Gas Investigation Report* on behalf of Chevron Environmental Management Company (Chevron). In a letter dated August 31, 2012 (Appendix A), Alameda County Environmental Health Services (ACEH) provided several technical comments regarding the site. ACEH request letter dated August 31, 2012 and the ACEH extension approval, request approval letter dated October 23, 2012 are presented in Appendix A. ACEH letter dated July 9, 2013 (Appendix A) approved CRA.'s *Work Plan for Sub-Slab Soil Gas Investigation* dated April 24, 2013. This investigation involved the installation of two sub-slab vapor probes within the garage on September 16, 2013, as well as the September 19 and 20, 2013 ambient indoor, crawl space, outdoor air and sub-slab probe sampling. Presented below is the site background, methods, investigation results, air results, and CRA's conclusions and recommendations.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION

The site is located on a triangularly-shaped lot at the intersections of Gibbons Drive, Fernside Boulevard, and High Street in Alameda, California (Figure 1). A former service station operated until June 1986. A residence was built on the property in 1989 (Figure 2). Surrounding area use is residential and commercial.

2.2 PREVIOUS ENVIRONMENTAL WORK

Environmental investigations began in 1986 with the underground storage tank (UST) removals. Since 1986, a total of 12 confirmation samples, 26 soil borings, 10 groundwater monitoring wells (well C-2 has been destroyed), 1 extraction well, 1 temporary well, and 51 temporary soil vapor probes have been installed (Figure 3). Groundwater has been monitored since 1986. Remediation conducted has included an excavation during UST removal and during the foundation construction for the house, a groundwater pump and treat system, oxygen releasing compound (ORC) and hydrogen peroxide injections, groundwater extraction events, and since 1995 weekly to quarterly light non-aqueous phase liquid (LNAPL) removal by bailing and sorbent socks. Two well surveys and preferential pathway studies have also been conducted. A summary of previous environmental investigation and remediation is included in Appendix B.

2.3 SITE GEOLOGY

Soil beneath the site consists primarily of sand with some silt and clay to the total depth explored of approximately 23 feet below grade (fbg).

2.4 SITE HYDROGEOLOGY

The site is approximately 8 feet above mean sea level. Depth to water in wells ranges from approximately 0 to 6.5 fbg. Groundwater beneath the site is designated as an existing or potential drinking water resource by the Regional Water Quality Control Board – San Francisco Bay Region (RWQCB-SF).[1] Groundwater flow direction is typically east-southeast toward the Oakland Alameda Estuary. The estuary is the closest surface water and is approximately 550 feet downgradient. Since 2010, LNAPL has been measured in well C-1, ranging in thickness from 0.01 to 0.25 foot.

3.0 CRAWL SPACE, INDOOR, AMBIENT AIR SUB-SLAB VAPOR INVESTIGATION

The investigation objective was to assess soil gas conditions beneath the garage slab and to assess ambient air on the property. Field activities are summarized below.

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.

Permits

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

Drilling Company

Vapor Tech Services (VTS), of Hayward, California (C57 license #916085) preformed the sub-slab vapor probe installation.

[1] Regional Water Quality Control Board – San Francisco Bay Region Groundwater Committee; June 1999, *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, California; California.*

Installation Dates
Installation of sub-slab vapor probes SSVP-1 and SSVP-2 occurred on September 16, 2013.

CRA Personnel
CRA Personnel, Oliver Yan and Elizabeth Austin managed the installation under the supervision of California Professional Geologist Nathan Lee (PG 8486).

Utility Clearance
Prior to drilling, CRA contacted Underground Service Alert (USA) to mark underground utilities near the proposed sub-slab probe locations. CRA contracted Cruz Brothers Locators of Soquel, California to verify underground utility locations near proposed boring locations using electronic line location and metal detectors.

Sub-Slab Vapor Probe Construction
The sub-slab probes SSVP-1 and SSVP-2 were installed based on the Department of Toxic Substances Control California Environmental Protection Agency's October 2011 *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. A rotary-hammer drill equipped with a 2-inch diameter drill bit to create a 2-inch deep "outer" hole that partially penetrated the concrete slab. A small portable vacuum cleaner was used to remove cuttings from the hole. Removal of cuttings in this manner from the non-penetrated slab does not compromise soil vapor samples because there is a lack of pneumatic communication between sub-slab material and the vacuum cleaner.

A smaller diameter 1-inch "inner" hole was advanced through the remaining concrete slab and into the sub-slab material using a rotary hammer to an approximately depth of 10 inches below grade.

The sub-slab probes were constructed using a stainless-steel tubing and stainless steel compression fittings. Stainless-steel ensures that the construction materials are not a source of volatile organic compounds. The vapor probe was installed at approximately 10 inches below surface. Monterey #2/12 sand was used to fill the annular space from the bottom of the boring to approximately 1.5 inches above the probe. Then 2 inches of hydrated bentonite seal was placed above the sand pack. Quick drying Portland cement slurry was use to fill the boring above the bentonite to the slab surface. Then capped with a stainless-steel plug and made flush with the slab surface to prevent interference with daily garage use. Sub-slab vapor probe locations are shown on Figure 2.

Crawl Space, Indoor, and Ambient Air and Sub-Slab Vapor Sampling Dates
Ambient air sampling began on September 19, 2013 and concluded on September 20, 2013. Sampling of sub-slab vapor probes SSVP-1 and SSVP-2 were conducted on September 20, 2013.

Crawl Space, Indoor, and Ambient Air Sub-Slab Vapor Sampling
Prior to ambient air sampling, a Building Survey and Building Chemical Screening forms were completed and are included in Appendix C.

Indoor air samples were collected from three locations inside the home (IA-1 in the living room, IA-2 in the laundry room, and IA-3 in the garage). Crawl space samples were collected from two locations (CS-1 and CS-2) in the crawlspace, and one ambient air sample was collected from an upwind location (OA-1) outside the house. A field duplicate was collected concurrently with the outdoor ambient air sample OA-1. The various sample locations 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 sample.

After the "shut in" test was completed the crawl space, indoor and ambient air samples were collected in certified 6 liter Summa™ canisters, in accordance with the DTSC *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*.by using flow limiters set at 3.48 through 3.54 milliliters per minute (mL/min) to allow the desired sample volume in approximately 24 hours.

After the "shut-in" test was completed the probes were connected to the sampling train and approximately three probe volumes of stagnant air were purged. After purging, the sample Summa™ canister valve was opened to allow the Summa™ canister vacuum to draw soil vapor through the flow controller at a flow rate of 167 milliliter per minute (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 sampling be 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

All samples were labeled, logged on a chain-of-custody, stored at ambient temperature, and shipped to Eurofins Air Toxics Inc. (EATI) of Folsom, California for analysis.

Laboratory Analyses

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

- Total petroleum hydrocarbons as gasolilne (TPHg), benzene, toluene, ethylbenzene, total xylene (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene by modified Environmental Protection Agency (EPA) Method TO-15 (GC/MS SIM) for the indoor, crawl space and ambient air samples and by 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
- Oxygen (O2), carbon dioxide (CO2), methane (CH4), nitrogen (N2), and helium by ASTM D-1946 (GC/TCD)

4.0 AIR AND VAPOR INVESTIGATION RESULTS

4.1 CRAWL SPACE, INDOOR AND AMBIENT AIR ANALYTICAL RESULTS

Hydrocarbons were detected in air above environmental screening levels (ESLs)[2] in several samples. Complete ambient air and soil vapor results are included as Table 1 and 2. Historic soil vapor results are included as Table 1. The laboratory analytical report is included as Appendix D. Crawl space, indoor, and ambient air analytical results are summarized in Table A below.

TABLE A: CRAWL SPACE, INDOOR AND AMBIENT AIR ANALYTICAL RESULTS

	TPHg	*Benzene*	*Toluene*	*Ethyl-benzene*	*m,p-Xylene*	*o-Xylene*	*MTBE*	*Naphthalene*
Ambient Air and Indoor Air ESLs - Residential[2]	**290**	**0.084**	**310**	**0.97**	**100**	**100**	**9.4**	**0.072**
SAMPLE ID	***All results reported in microgram per cubic meter (µg/m³)***							
OA-1	<66	**0.25J**	1.0	0.17	0.61	0.22	0.0075J	<4.2
OA-1 DUP	<67	**0.24J**	0.96	0.17	0.61	0.23	0.0062J	<4.3
IA-1	150	**0.60**	3.4	0.95	2.9	0.98	0.0094J	<4.4
IA-2	190	**1.7**	6.3	**1.1**	3.8	1.2	0.013J	<4.6
IA-3	270	**4.0**	12	**1.8**	6.1	2.0	0.028J	<4.8
CS-1	<67	**0.18J**	0.52	0.089J	0.30	0.12J	<0.59	<4.3
CS-2	<67	**0.28**	0.94	0.16	0.54	0.21	0.012J	<4.3

bold = concentrations detected at or above indoor air and ambient air ESLs
J = Estimated value (the result ≥ the method detection limit < the limit of quantition)

[2] California Regional Water Quality Control Board, San Francisco Bay Region – Interim Final, November 2007, revised May 2008 (Revised May 2013), *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Table E-3 Environmental Screening Levels (ESLs) Ambient and Indoor Air Screening Levels, Lowest Residential Concerns.*

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 B below.

TABLE B: APH FRACTIONATION RESULTS						
	C5-C6 Aliphatic Hydrocarbons	***>C6-C8 Aliphatic Hydrocarbons***	***>C8-C10 Aliphatic Hydrocarbons***	***>C10-C12 Aliphatic Hydrocarbons***	***>C8-C10 Aromatic Hydrocarbons***	***C10-C12 Aromatic Hydrocarbons***
Well ID	**All results reported in $\mu g/m^3$**					
OA-1	<52	<66	<94	<110	<79	<88
OA-1 DUP	<53	<67	<95	<110	<80	<89
IA-1	<54	<69	<98	<120	<82	<92
IA-2	<56	<71	<100	<120	<86	<96
IA-3	<59	<74	<100	<130	<89	<100
CS-1	<53	<67	<95	<110	<80	<89
CS-2	<53	<67	<95	<110	<81	<90

4.2 SUB-SLAB ANALYTCAL RESULTS

The laboratory analytical report is included in Appendix D. Sub-slab vapor analytical results are summarized in Table C below.

TABLE C: SUB-SLAB VAPOR ANALYTICAL RESULTS								
	TPHg	***Benzene***	***Toluene***	***Ethyl-benzene***	***m,p-Xylene***	***o-Xylene***	***MTBE***	***Naphthalene***
LTCP Soil Gas Criteria Residential[2]	**NE**	**85**	**NE**	**1,100**	**NE**	**NE**	**NE**	**93**
SAMPLE ID	***All results reported in $\mu g/m^3$***							
SSVP-1	98,000,000	**10,000J**	<36,000	<41,000	<41,000	<41,000	<34,000	**13,000J**
SSVP-2	120,000,000	**20,000J**	8,700J	<56,000	<56,000	<56,000	<47,000	**10,000J**
bold = concentrations detected at or above soil gas criteria J = Estimated value (the result ≥ the method detection limit < the limit of quantition)								

No helium was detected in any of the sub-slab vapor samples. The absence of helium indicates that no ambient air entered the canisters during the sampling process.

4.3 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 A presents the 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.

TABLE A: RANGES OF BACKGROUND INDOOR AIR CONCENTRATIONS[3]

Chemical of Concern	*Number of Studies*	*Number of Samples*	*Range % Detect*	*Total % Detects*	*RL Range (µg/m³)*	*Range of 50th % (µg/m³)*	*Range of 75th % (µg/m³)*	*Range of 90th % (µg/m³)*
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
Xylene, m/p-	10	1,920	52-100	92.9	0.4 – 2.2	1.5 – 14	4.6 – 21	12 – 56
Xylene, o-	12	2,004	31-100	89.0	0.11 – 2.2	1.1 – 3.6	2.4 – 6.2	5.5 – 16

RL = Reporting limit
µg/m³ =L = Micrograms per cubic meter

For example, the range of normal background concentrations for benzene spans the 1.41 to 14.1 µg/m³ 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 B lists the Office of Environmental Health Hazard Assessment (OEHHA) hazard quotient concentration values of 1 and excess cancer risk concentrations of 10^{-6}.

[3] 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.

TABLE B: CALIFORNIA HUMAN HEALTH SCREENING LEVELS FOR INDOOR AIR AND SOIL GAS		
	[1]*Indoor Air Human Health Screening Levels (µg/m3)*	
Chemical	*Residential Land Use*	*Commercial/ Industrial Land Use Only*
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[2]	1.60 E+00[2]
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[3]	1.02 E+03[3]
o-Xylene	7.30 E+02[3]	1.02 E+03[3]
p-Xylene	7.30 E+02[3]	1.02 E+03[3]
Reference: Appendix 1, OEHHA Target Indoor Air Concentrations and Soil-Gas Screening Numbers for Existing Buildings under Residential and Industrial/Commercial land uses.		
Notes: 1. "Residential Land Use" screening levels generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.).		
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: CHHSLS based on target cancer risk of 10-6. 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.		
2. Calculation of a screening number for the chemical outlined in OEHHA draft report, *California Human Health Screening Levels for Ethylbenzene* dated November 2009.		
3. Representative Screening Numbers for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest one amongst the three isomers.		

As a result, it is not possible to interpret whether vapor intrusion 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 intrusion would be a combination of indoor and outdoor air samples where indoor air contained significantly

greater concentrations of petroleum hydrocarbon VOC's (e.g., BTEX) than outdoor air, and also contained significantly lower concentrations of petroleum hydrocarbon VOC's than crawl space air.

Indoor air, outdoor air, and crawlspace concentrations will be evaluated per the above protocols. Criteria indicative of vapor intrusion 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 the indoor air 10-6 standard values presented in OEHHA Table 2 above, which are within the lower range of normal background).
3. Crawl space 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 intrusion to the building.

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

5.0 CONCLUSIONS AND RECOMMENDATIONS

Indoor ambient air hydrocarbon concentrations are significantly higher than both outdoor and crawl space ambient air, however the concentrations of both outside and crawl space ambient air are very similar. The detected outside and crawl space ambient air concentrations likely have a significant contribution from vehicle emissions from the heavily traveled High Street and Fernside Boulevard intersection. The outdoor, crawl space and indoor ambient air concentrations are similar to the concentrations detected and reported in CRA's *Subsurface and Crawl Space, Indoor and Ambient Air Investigation* dated April 18, 2012. The highest indoor ambient air concentrations were detected in sample IA-3 which was inside the garage as the garage is used to house vehicles. Although the garage sub-slab vapor probes concentrations were elevated, the benzene concentration in IA-3 is approximately 5000 times lower. Though ambient air concentrations are above ESLs levels for residential occupation, the factors used to confirm that the source of vapor intrusion is from a sub-surface hydrocarbon source have not been met. Therefore the concentrations detected in indoor air are likely due to sources other than sub-surface hydrocarbons, such as an indoor source.

FIGURES

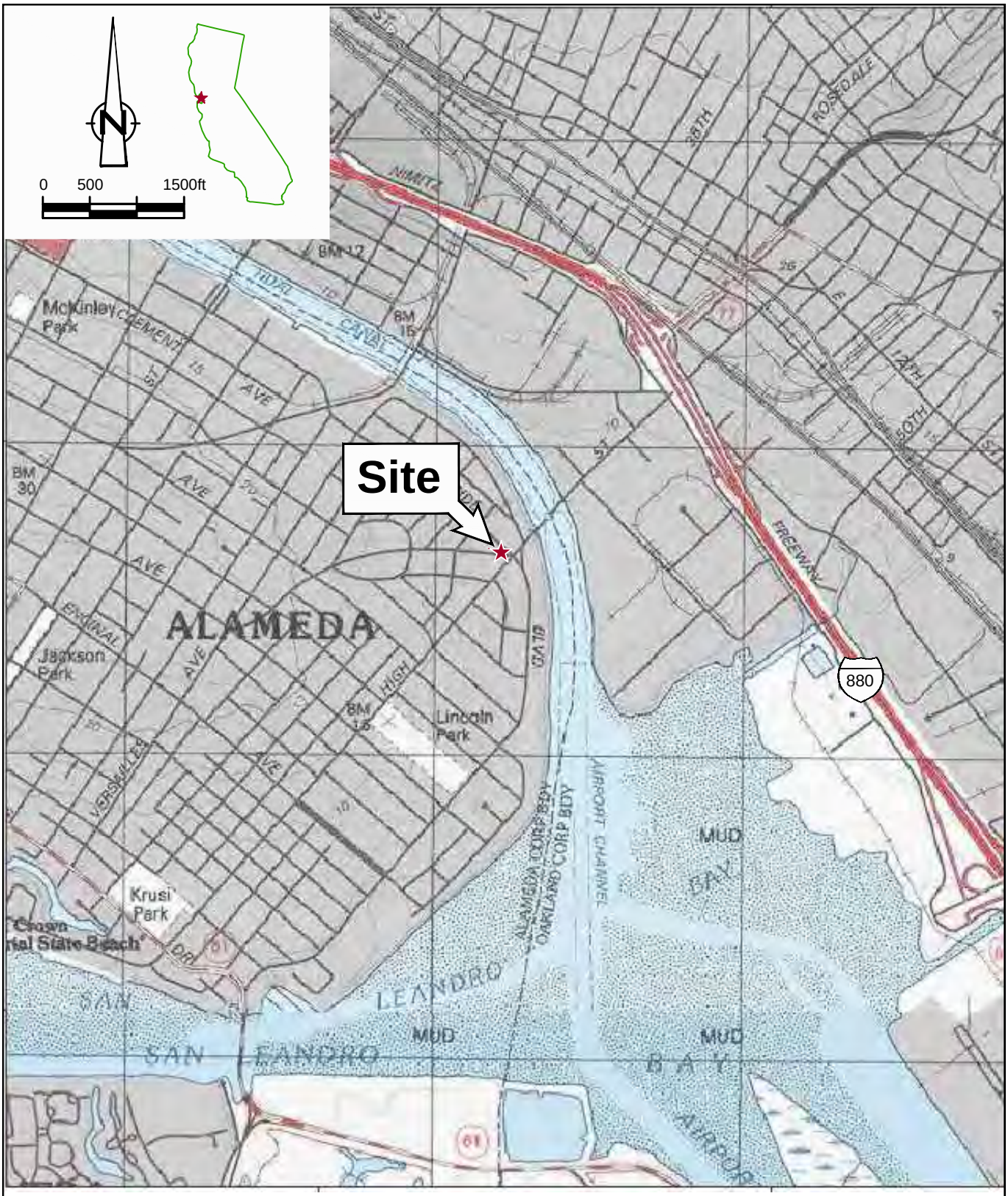

Figure 1

VICINITY MAP
FORMER CHEVRON SERVICE STATION 91153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

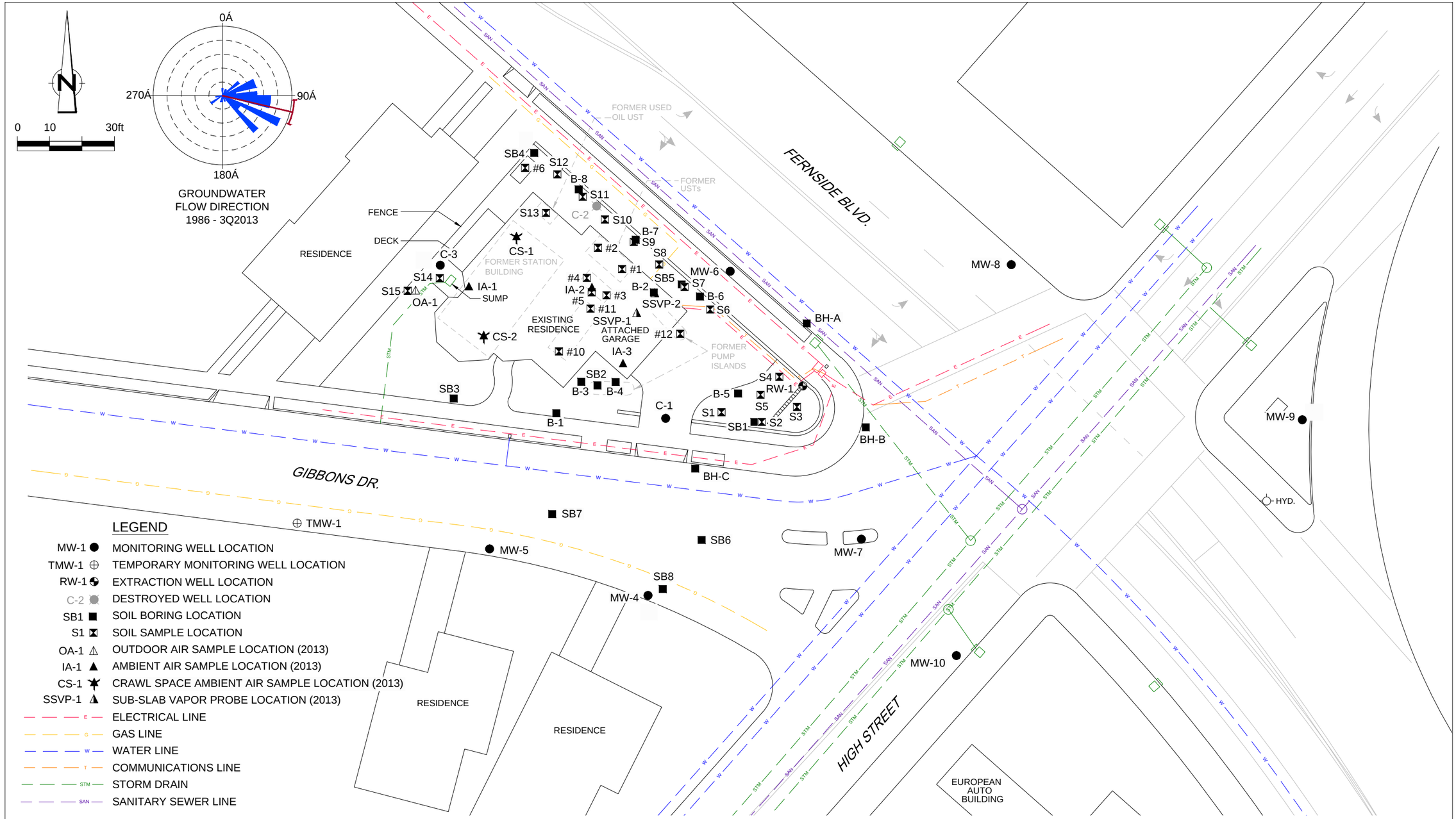

Figure 2

SITE PLAN
FORMER CHEVRON SERVICE STATION 91153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2012.2(024)GN-WA005 DEC 20/2013

0 10 30ft

0°
90°
180°
270°

GROUNDWATER
FLOW DIRECTION
1986 - 3Q2013

FERNSIDE BLVD.
GIBBONS DR.
HIGH STREET

RESIDENCE
FENCE
DECK
FORMER USED OIL UST
FORMER USTs
FORMER STATION BUILDING
EXISTING RESIDENCE
ATTACHED GARAGE
FORMER PUMP ISLANDS
SUMP
HYD.
EUROPEAN AUTO BUILDING

OA-1
OA-1-DUP
IA-1
IA-2
CS-1
CS-2
SV-1
SV-2
SV-3
SV-4
SV-5
SV-6
SV-7
SSVP-1
SSVP-2
IA-3
V1
V2
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LEGEND

OA-1	OUTDOOR AIR SAMPLE LOCATION (2013)
IA-1	AMBIENT AIR SAMPLE LOCATION (CRA, 2012)
IA-1	AMBIENT AIR SAMPLE LOCATION (2013)
CS-1	CRAWL SPACE AMBIENT AIR SAMPLE LOCATION (2013)
CS-1	CRAWLSPACE AMBIENT AIR SAMPLE LOCATION (CRA, 2012)
SV-1	SOIL VAPOR SAMPLE LOCATION (G-R, 2002)
V1	SOIL VAPOR SAMPLE LOCATION (EA, 1989)
V1	SOIL VAPOR SAMPLE LOCATION (EA, 1987)
SSVP-1	SUB-SLAB VAPOR PROBE LOCATION (2013)
E	ELECTRICAL LINE
G	GAS LINE
W	WATER LINE
T	COMMUNICATIONS LINE
STM	STORM DRAIN
SAN	SANITARY SEWER LINE

Figure 3

VAPOR AND AMBIENT AIR SAMPLE LOCATIONS
FORMER CHEVRON SERVICE STATION 91153
3135 GIBBONS DRIVE (3126 FERNSIDE BLVD)
Alameda, California

311642-2012.2(024)GN-WA006 NOV 19/2013

TABLES

TABLE 1

CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Sample Depth (fbg)*	*TPHg* ($\mu g/m^3$)	*Benzene* ($\mu g/m^3$)	*Toluene* ($\mu g/m^3$)	*Ethyl-benzene* ($\mu g/m^3$)	*m,p-Xylene* ($\mu g/m^3$)	*o-Xylene* ($\mu g/m^3$)	*Total Xylenes*[1] ($\mu g/m^3$)	*MTBE* ($\mu g/m^3$)	*Naphthalene* ($\mu g/m^3$)	*Oxygen* (% Vol)	N_2 (% Vol)	CO_2 Vol)	*Methane* (% Vol)	*He* (% Vol)
ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Residential[2]			***290***	***0.084***	***310***	***0.97***	***100***	***100***	***100***	***9.4***	***0.072***	*NE*	*NE*	*NE*	*NE*	*NE*
LTCP Soil Gas Criteria - Residential[3]			*NE*	*85*	*NE*	*1,100*	*NE*	*NE*	*NE*	*NE*	*93*	*NE*	*NE*	*NE*	*NE*	*NE*
CRA - Indoor Air/ Outdoor Air/ Crawl Space Air and Soil Vapor Sampling																
OA-1	09/19/13	--	<66	**0.25 J**	1.0	0.17	0.61	0.22	--	0.0075 J	<4.2	21	79	0.041	0.00020	<0.080
OA-1 DUP	09/19/13	--	<67	**0.24 J**	0.96	0.17	0.61	0.23	--	0.0062 J	<4.3	21	79	0.041	0.00022	<0.082
IA-1	09/19/13	--	150	**0.60**	3.4	0.95	2.9	0.98	--	0.0094 J	<4.4	21	79	0.064	0.00048	<0.084
IA-2	09/19/13	--	190	**1.7**	6.3	**1.1**	3.8	1.2	--	0.013 J	<4.6	21	79	0.052	0.00031	<0.087
IA-3	09/19/13	--	270	**4.0**	12	**1.8**	6.1	2.0	--	0.028 J	<4.8	21	79	0.048	0.00028	<0.091
CS-1	09/19/13	--	<67	**0.18 J**	0.52	0.089 J	0.30	0.12 J	--	<0.59	<4.3	21	79	0.039	0.00017	<0.082
CS-2	09/19/13	--	<67	**0.28**	0.94	0.16	0.54	0.21	--	0.012 J	<4.3	22	78	0.043	0.00022	<0.082
TB (6L)	09/19/13	--	<41	0.019J	0.011J	<0.087	<0.17	<0.087	--	<0.36	<2.6	22	78	0.043	0.00022	<0.082
SSVP-1	09/20/13	0.8	98,000,000	**10,000 J**	<36,000	<41,000	<41,000	<41,000	--	<34,000	**13,000 J**	1.5	69	15	12	<0.12
SSVP-2	09/20/13	0.8	120,000,000	**20,000 J**	8,700 J	<56,000	<56,000	<56,000	--	<47,000	**10,000 J**	1.3	66	15	15	<0.13
TB (1L)	09/20/13	--	<100	<1.6	1.8 J	<2.2	0.57J	<2.2	--	<1.8	<10	21	79	0.052J	<0.00070	<0.35
OA-1	01/26/12	--	<72	**0.88**	2.5	0.49	1.6	0.54	--	<0.63	<4.6	--	--	--	--	--
OA-1 DUP	01/26/12	--	<71	**0.86**	2.7	0.46	1.6	0.58	--	<0.62	<4.5	--	--	--	--	--
IA-1	01/26/12	--	**410**	**5.1**	21	**3.4**	11	3.4	--	<0.68	<4.9	--	--	--	--	--
IA-2	01/26/12	--	**1,100**	**20**	**85**	**13**	**40**	12	--	<0.59	<4.3	--	--	--	--	--
CS-1	01/26/12	--	<66	**0.98**	2.6	0.51	1.6	0.57	--	<0.58	<4.2	--	--	--	--	--
CS-2	01/26/12	--	94	**1.0**	3.0	0.59	1.9	0.68	--	<0.57	<4.1	--	--	--	--	--
Previous Consultants - Soil Vapor Sampling																
						Reported in ppm									*Reported in ppm*	
V1/A	05/04/89	2.5	--	25	<1	<1	--	--	23	--	--	--	--	--	--	--

TABLE 1

CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Sample Depth (fbg)*	*TPHg* ($\mu g/m^3$)	*Benzene* ($\mu g/m^3$)	*Toluene* ($\mu g/m^3$)	*Ethyl-benzene* ($\mu g/m^3$)	*m,p-Xylene* ($\mu g/m^3$)	*o-Xylene* ($\mu g/m^3$)	*Total Xylenes*[1] ($\mu g/m^3$)	*MTBE* ($\mu g/m^3$)	*Naphthalene* ($\mu g/m^3$)	*Oxygen* (% Vol)	N_2 (% Vol)	CO_2 Vol)	*Methane* (% Vol)	*He* (% Vol)
ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Residential[2]			***290***	***0.084***	***310***	***0.97***	***100***	***100***	***100***	***9.4***	***0.072***	***NE***	***NE***	***NE***	***NE***	***NE***
LTCP Soil Gas Criteria - Residential[3]			***NE***	***85***	***NE***	***1,100***	***NE***	***NE***	***NE***	***NE***	***93***	***NE***	***NE***	***NE***	***NE***	***NE***
V1/B	05/04/89	4.5	--	<1	16	<1	--	--	1	--	--	--	--	--	--	--
V2/A	05/04/89	2.5	--	80	69	<1	--	--	17	--	--	--	--	--	--	--
V2/B	05/04/89	4.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V3/A	05/04/89	2.5	--	<1	70	<1	--	--	1	--	--	--	--	--	--	--
V3/B	05/04/89	4.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V4/A	05/04/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V4/B	05/04/89	4.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V5/A	05/04/89	2.5	--	250	2,400	450	--	--	2,400	--	--	--	--	--	--	--
V5/B	05/04/89	2.5	--	8	83	<1	--	--	51	--	--	--	--	--	--	--
V6/A	05/04/89	2	--	<1	<1	3	--	--	<1	--	--	--	--	--	--	--
V6/B	05/04/89	3	--	34	39	10	--	--	12	--	--	--	--	--	--	--
V7	05/04/89	2.5	--	2,200	2,700	43	--	--	200	--	--	--	--	--	--	--
V8/A	05/04/89	2.5	--	1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V8/B	05/04/89	4.5	--	1	<1	--	--	--	--	--	--	--	--	--	--	--
V9-HS	05/04/89	3	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V10/A	05/04/89	2.5	--	1	1	<1	--	--	<1	--	--	--	--	--	--	--
V10/B	05/04/89	4.5	--	1	1	<1	--	--	<1	--	--	--	--	--	--	--
V11/A	05/04/89	3	--	0.5	1	<1	--	--	<1	--	--	--	--	--	--	--
V11/B	05/04/89	4.5	--	2	5	<1	--	--	2	--	--	--	--	--	--	--
V12/A	05/04/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V12/B	05/04/89	4.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V13/A	05/04/89	3	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V13/B	05/04/89	4.5	--	<1	1	<1	--	--	<1	--	--	--	--	--	--	--
V14	05/04/89	2.5	--	360	310	69	--	--	340	--	--	--	--	--	--	--

TABLE 1

CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Sample Depth (fbg)*	*TPHg* ($\mu g/m^3$)	*Benzene* ($\mu g/m^3$)	*Toluene* ($\mu g/m^3$)	*Ethyl-benzene* ($\mu g/m^3$)	*m,p-Xylene* ($\mu g/m^3$)	*o-Xylene* ($\mu g/m^3$)	*Total Xylenes*[1] ($\mu g/m^3$)	*MTBE* ($\mu g/m^3$)	*Naphthalene* ($\mu g/m^3$)	*Oxygen* (% Vol)	N_2 (% Vol)	CO_2 Vol)	*Methane* (% Vol)	*He* (% Vol)
ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Residential[2]			***290***	***0.084***	***310***	***0.97***	***100***	***100***	***100***	***9.4***	***0.072***	***NE***	***NE***	***NE***	***NE***	***NE***
LTCP Soil Gas Criteria - Residential[3]			***NE***	***85***	***NE***	***1,100***	***NE***	***NE***	***NE***	***NE***	***93***	***NE***	***NE***	***NE***	***NE***	***NE***
V15	05/04/89	2.5	--	8	7	<1	--	--	<1	--	--	--	--	--	--	--
V16	05/04/89	2.25	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V17	05/10/89	2.5	--	2,300	2,500	150	--	--	670	--	--	--	--	--	--	--
V18	05/10/89	2.5	--	490	220	10	--	--	32	--	--	--	--	--	--	--
V19/A	05/10/89	25	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V19/B	05/10/89	4.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V20/A	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V20/B	05/10/89	4	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V21/A	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V21/B	05/10/89	4	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V22	05/10/89	2.5	--	7	3	<1	--	--	<1	--	--	--	--	--	--	--
V23	05/10/89	2	--	<1	1	<1	--	--	<1	--	--	--	--	--	--	--
V24/A	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V24/B	05/10/89	4	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V24-HS	05/10/89	4	--	140	500	48	--	--	340	--	--	--	--	--	--	--
V24/C	05/10/89	3.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V25	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V26	05/10/89	2	--	1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V27	05/10/89	0	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V27/A	05/10/89	2	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V27/B	05/10/89	4	--	<1	15	<1	--	--	<1	--	--	--	--	--	--	--
V28/A	05/10/89	2	--	10	25	<1	--	--	42	--	--	--	--	--	--	--
V28/B	05/10/89	2.5	--	<1	1	<1	--	--	6	--	--	--	--	--	--	--

TABLE 1

CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Sample Depth (fbg)*	*TPHg* ($\mu g/m^3$)	*Benzene* ($\mu g/m^3$)	*Toluene* ($\mu g/m^3$)	*Ethyl-benzene* ($\mu g/m^3$)	*m,p-Xylene* ($\mu g/m^3$)	*o-Xylene* ($\mu g/m^3$)	*Total Xylenes*[1] ($\mu g/m^3$)	*MTBE* ($\mu g/m^3$)	*Naphthalene* ($\mu g/m^3$)	*Oxygen* (% Vol)	N_2 (% Vol)	CO_2 Vol)	*Methane* (% Vol)	*He* (% Vol)
ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Residential[2]			***290***	***0.084***	***310***	***0.97***	***100***	***100***	***100***	***9.4***	***0.072***	***NE***	***NE***	***NE***	***NE***	***NE***
LTCP Soil Gas Criteria - Residential[3]			***NE***	***85***	***NE***	***1,100***	***NE***	***NE***	***NE***	***NE***	***93***	***NE***	***NE***	***NE***	***NE***	***NE***
V29	05/10/89	2.5	--	5	49	<1	--	--	<1	--	--	--	--	--	--	--
V30	05/10/89	2	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V31	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V32	05/10/89	2.5	--	<1	<1	<1	--	--	<1	--	--	--	--	--	--	--
V1	07/21/87	3	--	110	30	--	--	--	--	--	--	--	--	--	--	--
V2	07/21/87	3	--	1,900	500	--	--	--	--	--	--	--	--	--	--	--
V3	07/21/87	3	--	120	50	--	--	--	--	--	--	--	--	--	--	--
V4	07/21/87	3	--	70	180	--	--	--	--	--	--	--	--	--	--	--
V5	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--
V6	07/21/87	3	--	10	10	--	--	--	--	--	--	--	--	--	--	--
V7	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--
V8	07/21/87	3	--	5	5	--	--	--	--	--	--	--	--	--	--	--
V9	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--
V10	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--
V11	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--
V12	07/21/87	3	--	<1	<1	--	--	--	--	--	--	--	--	--	--	--

Abbreviations/Notes:

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

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

Oxygen, nitrogen (N_2), carbon dioxide (CO_2), methane, and helium (He) by ASTM D-1946.

fbg = Feet below grade.

Micrograms per meter cubed ($\mu g/m^3$).

Percent Volume (%).

TABLE 1

CUMULATIVE AIR AND SOIL GAS ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Sample ID	*Date*	*Sample Depth (fbg)*	*TPHg* ($\mu g/m^3$)	*Benzene* ($\mu g/m^3$)	*Toluene* ($\mu g/m^3$)	*Ethyl-benzene* ($\mu g/m^3$)	*m,p-Xylene* ($\mu g/m^3$)	*o-Xylene* ($\mu g/m^3$)	*Total Xylenes*[1] ($\mu g/m^3$)	*MTBE* ($\mu g/m^3$)	*Naphthalene* ($\mu g/m^3$)	*Oxygen* (% Vol)	N_2 (% Vol)	CO_2 Vol)	*Methane* (% Vol)	*He* (% Vol)
ESL Table E-3 Ambient and Indoor Air Screening Levels, Lowest Residential[2]			***290***	***0.084***	***310***	***0.97***	***100***	***100***	***100***	***9.4***	***0.072***	***NE***	***NE***	***NE***	***NE***	***NE***
LTCP Soil Gas Criteria - Residential[3]			***NE***	***85***	***NE***	***1,100***	***NE***	***NE***	***NE***	***NE***	***93***	***NE***	***NE***	***NE***	***NE***	***NE***

Parts per million (ppm).

TB = Trip blank

<X = Not detected above method detection limit x.

-- = not analyzed or not applicable.

1 = total xylene, m,p-xylene plus o-xylene, concentration reported.

2 = 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.

3 = 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.

1989 soil vapor samples collected analyzed using a chromatograph equipped with a flame ionization detector

1987 soil vapor samples collected analyzed using a chromatograph equipped with a photo ionization detector

J = Estimated value

Bold = Concentration exceeds applicable ESL.

TABLE 2

ALIPHATIC AND AROMATIC HYDROCARBON ANALYTICAL DATA
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE,
ALAMEDA, CALIFORNIA

Location	*Date*	*Depth*	*C5-C6 Aliphatic Hydrocarbons*	*>C6-C8 Aliphatic Hydrocarbons*	*>C8-C10 Aliphatic Hydrocarbons*	*>C10-C12 Aliphatic Hydrocarbons*	*>C8-C10 Aromatic Hydrocarbons*	*>C10-C12 Aromatic Hydrocarbons*
Units		*(fbg)*	←		*µg/m³*			→
			Shallow Soil Gas Criteria[1]					
Commercial/Industrial			*NE*	*NE*	*NE*	*NE*	*NE*	*NE*
Residential			*NE*	*NE*	*NE*	*NE*	*NE*	*NE*
OA-1	9/19/2013	--	<52	<66	<94	<110	<79	<88
OA-1 DUP	9/19/2013	--	<53	<67	<95	<110	<80	<89
IA-1	9/19/2013	--	<54	<69	<98	<120	<82	<92
IA-2	9/19/2013	--	<56	<71	<100	<120	<86	<96
IA-3	9/19/2013	--	<59	<74	<100	<130	<89	<100
CS-1	9/19/2013	--	<53	<67	<95	<110	<80	<89
CS-2	9/19/2013	--	<53	<67	<95	<110	<81	<90
SSVP-1	9/20/2013	0.8	25,000,000	220,000,000	<1,100,000	<1,300,000	<940,000	<1,000,000
SSVP-2	9/20/2013	0.8	28,000,000	27,000,000	<1,500,000	<1,800,000	<1,300,000	<1,400,000
OA-1	1/26/2012	--	<57	<72	<100	<120	<86	<96
OA-1-DUP	1/26/2012	--	<56	<71	<100	<120	<85	<95
IA-1	1/26/2012	--	<61	<77	<110	<130	<92	<100
IA-2	1/26/2012	--	83	<67	<95	<110	<80	<89
CS-1	1/26/2012	--	<52	<66	<94	<110	<80	<89
CS-2	1/26/2012	--	<51	<64	<91	<110	<77	<86

Notes:
Aliphatic and Aromatic Hydrocarbon analyses by EPA Method TO-15 GC/MS Full Scan.
fbg = Feet below grade.
µg/m^3 = Micrograms per cubic meter
[1] = Low-Threat Underground Storage Tank Case Closure Policy - Soil Gas Criteria No Bioattenuation Zone - prepared by the California State Water Resources Board, August 17, 2012
NE = Not Established
<x = Not detected at reporting limit x.
-- = Not analyzed/not applicable.

APPENDIX A

REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

August 31, 2012

Ms. Catalina Espino Devine
Chevron Environmental Management Co.
6101 Bollinger Canyon Road
San Ramon, CA
(sent via electronic mail to
espino@chevron.com)

Mr. Mark Hom and Anna Cheng
3135 Gibbons Drive
Alameda, CA, 94501-1749
(sent via electronic mail to
mark@galvinhom.com)

JL and Jane Bolton
Address Unknown

John Thompson
Address Unknown

Shirley & Ruben Cohen
Address Unknown

Gary & Jerri Fenstermaker
Address Unknown

Claire Cepollina & Fred Martini
Address Unknown

Subject: Request for Site Conceptual Model and Data Gap Work Plan; Fuel Leak Case No. RO0000341; (Global ID # T0600100330); Chevron #9-1153, (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA 94501

Dear Mses. Devine and Cheng, and Mr. Hom:

Alameda County Environmental Health Department (ACEH) staff has reviewed the case file, including the *Subsurface and Crawl Space, Indoor and Ambient Air Investigation Report,* dated April 18, 2012 and the *Second Quarter 2012 Groundwater Monitoring and Sampling Report*, dated July 26, 2012. Both reports were prepared and submitted by Conestoga-Rovers & Associates (CRA) on your behalf. Thank you for submitting the reports. The subsurface report documented the results of the installation of eight soil bores (B-1 to B-8) and the collection of soil samples, and the collection of vapor samples (ambient background, indoor air, and crawl space; for TPHg, BTEX, MTBE, naphthalene, and aliphatic hydrocarbons) in an attempt to understand the potential vapor contribution from subsurface sources beneath the subject site. Background and crawl space vapor concentrations were very similar, reporting benzene concentrations over ESLs for ambient and residential indoor air; however, both crawl space samples reported slightly higher concentrations (except MTBE). Both indoor air samples contained substantially higher concentrations of one or more compounds above outdoor or crawl space air samples. While a building chemical survey was conducted, it does not appear chemical products were removed from the house prior to collection of the indoor air vapor samples in an attempt to determine the contribution from onsite subsurface contamination.

Based on the review of the case file ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Proposed Surfactant Enhanced Recovery Corrective Actions -** The referenced investigation report also contained a modified work plan largely based on a previous work plan (January 14, 2010 *Work Plan for Remediation and Vapor Survey),* that recommended surfactant enhanced recovery (SER) with a surfactant injection pilot test at free-phase well C-1. The recent work plan proposed the installation of two wells approximately 15 to 20 feet down and cross gradient (respectively) to monitor for the presence of surfactant in groundwater radially from the proposed

injection point at well C-1. Review of groundwater gradient maps and associated rose diagrams indicate that both proposed well locations are not appropriately positioned (are not downgradient of well C-1) to properly monitor or capture liberated soil free-phase hydrocarbons at the site unless the wells become extraction wells to manage (and confine) groundwater flow to the site. Critically, one of the principal rationales for the proposed SER is vicinity and property owner complaints related to remediation system noise. Otherwise, because free-phase well C-1 is essentially at the property line limits of the parcel, downgradient migration of free-phase cannot be precluded or controlled between individual short duration extraction events without an active system. Further the reported limited ability to locate bores or wells due to property owner preferences and exclusions, also indicates that the location of additional groundwater control wells (or bores) is also likely to be difficult to identify and limited. Thus while only well C-1 contains free-phase, existing data (confirmed and augmented by data collected in the recent site investigation), continues to indicate significant hydrocarbon contamination remains, at a minimum, in the majority of the southeastern half of the site; including significant concentrations at a depth of three feet, three to four feet from the foundation of a residential home (and is therefore presumed to also under lie the home due to likely source areas). ACEH also remains sufficiently concerned that the C-1 well pilot test might thus become essentially a spot treatment of a free-phase well without an apparent ability to also remediate elevated residual soil contamination across the site including in close proximity to the residential living spaces. As such SER appears to be an inappropriate remedial technology without the installation of a method to capture, manage, and collect liberated free-phase, and to monitor and remediate soil beneath the site, and ACEH does not concur with this approach.

2. **Request for SCM and Data Gap Work Plan** – ACEH requests the generation of an site conceptual model (SCM) to identify data gaps at the subject site, accompanied with a data gap work plan. One of several data gaps noted by ACEH includes an onsite well downgradient (east) of well C-1. It is understood that wells MW-8, MW-9, and MW-10 are downgradient and are non-detectable for hydrocarbon compounds found at the subject site; however, well placement limitations imposed by the five-star intersection (of three roads) and the presence of a major utility corridor along High Street, with multiple utilities located in the groundwater bearing zone, suggests a strong potential for direct migration to the Oakland – Alameda Estuary. While it is understood that the utilities may have used native soils as backfill, and that this is typically suggested not to create preferential pathways, ACEH also has direct experience with similar Alameda backfills acting as preferential pathways. A well positioned closer would serve multiple purposes onsite.

   The SCM will help synthesize all the analytical data and evaluate all potential exposure pathways and potential receptors that may exist at the site, including identifying or developing site cleanup objectives and goals. At a minimum, the SCM should include:

   - Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;
   - Geologic cross section maps that illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;
   - Plots of chemical concentrations versus time;
   - Plots of chemical concentrations versus distance from the source;
   - Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor); and
   - Well logs, boring logs, and well survey maps;
   - Discussion of likely contaminant fate and transport.

   For data gaps (i.e. potential contaminant volatilization to indoor air or contaminant migration along preferential pathways, etc.) identified in the SCM please include a data gap work plan, by the

date specified below. A sample SCM and Data Gap Table has been attached to this letter and may be an appropriate format for this site.

3. **Crawl Space, Indoor, and Ambient Air Analytical Results** – As noted above both ambient air and crawl space samples reported very similar concentrations, with slightly higher concentrations of most analytes (TPHg and BTEX) in the crawl space vapor samples; while significantly higher indoor air concentrations for the same analytes were reported. The subsequent analysis suggested that the indoor air samples were within a typical range for indoor air and cited data from six studies as support (Table D of the report, and derived in part from the November 2002 *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway form Groundwater and Soils [Subsurface Vapor Intrusion Guidance]* and the 2005 DTSC guidance document). ACEH has several technical concerns in regards with the analysis:

    a. **Age of Cited Source Studies** – The majority of the references cited predate the 1996 gasoline reformulation at the Federal level. One of the goals of gasoline reformulation was the reduction of benzene concentrations by approximately 50% by that date. Further reductions in benzene concentrations have followed, especially in California, with the required addition of MTBE in the late 1990's and the associated removal of benzene at that time (with subsequent further modifications in 2003 with the required removal of MTBE). The concentrations of benzene in the cited studies would be expected to reflect higher benzene source concentrations (including gasoline). These higher concentrations would also be expected to affect the background concentration of benzene inside or around (outside) homes at the time of the study. Consequently, it would appear inappropriate to compare older studies, which are likely to generate higher background benzene concentrations, to current generation gasoline formulations or analytical results.

    b. **Indoor Air Vapor Source Accounting** – As reported, the indoor air vapor concentrations were significantly higher than crawl space or ambient outdoor air concentrations and largely attributed higher indoor air concentrations to proximity of the garage and automotive gasoline use, and the laundry room which contained several consumer cleaning products, but which did not have a clear associated chemical content connection. Despite the generation of a chemical product inventory, the report did not otherwise seek to specifically identify other potential sources that would account for the significantly elevated indoor air concentrations.

    As a consequence of these concerns, ACEH requests further analysis of the analytical results of the vapor survey in the SCM, and inclusion of any associated data gaps in the data gap work plan requested above. One such data gap solution identified by ACEH may be the collection of sub-slab vapor samples from beneath the garage slab floor.

4. **Groundwater Monitoring of Recovery Well** – Recovery well RW-1 does not appear to have been monitored in recent history; however, appears to be extant. ACEH requests that it be incorporated into the current monitoring schedule, after it has been redeveloped. Please include redevelopment field sheets for the well in the next groundwater monitoring report, and past analytical data in all future groundwater monitoring reports, by the dates identified below.

5. **Groundwater Monitoring Schedule** – Except for well C-1, wells at the site are sampled on a semi-annual or annual basis; well C-1 is monitored on a quarterly basis. Review of the analytical data collected from downgradient well MW-10 (non-detectable for all compounds for over 11 years) indicates that sufficient and very consistent data indicates that well MW-10 should also be monitored on an annual sampling basis. Free-phase well C-1 should continue to be monitored on a quarterly (or more frequent) basis; however, ACEH requests that the data be reported on a semi-annual basis, as defined below.

6. **Request for an Updated Site Plan** – The current site plan does not appear to reflect site features as visible on aerial photograph map searches. As a consequence ACEH requests that an updated site plan be generated for future reports.

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:

- **October 19, 2012** – SCM and Data Gap Work Plan
  File to be named: SCM_WP_R_yyyy-mm-dd
- **November 30, 2012** – Second Semi-Annual 2012 Groundwater Monitoring Report
  File to be named: GWM_R_yyyy-mm-dd
- **May 24, 2013** – First Semi-Annual 2013 Groundwater Monitoring
  File to be named: GWM_R_yyyy-mm-dd
- **60 Days After SCM & Data Gap Work Plan Approval** – Soil & Groundwater Investigation
  File to be named: SWI_R_yyyy-mm-dd
- **90 Days After SWI Approval** – Feasibility Study
  File to be named: FEASSTUD_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.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2012.08.31 10:27:55 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

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

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

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to 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/)

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.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**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
   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 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.

TABLE 1

INITIAL SITE CONCEPTUAL MODEL
Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	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). 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).	None	NA
	Site	***Geology:*** 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). ***Hydrogeology:*** 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.	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. 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.	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. 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.
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).

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Constituents of Concern		Constituents of concern have been identified by comparing analytical results to environmental screening levels for residential land use and for groundwater that is a current or potential drinking water source, developed by the California Regional Water Quality Control Board, San Francisco Bay Region (May 2008). PCE and TCE have been identified as the primary constituents of concern at the site; these constituents have been detected in soil, groundwater and soil vapor in the northern portion of the site. Biodegradation byproducts (e.g., cis-1,2-DCE) are present in groundwater, but at lower concentrations relative to PCE and TCE and below their respective environmental screening levels. Vinyl chloride has been detected in soil vapor at concentrations above its screening level. In the northern portion of the site, benzene and ethylbenzene have been detected in soil vapor at concentrations above their respective screening levels. Chlorobenzene and related constituents, and to a lesser extent, benzene, are present in soil, groundwater, and soil vapor at the former sump and pit in Building B.	None	NA
Potential Sources	On-site	Building B has been used for servicing automobiles since the 1960s. Based on the minor detections of PCE in soil vapor (in an area where groundwater is not impacted) beneath Building B and in groundwater beneath the former sump in another portion of Building B, it is possible that PCE entered the drain line from the sump within Building B, and was released to the subsurface from the sewer line northeast of Building A between 1968 and the present. There is no likely source in Building A, which has only been used as a showroom. Investigation performed within and downgradient of Building C indicates that there are no significant impacts in this area.	Concentrations of PCE in groundwater and soil vapor are highest approximately 50 feet west of the sewer line; the mechanism for these constituents to be present west of the sewer line is not currently known.	A subsurface utility locator, using ground penetrating radar, will evaluate the area north of Building A to ascertain the possible presence of unknown, buried utilities that could serve as a PCE source or migration conduit in the area. See Item 10 on Table 2.
		Two USTs (one 1,000-gallon gasoline and one 1,000-gallon waste oil) are present just south of Building B). The tanks appear to have been replaced in the 1980s and upgraded in 1998. Recent data collected in the vicinity of the USTs indicate that there are no significant impacts.	The absence of localized impacts to soil in the vicinity of the USTs has not been confirmed.	No additional investigation is recommended at this time. Additional sampling may be conducted as part of the formal UST closure process, and any impacts addressed at that time.
Potential Sources	Off-site	The site is located within a commercial/industrial area, and several vehicle-maintenance related shops are located south of the site; these facilities appear to be served by a sewer that flows north along the western edge of the Crown site. It is possible that PCE was released to the subsurface upgradient of the site via the sewer line. Additionally, there are three dry cleaners located hydraulically upgradient of the Crown site, including Crow Canyon Cleaners at 7272 San Ramon Road, which has a known groundwater contamination issue (however, that site is approximately 0.5 mile from the Crown site and groundwater at the site has limited impact with maximum concentrations of 24 parts per billion). The other two sites, VIP Cleaners at 7214 Regional Street and "Dry Clean 1 Hour" at 7257 Regional Street, are slightly closer to the Crown site (0.3 mile) and may have had an undocumented release to soil or groundwater. All three of the sites are served by sewers that flow north, away from the Crown site, but sewer releases in the general area, if any, could have impacted groundwater flowing toward the Crown site.	A specific off-site source is not known at this time. It is possible that additional research and/or investigation will be warranted at a later time, pending the results of this investigation.	NA

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CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Presence of DNAPL		Based on the currently available information, there does not appear to be separate-phase product (i.e., DNAPL) in soil or groundwater at the site. The U.S. EPA Fact Sheet entitled "Estimating Potential for Occurrence of DNAPL at Superfund Sites" (Fact Sheet) includes two flow charts that provide guidance for assessing whether site characterization data indicate the presence of DNAPL. The EPA approach uses lines of evidence that include consideration of historical site use and site characterization data. Based on the historical site use flow chart, some activities may have been performed (i.e., metal cleaning/degreasing and paint removing/stripping) that possibly may have resulted in historical DNAPL releases. However, review of available historical site chemical inventories does not indicate the presence of pure product PCE; it was likely present within other products at lower concentrations (percentage of product mixtures). Laboratory data generated from site characterization activities conducted to date do not indicate the potential for DNAPL, based on the following conditions, which are components of the laboratory data flow chart in the Fact Sheet: • Concentrations of PCE in groundwater are not greater than 1% of the solubility of PCE (i.e., greater than 2,000 µg/L, which is 1% of the pure product solubility of PCE)[1]; • Concentrations of PCE on soils are not greater than 10,000 mg/kg (and PID readings collected every 1 to 3 feet in the area of elevated groundwater concentrations were all 0, with the exception of several readings at 0.1 parts per million); and • Concentrations of PCE in groundwater calculated from water/soil partitioning relationships and soil samples are not greater than 1,500 µg/L.	Some elements listed in the Fact Sheet that would further our understanding of whether DNAPL is present at the site include additional knowledge of site stratigraphy and vertical distribution of PCE.	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.
Nature and Extent of Environmental Impacts	Extent in Soil	PCE and TCE have been detected in soil samples collected north of Buildings A and B. All concentrations are less than their respective screening levels for residential shallow soil, applicable to groundwater considered to be a potential source of drinking water (screening levels of 370 and 460 µg/kg for PCE and TCE, respectively). PCE was detected at concentrations up to 6.8 µg/kg in soil at a depth of approximately 5.5 feet bgs in the vicinity of the highest PCE concentrations in groundwater and soil vapor (locations NM-B-32 and SV-22, respectively). It is likely that these PCE detections represent PCE in the vapor phase and not a source of PCE in soil. PCE and TCE were detected in deeper soil samples (between 12.5 and 14.5 feet bgs) at concentrations up to 36 µg/kg (in borings NM-B-23B, -24, -25, -26, 29, and -30). These soil samples were generally located within the saturated zone and it is likely that the detected concentrations represent PCE and TCE in groundwater. Soil was screened during advancement of the direct-push probe approximately every 1 to 4 feet using a PID; readings in most borings were 0 ppm; the highest PID readings (up to 22 ppmv of total VOCs) were observed at SB-02 within a likely saturated zone.	Additional samples will be collected to confirm absence of significant VOC concentrations in soil.	Soil samples will be collected from select borings, as indicated on Table 2 (items 1, 3, and 8); sampling locations are prescribed and/or will be collected based on field observations.
		Chlorobenzenes and petroleum-related constituents were detected in soil in the vicinity of the former sump and pit at concentrations greater than their respective ESLs; soil remediation was performed in 2011. Currently inaccessible impacted soil remains in place under existing building foundation walls at concentrations greater than ESLs.	Soil samples have collected to a total depth of 11.5 feet bgs pre-remediation and 8 feet bgs post-remediation beneath the sump. The remediation consisted of soil excavation to a depth of 16 feet bgs. No soil samples were collected at the base of the excavation because the soil was saturated; there is currently no data confirming the absence of significant impacts to soil beneath the sump.	No additional investigation is recommended at this time. Additional soil removal and sampling may be conducted at the time of redevelopment.

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CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts	Extent in Soil	TPHho (at concentrations greater than the residential ESL) was detected in soil sample SB-20-11 near a hydraulic lift east of the former pit in Building B (an elevated concentration of TPHho also was detected in soil sample SB-25-8; this sample location subsequently was excavated). Analysis for PCBs was performed on 13 samples, which were collected in the vicinity of hydraulic lifts within Building B. One PCB, Arochlor 1242, was detected in a soil sample collected at location NM-B-5 just north of the pit in Building B; however, the concentration of Aroclor 1242 at this location was an order of magnitude lower than its screening level. No other PCBs were detected in soil samples (however, the detection limit for Aroclor in 1 sample of the 13 samples analyzed was above the screening level).	None	NA
Nature and Extent of Environmental Impacts	Extent in Shallow Groundwater	Grab groundwater data are available for VOCs on approximately 50- to 100-foot centers throughout the northern portion of the site, indicating that PCE, TCE, and some related breakdown products (other VOCs) are present in groundwater at concentrations greater than their respective screening levels that consider groundwater to be a current or potential drinking water resource (the screening level is 5 µg/L for both PCE and TCE). The current data indicate that the highest concentrations of PCE in groundwater are limited to a small area just north of Building A, adjacent to and near a sewer line (concentrations in this area range from 120 to 190 µg/L at locations NM-B-23B2 and NM-B-32, respectively; these concentrations are not indicative of separate-phase product in groundwater). PCE also was detected at concentrations less than 50 µg/L upgradient (to the north and west) and downgradient (to the east) of the highest concentration area. TCE is present at higher concentrations relative to PCE at sampling locations NM-B-26-W and NM-B-28-W, in the northeast corner of the site; cis- and trans-1,2-DCE also were detected in these groundwater samples (at concentrations below their respective screening levels). Cis- and trans-1,2-DCE also have been detected (below screening levels) at other groundwater sampling locations. The results suggest that natural biodegradation could be occurring. With the exception of one shallow grab groundwater sample (Basics sample B8 located at the former sump) in which PCE was detected at 9.6 µg/L, only low concentrations of PCE (less than 5 µg/L) were detected in shallow groundwater in the vicinity of the former sump and pit.	Groundwater concentrations are not defined to less than the ESL in the following areas: • The northern and western property boundaries. • The eastern property boundary and the adjacent property to the east. • Within Building A, south of the highest concentration area. No temporal data are available. Specific data to confirm that natural biodegradation processes may be occurring has not been collected.	Seven monitoring wells will be installed to collect groundwater samples for evaluation of current and long-term concentration trends. See Items 1, 2, 3, 5, 4, 7, and 8 in Table 2. Groundwater samples will be analyzed for field parameters that could indicate that natural biodegradation is occurring. See Item 2 in Table 2.
		Chlorobenzenes and petroleum-related constituents are present in shallow groundwater at concentrations greater than ESLs in the vicinity of the former sump within Building B (where soil remediation was conducted in 2011). The presence of these constituents (e.g., gasoline-range organics, benzene, and chlorobenzene) in groundwater appears to be limited to an area within approximately 15 feet of the former sump. These constituents were not detected above ESLs in groundwater samples collected at the former pit in Building B.	No temporal data are available.	One shallow groundwater monitoring well will be installed within the area of known impacts. See Item 2 on Table 2.
Nature and Extent of Environmental Impacts	Extent in Shallow Groundwater	TPHho (at a concentration greater than its screening level) was detected in an unfiltered groundwater sample (SB-20) collected near one hydraulic lift east of the former pit in Building B; however, no TPHho was detected in the filtered groundwater sample. The unfiltered sample result is likely representative of TPHho sorbed onto soil particles, as TPHho was also detected in soil at 11 feet bgs at this location. The reporting limits for TPHho (and TPHd and TPHmo) in groundwater are greater than the respective screening levels for these constituents. However, no TPH was detected down to the laboratory's method detection limit for the filtered samples. While concentrations less than the laboratory reporting limit are estimated, the absence of detections indicates that dissolved TPHd, TPHmo, and TPHho are not present.	None	NA
		Total chromium was detected above the residential ESL at one location (SB-06), but dissolved concentrations in the vicinity were less than the screening level.	None	NA

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TABLE 1

INITIAL SITE CONCEPTUAL MODEL
Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts	Extent in Deeper Groundwater	Grab groundwater samples have been collected from two deeper water-bearing zones. Samples were collected from approximately 42 to 47 feet bgs and from 58 to 63 feet bgs from a boring just downgradient of the former sump within building B, and from approximately 43.5 feet bgs from a boring adjacent to the sewer line (northeast of Building A, just east of the highest concentration area). No constituents were detected in the deeper groundwater samples.	Limited data are available within the area of known PCE impacts to shallow groundwater, and no temporal data are available.	Nested, multi-port groundwater monitoring wells will be installed at four locations. Ports will be located within the shallowest water-bearing zone, in addition to one to two deeper water bearing zones (as possible based on saturated units encountered). See Item 5 of Table 2.
Nature and Extent of Environmental Impacts	Extent in Soil Vapor	PCE, TCE, vinyl chloride, and some related breakdown products, were detected in soil vapor in the northern portion of the north parcel; PCE, TCE, and vinyl chloride concentrations are greater than residential screening levels for evaluation of potential vapor intrusion concerns (410, 1,200, and 31 $\mu g/m^3$, respectively [Table E-2 of the May 2008 Water Board publication]) in some areas. The highest concentrations of PCE detected in soil vapor (up to a maximum concentration of 35,000 $\mu g/m^3$ at location SV-22) were in the vicinity of the highest concentrations of PCE in groundwater (north of Building A, near the sewer line). PCE has been detected in soil vapor at concentrations greater than the ESL (up to 9,600 $\mu g/m^3$ at location SV-24) at various locations north of Buildings A and B, along the sewer line running from between Buildings A and B to Dublin Boulevard, and along the floor drain lateral to the sewer line within Building B. (It should be noted that PCE was detected at 4,700 $\mu g/m^3$ in sample SV-3, collected from within a former pit in Building B; this pit has since been removed). The higher concentrations of TCE in soil vapor also generally correlate with the higher concentrations of TCE in groundwater. The concentration of vinyl chloride in soil vapor exceeded its screening level in three samples collected in the north-central area of the north parcel (SG-03, SG-04, and SV-23).	Only limited soil vapor data is available at the eastern property boundary.	A transect of four nested temporary soil vapor probes will be installed at the eastern property boundary. Based on results of initial sampling, at least two of these probes will be converted to permanent vapor monitoring probes. See Item 6 on Table 2.
		PCE was detected in one vapor sample, at a concentration that is approximately an order of magnitude less than its screening level, at the northwestern corner of the southern parcel. No auto servicing activities are known to have been conducted in this area, which was historically used as a parking lot. PCE was not detected in groundwater at this location.	The source and extent of PCE in soil vapor is not known.	Four temporary soil vapor probes will be installed and sampled in the southern parcel around the location of the PCE detection. See Item 9 on Table 2.
Nature and Extent of Environmental Impacts	Extent in Soil Vapor	Benzene and ethylbenzene have been detected in shallow soil vapor (i.e., collected from 1.5 to 5 feet bgs) north of Buildings A and B at concentrations exceeding their respective screening levels. Benzene was detected at concentrations generally ranging from 90 to 160 $\mu g/m^3$, with one detected concentration of 1,300 $\mu g/m^3$ (the shallowest soil vapor sample, which was collected from a depth of 1.5 to 2 feet bgs at location SV-16) in the northeastern portion of the north parcel. Ethylbenzene concentrations were greater than the screening level at two locations, up to a maximum concentration of 1,300 $\mu g/m^3$ at location SV-16. These constituents were not detected in corresponding soil and groundwater samples, and there was not a visible pattern to the soil vapor sample concentrations. Additionally, there is no known source of petroleum-related constituents in the northern portion of the north parcel.	The extent of benzene and ethylbenzene at concentrations greater than screening levels has not been defined. While shallow soil will be removed during the proposed redevelopment, and engineering controls are expected to be implemented in this area due to PCE concentrations in soil vapor, only limited soil vapor data is available at the eastern property boundary.	A transect of four nested temporary soil vapor probes will be installed at the eastern property boundary. Based on results of initial sampling, at least two of these probes will be converted to permanent vapor monitoring probes. See Item 6 on Table 2.
		Soil vapor sampling was conducted in the vicinity of the former sump and pit in Building B prior to remediation, and some concentrations of PCE, benzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were greater than their respective screening levels at that time.	Post-remediation soil vapor concentrations are not known.	No additional investigation is recommended at this time. Additional sampling may be conducted at the time of redevelopment.
Migration Pathways	Potential Conduits	Figure 2 shows the known locations of on-site utilities, including sanitary sewer laterals, water, gas, and electrical lines. These facilities could act as conduits for vapor migration. From the data collected at the site, it appears that concentrations of VOCs in soil vapor generally correlate with concentrations of VOCs in groundwater. Based on this observation, it appears that these utilities act as only a minor conduit, if at all.	While we believe that PCE was released to the subsurface via the main on-site sewer line and lateral from Building B, the highest concentrations of PCE in soil vapor and groundwater are west (in the presumed upgradient direction) of the on-site sewer main. The extent of possible subsurface utilities just north of Building A, which may have acted as a source for a PCE release, is not known.	A subsurface utility locator will evaluate the area, including with ground-penetrating radar, to evaluate if there are potential conduits in the area. See Item 10 on Table 2.

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TABLE 1

INITIAL SITE CONCEPTUAL MODEL
Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Receptors/Risk	On-site	Potable water at the site currently is provided via municipal supply and will continue to be in the foreseeable future. As such, direct contact to groundwater is not contemplated. Receptors at the site could include the following: • Current worker via vapor intrusion to indoor air • Future construction worker via soil, groundwater, and soil vapor • Future resident via vapor intrusion to indoor air • Future maintenance worker via soil and soil vapor	Potential impacts to on-site receptors are not known.	Human health risks will be evaluated following additional data collection.
Potential Receptors/Risk	Off-site	Potential off-site receptors include: • Nearby water-producing wells, if any are present • Concrete-lined Dublin Creek and Martin Canyon Creek	Potential impacts to off-site receptors are not known.	Data will be obtained from the California Department of Water Resources and Zone 7 Water Agency regarding the location of nearby water-producing wells, including the depth at which groundwater is extracted, will be obtained. See Item 11 on Table 2. The potential for constituents at the site to impact off-site receptors will be evaluated pending the results of the proposed investigation.

Abbreviations
bgs = below ground surface
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
DNAPL = dense non-aqueous phase liquid
mg/kg = milligrams per kilogram
PCE = tetrachloroethene
PCBs = polychlorinated biphenyls
PID = photoionization detector
ppm = parts per million
ppmv = parts per million by volume
TCE = trichloroethene
TPHho = total petroleum hydrocarbons as hydraulic oil
TPHd = total petroleum hydrocarbons as diesel
TPHmo = total petroleum hydrocarbons as motor oil
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
µg/m^3 = micrograms per cubic meter

Note
1. Pankow, J., et al, 1996, Dense chlorinated solvents in groundwater: background and history of the problem: in Pankow D. and Cherry J. (eds.), Dense Chlorinated Solvents and other DNAPLs in Groundwater, Waterloo Press, Portland, Ore., Ch. 1, pp. 1-52.

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TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION
Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

Item	Data Gap	Proposed Investigation	Rationale	Analysis
1	Refine groundwater contours beneath Building A. Collect data relevant to the potential for biodegradation.	Advance two borings to approximately 20 feet bgs within Building A for collection of soil and grab groundwater samples.[1] 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. One boring will be advanced approximately 15 feet from the northern building wall to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and existing boring NM-B-31 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
2	Confirm shallow groundwater flow direction. Evaluate VOC concentration trends over time. Collect data relevant to the potential for biodegradation.	Install seven shallow groundwater monitoring wells to approximately 15 to 20 feet bgs in northern portion of site (monitoring well locations may be adjusted pending results of grab groundwater samples). • Three of these wells will be pre-pack wells installed using direct push technology, and a grab groundwater sample will be collected from these borings prior to installation of the well. • Four of these wells will be part of nested, multi-port wells that will also allow collection of chemical and water level data from deeper groundwater (see Item 6, below). • Soil samples will be collected only if there are field indications of impacts (with the exception of the well planned in the highest PCE concentration area, where soil samples will be collected at two depths in the vadose zone 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.). • Groundwater monitoring frequency to be determined.	To evaluate groundwater flow direction, a minimum of three wells is needed; the seven proposed wells will provide for a more robust analysis. It is proposed that the wells be spaced throughout the northern portion of the north parcel to evaluate concentration trends while also evaluating groundwater flow direction. • In the west, one well is proposed at the western property boundary at the location where PCE concentrations are highest (the location may be adjusted based on the results of grab groundwater samples to be collected nearby). • A second well is proposed in the area with the highest concentrations of PCE in groundwater, north of Building A. • Three wells are proposed in a north-south line through the middle of the northern parking lot to evaluate spatial variations in PCE and TCE concentrations. • A sixth well is proposed just southwest (downgradient) of the former sump, where VOCs have been detected in groundwater. • A seventh well is proposed at the eastern property boundary; its distance from the northern property boundary is based on where existing data indicate the highest concentrations of PCE are present.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. Soil: VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
3	Evaluate groundwater impacts along western property boundary (presumed upgradient boundary).	Advance a transect of three borings to approximately 20 feet bgs at the western property boundary for collection of soil and grab groundwater samples (one will be converted to a monitoring well, see Item 2, above). Soil samples will be collected at two depths in the vadose zone 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.	PCE was detected in boring NM-B-34, at the western property boundary. A transect of three additional borings is proposed at an approximately 15-foot spacing to the south to provide more data regarding PCE at the upgradient property boundary. Data from these borings may be used to modify the location of one of the monitoring wells.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
4	Evaluate deeper lithology at the site.	Advance two direct push borings to approximately 75 feet bgs (one downgradient of the highest concentration area and one upgradient). Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged.	One boring is proposed adjacent to the location of the westernmost nested well, and one is proposed between the two nested wells in the central portion of the northern parking lot (see Item 6, below). No borings are proposed in the highest concentration area, as a precaution to avoid potential cross-contamination.	None

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TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION
Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

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.	*Groundwater:* 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.	*Soil vapor*: 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.	*Groundwater:* 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.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* 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.	*Soil vapor*: 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

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TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION

Crown Chevrolet
7544 Dublin Boulevard
Dublin, California

Item	Data Gap	Proposed Investigation	Rationale	Analysis
11	Perform a formal well survey to identify water-producing wells.	A formal well survey will be performed to identify water-producing, monitoring, and cathodic protection wells. Data will be obtained regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).	If groundwater downgradient of the site is being used for supply purposes, it is possible that VOCs related to the site could be impacting groundwater.	NA

Notes
1. Borings for soil/grab groundwater collection may be terminated at 15 feet bgs if groundwater is encountered and grab groundwater sample collection is possible at that depth. Soil lithology will be logged at all borings.

Abbreviations
bgs = below ground surface
EPA = U.S. Environmental Protection Agency
PCE = tetrachloroethene
TPHg = total petroleum hydrocarbons quantified as gasoline
VOCs = volatile organic compounds

Yan, Oliver

From: Lee, Nathan
Sent: Tuesday, October 23, 2012 12:04 PM
To: Yan, Oliver
Subject: FW: RO 0341 Former Chevron 91153 (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA - Extension Request

Nathan Lee, P.G.
Conestoga-Rovers & Associates (CRA)
5900 Hollis Street, Suite A
Emeryville, CA 94608

Phone: 510.420.3333
Fax: 510.420.9170
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Email: nlee@CRAworld.com

From: Detterman, Mark, Env. Health [mailto:Mark.Detterman@acgov.org]
Sent: Tuesday, October 16, 2012 4:14 PM
To: Lee, Nathan
Cc: Espino Devine, Catalina
Subject: RE: RO 0341 Former Chevron 91153 (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA - Extension Request

Nathan,
ACEH agrees that the meeting may be beneficial for forward progress at the site. Please use this email to document ACEH concurrence with this request.

(And by the way, it's the November 1st.)

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
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PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

From: Lee, Nathan [mailto:nlee@craworld.com]
Sent: Tuesday, October 16, 2012 4:00 PM
To: Detterman, Mark, Env. Health
Cc: Espino Devine, Catalina
Subject: RO 0341 Former Chevron 91153 (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA - Extension Request

Mark,

Conestoga-Rovers and Associates (CRA) on behalf of Chevron Environmental Management Company (EMC) would like to request an extension for the Site Conceptual Model (SCM) and Data Gap Work Plan which was requested by Alameda County Environmental Health (ACEH) in their letter, dated August 31, 2012 and due on October 19, 2012. A meeting is currently scheduled on November 4, 2012 between CRA, EMC, and ACEH to discuss several sites where ACEH is the lead agency, including this site. We would like to incorporate the information discussed during the meeting to adequately prepare the SCM and work plan. This will help identify any additional data gaps that might exist, which could be addressed by the work plan. The more data gaps addressed by the scope of work within the work plan, the more complete the soil and groundwater data will be. Therefore an extension of **November 30, 2012** for the submittal of the SCM and Data Gap Work Plan is requested.

Thanks,

Nathan Lee, P.G.
Conestoga-Rovers & Associates (CRA)
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ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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July 9, 2013

Ms. Catalina Espino Devine
Chevron Environmental Management Co.
6101 Bollinger Canyon Road
San Ramon, CA
(sent via electronic mail to
espino@chevron.com)

Mr. Mark Hom and Anna Cheng
3135 Gibbons Drive
Alameda, CA, 94501-1749
(sent via electronic mail to
mark@galvinhom.com)

JL and Jane Bolton
Address Unknown

John Thompson
Address Unknown

Shirley & Ruben Cohen
Address Unknown

Gary & Jerri Fenstermaker
Address Unknown

Claire Cepollina & Fred Martini
Address Unknown

Subject: Request for Data Gap Work Plan and Focused Site Conceptual Model; Fuel Leak Case No. RO0000341; (Global ID # T0600100330); Chevron #9-1153, (3126 Fernside Blvd), 3135 Gibbons Drive, Alameda, CA 94501

Dear Mmes. Espino Devine and Cheng, and Mr. Hom:

Alameda County Environmental Health Department (ACEH) staff has reviewed the case file, including the *Work Plan for Sub-Slab Soil Gas Investigation,* dated April 24, 2013 and the *First Quarter 2013 Groundwater Monitoring and Sampling Report*, dated May 22, 2013. Both reports were prepared and submitted by Conestoga-Rovers & Associates (CRA) on your behalf. Thank you for submitting the reports.

The work plan proposes the installation of two sub-slab vapor sampling probes in the residential garage, the collection of two additional crawl space vapor samples, the collection of an indoor air vapor sample in the garage, two additional indoor air samples in the home, and an additional up- wind outdoor air sample. CRA proposes to compare the results to published ambient air sample data and California Human Health Screening Levels for Indoor Air and Soil Gas. Please note ACEH has previously commented on this approach and documented its concerns in technical comments in the August 31, 2012 directive letter.

The site has also been the subject of a discussion in a conference call between ACEH, Chevron, and CRA on July 2, 2013. Briefly, the discussion covered the following items.

- The ACEH requirement for adherence to Department of Toxics Substance Control (DTSC) vapor guidance protocols,
- An evaluation of the well network to delineate the extent of the groundwater contamination plume,
- And an evaluation of the fate and transport of light non-aqueous phase product (LNAPL) at the site.

Specifically, ACEH review of site data appears to indicate that very shallow groundwater is present beneath the site and vicinity (approximately two to three feet below grade surface [bgs]), that all existing wells are screened up to either two or three feet bgs, that most wells are submerged for substantial periods of time, and that notable concentration spikes are present in groundwater during periods of time when groundwater is below the upper screen depth. Additionally the screened sections of a number of wells appear to cross connect two sandier water-bearing zones, and may yield non-representative groundwater concentrations and may potentially contaminate the lower water-bearing zone. Finally, analytical data generated in January 2012 indicates that soil contamination appears to be highest at the

approximate depth of the groundwater table surface (up to 1,600 mg/kg Total Petroleum Hydrocarbons [TPH] as diesel and up to 6,000 mg/kg TPH as gas), is present at multiple soil bores over a significant portion of the site at concentrations significantly over concentrations that the *Technical Justification for Vapor Intrusion Media-Specific Criteria*, generated in support of the Low-Threat Closure Policy (LTCP), suggests is "indirect" evidence of LNAPL (10 to 50 mg/kg TPH as diesel and 100 to 200 mg/kg TPH as gas). The end result of that call is incorporated into the technical comments listed below.

Based on ACEH staff review of the work plan, the proposed scope of work is conditionally approved for implementation provided that the technical comments below are incorporated during the proposed work. Submittal of a revised work plan or a work plan addendum is not required unless an alternate scope of work outside that described in the work plan or these technical comments is proposed. We request that you address the following technical comments, perform the proposed work, and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Work Plan Clarifications** – The referenced work plan proposes a series of actions with which ACEH is in general agreement of undertaking; however, ACEH requests several modifications to the approach. Please submit a site investigation report documenting the results of the investigation by the date specified below.

    a. **Vapor Analytical Suite** – As discussed in the July 2, 2013 conference call ACEH requires adherence to DTSC vapor guidance for the collection and analysis of vapor intrusion samples. This includes the selection of the appropriate analytical standard for the analysis of naphthalene. Appendix E of the April 2012 *Active Soil Gas Investigations Advisory*, contains specific recommendations in regards to the analytical standard and laboratory procedures used to obtain valid naphthalene concentrations. Because standard operating procedures (SOPs) were not included in the referenced April 2013 work plan, ACEH cannot determine if these specific procedures for naphthalene analysis were proposed for use at the site. To clarify, ACEH requests that the processes discussed in Appendix E of the April 2012 DTSC guidance document be used to ensure valid naphthalene analytical results and that these be documented in the report requested below.

2. **Data Gap Investigation Work Plan and Site Conceptual Model (SCM)** – Please prepare Data Gap Investigation Work Plan to address the July 2, 2013 conference call technical comment discussions listed above regarding the delineation of the LNAPL and groundwater plumes. 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 the intended purpose of the data, or to any LTCP criteria to which the data collection is intended to apply to. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to. If the sampling strategy includes data collection to support the delineation of LNAPL, a description should be included in the Data Gap Investigation Work Plan to support your sampling strategy so that ACEH can verify the appropriateness of the proposed sample locations.

    In order to expedite review, ACEH requests the 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 Data Gap Investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

3. **Path to Closure Project Schedule** - The State Water Resources Control Board passed Resolution No. 2012-0062 on November 6, 2012 which requires development of a "Path to Closure Plan" by December 31, 2013 that addresses the impediments to closure for the site. The Path to Closure must have milestone dates tied to calendar quarters which will achieve site cleanup and case closure in a timely and efficient manner and minimizes the cost of corrective action. Therefore, by the date listed below please prepare a Path to Closure Schedule (further detailed in Attachment B) for your site that incorporates the items identified by ACEH in the Technical Comments above as impediments to closure. ACEH staff utilizes a Data Gap Identification Tool (DGIT) while reviewing cases for

compliance with the LTCP criteria and identification of impediments to closure. We encourage you to also utilize the DGIT to (1) evaluate your site and develop an efficient path to site closure by focusing data collection efforts, if necessary, on the LTCP criteria, and (2) assist and expedite ACEH staff review of work plans and request for closures. ACEH will provide the DGIT as a PDF form via e-mail upon request. ACEH will review the schedule to ensure that all key elements are included.

4. **Request for an Updated Site Plan** – The current site plan does not appear to reflect site features as visible on aerial photograph map searches. As a consequence ACEH requests that an updated site plan be generated for future reports.
5. **Groundwater Monitoring** – Please continue to conduct quarterly groundwater monitoring at the subject site and submit report on the schedule listed below.

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:

- **September 13, 2013** – Vapor Investigation Report
  File to be named: RO341_SWI_R_yyyy-mm-dd
- **September 27, 2013** – Data Gap Investigation Plan and Focused Site Conceptual Model
  File to be named: RO341_WP_R_yyyy-mm-dd
- **November 30, 2012** – Third Quarter 2013 Groundwater Monitoring Report
  File to be named: RO341_GWM_R_yyyy-mm-dd
- **November 15, 2013** – Fourth Quarter 2013 Groundwater Monitoring
  File to be named: RO341_GWM_R_yyyy-mm-dd
- **February 14, 2014** – First Quarter 2014 Groundwater Monitoring
  File to be named: RO341_GWM_R_yyyy-mm-dd
- **60 Days After SCM & Data Gap Work Plan Approval** – Soil & Groundwater Investigation
  File to be named: RO341_SWI_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.

Sincerely,

Digitally signed by Mark Detterman
DN: cn=Mark Detterman, o, ou, email=mark.detterman@acgov.org, c=US
Date: 2013.07.09 15:37:53 -07'00'

Mark E. Detterman, PG, CEG
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
Attachment B – Path to Closure Project Schedule Requisite Elements

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

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Dilan Roe (sent via electronic mail to dilan.roe@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

ATTACHMENT 1

Responsible Party(ies) Legal Requirements/Obligations
& ACEH Electronic Report Upload (ftp) Instructions

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/)

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.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**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 .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 ://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 .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-

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	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). 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).	None	NA
	Site	***Geology:*** 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). ***Hydrogeology:*** 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.	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. 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.	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. 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.
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.	*Groundwater:* 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.	*Soil vapor*: 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.	*Groundwater:* 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.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* 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.	*Soil vapor*: 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

ATTACHMENT B

Path to Closure Project Schedule Requisite Elements

The State Water Resources Control Board passed Resolution No. 2012-0062 on November 6, 2012 which requires development of a "Path to Closure Plan" by December 31, 2013 that addresses the impediments to closure for the site. The Path to Closure must have milestone dates tied to calendar quarters which will achieve site cleanup and case closure in a timely and efficient manner and minimizes the cost of corrective action. ACEH will review the schedule to ensure that all key elements are included.

Please submit an electronic copy that includes, but is not be limited to, the following key environmental elements and milestones as appropriate:

- Preferential Pathway Study
- Soil, Groundwater, and Soil Vapor Investigations
- Initial, Updated, and Final/Validated SCMs
- Interim Remedial Actions
- Feasibility Study/Corrective Action Plan
- Pilot Tests
- Remedial Actions
- Soil Vapor and Groundwater Monitoring Well Installation and Monitoring
- Public Participation Program (Fact Sheet Preparation/Distribution/Public Comment Period, Community Meetings, etc.)
- Case Closure Tasks (Request for closure documents, ACEH Case Closure Summary Preparation and Review, Site Management Plan, Institutional Controls, Public Participation, Landowner Notification, Well Decommissioning, Waste Removal, and Reporting.)

Please include time for regulatory and RP in house review, permitting, off-site access agreements, and utility connections, etc.

Please use a critical path methodology/tool to construct a schedule with sufficient detail to support a realistic and achievable Path to Closure Schedule. The schedule is to include at a minimum:

- Defined work breakdown structure including summary tasks required to accomplish the project objectives and required deliverables
- Summary task decomposition into smaller more manageable components that can be scheduled, monitored, and controlled
- Sequencing of activities to identify and document relationships among the project activities using logical relationships
- Identification of critical paths, linkages, predecessor and successor activities, leads and lags, and key milestones
- Identification of entity responsible for executing work
- Estimated activity durations (60-day ACEH review times are based on calendar days)

APPENDIX B

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

SUMMARY OF ENVIRONMENAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON STATION 91153
3135 GIBBONS DRIVE, ALAMEDA, CALIFORNIA

1986 UST Removal and Excavation

The underground storage tanks (USTs) were removed and an unreported volume of soil was excavated from the former UST pit and product line trenches. Excavated soil was aerated onsite and used as backfill. Additional information is available in Blaine Tech Services, Inc.'s June 19, 1986 *Field Sampling* report and Weiss Associates' (Weiss) December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1986 Well Installation

Wells C-1 through C-3 were installed onsite. Additional information is available in Emcon Associates' September 18, 1986 *Well Installation Memorandum*.

1987 Area Well Survey

In August 1987, Pacific Environmental Group, Inc. (PEG) conducted a well survey and indentified wells within approximately 0.5 mile of the site. The majority of these wells were used for groundwater monitoring or cathodic protection and some were used for irrigation. None of the wells were listed as municipal drinking water supply wells. Additional information is available in PEG's August 12, 1987 *Well Survey Report*.

1989 House Construction and Destruction of Monitoring Well C-2

According to Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*, a majority of the soil beneath the planned residence footprint was removed for construction in early 1989. Groundwater monitoring well C-2 was apparently destroyed during construction prior to May 1989. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1987 and 1989 Soil Vapor Survey

Soil vapor surveys were conducted to quantify vapor intrusion to indoor air risks for onsite residents. Based on vapor concentrations from samples collected from the southeastern portion of the site, a vapor barrier was recommended for any structures. Additional information is available in EA Engineering's August 19, 1987 *Risk Assessment* and June 9, 1989 *Soil Vapor Contaminant Assessment Report of Investigation*.

1989 Subsurface Investigation

In July 1989, EA collected soil samples from between 0.5 and 9.5 feet below grade (fbg) in five shallow onsite borings and three shallow offsite borings (SB1 through SB8). The highest concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene,

ethylbenzene and xylenes (BTEX) were found in the areas east of the UST complex and pump islands. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1991 Groundwater Treatment

A groundwater pump and treat system was installed and operated by EA from 1991 to 1994. The system extracted groundwater from a recovery trench and extraction well RW-1. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1992 Well Installations

Offsite wells MW-4 through MW-6 were installed to further delineate the lateral extent of dissolved hydrocarbons. Additional information is available in Groundwater Technology Inc.'s (GTI) July 16, 1992 *Environmental Assessment Report*.

1993 Offsite Groundwater Sampling

Weiss collected groundwater samples from temporary offsite borings BH-A, BH-B, and BH-C, located crossgradient and downgradient of the groundwater extraction trench. Additional information is available in Weiss' December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan*.

1993 Monitoring Well Installation

On November 11, 1993 GTI installed groundwater monitoring well MW-7 and temporary monitoring well TMW-1 to further characterize the distribution of hydrocarbons in soil and groundwater upgradient and downgradient of the site. Additional information is available in GTI's January 31, 1994 *Additional Environmental Assessment Report*.

1994 Site Evaluation and Proposed Further Action

At Chevron's request, Weiss prepared a site evaluation to summarize all investigative and remedial actions performed to date and to outline a recommended future action plan. Additional information is available in WA's December 20, 1994 *Site Evaluation and Proposed Further Action Plan*.

1995 Well Installations

Wells MW-8 through MW-10 were installed to further delineate the downgradient extent of hydrocarbons in groundwater. Additional information is available in GTI's October 31, 1995 *Additional Site Assessment Report*.

1996 Evaluation for Potential Migration Pathway via Buried Utility Pipelines

Fluor Daniel GTI (FD-GTI) compiled utility location and depth information to analyze the potential for offsite migration of dissolved hydrocarbons in utility trenches. The report concluded that several utilities penetrated groundwater, but that these utilities were not acting as preferential pathways. The report states that the buried utilities were installed in materials similar to native soil and were unlikely to result in preferential flow. In addition, monitoring well data near the utilities was not consistent with preferential flow. Additional information is available in FD-GTI's May 15, 1996 *Evaluation for Potential Migration Pathway via Buried Utility Pipelines*.

1996 Geophysical Investigation for Buried Underground Storage Tanks

FD-GTI performed a geophysical survey of approximately 70 feet of sidewalk along Gibbons Boulevard and near monitoring well C-1. Both ground penetrating radar and vertical magnetic gradiometer were used. No buried underground storage tanks were identified within the survey areas. Additional information is available in FD-GTI's July 8, 1996 *Geophysical Investigation for Buried Underground Storage Tanks*.

1997 Shallow Soil Investigation

Shallow soil samples S-1 through S-15 were collected along the north, west, and east property boundaries to assess lead concentrations in onsite soil. Additional information is available in Gettler-Ryan's (G-R) October 22, 1997 *Soil Sampling Report*.

1997 ORC and Peroxide Injection

Oxygen releasing compound (ORC) was placed in well MW-6 and MW-7 and hydrogen peroxide was injected in well MW-1 to remediate light non-aqueous phase liquids. Additional information is available in ChevronTexaco Energy Research and Technology Company's (Chevron ETC) May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*,

1998 Bio-Parameter Evaluation

Three samples collected during the third quarter 1998 groundwater monitoring event were analyzed for bio-parameter data to evaluate biodegradation processes. The report concluded that not enough parameters indicated biodegradation was occurring. However, the report states that the recently added ORC and hydrogen peroxide would potentially increase bioremediation. Additional information is available in Chevron's September 29, 1998 *Bio-Remediation Evaluation Letter*.

1999 Hydrogen Peroxide Injection

In July 1999, Cambria Environmental Technology, Inc. (Cambria) injected a hydrogen peroxide solution into well C-1 to oxidize residual hydrocarbons. Additional information is available in Cambria's July 12, 1999 *Hydrogen Peroxide Injection* report.

2001 to 2002 Groundwater Batch Extraction Events

Five groundwater batch extraction events were conducted. These events were discontinued because of inconvenience to the resident. Additional Information available in Chevron ETC's May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*.

2002-2003 Vapor Intrusion Study and Risk-Based Correction Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor

Borings SV-1 through SV-7 were hand-augered along the edges of the current building and soil-vapor samples were collected from temporary probes. These data were used to evaluate potential indoor air risks to onsite residents. Data was compared to the United States Environmental Protection Agency's established target risk levels for adults and children. The report concludes that vapor intrusion risks from soil vapor intrusion to indoor air were below the established guidelines. Additional information is available in Chevron ETC's May 2003 *Risk-Based Corrective Action Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor*.

2010 Preferential Pathway and Well Survey

In 2010, Conestoga-Rovers & Associates (CRA) completed another preferential pathway analysis and well survey. CRA located electric, natural gas, water, communication, storm drain sewer, and sanitary sewer lines near the site. Although some of these utilities periodically intersect the groundwater table, hydrocarbon concentrations in monitoring wells indicate that utilities are not acting as significant pathways for hydrocarbon migration. This is consistent with previous assessments. The closest water supply wells are over 1,000 feet from the site. These wells are either upgradient or located in Oakland across the Oakland Alameda Estuary. The wells identified in the survey are not at risk from hydrocarbons originating from the site. Additional information is available in CRA's September 30, 2010 *Preferential Pathway Study and Well Survey Report*.

2011 Subsurface and Crawl Space and Indoor Ambient Air Investigation

In 2011, Conestoga-Rovers & Associates (CRA) collected two indoor ambient air samples from inside the residence, two ambient air samples from within the crawl space, and one outdoor ambient air sample. Also eight soil borings B-1 through B-8 were advanced onsite. Additional information is available in CRA's April 18, 2012 *Subsurface and Crawl Space, Indoor and Ambient Air Investigation Report*.

APPENDIX C

BUILDING SURVEY FORM

APPENDIX L - BUILDING SURVEY FORM

Preparer's Name: OLIVER YAN Date/Time Prepared: 9/16/13
Affiliation: CONESTOGA-ROVERS & ASSOCIATES CONSULTANT Phone Number: 510-420-0700

Occupant Information

Occupant Name: MARK HOM Interviewed: ☒ Yes ☐ No
Mailing Address: 3135 GIBBONS DRIVE
City: ALAMEDA State: CA Zip Code: 94501
Phone: Email:

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

Occupant Name: Interviewed: ☐ Yes ☐ No
Mailing Address:
City: State: Zip Code:
Phone: Email:

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): 24 Number of Stories: 2
Approximate Building Area (square feet): 3,500 Number of Elevators: —

Foundation Type (Check appropriate boxes)

☐ Slab-on-Grade ☒ Crawl Space ☐ Basement

Basement Characteristics (Check appropriate boxes)

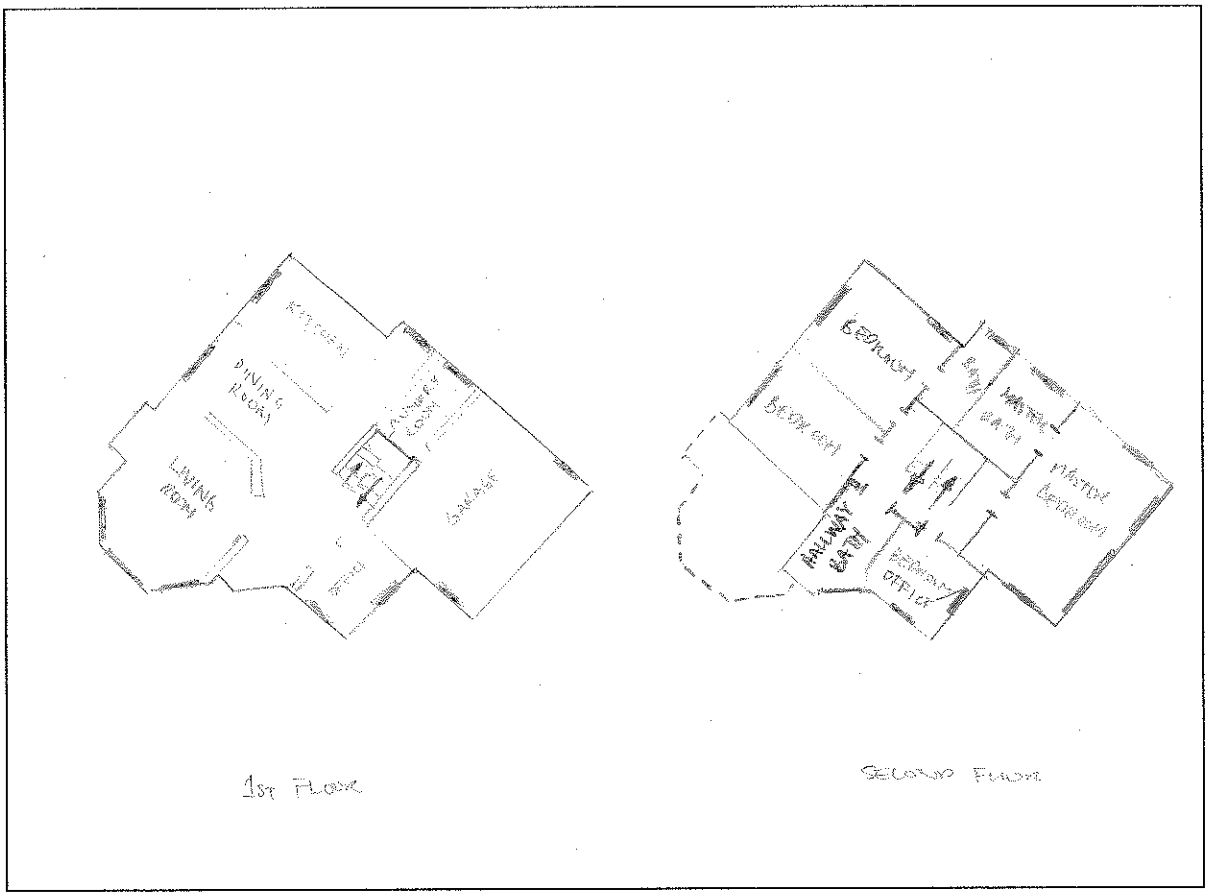
☒ Dirt Floor ☐ Sealed ☐ Wet Surfaces ☐ Sump Pump ☐ Concrete Cracks ☐ Floor Drains

Factors Influencing Indoor Air Quality

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

SUNNY; CALM - NO WINDS ~61°F

General Comments

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

APPENDIX M – BUILDING SCREENING FORM

Occupant of Building MARK HOM

Address 3135 GIBBONS DRIVE

City ALAMEDA, CALIFORNIA

Field Investigator YAN, OLIVER Date 09/16/2013

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
0.0ppm	FIRST FLOOR – LAUNDRY ROOM	Oxi Clean detergent
0.0ppm	// //	Fabric Softener
0.0 ppm	// //	Dishwasher pacs (KIRKLAND)
0.0 ppm	// //	"Kitchen Aid" - stainless steel cleaner
0.0ppm	// //	"Swiffer" wet sets, refill floor wipes
0.0 ppm	// //	"Four Monks" distilled vinegar
0.0ppm	SECOND FLOOR – MASTER BATHROOM	"JOHNSON'S" BABY LOTION
0.0ppm	// //	"CREST" MOUTHWASH "ALCOHOL FREE"
0.0 ppm	// //	AQUAPHOR HEALING OINTMENT
0.0ppm	// //	SHAMPOO – different varieties (2 bottles)
0.0ppm	// //	Additional lotions (3 BOTTLES)
0.0ppm	// //	"NEOSPORIN" OINTMENT
0.0ppm	// //	HYDROGEN PEROXIDE (2 BOTTLES)
0.0ppm	// //	Sun tan lotion "Allegra" Skin Oil
0.0ppm	// //	Opti-free eye/contact solution.
0.0ppm	// //	Sunscreen lotion (3 different bottles)
0.0ppm	// //	Sslene Solution

Comments:
All containers are sealed; there does not apear to be any leaks.

APPENDIX M – BUILDING SCREENING FORM

Occupant of Building MARK HOM

Address 3135 GIBBONS DRIVE

City ALAMEDA, CALIFORNIA

Field Investigator YAN, OLIVER Date 09/16/2013

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
0.0 ppm	SECOND FLOOR – MASTER BATHROOM	"PURE GREEN" disinfectant
0.0 ppm	" "	St. Ives Apricot scrub
0.0 ppm	" "	Sinus Rinse, "Neti Mea"
0.0 ppm	" "	Epsom Salt
0.0 ppm	" "	Scrub Spray Professional Sprayer
0.0 ppm	SECOND FLOOR – HALLWAY BATHROOM	MEYER'S HAND SOAP
0.0 ppm	" "	TOM'S TOOTH PASTE
0.0 ppm	" "	ACT – anticavity mouthwash
0.0 ppm	" "	Swiffer – refill floor wipes (4 boxes)
0.0 ppm	" "	miele cleaner
0.0 ppm	" "	Isopropyl Alcohol (4 bottles)
0.0 ppm	" "	"Swan" hydrogen peroxide
0.0 ppm	" "	"Purel" sanitizing wipes
0.0 ppm	" "	ACT – regular mouthwash
0.0 ppm	SECOND FLOOR – NURSERY BATHROOM	Soft Soap anti-bacterial handwash
0.0 ppm	SECOND FLOOR-OFFICE	"LINKYO" COPIER TONER (5 BOXES)
0.0 ppm	Garage	"FOUR MONKS" DISTILLED VINEGAR.

Comments:
Hallway bathroom (2nd floor) → chemicals located in storage closet; majority under the sink or counter. All containers are sealed; there does not appear to be any leaks.

APPENDIX M – BUILDING SCREENING FORM

Occupant of Building MARK HOM

Address 3135 GIBBONS DRIVE

City ALAMEDA, CALIFORNIA

Field Investigator JAN, OLIVER Date 09/16/2013

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
0.0 ppm	GARAGE	OLIVE OIL (5 BOTTLES, AND 1 GALLON CAN)
0.0 ppm	"	PRINTER → W/ TONER
0.0 ppm	GARAGE → CLOSET	ORTHO → DIAL N SPRAY WEED/INSECT KILLER (EMPTY)
0.0 ppm	" "	MIRACLE GRO GARDEN FEEDER (EMPTY)
0.0 ppm	" "	12-VOLT INFLATOR MACHINE
0.0 ppm	" "	Dura-Flame firelogs (1 BOX - 9-6 POUNDS)

Comments:
Closet in garage located on northern wall; closet includes crawl space entry.

APPENDIX D

LABORATORY ANALYTICAL REPORTS

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9/26/2013
Mr. Oliver Yan
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Former Chevron 91153
Project #: 311642
Workorder #: 1309412A

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 9/23/2013 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: Karen Stempson at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Karen Stempson

Project Manager

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WORK ORDER #: 1309412A

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/26/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-1	Modified TO-15	5.9 "Hg	5.1 psi
01B	IA-1	Modified TO-15	5.9 "Hg	5.1 psi
02A	IA-2	Modified TO-15	7.1 "Hg	4.8 psi
02B	IA-2	Modified TO-15	7.1 "Hg	4.8 psi
03A	IA-3	Modified TO-15	7.6 "Hg	5.3 psi
03B	IA-3	Modified TO-15	7.6 "Hg	5.3 psi
04A	OA-1	Modified TO-15	5.1 "Hg	5 psi
04B	OA-1	Modified TO-15	5.1 "Hg	5 psi
05A	OA-1 DUP	Modified TO-15	5.3 "Hg	5 psi
05B	OA-1 DUP	Modified TO-15	5.3 "Hg	5 psi
06A	CS-1	Modified TO-15	5.5 "Hg	4.9 psi
06B	CS-1	Modified TO-15	5.5 "Hg	4.9 psi
07A	CS-2	Modified TO-15	5.3 "Hg	5.2 psi
07B	CS-2	Modified TO-15	5.3 "Hg	5.2 psi
10A	TRIP BLANK (6L)	Modified TO-15	29.8 "Hg	5.3 psi
10B	TRIP BLANK (6L)	Modified TO-15	29.8 "Hg	5.3 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
11C	Lab Blank	Modified TO-15	NA	NA
11D	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
12C	CCV	Modified TO-15	NA	NA

Continued on next page

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WORK ORDER #: 1309412A

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/26/2013		

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

CERTIFIED BY: Heidi Rayos DATE: 09/26/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Conestoga-Rovers Associates (CRA)
Workorder# 1309412A

Eight 6 Liter Summa Canister (SIM Certified) samples were received on September 23, 2013. 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 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 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.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	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.

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

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

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

Client Sample ID: IA-1

Lab ID#: 1309412A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	17	36	69	150

Client Sample ID: IA-1

Lab ID#: 1309412A-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.17	0.0026 J	0.60	0.0094 J
Benzene	0.084	0.19	0.27	0.60
Toluene	0.034	0.91	0.13	3.4
Ethyl Benzene	0.034	0.22	0.14	0.95
m,p-Xylene	0.067	0.67	0.29	2.9
o-Xylene	0.034	0.22	0.14	0.98

Client Sample ID: IA-2

Lab ID#: 1309412A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	17	46	71	190

Client Sample ID: IA-2

Lab ID#: 1309412A-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.17	0.0036 J	0.63	0.013 J
Benzene	0.087	0.53	0.28	1.7
Toluene	0.035	1.7	0.13	6.3
Ethyl Benzene	0.035	0.26	0.15	1.1
m,p-Xylene	0.070	0.88	0.30	3.8
o-Xylene	0.035	0.29	0.15	1.2

Client Sample ID: IA-3

Lab ID#: 1309412A-03A

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

Client Sample ID: IA-3

Lab ID#: 1309412A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	18	67	74	270

Client Sample ID: IA-3

Lab ID#: 1309412A-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.18	0.0077 J	0.66	0.028 J
Benzene	0.091	1.2	0.29	4.0
Toluene	0.036	3.2	0.14	12
Ethyl Benzene	0.036	0.41	0.16	1.8
m,p-Xylene	0.073	1.4	0.32	6.1
o-Xylene	0.036	0.46	0.16	2.0

Client Sample ID: OA-1

Lab ID#: 1309412A-04A

No Detections Were Found.

Client Sample ID: OA-1

Lab ID#: 1309412A-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0021 J	0.58	0.0075 J
Benzene	0.080	0.080 J	0.26	0.25 J
Toluene	0.032	0.27	0.12	1.0
Ethyl Benzene	0.032	0.039	0.14	0.17
m,p-Xylene	0.064	0.14	0.28	0.61
o-Xylene	0.032	0.051	0.14	0.22

Client Sample ID: OA-1 DUP

Lab ID#: 1309412A-05A

No Detections Were Found.

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

Client Sample ID: OA-1 DUP

Lab ID#: 1309412A-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0017 J	0.59	0.0062 J
Benzene	0.082	0.077 J	0.26	0.24 J
Toluene	0.033	0.26	0.12	0.96
Ethyl Benzene	0.033	0.039	0.14	0.17
m,p-Xylene	0.065	0.14	0.28	0.61
o-Xylene	0.033	0.053	0.14	0.23

Client Sample ID: CS-1

Lab ID#: 1309412A-06A

No Detections Were Found.

Client Sample ID: CS-1

Lab ID#: 1309412A-06B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.082	0.055 J	0.26	0.18 J
Toluene	0.033	0.14	0.12	0.52
Ethyl Benzene	0.033	0.021 J	0.14	0.089 J
m,p-Xylene	0.065	0.069	0.28	0.30
o-Xylene	0.033	0.028 J	0.14	0.12 J

Client Sample ID: CS-2

Lab ID#: 1309412A-07A

No Detections Were Found.

Client Sample ID: CS-2

Lab ID#: 1309412A-07B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0035 J	0.59	0.012 J
Benzene	0.082	0.087	0.26	0.28
Toluene	0.033	0.25	0.12	0.94

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

Client Sample ID: CS-2

Lab ID#: 1309412A-07B

Ethyl Benzene	0.033	0.037	0.14	0.16
m,p-Xylene	0.066	0.12	0.28	0.54
o-Xylene	0.033	0.048	0.14	0.21

Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412A-10A

No Detections Were Found.

Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412A-10B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	0.0060 J	0.16	0.019 J
Toluene	0.020	0.0029 J	0.075	0.011 J

eurofins | Air Toxics

Client Sample ID: IA-1

Lab ID#: 1309412A-01A

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

File Name:	**v092412**	**Date of Collection: 9/19/13 3:24:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 9/24/13 04:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.84	Not Detected	4.4	Not Detected
TPH ref. to Gasoline (MW=100)	17	36	69	150

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: IA-1

Lab ID#: 1309412A-01B

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

File Name:	**v092412sim**	**Date of Collection: 9/19/13 3:24:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 9/24/13 04:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.17	0.0026 J	0.60	0.0094 J
Benzene	0.084	0.19	0.27	0.60
Toluene	0.034	0.91	0.13	3.4
Ethyl Benzene	0.034	0.22	0.14	0.95
m,p-Xylene	0.067	0.67	0.29	2.9
o-Xylene	0.034	0.22	0.14	0.98

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: IA-2

Lab ID#: 1309412A-02A

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

File Name:	**v092413**	**Date of Collection: 9/19/13 3:16:00 PM**	
Dil. Factor:	**1.74**	**Date of Analysis: 9/24/13 06:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.87	Not Detected	4.6	Not Detected
TPH ref. to Gasoline (MW=100)	17	46	71	190

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: IA-2

Lab ID#: 1309412A-02B

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

File Name:	**v092413sim**	**Date of Collection: 9/19/13 3:16:00 PM**	
Dil. Factor:	**1.74**	**Date of Analysis: 9/24/13 06:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.17	0.0036 J	0.63	0.013 J
Benzene	0.087	0.53	0.28	1.7
Toluene	0.035	1.7	0.13	6.3
Ethyl Benzene	0.035	0.26	0.15	1.1
m,p-Xylene	0.070	0.88	0.30	3.8
o-Xylene	0.035	0.29	0.15	1.2

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: IA-3

Lab ID#: 1309412A-03A

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

File Name:	**v092419**	**Date of Collection: 9/19/13 3:14:00 PM**	
Dil. Factor:	**1.82**	**Date of Analysis: 9/24/13 11:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.91	Not Detected	4.8	Not Detected
TPH ref. to Gasoline (MW=100)	18	67	74	270

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	95	70-130

eurofins | Air Toxics

Client Sample ID: IA-3

Lab ID#: 1309412A-03B

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

File Name:	**v092419sim**	**Date of Collection: 9/19/13 3:14:00 PM**	
Dil. Factor:	**1.82**	**Date of Analysis: 9/24/13 11:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.18	0.0077 J	0.66	0.028 J
Benzene	0.091	1.2	0.29	4.0
Toluene	0.036	3.2	0.14	12
Ethyl Benzene	0.036	0.41	0.16	1.8
m,p-Xylene	0.073	1.4	0.32	6.1
o-Xylene	0.036	0.46	0.16	2.0

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: OA-1

Lab ID#: 1309412A-04A

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

File Name:	**v092508**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/25/13 01:41 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	119	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: OA-1

Lab ID#: 1309412A-04B

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

File Name:	**v092508sim**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/25/13 01:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0021 J	0.58	0.0075 J
Benzene	0.080	0.080 J	0.26	0.25 J
Toluene	0.032	0.27	0.12	1.0
Ethyl Benzene	0.032	0.039	0.14	0.17
m,p-Xylene	0.064	0.14	0.28	0.61
o-Xylene	0.032	0.051	0.14	0.22

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1309412A-05A

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

File Name:	**v092509**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/25/13 02:18 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	115	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: OA-1 DUP

Lab ID#: 1309412A-05B

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

File Name:	**v092509sim**	**Date of Collection:**	**9/19/13 3:07:00 PM**
Dil. Factor:	**1.63**	**Date of Analysis:**	**9/25/13 02:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0017 J	0.59	0.0062 J
Benzene	0.082	0.077 J	0.26	0.24 J
Toluene	0.033	0.26	0.12	0.96
Ethyl Benzene	0.033	0.039	0.14	0.17
m,p-Xylene	0.065	0.14	0.28	0.61
o-Xylene	0.033	0.053	0.14	0.23

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: CS-1

Lab ID#: 1309412A-06A

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

File Name:	**v092510**	**Date of Collection: 9/19/13 3:20:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/25/13 02:54 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	121	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: CS-1

Lab ID#: 1309412A-06B

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

File Name:	**v092510sim**	**Date of Collection:**	**9/19/13 3:20:00 PM**
Dil. Factor:	**1.63**	**Date of Analysis:**	**9/25/13 02:54 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	0.055 J	0.26	0.18 J
Toluene	0.033	0.14	0.12	0.52
Ethyl Benzene	0.033	0.021 J	0.14	0.089 J
m,p-Xylene	0.065	0.069	0.28	0.30
o-Xylene	0.033	0.028 J	0.14	0.12 J

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: CS-2

Lab ID#: 1309412A-07A

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

File Name:	**v092511**	**Date of Collection: 9/19/13 3:32:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 9/25/13 03:29 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	117	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: CS-2

Lab ID#: 1309412A-07B

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

File Name:	**v092511sim**	**Date of Collection: 9/19/13 3:32:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 9/25/13 03:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methyl tert-butyl ether	0.16	0.0035 J	0.59	0.012 J
Benzene	0.082	0.087	0.26	0.28
Toluene	0.033	0.25	0.12	0.94
Ethyl Benzene	0.033	0.037	0.14	0.16
m,p-Xylene	0.066	0.12	0.28	0.54
o-Xylene	0.033	0.048	0.14	0.21

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412A-10A

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

File Name:	**v092512**	**Date of Collection: 9/19/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 04:05 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: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412A-10B

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

File Name:	**v092512sim**	**Date of Collection: 9/19/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 04:05 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	0.0060 J	0.16	0.019 J
Toluene	0.020	0.0029 J	0.075	0.011 J
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

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1309412A-11A

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

File Name:	**v092406a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 11:37 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	105	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1309412A-11B

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

File Name:	**v092406sima**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 11:37 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	0.0059 J	0.16	0.019 J
Toluene	0.020	0.0058 J	0.075	0.022 J
Ethyl Benzene	0.020	0.0027 J	0.087	0.012 J
m,p-Xylene	0.040	0.0081 J	0.17	0.035 J
o-Xylene	0.020	0.0038 J	0.087	0.016 J

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1309412A-11C

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

File Name:	**v092507a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 12:44 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	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1309412A-11D

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

File Name:	**v092507sima**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 12:44 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	0.018 J	0.16	0.059 J
Toluene	0.020	0.0033 J	0.075	0.012 J
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	0.0025 J	0.17	0.011 J
o-Xylene	0.020	Not Detected	0.087	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1309412A-12A

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

File Name:	**v092402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 08:51 AM**	

Compound	**%Recovery**
Naphthalene	77
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1309412A-12B

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

File Name:	**v092402sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 08:51 AM**	

Compound	**%Recovery**
Methyl tert-butyl ether	93
Benzene	78
Toluene	91
Ethyl Benzene	94
m,p-Xylene	95
o-Xylene	95

Container Type: NA - Not Applicable

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

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1309412A-12C

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

File Name:	**v092502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:01 AM**	

Compound	**%Recovery**
Naphthalene	73
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1309412A-12D

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

File Name:	**v092502sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:01 AM**	

Compound	**%Recovery**
Methyl tert-butyl ether	93
Benzene	78
Toluene	91
Ethyl Benzene	93
m,p-Xylene	95
o-Xylene	95

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1309412A-13A

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

File Name:	**v092403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 09:34 AM**	

Compound	**%Recovery**	**Method Limits**
Naphthalene	74	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1309412A-13AA

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

File Name:	**v092404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 10:14 AM**	

Compound	%Recovery	Method Limits
Naphthalene	78	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1309412A-13B

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

File Name:	**v092403sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 09:34 AM**	

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	94	70-130
Benzene	77	70-130
Toluene	87	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	92	70-130
o-Xylene	92	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1309412A-13BB

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

File Name:	**v092404sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 10:14 AM**	

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	94	70-130
Benzene	77	70-130
Toluene	87	70-130
Ethyl Benzene	89	70-130
m,p-Xylene	91	70-130
o-Xylene	90	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCS

Lab ID#: 1309412A-13C

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

File Name:	**v092503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:50 AM**	

Compound	%Recovery	Method Limits
Naphthalene	76	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCSD

Lab ID#: 1309412A-13CC

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

File Name:	**v092504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 10:34 AM**	

Compound	%Recovery	Method Limits
Naphthalene	81	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1309412A-13D

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

File Name:	**v092503sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:50 AM**	

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	92	70-130
Benzene	76	70-130
Toluene	86	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	93	70-130
o-Xylene	92	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCSD

Lab ID#: 1309412A-13DD

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

File Name:	**v092504sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 10:34 AM**	

Compound	%Recovery	Method Limits
Methyl tert-butyl ether	94	70-130
Benzene	76	70-130
Toluene	88	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	94	70-130
o-Xylene	94	70-130

Container Type: NA - Not Applicable

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

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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

Project Manager: Nathan Lee
Collected by: (Print and Sign) OLIVER MAN
Company: CONESTOGA ROVERS & ASSOCIATES Email: NLEE@CRAWORLD.COM
Address: 5900 HOLLIS ST. SUITE A City: EMERYVILLE State: CA Zip: 94610
Phone: (510) 420-0700 Fax: (510) 420-9170

Project Info:
P.O. #
Project # 311642
Project Name: FORMER CHEVRON 91153

Turn Around Time: ☐ Normal ☒ Rush 48 HOUR

Lab Use Only: Pressurized by: Date: Pressurization Gas: N_2 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)
01A	IA-1	5776	09/19/13	1524	TPHg/BTEX/MTBE/NAPTHALENE BY TO-15 (3M); O2/N2/He/CO2/CH4 BY ASTM D1946; aromatics/aliphatics [illegible]	-30	-8		
02A	IA-2	31435	09/19/13	1516	↓	-30	-9		
03A	IA-3	34725	09/19/13	1514		-26	-25		
04A	OA-1	12689	09/19/13	1507		-30	-7		
05A	OA-1 DUP	33935	09/19/13	1507		-30	-6		
06A	CS-1	35176	09/19/13	1520		-30	-6		
07A	CS-2	9424	09/19/13	1532		-30	-6		
08A	SSVP-1	35555	09/20/13	1550		-30	-6		
09A	SSVP-2	1371	09/20/13	1640		-30	-6		
10A	TRIP BLANK (6L)	3659	09/19/13	–			–		
11A	TRIP BLANK (1L)	1041	09/19/13	–			–		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	09/23/13 0800	[signature]	9-23-13 1232

Notes:
Email/send results to: NLEE@CRAWORLD.COM
Run requested analysis on trip blanks.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	ATL Dropoff		N/A	Good	Yes No None (circled: None)	1309412

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9/25/2013
Mr. Oliver Yan
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Former Chevron 91153
Project #: 311642
Workorder #: 1309412B

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 9/23/2013 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: Karen Stempson at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Karen Stempson

Project Manager

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WORK ORDER #: 1309412B

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/25/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-1	Modified ASTM D-1946	5.9 "Hg	5.1 psi
02A	IA-2	Modified ASTM D-1946	7.1 "Hg	4.8 psi
03A	IA-3	Modified ASTM D-1946	7.6 "Hg	5.3 psi
04A	OA-1	Modified ASTM D-1946	5.1 "Hg	5 psi
05A	OA-1 DUP	Modified ASTM D-1946	5.3 "Hg	5 psi
06A	CS-1	Modified ASTM D-1946	5.5 "Hg	4.9 psi
07A	CS-2	Modified ASTM D-1946	5.3 "Hg	5.2 psi
08A	SSVP-1	Modified ASTM D-1946	4.5 "Hg	15.1 psi
09A	SSVP-2	Modified ASTM D-1946	6.3 "Hg	15.3 psi
10A	TRIP BLANK (6L)	Modified ASTM D-1946	29.8 "Hg	5.3 psi
11A	TRIP BLANK (1L)	Modified ASTM D-1946	21.4 "Hg	14.8 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: Heidi Hayes DATE: 09/25/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Conestoga-Rovers Associates (CRA)
Workorder# 1309412B

Eight 6 Liter Summa Canister (SIM Certified) and three 1 Liter Summa Canister (100% Certified) samples were received on September 23, 2013. 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.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
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 >/= 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

The trip blank, sample TRIP BLANK (1L), was received at low vacuum (<25"Hg). The client was notified and the analysis proceed.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit.

The trip blank sample TRIP BLANK (1L) has reportable levels of Oxygen present. Reanalysis confirm initial result.

The reporting limit for Nitrogen was raised from 0.10% to 0.50%.

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

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

Client Sample ID: IA-1

Lab ID#: 1309412B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	21
Nitrogen	0.84	79
Carbon Dioxide	0.017	0.064
Methane	0.00017	0.00048

Client Sample ID: IA-2

Lab ID#: 1309412B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	21
Nitrogen	0.87	79
Carbon Dioxide	0.017	0.052
Methane	0.00017	0.00031

Client Sample ID: IA-3

Lab ID#: 1309412B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	21
Nitrogen	0.91	79
Carbon Dioxide	0.018	0.048
Methane	0.00018	0.00028

Client Sample ID: OA-1

Lab ID#: 1309412B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.80	79
Carbon Dioxide	0.016	0.041
Methane	0.00016	0.00020

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

Client Sample ID: OA-1 DUP

Lab ID#: 1309412B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.82	79
Carbon Dioxide	0.016	0.041
Methane	0.00016	0.00022

Client Sample ID: CS-1

Lab ID#: 1309412B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.82	79
Carbon Dioxide	0.016	0.039
Methane	0.00016	0.00017

Client Sample ID: CS-2

Lab ID#: 1309412B-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	22
Nitrogen	0.82	78
Carbon Dioxide	0.016	0.043
Methane	0.00016	0.00022

Client Sample ID: SSVP-1

Lab ID#: 1309412B-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.5
Nitrogen	1.2	69
Carbon Dioxide	0.024	15
Methane	0.00024	12

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

Client Sample ID: SSVP-2

Lab ID#: 1309412B-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.3
Nitrogen	1.3	66
Carbon Dioxide	0.026	15
Methane	0.00026	15

Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412B-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	0.034 J
Nitrogen	0.50	100

Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1309412B-11A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.70	21
Nitrogen	3.5	79
Carbon Dioxide	0.070	0.052 J

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Client Sample ID: IA-1

Lab ID#: 1309412B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092505**	**Date of Collection: 9/19/13 3:24:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 9/25/13 09:59 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.17	21
Nitrogen	0.84	79
Carbon Dioxide	0.017	0.064
Methane	0.00017	0.00048
Helium	0.084	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-2

Lab ID#: 1309412B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092506**	**Date of Collection: 9/19/13 3:16:00 PM**	
Dil. Factor:	**1.74**	**Date of Analysis: 9/25/13 10:36 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	21
Nitrogen	0.87	79
Carbon Dioxide	0.017	0.052
Methane	0.00017	0.00031
Helium	0.087	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-3

Lab ID#: 1309412B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092507**	**Date of Collection: 9/19/13 3:14:00 PM**	
Dil. Factor:	**1.82**	**Date of Analysis: 9/25/13 11:01 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.18	21
Nitrogen	0.91	79
Carbon Dioxide	0.018	0.048
Methane	0.00018	0.00028
Helium	0.091	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: OA-1

Lab ID#: 1309412B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092508**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/25/13 11:28 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.80	79
Carbon Dioxide	0.016	0.041
Methane	0.00016	0.00020
Helium	0.080	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: OA-1 DUP

Lab ID#: 1309412B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092509**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/25/13 11:56 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Nitrogen	0.82	79
Carbon Dioxide	0.016	0.041
Methane	0.00016	0.00022
Helium	0.082	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: CS-1

Lab ID#: 1309412B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092510**	**Date of Collection: 9/19/13 3:20:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/25/13 12:21 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.16	21
Nitrogen	0.82	79
Carbon Dioxide	0.016	0.039
Methane	0.00016	0.00017
Helium	0.082	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: CS-2

Lab ID#: 1309412B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092511**	**Date of Collection: 9/19/13 3:32:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 9/25/13 12:50 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	22
Nitrogen	0.82	78
Carbon Dioxide	0.016	0.043
Methane	0.00016	0.00022
Helium	0.082	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: SSVP-1

Lab ID#: 1309412B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092515**	**Date of Collection: 9/20/13 3:30:00 PM**	
Dil. Factor:	**2.38**	**Date of Analysis: 9/25/13 03:01 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.5
Nitrogen	1.2	69
Carbon Dioxide	0.024	15
Methane	0.00024	12
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-2

Lab ID#: 1309412B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092516**	**Date of Collection: 9/20/13 4:40:00 PM**	
Dil. Factor:	**2.59**	**Date of Analysis: 9/25/13 03:26 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.3
Nitrogen	1.3	66
Carbon Dioxide	0.026	15
Methane	0.00026	15
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: TRIP BLANK (6L)

Lab ID#: 1309412B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092512**	**Date of Collection: 9/19/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 01:38 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	0.034 J
Nitrogen	0.50	100
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected
Helium	0.050	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1309412B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092513**	**Date of Collection: 9/20/13**	
Dil. Factor:	**7.02**	**Date of Analysis: 9/25/13 02:12 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.70	21
Nitrogen	3.5	79
Carbon Dioxide	0.070	0.052 J
Methane	0.00070	Not Detected
Helium	0.35	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: Lab Blank

Lab ID#: 1309412B-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092504a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:28 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	0.020 J
Nitrogen	0.50	0.091 J
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1309412B-12B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092503c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:02 AM**	

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

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1309412B-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 08:36 AM**	

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	100	85-115
Carbon Dioxide	102	85-115
Methane	101	85-115
Helium	98	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1309412B-13AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10092517**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 03:57 PM**	

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

Container Type: NA - Not Applicable

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CHAIN-OF-CUSTODY RECORD

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

Project Manager: Nathan Lee
Collected by: (Print and Sign) OLIVER YAU
Company: CONESTOGA-ROVERS & ASSOCIATES Email: NLEE@CRAWORLD.COM
Address: 9380 HOLLIS ST. SUITE 4 City: EMERYVILLE State: CA Zip: 94610
Phone: (510) 420-0700 Fax: (510) 420-9170

Project Info:
P.O. #:
Project #: 311642
Project Name: FORMER CHEVRON 9111S3

Turn Around Time:
☐ Normal
☒ Rush
48 Hour
specify

Pressurized by:
Date:
Pressurization Gas: N2 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 (psig)
01A	IA-1	5776	09/19/13	1524	TPH(G)/BTEX/MTBE/NAPHTHALENE BY TO-15 (SIM), 02/N2/Ar/CH4/He BY ASTM D1946, ARGON/ALIPHATICS + TENTATIVELY IDENTIFIED COMPOUNDS	-30	-8		
02A	IA-2	31435	09/19/13	1516		-30	-9		
03A	IA-3	34725	09/19/13	1514		-26	-25		
04A	OA-1	12689	09/19/13	1507		-30	-7		
05A	OA-1 DUP	33935	09/19/13	1507		-30	-6		
06A	CS-1	35176	09/19/13	1520		-30	-6		
07A	CS-2	9424	09/19/13	1532		-30	-6		
08A	SSVP-1	35555	09/20/13	1550		-30	-6		
09A	SSVP-2	1371	09/20/13	1640		-30	-6		
10A	TRIP BLANK (CL)	5654	09/19/13						
11A	TRIP BLANK (CL)	1041	09/20/13						

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time	Notes:
	09/23/13 0800		9-23-13 1232	Email/send results to: NLEE@CRAWORLD.COM
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time	RUSH REQUESTED ANALYSIS ON TRIP BLANKS.
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 #
	ATL Drop Off		N/A	Good	Yes No None	130912

Rev. 12/05/11

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9/25/2013
Mr. Oliver Yan
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Former Chevron 91153
Project #: 311642
Workorder #: 1309412C

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 9/23/2013 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: Karen Stempson at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Karen Stempson

Project Manager

WORK ORDER #: 1309412C

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/25/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-1	Modified TO-15 APH	5.9 "Hg	5.1 psi
01B	IA-1	Modified TO-15 APH	5.9 "Hg	5.1 psi
02A	IA-2	Modified TO-15 APH	7.1 "Hg	4.8 psi
02B	IA-2	Modified TO-15 APH	7.1 "Hg	4.8 psi
03A	IA-3	Modified TO-15 APH	7.6 "Hg	5.3 psi
03B	IA-3	Modified TO-15 APH	7.6 "Hg	5.3 psi
04A	OA-1	Modified TO-15 APH	5.1 "Hg	5 psi
04B	OA-1	Modified TO-15 APH	5.1 "Hg	5 psi
05A	OA-1 DUP	Modified TO-15 APH	5.3 "Hg	5 psi
05B	OA-1 DUP	Modified TO-15 APH	5.3 "Hg	5 psi
06A	CS-1	Modified TO-15 APH	5.5 "Hg	4.9 psi
06B	CS-1	Modified TO-15 APH	5.5 "Hg	4.9 psi
07A	CS-2	Modified TO-15 APH	5.3 "Hg	5.2 psi
07B	CS-2	Modified TO-15 APH	5.3 "Hg	5.2 psi
08A	SSVP-1	Modified TO-15 APH	4.5 "Hg	15.1 psi
08B	SSVP-1	Modified TO-15 APH	4.5 "Hg	15.1 psi
09A	SSVP-2	Modified TO-15 APH	6.3 "Hg	15.3 psi
09B	SSVP-2	Modified TO-15 APH	6.3 "Hg	15.3 psi
10A	Lab Blank	Modified TO-15 APH	NA	NA
10B	Lab Blank	Modified TO-15 APH	NA	NA
10C	Lab Blank	Modified TO-15 APH	NA	NA
10D	Lab Blank	Modified TO-15 APH	NA	NA
11A	CCV	Modified TO-15 APH	NA	NA

Continued on next page

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WORK ORDER #: 1309412C

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/25/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
11B	CCV	Modified TO-15 APH	NA	NA
11C	CCV	Modified TO-15 APH	NA	NA
11D	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY: Heidi Rayos DATE: 09/25/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 & VPH Fractions
Conestoga-Rovers Associates (CRA)
Workorder# 1309412C

Seven 6 Liter Summa Canister (SIM Certified) and two 1 Liter Summa Canister (100% Certified) samples were received on September 23, 2013. 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

Dilution was performed on samples SSVP-1 and SSVP-2 due to matrix interference.

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

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

Client Sample ID: IA-1

Lab ID#: 1309412C-01A

No Detections Were Found.

Client Sample ID: IA-1

Lab ID#: 1309412C-01B

No Detections Were Found.

Client Sample ID: IA-2

Lab ID#: 1309412C-02A

No Detections Were Found.

Client Sample ID: IA-2

Lab ID#: 1309412C-02B

No Detections Were Found.

Client Sample ID: IA-3

Lab ID#: 1309412C-03A

No Detections Were Found.

Client Sample ID: IA-3

Lab ID#: 1309412C-03B

No Detections Were Found.

Client Sample ID: OA-1

Lab ID#: 1309412C-04A

No Detections Were Found.

Client Sample ID: OA-1

Lab ID#: 1309412C-04B

No Detections Were Found.

Client Sample ID: OA-1 DUP

Lab ID#: 1309412C-05A

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

Client Sample ID: OA-1 DUP

Lab ID#: 1309412C-05A

No Detections Were Found.

Client Sample ID: OA-1 DUP

Lab ID#: 1309412C-05B

No Detections Were Found.

Client Sample ID: CS-1

Lab ID#: 1309412C-06A

No Detections Were Found.

Client Sample ID: CS-1

Lab ID#: 1309412C-06B

No Detections Were Found.

Client Sample ID: CS-2

Lab ID#: 1309412C-07A

No Detections Were Found.

Client Sample ID: CS-2

Lab ID#: 1309412C-07B

No Detections Were Found.

Client Sample ID: SSVP-1

Lab ID#: 1309412C-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	190000	7800000	620000	25000000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	190000	5400000	780000	22000000

Client Sample ID: SSVP-1

Lab ID#: 1309412C-08B

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

Client Sample ID: SSVP-1

Lab ID#: 1309412C-08B

No Detections Were Found.

Client Sample ID: SSVP-2

Lab ID#: 1309412C-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	260000	8700000	840000	28000000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	260000	6700000	1100000	27000000

Client Sample ID: SSVP-2

Lab ID#: 1309412C-09B

No Detections Were Found.

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Client Sample ID: IA-1

Lab ID#: 1309412C-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092419a**	**Date of Collection: 9/19/13 3:24:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 9/24/13 08:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	17	Not Detected	54	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	17	Not Detected	69	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	17	Not Detected	98	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	17	Not Detected	120	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-1

Lab ID#: 1309412C-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092419c**	**Date of Collection: 9/19/13 3:24:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 9/24/13 08:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	17	Not Detected	82	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	17	Not Detected	92	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-2

Lab ID#: 1309412C-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092413a**	**Date of Collection: 9/19/13 3:16:00 PM**	
Dil. Factor:	**1.74**	**Date of Analysis: 9/24/13 05:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	17	Not Detected	56	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	17	Not Detected	71	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	17	Not Detected	100	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	17	Not Detected	120	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-2

Lab ID#: 1309412C-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092413c**	**Date of Collection: 9/19/13 3:16:00 PM**	
Dil. Factor:	**1.74**	**Date of Analysis: 9/24/13 05:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	17	Not Detected	86	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	17	Not Detected	96	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: IA-3

Lab ID#: 1309412C-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092414a**	**Date of Collection: 9/19/13 3:14:00 PM**	
Dil. Factor:	**1.82**	**Date of Analysis: 9/24/13 05:33 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)

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Client Sample ID: IA-3

Lab ID#: 1309412C-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092414c**	**Date of Collection: 9/19/13 3:14:00 PM**	
Dil. Factor:	**1.82**	**Date of Analysis: 9/24/13 05:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	18	Not Detected	89	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	18	Not Detected	100	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: OA-1

Lab ID#: 1309412C-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092415a**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/24/13 06:02 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)

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Client Sample ID: OA-1

Lab ID#: 1309412C-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092415c**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 9/24/13 06:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	16	Not Detected	79	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	16	Not Detected	88	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: OA-1 DUP

Lab ID#: 1309412C-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092416a**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/24/13 06:42 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)

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Client Sample ID: OA-1 DUP

Lab ID#: 1309412C-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092416c**	**Date of Collection: 9/19/13 3:07:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/24/13 06:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	16	Not Detected	80	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	16	Not Detected	89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: CS-1

Lab ID#: 1309412C-06A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092417a**	**Date of Collection: 9/19/13 3:20:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 9/24/13 07:25 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	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)

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Client Sample ID: CS-1

Lab ID#: 1309412C-06B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092417c**	**Date of Collection:**	**9/19/13 3:20:00 PM**
Dil. Factor:	**1.63**	**Date of Analysis:**	**9/24/13 07:25 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	16	Not Detected	80	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	16	Not Detected	89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: CS-2

Lab ID#: 1309412C-07A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092418a**	**Date of Collection: 9/19/13 3:32:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 9/24/13 08:01 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)

eurofins | Air Toxics

Client Sample ID: CS-2

Lab ID#: 1309412C-07B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092418c**	**Date of Collection:**	**9/19/13 3:32:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**9/24/13 08:01 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	16	Not Detected	81	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	16	Not Detected	90	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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Client Sample ID: SSVP-1

Lab ID#: 1309412C-08A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092511a**	**Date of Collection: 9/20/13 3:30:00 PM**	
Dil. Factor:	**19000**	**Date of Analysis: 9/25/13 02:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	190000	7800000	620000	25000000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	190000	5400000	780000	22000000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	190000	Not Detected	1100000	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	190000	Not Detected	1300000	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-1

Lab ID#: 1309412C-08B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092511c**	**Date of Collection: 9/20/13 3:30:00 PM**	
Dil. Factor:	**19000**	**Date of Analysis: 9/25/13 02:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	190000	Not Detected	940000	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	190000	Not Detected	1000000	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-2

Lab ID#: 1309412C-09A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092512a**	**Date of Collection: 9/20/13 4:40:00 PM**	
Dil. Factor:	**25900**	**Date of Analysis: 9/25/13 03:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	260000	8700000	840000	28000000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	260000	6700000	1100000	27000000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	260000	Not Detected	1500000	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	260000	Not Detected	1800000	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-2

Lab ID#: 1309412C-09B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092512c**	**Date of Collection: 9/20/13 4:40:00 PM**	
Dil. Factor:	**25900**	**Date of Analysis: 9/25/13 03:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	260000	Not Detected	1300000	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	260000	Not Detected	1400000	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: Lab Blank

Lab ID#: 1309412C-10A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092408a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 12:50 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

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Client Sample ID: Lab Blank

Lab ID#: 1309412C-10B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092408c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 12:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1309412C-10C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092510a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 02:03 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

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Client Sample ID: Lab Blank

Lab ID#: 1309412C-10D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092510c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 02:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1309412C-11A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092406a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 11:27 AM**	

Compound	**%Recovery**
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	85
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	76
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	65
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	73

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1309412C-11B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092406c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 11:27 AM**	

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	91
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	98

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1309412C-11C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092508a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 12:22 PM**	

Compound	**%Recovery**
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	87
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	77
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	67
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	87

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1309412C-11D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092508c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 12:22 PM**	

Compound	**%Recovery**
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	96
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	106

Container Type: NA - Not Applicable

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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

Project Manager [illegible]
Collected by: (Print and Sign) [illegible]
Company [illegible] Email [illegible]
Address [illegible] City [illegible] State CA Zip [illegible]
Phone [illegible] Fax [illegible]

Project info:
P.O. #
Project # [illegible]
Project Name [illegible]

Turn Around Time:
☐ Normal
☒ Rush
[illegible] specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N2 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)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	-9		
[illegible]	[illegible]	[illegible]	[illegible]	1519		-26	-25		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		-30	-5		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	1550		[illegible]	-6		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					

Relinquished by: (signature) Date/Time [illegible]
Received by: (signature) Date/Time [illegible]
Relinquished by: (signature) Date/Time
Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time
Received by: (signature) Date/Time

Notes: [illegible]

Lab Use Only: Shipper Name [illegible] Air Bill # [illegible] Temp (°C) [illegible] Condition [illegible] Custody Seals Intact? Yes No None Work Order # 1309412

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9/25/2013
Mr. Oliver Yan
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Former Chevron 91153
Project #: 311642
Workorder #: 1309412D

Dear Mr. Oliver Yan

The following report includes the data for the above referenced project for sample(s) received on 9/23/2013 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: Karen Stempson at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Karen Stempson

Project Manager

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WORK ORDER #: 1309412D

Work Order Summary

CLIENT:	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Mr. Oliver Yan Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608
PHONE:	510-420-0700	**P.O. #**	311642
FAX:	510-420-9170	**PROJECT #**	311642 Former Chevron 91153
DATE RECEIVED:	09/23/2013	**CONTACT:**	Karen Stempson
DATE COMPLETED:	09/25/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
08A	SSVP-1	Modified TO-15	4.5 "Hg	15.1 psi
09A	SSVP-2	Modified TO-15	6.3 "Hg	15.3 psi
11A	TRIP BLANK (1L)	Modified TO-15	21.4 "Hg	14.8 psi
12A	Lab Blank	Modified TO-15	NA	NA
12B	Lab Blank	Modified TO-15	NA	NA
13A	CCV	Modified TO-15	NA	NA
13B	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

CERTIFIED BY: Heidi Rayos DATE: 09/25/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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# 1309412D

Three 1 Liter Summa Canister (100% Certified) samples were received on September 23, 2013. 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

The trip blank, sample TRIP BLANK (1L), was received at low vacuum (<25"Hg). The client was notified and the analysis proceed.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

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.

Dilution was performed on samples SSVP-1 and SSVP-2 due to the presence of high level non-target species.

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

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

Client Sample ID: SSVP-1

Lab ID#: 1309412D-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	9500	3100 J	30000	10000 J
Naphthalene	38000	2400 J	200000	13000 J
TPH ref. to Gasoline (MW=100)	480000	24000000	1900000	98000000

Client Sample ID: SSVP-2

Lab ID#: 1309412D-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	13000	6300 J	41000	20000 J
Toluene	13000	2300 J	49000	8700 J
Naphthalene	52000	1900 J	270000	10000 J
TPH ref. to Gasoline (MW=100)	650000	30000000	2600000	120000000

Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1309412D-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.50	0.49 J	1.9	1.8 J
m,p-Xylene	0.50	0.13 J	2.2	0.57 J

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Client Sample ID: SSVP-1

Lab ID#: 1309412D-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092511**	**Date of Collection: 9/20/13 3:30:00 PM**	
Dil. Factor:	**19000**	**Date of Analysis: 9/25/13 02:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	9500	3100 J	30000	10000 J
Ethyl Benzene	9500	Not Detected	41000	Not Detected
Toluene	9500	Not Detected	36000	Not Detected
m,p-Xylene	9500	Not Detected	41000	Not Detected
o-Xylene	9500	Not Detected	41000	Not Detected
Methyl tert-butyl ether	9500	Not Detected	34000	Not Detected
Naphthalene	38000	2400 J	200000	13000 J
TPH ref. to Gasoline (MW=100)	480000	24000000	1900000	98000000

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: SSVP-2

Lab ID#: 1309412D-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092512**	**Date of Collection: 9/20/13 4:40:00 PM**	
Dil. Factor:	**25900**	**Date of Analysis: 9/25/13 03:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	13000	6300 J	41000	20000 J
Ethyl Benzene	13000	Not Detected	56000	Not Detected
Toluene	13000	2300 J	49000	8700 J
m,p-Xylene	13000	Not Detected	56000	Not Detected
o-Xylene	13000	Not Detected	56000	Not Detected
Methyl tert-butyl ether	13000	Not Detected	47000	Not Detected
Naphthalene	52000	1900 J	270000	10000 J
TPH ref. to Gasoline (MW=100)	650000	30000000	2600000	120000000

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: TRIP BLANK (1L)

Lab ID#: 1309412D-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092420**	**Date of Collection: 9/20/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 09:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	0.49 J	1.9	1.8 J
m,p-Xylene	0.50	0.13 J	2.2	0.57 J
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1309412D-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092408e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 12:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	0.091 J	1.9	0.34 J
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	0.69 J	10	3.6 J
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1309412D-12B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092510e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 02:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	0.84 J	10	4.4 J
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: CCV

Lab ID#: 1309412D-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 09:48 AM**	

Compound	%Recovery
Benzene	92
Ethyl Benzene	98
Toluene	92
m,p-Xylene	101
o-Xylene	100
Methyl tert-butyl ether	109
Naphthalene	103
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: CCV

Lab ID#: 1309412D-13B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 08:37 AM**	

Compound	%Recovery
Benzene	95
Ethyl Benzene	103
Toluene	96
m,p-Xylene	106
o-Xylene	103
Methyl tert-butyl ether	111
Naphthalene	106
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCS

Lab ID#: 1309412D-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 10:30 AM**	

Compound	%Recovery	Method Limits
Benzene	87	70-130
Ethyl Benzene	90	70-130
Toluene	86	70-130
m,p-Xylene	97	70-130
o-Xylene	94	70-130
Methyl tert-butyl ether	102	70-130
Naphthalene	70	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1309412D-14AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092405**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/13 10:48 AM**	

Compound	%Recovery	Method Limits
Benzene	87	70-130
Ethyl Benzene	92	70-130
Toluene	87	70-130
m,p-Xylene	98	70-130
o-Xylene	96	70-130
Methyl tert-butyl ether	103	70-130
Naphthalene	62	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1309412D-14B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 09:34 AM**	

Compound	%Recovery	Method Limits
Benzene	88	70-130
Ethyl Benzene	93	70-130
Toluene	87	70-130
m,p-Xylene	98	70-130
o-Xylene	95	70-130
Methyl tert-butyl ether	105	70-130
Naphthalene	63	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCSD

Lab ID#: 1309412D-14BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3092504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/25/13 10:05 AM**	

Compound	%Recovery	Method Limits
Benzene	89	70-130
Ethyl Benzene	92	70-130
Toluene	87	70-130
m,p-Xylene	98	70-130
o-Xylene	95	70-130
Methyl tert-butyl ether	104	70-130
Naphthalene	61	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	102	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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

Project Manager Nathan Lee

Collected by: (Print and Sign) OLIVER YAU

Company CONESTOGA-ROVERS & ASSOCIATES Email NLEE@CRAWORLD.COM

Address 5900 HOLLIS ST. SUITE A City EMERYVILLE State CA Zip 94610

Phone (510) 420-0700 Fax (510) 420-9170

Project Info:
P.O. #
Project # 31642
Project Name FORMER CHEVRON 9153

Turn Around Time:
☐ Normal
☒ Rush
48 HOURS
specify

Lab Use Only
Pressurized by:
Date
Pressurization Gas: N 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
01A	IA-1	5776	09/19/13	1524	TPH-g/BTEX/MTBE/NAPHTHALENE BY TO-15 O2/N2, CO2/CH4/HE BY ASTM D1946	-30	-8		
02A	IA-2	31435	09/19/13	1516		-30	-9		
03A	IA-3	34725	09/19/13	1519		-26	-25		
04A	OA-1	12689	09/19/13	1507		-30	-7		
05A	OA-1 DUP	33935	09/19/13	1507		-30	-6		
06A	CS-1	35176	09/19/13	1520		-30	-6		
07A	CS-2	9424	09/19/13	1532		-30	-6		
08A	SSVP-1	35555	09/20/13	1550		-30	-6		
09A	SSVP-2	1371	09/20/13	1640		-30	-6		
10A	TRIP BLANK (GL)	5659	09/19/13						
11A	TRIP BLANK (GL)	1041	09/19/13						

9-23-13
9-24-13

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	09/23/13 0800		9-23-13 1232
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
Run requested analysis on trip blanks.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	AIR DROP		N/A	Good	Yes No None	1309412

Form 005.rev 1