Ian Robb
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6513
ianrobb@chevron.com

June 18, 2012

RECEIVED

5:46 pm, Jun 20, 2012

Alameda County
Environmental Health

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

Re: Former Signal Oil Station No. 20-6145
800 Center Street
Oakland, CA
ACEH RO0454

I have reviewed the attached Second Quarter 2012 Vapor Well Sampling Report dated June 18, 2012.

I agree with the conclusions and recommendations presented in the referenced report. This 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 who 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,

Ian Robb
Project Manager

Attachment: Second Quarter 2012 Vapor Well Sampling Report

CONESTOGA-ROVERS & ASSOCIATES

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

June 18, 2012 Reference No. 312002

Mr. Mark Detterman
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway
Alameda, California 94502

Re: Second Quarter 2012 Vapor Well Sampling Report
Former Signal Oil Service Station 206145
800 Center Street
Oakland, California
ACEH Case RO0454

Dear Mr. Detterman:

Conestoga-Rovers & Associates (CRA) is submitting this *Second Quarter 2012 Soil Vapor Sampling Report* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above (Figure 1). On May 21, 2012, CRA collected soil vapor samples from all soil vapor wells. The site background and soil vapor sampling details and results are discussed below.

SITE BACKGROUND

The site is a former Signal Oil gasoline service station located on the northeastern corner of the intersection of 8th Street and Center Street in a mixed commercial and residential area of Oakland, California (Figure 1). The site was first developed as a service station in 1932. Four 1,000-gallon fuel underground storage tanks (USTs) and one used-oil UST were installed when the site was developed. These USTs were removed in 1973 when the station was closed. The site is currently undeveloped.

Environmental investigation has been ongoing since 1989. To date, 17 monitoring wells, 8 air sparge wells, 61 soil borings, and 5 temporary vapor probes, and 6 permanent soil vapor probes have been drilled. A remedial excavation was completed in 2002, removing 1,584 tons of hydrocarbon source mass soil. An air sparge pilot test operated January through April 2011 using wells AS-1 through AS-8. Groundwater is currently monitored by 17 onsite and offsite monitoring wells and soil vapor is monitored by 6 onsite vapor probes. A summary of previous environmental assessments and remediation is included as Attachment A. Former station facilities, groundwater monitoring wells, air sparge wells, and permanent soil vapor probes are illustrated on Figure 2.

VAPOR WELL SAMPLING EVENT

Vapor Sampling

On May 16, 2012, CRA collected soil vapor samples from probes VP-1 through VP-6 using flow meters set at approximately 167 milliliters/minute and one-liter Summa™ canisters connected directly to the tubing at each vapor probe. A closed circuit sampling train was created by attaching the sample Summa™ canister in series with the purge Summa™ canister via a steam-cleaned stainless-steal manifold.

A "shut-in" test was performed prior to connecting the sampling equipment to the vapor probe tubing. This test was performed by sealing all openings to ambient air, opening the purge Summa™ canister to establish a vacuum inside the sampling train and waiting to ensure the vacuum remained stable over time. The shut-in test reduces the potential for ambient air to bias the soil vapor samples.

After the sampling train passed the "shut in" test, it was connected to the probe tubing and approximately 0.01 liters of existing vapor in the tubing was purged so the sample was representative of actual soil gas concentrations. After purging, the sample Summa™ canister valve was opened. The vacuum of the Summa™ canister was used to draw soil vapor through the flow controller and into the sample canister until a vacuum of approximately 5 inches of mercury was observed on the vacuum gauge. A field duplicate was collected concurrently with the VP-2 sample. After sampling, the Summa™ canisters were packaged and sent to Eurofins | Air Toxics of Folsom, California under chain-of-custody for analysis.

Using the Department of Toxic Substance Control (DTSC) March 2010 *Advisory-Active Soil Gas Investigations* guidance document, laboratory grade helium was used for leak detection to determine if ambient air was entering the Summa™ canisters during sampling. A shroud surrounded the vapor sampling equipment and the connection between the sampling equipment and the vapor probe tubing. A helium detector was placed inside the shroud to quantify helium concentrations. An atmosphere of at least 20 percent helium was created and maintained for the duration of vapor sampling. Helium in the atmosphere was monitored by a helium detector. No helium was detected by the laboratory in any samples and all samples are considered valid.

Laboratory Analysis
Vapor samples were stored at ambient air temperature and transported under chain of custody to Eurofins | Air Toxics of Folsom, California where they were analyzed for the following constituents:

- Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) using EPA Method TO-15.
- Oxygen (O_2), carbon dioxide (CO_2), methane (CH_4), nitrogen (N_2), and helium using ASTM D-1946 (GC/TCD).

Eurofins | Air Toxic's analytical results reports are included as Attachment B.

HYDROCARBONS IN SOIL VAPOR

Maximum hydrocarbon concentrations detected in soil vapor were:

- 1,700 micrograms per cubic meter ($\mu g/m^3$) TPHg VP-5
- 7.3 $\mu g/m^3$ benzene in VP-5
- 46 $\mu g/m^3$ toluene in VP-4
- 4.1 $\mu g/m^3$ ethylbenzene in VP-5
- 36 $\mu g/m^3$ xylenes in VP-4
- No MTBE or naphthalene were detected

Hydrocarbon concentrations in soil vapor are below the residential Environmental Screening Levels (ESLs)[1] for shallow soil gas. The soil vapor samples collected in May 2011, one month after the low flow air sparge pilot test, contained concentrations up to three orders of magnitude above the residential ESL for soil gas. Since then, soil vapor samples have been collected quarterly to confirm those concentrations detected in May 2011. Over the past four quarters, concentrations have decreased by up to five orders of magnitude and have been below the residential ESLs for soil gas for at least three quarters. Additionally, oxygen in the vapor samples ranges from 13 to 19 percent, indicating a sufficient bioattenuation zone between the probe and the surface. Current and historical soil vapor data is presented in Table 1.

[1] Shallow gas screening levels for evaluation of potential vapor intrusion concerns (Table E-2) 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.

CONCLUSIONS AND RECOMMENDATIONS

This site is currently undeveloped and surrounded by residential buildings. Based on the soil vapor data, there is no significant risk from soil vapor in the vadose zone to the surrounding residences or any future site occupants under static equilibrium conditions (i.e. without air sparging). Therefore, CRA recommends case closure and will submit a formal case closure request as a separate report.

Please contact Kiersten Hoey (510) 420-3347 if you have any questions or require additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Kiersten Hoey N. Scott MacLeod, PG 5747

APM/mws/23
Encl.

Figure 1	Vicinity Map
Figure 2	Site Map
Table 1	Cumulative Vapor Sampling Results
Attachment A	Summary of Previous Environmental Investigations and Remediation
Attachment B	Laboratory Analytical Reports

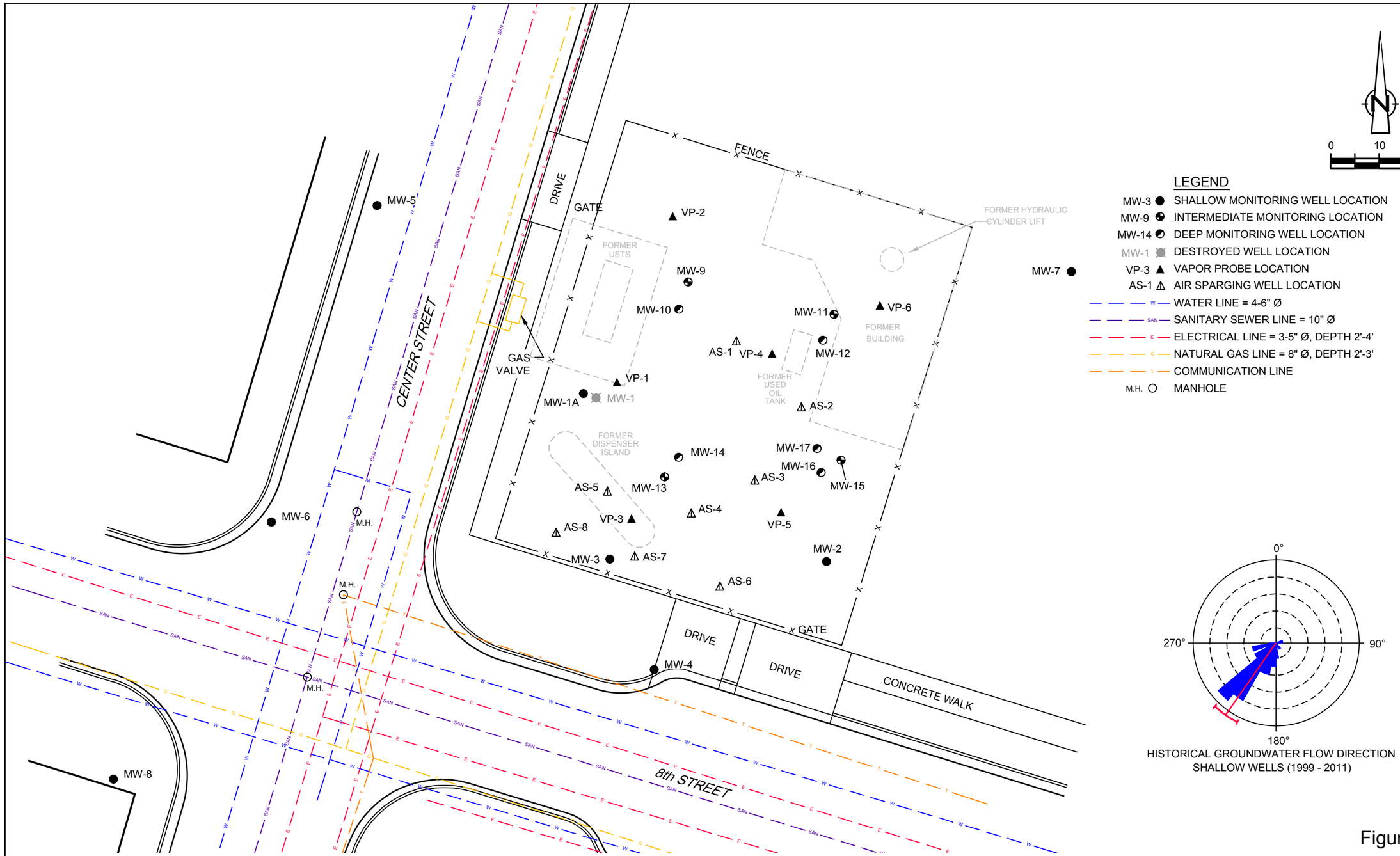
cc: Mr. Ian Robb, Chevron EMC (*electronic copy*)

FIGURES

SOURCE: USGS QUADRANGLE MAP: OAKLAND WEST, CA.

Figure 1

VICINITY MAP
FORMER SIGNAL OIL SERVICE STATION 20-6145
800 CENTER STREET
Oakland, California



HISTORICAL GROUNDWATER FLOW DIRECTION
SHALLOW WELLS (1999 - 2011)

Figure 2

SITE PLAN
FORMER SIGNAL OIL SERVICE STATION 20-6145
800 CENTER STREET
Oakland, California

312002-2012(022)GN-WA002 MAR 12/2012

TABLE

TABLE 1

CUMULATIVE VAPOR ANALYTICAL DATA
FORMER SIGNAL OIL SERVICE STATION
(CHEVRON STATION #206145)
800 CENTER STREET
OAKLAND, CALIFORNIA

Sample ID	Sample Date	Probe Depth Interval	TPHg (by TO-3)	TPHg (by TO-15)	Benzene	Toluene	Ethyl-benzene	Xylenes [1]	MTBE	Naphthalene	Oxygen	Nitrogen	Carbon Dioxide	Methane	Helium	Iso-butane [2]
		fbg	Concentrations reported in micrograms per cubic meter (µg/m ^{3})								% Volume					ppbv
ESL Table E-2	*Shallow Soil Gas (Residential)*		*10,000*	*10,000*	*84*	*63,000*	*980*	*21,000*	*9,400*	*72*	--	--	--	--	--	--
VP-1	11/6/2007	5.0-5.5	1,400	--	<3.8	16	<5.2	<5.2	<17	<25	10	--	<0.024	<0.00024	--	6.6
VP-1	LAB DUPLICATE		--	--	<3.8	14	<5.2	<5.2	<17	<25	--	--	--	--	--	6.5
VP-1	10/3/2008	5.0-5.5	--	<97	<3.8	<4.5	<5.2	<5.2	<4.3	<25	14	--	0.027	0.00027	<0.12	--
VP-1	5/10/2011	5.0-5.5	--	57,000,000	9,200	<3,200	<3,700	<3,700	<3,100	<18,000	8.7	88	1.6	0.0059	<0.12	--
VP-1	8/23/2011	5.0-5.5	--	2,500,000	<400	<470	<550	<550	<450	<2,600	9.4	89	1.5	0.0024	<0.13	--
VP-1	11/2/2011	5.0-5.5	--	5,700	2.9	<3.0	<3.5	<3.5	<2.9	<17	8.6	91	0.52	0.00054	--	--
VP-1	2/21/2012	5.0-5.5	--	<200	<3.1	<3.6	<4.2	<4.2	<3.5	<20	11	88	0.55	<0.00019	<0.097	--
VP-1	**5/16/2012**	**5.0-5.5**	**--**	**490**	**<2.6**	**<3.0**	**<3.5**	**<3.5**	**<2.9**	**<17**	**13**	**86**	**0.98**	**<0.00016**	**<0.080**	**--**
VP-2	11/6/2007	5.0-5.5	<250	--	<3.9	<4.6	<5.2	<5.2	<17	<25	10	--	0.88	<0.00024	--	ND
VP-2	LAB DUPLICATE		<250	--	--	--	--	--	--	--	10	--	0.88	<0.00024	--	--
VP-2	10/3/2008 [3]	5.0-5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-2	5/10/2011	5.0-5.5	--	6,500	<4.1	5.1	<5.6	<5.6	<4.7	<27	15	84	1.4	0.00039	<0.13	--
VP-2 DUP	5/10/2011	5.0-5.5	--	13,000	<4.1	7.5	<5.6	<5.6	<4.7	<27	15	84	1.4	0.00037	<0.13	--
VP-2	8/23/2011	5.0-5.5	--	<260	<4.0	<4.7	<5.5	<5.5	<4.5	<26	14	84	2.1	<0.00025	<0.13	--
VP-2	11/2/2011	5.0-5.5	--	<160	<2.6	<3.0	<3.5	<3.5	<2.9	<17	12	86	1.9	--	--	--
VP-2	2/21/2012	5.0-5.5	--	<170	<2.7	<3.2	<3.6	<3.6	<3.0	<18	14	85	1.3	<0.00017	<0.084	--
VP-2-DUP	2/21/2012	5.0-5.5	--	<170	<2.7	<3.2	<3.6	<3.6	<3.0	<18	15	84	1.4	<0.00017	<0.084	--
VP-2	**5/16/2012**	**5.0-5.5**	**--**	**<170**	**<2.6**	**<3.1**	**<3.6**	**<3.6**	**<3.0**	**<17**	**16**	**83**	**1.3**	**<0.00016**	**<0.082**	**--**
VP-2-DUP	**5/16/2012**	**5.0-5.5**	**--**	**<170**	**<2.6**	**<3.1**	**<3.5**	**<3.5**	**<2.9**	**<17**	**16**	**83**	**1.3**	**<0.00016**	**<0.082**	**--**
VP-3	11/6/2007	5.0-5.5	<240	--	<3.7	<4.4	<5.0	<5.0	<17	<24	16	--	2.0	<0.00023	--	ND
VP-3	10/3/2008	5.0-5.5	--	<92	<3.6	<4.2	<4.9	<4.9	<4.0	<23	16	--	2.4	<0.00022	<0.11	--
VP-3	LAB DUPLICATE		--	--	--	--	--	--	--	--	16	--	2.4	<0.00022	<0.11	--
VP-3	5/10/2011	5.0-5.5	--	22,000,000	10,000	21,000	4,200	60,000	<1600	<9000	14	82	3.8	0.0054	<0.13	--

TABLE 1

CUMULATIVE VAPOR ANALYTICAL DATA
FORMER SIGNAL OIL SERVICE STATION
(CHEVRON STATION #206145)
800 CENTER STREET
OAKLAND, CALIFORNIA

Sample ID	*Sample Date*	*Probe Depth Interval* *fbg*	*TPHg (by TO-3)*	*TPHg (by TO-15)*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Xylenes* [1]	*MTBE*	*Naphthalene*	*Oxygen*	*Nitrogen*	*Carbon Dioxide*	*Methane*	*Helium*	*Iso-butane* [2]
			Concentrations reported in micrograms per cubic meter (µg/m [3] *)*								% Volume					*ppbv*
ESL Table E-2	*Shallow Soil Gas (Residential)*		*10,000*	*10,000*	*84*	*63,000*	*980*	*21,000*	*9,400*	*72*	--	--	--	--	--	--
VP-3	8/23/2011	5.0-5.5	--	300	<3.9	4.8	<5.2	15	<4.4	<25	16	80	3.6	<0.00024	<0.12	--
VP-3 DUP	8/23/2011	5.0-5.5	--	<250	<3.9	<4.6	<5.2	15	<4.4	<25	16	80	3.5	<0.00024	<0.12	--
VP-3	11/2/2011	5.0-5.5	--	860	<2.6	4.8	<3.5	30	<2.9	<17	17	79	3.6	--	--	--
VP-3	2/21/2012	5.0-5.5	--	<160	<2.6	3.6	<3.5	9.1	<2.9	<17	17	80	3.2	<0.00016	<0.080	--
VP-3	**5/16/2012**	**5.0-5.5**	**--**	**780**	**<2.6**	**4.0**	**<3.6**	**20**	**<3.0**	**<17**	**17**	**80**	**3.4**	**<0.00017**	**<0.083**	**--**
VP-4	11/6/2007	5.0-5.5	280	--	<3.9	<4.6	<5.2	<5.2	<17	<25	9.7	--	4.0	<0.00024	--	ND
VP-4	10/3/2008	5.0-5.5	--	390	<4.1	<4.9	<5.6	<5.6	<4.6	<27	11	--	4.8	0.00028	<0.13	--
VP-4 DUPLICATE	10/3/2008	5.0-5.5	--	240	<4.2	<5.0	<5.7	<5.7	<4.8	<28	11	--	5.0	0.00028	<0.13	--
VP-4	5/10/2011	5.0-5.5	--	12,000,000	2,600	3,400	160	13,000	<36	<210	6.5	86	6.8	0.0034	<0.12	--
VP-4	8/23/2011	5.0-5.5	--	3,300	14	160	<5.2	89	<4.4	<25	14	81	5.2	0.00031	<0.12	--
VP-4	11/2/2011	5.0-5.5	--	650	<2.5	23	<3.4	16	<2.8	<16	13	82	4.4	0.0002	0.09	--
VP-4 DUP	11/2/2011	5.0-5.5	--	780	2.7	27	<3.4	20	<2.8	<16	13	82	4.5	0.0002	--	--
VP-4	2/21/2012	5.0-5.5	--	<160	<2.5	22	<3.4	17	<2.8	<16	17	80	2.7	<0.00016	<0.078	--
VP-4	**5/16/2012**	**5.0-5.5**	**--**	**1,400**	**3.1**	**46**	**<3.2**	**36**	**<2.7**	**<16**	**17**	**79**	**4.0**	**0.00017**	**<0.075**	**--**
VP-5	11/6/2007	5.0-5.5	120,000 *	2,100,000	<760	<900	<1,000	<1,000	<3,400	<5,000	16	--	4.4	<0.00024	--	13,000
VP-5	10/3/2008	5.0-5.5	--	57,000	<86	<100	<120	<120	<97	<560	17	--	4.1	<0.00024	<0.12	--
VP-5	LAB DUPLICATE		--	65,000	<15	<18	<21	<21	<17	<100	--	--	--	--	--	--
VP-5	5/10/2011 [3]	5.0-5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-5	8/23/2011	5.0-5.5	--	150,000	110	870	9.1	86	4.4	<25	19	78	2.5	<0.00024	<0.12	--
VP-5	11/2/2011	5.0-5.5	--	1,500	<2.6	23	<3.6	8.9	<3.0	<17	19	78	2.6	--	--	--
VP-5	2/21/2012	5.0-5.5	--	<170	<2.6	12	<3.6	4.8	<3.0	<17	19	78	2.6	<0.00016	<0.082	--
VP-5	**5/16/2012**	**5.0-5.5**	**--**	**1,700**	**7.3**	**24**	**4.1**	**16**	**<2.8**	**<16**	**18**	**78**	**3.7**	**<0.00015**	**<0.076**	**--**
VP-6	11/6/2007	5.0-5.5	<260	--	<4.0	<4.8	<5.5	<5.5	<18	<26	20	--	1.0	<0.00025	--	ND

TABLE 1

CUMULATIVE VAPOR ANALYTICAL DATA
FORMER SIGNAL OIL SERVICE STATION
(CHEVRON STATION #206145)
800 CENTER STREET
OAKLAND, CALIFORNIA

Sample ID	Sample Date	Probe Depth Interval	TPHg (by TO-3)	TPHg (by TO-15)	Benzene	Toluene	Ethyl-benzene	Xylenes [1]	MTBE	Naphthalene	Oxygen	Nitrogen	Carbon Dioxide	Methane	Helium	Iso-butane [2]
		fbg	Concentrations reported in micrograms per cubic meter (µg/m ^{3})								% Volume					ppbv
ESL Table E-2	*Shallow Soil Gas (Residential)*		*10,000*	*10,000*	*84*	*63,000*	*980*	*21,000*	*9,400*	*72*	--	--	--	--	--	--
VP-6 DUPLICATE	11/6/2007	5.0-5.5	<250	--	<3.9	<4.6	<5.4	<5.4	<18	<26	20	--	1.0	<0.00025	--	ND
VP-6	10/3/2008	5.0-5.5	--	<97	<3.8	<4.5	<5.2	<5.2	<4.3	<25	20	--	0.98	<0.00024	<0.12	--
VP-6	5/10/2011	5.0-5.5	--	2,200,000	<190	<230	<260	380	<220	<1,200	19	79	1.8	<0.00024	<0.12	--
VP-6	8/23/2011	5.0-5.5	--	980	<4.0	<4.7	<5.5	<5.5	<4.5	<26	19	79	2.2	<0.00025	<0.13	--
VP-6	11/2/2011	5.0-5.5	--	450	<2.6	<3.1	<3.6	<3.6	<3.0	<17	20	78	1.9	--	--	--
VP-6	2/21/2012	5.0-5.5	--	<160	<2.5	<3.0	<3.4	<3.4	<2.8	<16	21	78	1.0	<0.00016	<0.079	--
VP-6	**5/16/2012**	**5.0-5.5**	**--**	**350**	**<2.5**	**<3.0**	**<3.4**	**<3.4**	**<2.8**	**<16**	**19**	**79**	**1.8**	**<0.00016**	**<0.079**	**--**

Notes/Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method TO-3 for samples collected 11/06/07

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method TO-15 for samples starting 10/03/08

Benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tertiary butyl ether (MTBE), napthalene by EPA method TO-15

Oxygen, nitrogen, carbon dioxide, methane and helium by ASTM D-1946

fbg = feet below grade

ppbv = parts per billion volume

<x.xxx = Below laboratory method detection limits

ND = Not detected above laboratory method detection limits, detection limit not reported by laboratory

-- = Not analyzed

ESL - Environmental Screening Levela from Table E-2 of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final* November 2007 (Updated May 2008) prepared by the San Francisco Regional Water Quality Control Board.

1 = Values for highest value of xylenes detected

2 = Constituent used as leak detector for samples collected 11/06/07determined as a Tentatively Identified Compound (TICs) by Modified EPA Method TO-15. Match quality was below 50%.

3 = Water in probe tubing: sample couldn't be collected

* = TPHg samples collected on 10/03/08 from VP-5 were analyzed by EPA Method TO-15 and EPA Method TO-3 for comparison purposes. Results were within laboratory limits.

ATTACHMENT A

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND REMEDIATION

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATION AND REMEDIATON
FORMER SIGNAL OIL SERVICE STATION (CHEVRON SITE NO. 206145)
800 CENTER STREET, OAKLAND, CALIFORNIA

August 1989 Subsurface Investigation

Subsurface Consultants Inc. (Subsurface) advanced soil borings B1 through B5 to depths ranging from 4.5 to 26 feet below grade (fbg) in the vicinity of the former underground storage tanks (USTs), dispenser island, and sumps along the eastern property boundary. Temporary wells were installed in borings B1 and B3 and grab-groundwater samples were collected. Subsurface noted in their report that the former USTs had been removed in 1973 when the station closed, based on a permit search at City of Oakland. Additional information is available in Subsurface's October 13, 1989 *Preliminary Hydrocarbon Contamination Assessment*.

October 1995 Subsurface Investigation

Groundwater Technology Inc. (GTI) advanced borings SB-1 through SB-3 to 12 fbg and installed groundwater monitoring wells MW-1 through MW-4 to 15 fbg. Additional information is available in GTI's November 14, 1995 *Additional Site Assessment Report*.

March 1996 Subsurface Investigation

Pacific Environmental Group (PEG) advanced GeoProbe soil borings P-1 through P-9 to a maximum depth of 20 fbg and collected soil and grab-groundwater samples from each boring. Additional information is available in PEG's April 18, 1996 *Soil and Groundwater Investigation*.

December 1996 Well Installation

PEG installed offsite wells MW-5 through MW-7 and drilled a boring for MW-8. Well MW-8 was not installed because no evidence of petroleum hydrocarbons was observed. Additional information is available in PEG's January 24, 1997 *Soil and Groundwater Investigation*.

1997 Soil Vapor Sampling

PEG advanced borings SV-1 through SV-5 to depths up to 12 fbg and collected soil and soil vapor samples from each boring. Hydrocarbon concentrations in soil vapor were highest between 6 and 10 fbg. Additional information is available in PEG's July 28, 1997 *Results of the Soil Vapor Investigation.*

1999/2001 Site Demolition

Gettler-Ryan, Inc. (G-R) removed the dispenser island, sumps, the hydraulic hoist, building foundations, garbage enclosure, yard lights and asphalt. An orphaned 1,000-gallon UST, an orphaned 550-gallon used-oil UST, and a buried 55-gallon drum (apparently a makeshift used

oil UST) were encountered and removed. This work was initiated in September 1999 and postponed until April 2001, while Chevron and the property owner determined UST ownership. Soil samples A-1 and A-2 were collected from the gasoline UST pit at 8.5 fbg and soil sample WOT was collected from the used-oil UST pit at 8 fbg. Additional information is available in Delta Environmental Consultants, Inc. (Delta) May 21, 2001 *Compliance Soil Sampling During Removal of Underground Storage Tanks*.

2002 Monitoring Well Installation

G-R installed offsite groundwater monitoring well MW-8. Additional information is available in Delta's April 11, 2002 *Monitoring Well Installation Report*.

2002 Subsurface Investigation

G-R advanced soil borings GP-1 through GP-23 to approximately 12 fbg. Soil samples were collected at 5 and 10 fbg in each boring to profile soil for disposal for a planned source mass remedial excavation. Additional information is available in G-R's July 31, 2002 *Soil Borings*.

November 2002 Remedial Excavation

G-R excavated hydrocarbon-bearing soil in the areas of the former USTs, dispenser island, hydraulic lift, and sumps to a total depth of approximately 12 fbg, with a maximum depth of 14 fbg in one location. A total of 1,584 tons of hydrocarbon-bearing soil were removed and transported to Allied Waste Landfill in Manteca, California. Twenty soil samples (SW-1 through SW-10 at 5 and 10 fbg) were collected from the sidewalls of the gasoline UST/dispenser island excavation, four soil samples (EXB-1 through EXB-4) were collected from the base of the gasoline UST/dispenser excavation, and five soil samples (SWH-1 through SWH-4 and BH-1) were collected from the hydraulic lift excavation. Well MW-1 was destroyed by excavation during this event. Prior to backfilling, approximately 900 pounds of Oxygen Release Compound was placed in the excavation bottoms, and Class II aggregate base was used for backfill. Additional information is available in Delta's January 23, 2003 *Well Destruction, Over-Excavation and Soil Sampling Report*.

2003 Soil Borings and Well installation

Delta advanced soil borings GP-24 through GP-30 to approximately 16 fbg and installed MW-1A near former monitoring well MW-1. Additional information is available in Delta's May 15, 2003 *Soil Boring and Well Installation Report*.

October and November 2004 Geoprobe and CPT Investigation

Cambria Environmental Technology (Cambria) advanced cone penetration test (CPT) borings CPT-1 through CPT-5 and direct push borings C-1 through C-9 to further define the lateral and vertical extents of hydrocarbons in soil. Additional information is in Cambria's January 14, 2005 *Subsurface Investigation Report*.

May 2005 SCM and CAP

Cambria submitted a *Site Conceptual Model and Corrective Action Plan* dated May 23, 2005. Cambria concluded the extent of hydrocarbons in soil and groundwater were adequately defined and no additional assessment was needed to make a remedial decision. Cambria recommended forgoing active remediation and instead installing an engineered vapor pathway mitigation measure such as the Liquid Boot, and placing a deed restriction on the property that stipulates any future site developments also include vapor mitigation measures.

2007 Well Installation and Subsequent Sampling

Conestoga-Rovers & Associates, Inc. (CRA) installed clustered monitoring wells MW-9 through MW-17 to further define the vertical extent of hydrocarbons in groundwater. Wells MW-9 through MW-16 were screened from 35 to 40 fbg or from 55 to 60 fbg to collect depth-discrete groundwater samples. Well MW-17 was screened from 70 to 75 fbg to vertically delineate dissolved-phase hydrocarbons. Additional information is available in CRA's May 14, 2007 *Well Installation Report* and October 1, 2007 *Third Multi-Level Groundwater Monitoring Report*.

October 2007 Soil Vapor Probe Installation

CRA installed permanent soil vapor probes VP-1 through VP-6 and collected soil vapor samples to evaluate the potential for vapor intrusion to proposed residential housing units. No benzene was detected in soil vapor. Additional information is available in CRA's January 23, 2008 *Feasibility Study/Corrective Action Plan Addendum*.

October 2008 Soil Vapor Investigation

CRA re-sampled vapor probes VP-1 and VP-3 through VP-6 to confirm initial results. VP-2 could not be sampled due to water in the tubing. No benzene was detected. Additional information is available in CRA's November 18, 2008 *Soil Vapor Investigation Results*.

January 2010 Surficial Sampling

CRA collected soil samples SS-1 through SS-12 at the surface and at depths of 0.5 and 2.5 fbg, the majority of which are designated as future landscaping areas where potential direct human contact may occur. All 36 samples were analyzed for lead. The scope of work was based on California's Department of Toxic Substances Control (DTSC) 2006 *Interim Guidance Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers*. The highest lead concentrations were detected at SS-1, SS-2, SS-3, and SS-6, located in the northern portion of the site, outside of the former Signal Oil parcel. In December 2009, CRA conducted a Department of Water Resources (DWR) file review and identified one irrigation well within 1/2-mile radius of the site, located approximately 2,100 feet upgradient of

the site. The well was installed in 1915 and has a total depth of 55 fbg. Additional details are available in CRA's February 15, 2010 *Surficial Soil Lead Results.*

2011 Air Sparge Pilot Test

A low flow air sparge (LFAS) pilot test began on January 5, 2011 and operated continuously until it was shutdown on April 8, 2011. Air was injected sequentially into new sparge wells AS-1 through AS-8 for approximately 60 minutes per sparge cycle. The following conclusions were made based on the results of the LFAS pilot test: (1) Dissolved petroleum hydrocarbon concentrations generally declined from before the pilot test to after the test; (2) Hydrocarbon concentrations in soil vapor samples collected after the test increased by several orders of magnitude from concentrations detected prior to testing; (3) Vapor samples were collected from the monitoring well casings during the pilot test to confirm air sparging was performed at a sufficiently low flow rate to prevent stripping of hydrocarbons from the saturated zone into the vadose zone. Details of the pilot test are available in CRA's July 6, 2011 *Low Flow Air Sparge Pilot Test* report.

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS

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5/29/2012

Ms. Kiersten Hoey
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: CHEVRON 206145
Project #: 312002
Workorder #: 1205415A

Dear Ms. Kiersten Hoey

The following report includes the data for the above referenced project for sample(s) received on 5/21/2012 at Air Toxics Ltd.

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

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

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1205415A

Work Order Summary

CLIENT:	Ms. Kiersten Hoey Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Conestoga-Rovers Associates (CRA) 2055 Niagara Falls Blvd. Suite Three Niagara Falls, NY 14304
PHONE:	510-420-0700	**P.O. #**	TBD
FAX:	510-420-9170	**PROJECT #**	312002 CHEVRON 206145
DATE RECEIVED:	05/21/2012	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	05/29/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP-1	Modified TO-15	4.8 "Hg	5 psi
02A	VP-2	Modified TO-15	5.6 "Hg	5 psi
03A	VP-2-DUP	Modified TO-15	5.4 "Hg	5 psi
04A	VP-3	Modified TO-15	5.8 "Hg	5 psi
05A	VP-4	Modified TO-15	3.2 "Hg	5 psi
06A	VP-5	Modified TO-15	3.8 "Hg	5 psi
07A	VP-6	Modified TO-15	4.6 "Hg	5 psi
08A	TRIP BLANK	Modified TO-15	28.2 "Hg	5 psi
09A	Lab Blank	Modified TO-15	NA	NA
10A	CCV	Modified TO-15	NA	NA
11A	LCS	Modified TO-15	NA	NA
11AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 05/29/12

Laboratory Director

Certfication numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Conestoga-Rovers Associates (CRA)
Workorder# 1205415A

Eight 1 Liter Summa Canister (100% Certified) samples were received on May 21, 2012. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

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

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 and/or LCS.
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: VP-1

Lab ID#: 1205415A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	40	120	160	490

Client Sample ID: VP-2

Lab ID#: 1205415A-02A

No Detections Were Found.

Client Sample ID: VP-2-DUP

Lab ID#: 1205415A-03A

No Detections Were Found.

Client Sample ID: VP-3

Lab ID#: 1205415A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.83	1.0	3.1	4.0
m,p-Xylene	0.83	4.7	3.6	20
o-Xylene	0.83	1.1	3.6	4.9
TPH ref. to Gasoline (MW=100)	42	190	170	780

Client Sample ID: VP-4

Lab ID#: 1205415A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.75	0.97	2.4	3.1
Toluene	0.75	12	2.8	46
m,p-Xylene	0.75	8.2	3.2	36
o-Xylene	0.75	1.8	3.2	7.8
TPH ref. to Gasoline (MW=100)	38	350	150	1400

Client Sample ID: VP-5

Lab ID#: 1205415A-06A

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

Client Sample ID: VP-5

Lab ID#: 1205415A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.76	2.3	2.4	7.3
Ethyl Benzene	0.76	0.95	3.3	4.1
Toluene	0.76	6.3	2.9	24
m,p-Xylene	0.76	3.7	3.3	16
o-Xylene	0.76	2.3	3.3	10
TPH ref. to Gasoline (MW=100)	38	420	160	1700

Client Sample ID: VP-6

Lab ID#: 1205415A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	40	86	160	350

Client Sample ID: TRIP BLANK

Lab ID#: 1205415A-08A

No Detections Were Found.

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Client Sample ID: VP-1

Lab ID#: 1205415A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052227**	**Date of Collection: 5/16/12 3:00:00 PM**	
Dil. Factor:	**1.60**	**Date of Analysis: 5/22/12 08:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.80	Not Detected	2.6	Not Detected
Ethyl Benzene	0.80	Not Detected	3.5	Not Detected
Toluene	0.80	Not Detected	3.0	Not Detected
m,p-Xylene	0.80	Not Detected	3.5	Not Detected
o-Xylene	0.80	Not Detected	3.5	Not Detected
Methyl tert-butyl ether	0.80	Not Detected	2.9	Not Detected
Naphthalene	3.2	Not Detected	17	Not Detected
TPH ref. to Gasoline (MW=100)	40	120	160	490

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: VP-2

Lab ID#: 1205415A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052228**	**Date of Collection: 5/16/12 12:04:00 PM**	
Dil. Factor:	**1.65**	**Date of Analysis: 5/22/12 09:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.82	Not Detected	2.6	Not Detected
Ethyl Benzene	0.82	Not Detected	3.6	Not Detected
Toluene	0.82	Not Detected	3.1	Not Detected
m,p-Xylene	0.82	Not Detected	3.6	Not Detected
o-Xylene	0.82	Not Detected	3.6	Not Detected
Methyl tert-butyl ether	0.82	Not Detected	3.0	Not Detected
Naphthalene	3.3	Not Detected	17	Not Detected
TPH ref. to Gasoline (MW=100)	41	Not Detected	170	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	85	70-130

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Client Sample ID: VP-2-DUP

Lab ID#: 1205415A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052229**	**Date of Collection: 5/16/12 12:04:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 5/22/12 09:49 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.82	Not Detected	2.6	Not Detected
Ethyl Benzene	0.82	Not Detected	3.5	Not Detected
Toluene	0.82	Not Detected	3.1	Not Detected
m,p-Xylene	0.82	Not Detected	3.5	Not Detected
o-Xylene	0.82	Not Detected	3.5	Not Detected
Methyl tert-butyl ether	0.82	Not Detected	2.9	Not Detected
Naphthalene	3.3	Not Detected	17	Not Detected
TPH ref. to Gasoline (MW=100)	41	Not Detected	170	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: VP-3

Lab ID#: 1205415A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052230**	**Date of Collection: 5/16/12 2:35:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 5/22/12 10:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.83	Not Detected	2.6	Not Detected
Ethyl Benzene	0.83	Not Detected	3.6	Not Detected
Toluene	0.83	1.0	3.1	4.0
m,p-Xylene	0.83	4.7	3.6	20
o-Xylene	0.83	1.1	3.6	4.9
Methyl tert-butyl ether	0.83	Not Detected	3.0	Not Detected
Naphthalene	3.3	Not Detected	17	Not Detected
TPH ref. to Gasoline (MW=100)	42	190	170	780

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: VP-4

Lab ID#: 1205415A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052231**	**Date of Collection:**	**5/16/12 1:25:00 PM**
Dil. Factor:	**1.50**	**Date of Analysis:**	**5/22/12 10:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.75	0.97	2.4	3.1
Ethyl Benzene	0.75	Not Detected	3.2	Not Detected
Toluene	0.75	12	2.8	46
m,p-Xylene	0.75	8.2	3.2	36
o-Xylene	0.75	1.8	3.2	7.8
Methyl tert-butyl ether	0.75	Not Detected	2.7	Not Detected
Naphthalene	3.0	Not Detected	16	Not Detected
TPH ref. to Gasoline (MW=100)	38	350	150	1400

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: VP-5

Lab ID#: 1205415A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052232**	**Date of Collection: 5/16/12 2:07:00 PM**	
Dil. Factor:	**1.53**	**Date of Analysis: 5/22/12 11:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.76	2.3	2.4	7.3
Ethyl Benzene	0.76	0.95	3.3	4.1
Toluene	0.76	6.3	2.9	24
m,p-Xylene	0.76	3.7	3.3	16
o-Xylene	0.76	2.3	3.3	10
Methyl tert-butyl ether	0.76	Not Detected	2.8	Not Detected
Naphthalene	3.1	Not Detected	16	Not Detected
TPH ref. to Gasoline (MW=100)	38	420	160	1700

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: VP-6

Lab ID#: 1205415A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052233**	**Date of Collection: 5/16/12 1:04:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 5/22/12 11:35 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.79	Not Detected	2.5	Not Detected
Ethyl Benzene	0.79	Not Detected	3.4	Not Detected
Toluene	0.79	Not Detected	3.0	Not Detected
m,p-Xylene	0.79	Not Detected	3.4	Not Detected
o-Xylene	0.79	Not Detected	3.4	Not Detected
Methyl tert-butyl ether	0.79	Not Detected	2.8	Not Detected
Naphthalene	3.2	Not Detected	16	Not Detected
TPH ref. to Gasoline (MW=100)	40	86	160	350

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: TRIP BLANK

Lab ID#: 1205415A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052234**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/23/12 06:29 AM**	

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	Not Detected	10	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1205415A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052208**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 09:54 AM**	

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	Not Detected	10	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: CCV

Lab ID#: 1205415A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 06:55 AM**	

Compound	%Recovery
Benzene	105
Ethyl Benzene	114
Toluene	113
m,p-Xylene	113
o-Xylene	115
Methyl tert-butyl ether	96
Naphthalene	114
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: LCS

Lab ID#: 1205415A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 08:22 AM**	

Compound	%Recovery
Benzene	104
Ethyl Benzene	112
Toluene	111
m,p-Xylene	111
o-Xylene	112
Methyl tert-butyl ether	98
Naphthalene	94
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: LCSD

Lab ID#: 1205415A-11AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j052205**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 08:44 AM**	

Compound	**%Recovery**
Benzene	101
Ethyl Benzene	108
Toluene	111
m,p-Xylene	108
o-Xylene	109
Methyl tert-butyl ether	97
Naphthalene	96
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	94	70-130

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5/26/2012

Ms. Kiersten Hoey
Conestoga-Rovers Associates (CRA)
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: CHEVRON 206145
Project #: 312002
Workorder #: 1205415B

Dear Ms. Kiersten Hoey

The following report includes the data for the above referenced project for sample(s) received on 5/21/2012 at Air Toxics Ltd.

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

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

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1205415B

Work Order Summary

CLIENT:	Ms. Kiersten Hoey Conestoga-Rovers Associates (CRA) 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Conestoga-Rovers Associates (CRA) 2055 Niagara Falls Blvd. Suite Three Niagara Falls, NY 14304
PHONE:	510-420-0700	**P.O. #**	TBD
FAX:	510-420-9170	**PROJECT #**	312002 CHEVRON 206145
DATE RECEIVED:	05/21/2012	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	05/26/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP-1	Modified ASTM D-1946	4.8 "Hg	5 psi
02A	VP-2	Modified ASTM D-1946	5.6 "Hg	5 psi
03A	VP-2-DUP	Modified ASTM D-1946	5.4 "Hg	5 psi
04A	VP-3	Modified ASTM D-1946	5.8 "Hg	5 psi
05A	VP-4	Modified ASTM D-1946	3.2 "Hg	5 psi
06A	VP-5	Modified ASTM D-1946	3.8 "Hg	5 psi
07A	VP-6	Modified ASTM D-1946	4.6 "Hg	5 psi
08A	TRIP BLANK	Modified ASTM D-1946	28.2 "Hg	5 psi
09A	Lab Blank	Modified ASTM D-1946	NA	NA
09B	Lab Blank	Modified ASTM D-1946	NA	NA
10A	LCS	Modified ASTM D-1946	NA	NA
10AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 05/26/12

Laboratory Director

Certfication numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Conestoga-Rovers Associates (CRA)
Workorder# 1205415B

Eight 1 Liter Summa Canister (100% Certified) samples were received on May 21, 2012. 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

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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

Client Sample ID: VP-1

Lab ID#: 1205415B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	13
Nitrogen	0.16	86
Carbon Dioxide	0.016	0.98

Client Sample ID: VP-2

Lab ID#: 1205415B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Nitrogen	0.16	83
Carbon Dioxide	0.016	1.3

Client Sample ID: VP-2-DUP

Lab ID#: 1205415B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Nitrogen	0.16	83
Carbon Dioxide	0.016	1.3

Client Sample ID: VP-3

Lab ID#: 1205415B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	17
Nitrogen	0.17	80
Carbon Dioxide	0.017	3.4

Client Sample ID: VP-4

Lab ID#: 1205415B-05A

Compound	Rpt. Limit (%)	Amount (%)

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

Client Sample ID: VP-4

Lab ID#: 1205415B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	17
Nitrogen	0.15	79
Carbon Dioxide	0.015	4.0
Methane	0.00015	0.00017

Client Sample ID: VP-5

Lab ID#: 1205415B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	18
Nitrogen	0.15	78
Carbon Dioxide	0.015	3.7

Client Sample ID: VP-6

Lab ID#: 1205415B-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	19
Nitrogen	0.16	79
Carbon Dioxide	0.016	1.8

Client Sample ID: TRIP BLANK

Lab ID#: 1205415B-08A

Compound	Rpt. Limit (%)	Amount (%)
Nitrogen	0.10	100

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Client Sample ID: VP-1

Lab ID#: 1205415B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052215**	**Date of Collection: 5/16/12 3:00:00 PM**	
Dil. Factor:	**1.60**	**Date of Analysis: 5/22/12 02:22 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	13
Nitrogen	0.16	86
Carbon Dioxide	0.016	0.98
Methane	0.00016	Not Detected
Helium	0.080	Not Detected

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

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Client Sample ID: VP-2

Lab ID#: 1205415B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052216**	**Date of Collection: 5/16/12 12:04:00 PM**	
Dil. Factor:	**1.65**	**Date of Analysis: 5/22/12 02:54 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Nitrogen	0.16	83
Carbon Dioxide	0.016	1.3
Methane	0.00016	Not Detected
Helium	0.082	Not Detected

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

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Client Sample ID: VP-2-DUP

Lab ID#: 1205415B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052217**	**Date of Collection: 5/16/12 12:04:00 PM**	
Dil. Factor:	**1.63**	**Date of Analysis: 5/22/12 03:15 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Nitrogen	0.16	83
Carbon Dioxide	0.016	1.3
Methane	0.00016	Not Detected
Helium	0.082	Not Detected

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

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Client Sample ID: VP-3

Lab ID#: 1205415B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052218**	**Date of Collection: 5/16/12 2:35:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 5/22/12 03:38 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.17	17
Nitrogen	0.17	80
Carbon Dioxide	0.017	3.4
Methane	0.00017	Not Detected
Helium	0.083	Not Detected

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

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Client Sample ID: VP-4

Lab ID#: 1205415B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052219**	**Date of Collection: 5/16/12 1:25:00 PM**	
Dil. Factor:	**1.50**	**Date of Analysis: 5/22/12 04:03 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	17
Nitrogen	0.15	79
Carbon Dioxide	0.015	4.0
Methane	0.00015	0.00017
Helium	0.075	Not Detected

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

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Client Sample ID: VP-5

Lab ID#: 1205415B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052220**	**Date of Collection: 5/16/12 2:07:00 PM**	
Dil. Factor:	**1.53**	**Date of Analysis: 5/22/12 04:31 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.15	18
Nitrogen	0.15	78
Carbon Dioxide	0.015	3.7
Methane	0.00015	Not Detected
Helium	0.076	Not Detected

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

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Client Sample ID: VP-6

Lab ID#: 1205415B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052221**	**Date of Collection: 5/16/12 1:04:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 5/22/12 04:55 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.16	19
Nitrogen	0.16	79
Carbon Dioxide	0.016	1.8
Methane	0.00016	Not Detected
Helium	0.079	Not Detected

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

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Client Sample ID: TRIP BLANK

Lab ID#: 1205415B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052222**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 05:18 PM**	

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

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

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Client Sample ID: Lab Blank

Lab ID#: 1205415B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052205**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 10:30 AM**	

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

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1205415B-09B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052204b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 10:08 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#: 1205415B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 09:26 AM**	

Compound	%Recovery
Oxygen	100
Nitrogen	100
Carbon Dioxide	102
Methane	96
Helium	100

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1205415B-10AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9052227**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/22/12 07:16 PM**	

Compound	%Recovery
Oxygen	99
Nitrogen	100
Carbon Dioxide	102
Methane	98
Helium	99

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
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(916) 985-1000 FAX (916) 985-1020

Project Manager KIERSTEN HOEY

Collected by: (Print and Sign) SEQUOIA PATTERSON

Company CRA Email KHOEY@CRAWORLD.COM

Address 5900 HOLLIS ST STE A City EMERYVILLE State CA Zip 94608

Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. # TBD
Project # 312002
Project Name CHEVRON 206145

Turn Around Time:
☑ Normal
☐ Rush
specify

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)
CRA	VP-1	35661	5-16-12	1500	For All Samples:	-30	-5		
CRA	VP-2	36454	↓	1204	•TO-15: TPHg, BTEX,	-30	-6		
CRA	VP-2-DUP	34148		1204	MTBE, Naphthalene	-30	-6		
CRA	VP-3	21018		1435		-30	-6		
CRA	VP-4	36415		1325	•ATSM D-1946:	-29.5	-3		
CRA	VP-5	6165		1407	N_2, O_2, CO_2, CH_4	-30	-4.5		
CRA	VP-6	3023		1304	Helium	-30	-5		
CRA	TRIP BLANK	11832	—	—		—	—		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	5-16-12 1630	Secure Location CRA	5-16-12 1630
Secure Location CRA	5-17-12 1500	Fed Ex	
		B. Whittaker AIR	5/21/12 0820

Notes:
- Report results in ppbv and µg/m³
- email results and edf to khoey@craworld.com
- Global ID: T0600102230

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good	Yes No (None)	1205415

Form 1293 rev.11