Carryl MacLeod
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Marketing Business Unit

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January 16, 2017

RECEIVED
By Alameda County Environmental Health 3:51 pm, Jan 19, 2017

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

Re: Former Chevron Service Station 95607
5269 Crow Canyon Road
Castro Valley, CA
ACEH Case #RO0350

I have reviewed the attached Soil Vapor Sampling 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 GHD Services Inc., 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,

Carryl MacLeod
Project Manager

Attachment: Soil Vapor Sampling Report

January 16, 2017 Reference No. 311950

Mr. Mark Detterman
Alameda County Environmental Health Services (ACEHS)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6540

Re: Soil Vapor Sampling Report
Former Chevron Service Station 95607
5269 Crow Canyon Road
Castro Valley, California
ACEH LOP #RO0350

Dear Mr. Detterman:

GHD prepared this *Soil Vapor Sampling Report* on behalf of Chevron Environmental Management Company (Chevron) summarizing the soil vapor sampling conducted at the site referenced above (Figure 1). The soil vapor sampling was conducted in accordance with GHD's *Soil Vapor Sampling Work Plan*, dated July 29, 2016, which was approved in a letter dated September 22, 2016 (Attachment A), by Alameda County Environmental Health Services (ACEHS). The letter directed Chevron to submit the soil vapor investigation report by December 2, 2016. However, due to more than 1-inch of rainfall within 5-days of the scheduled sampling event, the work was postponed. A request for an extension to submit the report by December 16, 2016 was approved in an email on November 3, 2016. A second extension to January 16, 2017 was requested and approved in an email dated December 15, 2016 (Attachment A). The site description and background, an investigation summary, soil vapor analytical results and conclusions and recommendations are presented below.

1. Site Description and Background

1.1 Site History

The site is a former Chevron service station, currently occupied by an automotive repair shop, located on the southeast corner of Waterford Place and Crow Canyon Road in Castro Valley, California (Figure 1). A used oil underground storage tank (UST), owned by the current property owner, is located on the west side of the repair shop. The former station facilities consisted of a station building, three gasoline USTs and two dispenser islands under one canopy (Figure 2). The USTS and dispensers were removed in 1990. Surrounding properties consist of residential properties to the south, west and east, and undeveloped hillside to the north.

1.2 Background

In September 2013, Conestoga-Rovers & Associates (CRA) completed a subsurface investigation which included installing ten nested soil vapor probes at onsite (VP-1 through VP-6) and offsite (VP-7 through

VP-10) locations (Figure 2). The subsurface investigation was conducted prior to the installation of the dual phase extraction (DPE) remediation system which operated at the site from September 2014 to March 2016. The results of the investigation are summarized in the December 20, 2013, *Subsurface Investigation Report* and presented on Figure 1, and in Table 1 and 2. The results of historical soil vapor sampling conducted offsite at Forest Creek Townhomes by Weiss Associates in 1996 and 1998 are included as Table 3.

1.3 Site Geology and Hydrogeology

The site lies within the Northern Coast Range geomorphic province at an elevation of approximately 285 feet above mean sea level (ft amsl). Lithology beneath the site is mapped as Miocene age sandstone, shale, siltstone, conglomerate, and breccia. Soil encountered beneath the site is characterized as interbedded clay, silt, silty sand, and clayey sand to the maximum depth explored of 55 feet below grade (fbg). Bedrock is encountered beneath the site at depths ranging from approximately 30 to 55 fbg.

The site is located in the Castro Valley Groundwater Basin (California Department of Water Resources, Bulletin 118, 2004). The San Francisco Bay Regional Water Quality Control Board (RWQCB SF) Basin Plan considers groundwater in this basin a potential resource for municipal, industrial process, and agricultural water usage.

The nearest surface water bodies are Crow Creek located approximately 380 feet southwest (downgradient) of the site, and Cull Canyon Lake located approximately 2,245 feet northwest (crossgradient) of the site. Depth to groundwater has historically ranged between approximately 0.5 and 34 feet below top of casing (ft-btoc). Groundwater flow direction is to the west southwest toward Crow Creek.

2. Soil Vapor Sampling

Vapor samples were collected onsite and offsite November 9 through 11, 2016. GHD used 100 percent laboratory certified 1 liter Summa™ canisters to collect vapor samples for analyses by TO-15 method and 100 percent laboratory certified Sorbent Tubes and a syringe assembly to collect samples for analyses by TO-17 method. For the TO-15 method, prior to collecting samples, 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 steel 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 for at least 10 minutes to ensure the vacuum remained stable over time. The shut in test reduces the potential for ambient air to dilute the soil vapor samples. Once the sampling train passed the “shut in” test, it was connected to the probe tubing. Using the same flow rate as is used during sampling; approximately three purge volumes were purged from the sampling tubing using the purge Summa™ canister before sample collection began. The vacuum of the sample Summa™ canister was used to draw the soil vapor through

the flow controller until a negative pressure of approximately 5 inches of mercury was observed on the vacuum gauge.

In accordance with the Department of Toxic Substances Control (DTSC) Advisory – Active Soil Gas Investigation guidance document, dated July 2015, leak testing was performed during sampling using laboratory grade helium. The vapor probe vault, probe tubing, and entire sampling train were enclosed in a rigid shroud. The helium concentration inside the shroud was maintained above 50 percent helium and quantified using a helium meter. A minimum of 10 percent helium is needed inside the shroud during sampling for leak detection. After samples were collected, the Summa™ canisters final pressure was measured, capped, packaged and sent to Eurofins Air Toxics Laboratory (ATL) in Folsom, California under chain of custody for analysis.

According to the Department of Toxic Substances Control's (DTSC) July 2015, Advisory – Active Soil Gas Investigations, US EPA Method TO-17 is the preferred analytical method to confirm naphthalene concentrations. Vapor samples collected for TO-17 analysis (for naphthalene) were collected immediately after the Summa™ canisters were disconnected. A leak test was performed on the syringe assembly prior to connecting the sampling equipment to the vapor tubing. The test was performed by inserting the sorbent tube into the tube holder on the 60 cubic centimeter (cc) syringe assembly, turning the valve into the 'off' position, and pulling the plunger of the syringe. If the plunger does not move or immediately returns to the starting position, the system is leak tight and is ready for sampling. Approximately 200 cc of vapor sample was collected by pulling and purging the syringe three times to 60 cc and one time to 20 cc. After each sample was collected, the sorbent tube was removed from both the syringe and the probe tubing ends and immediately re capped. The sample ID, the tube number, and sample volume were recorded and the tubes were wrapped in aluminum foil, put on ice and sent to ATL under chain of custody for analysis.

Prior to sampling, the vapor probe tubing was inspected for integrity and the presence of water. If water was observed in the tubing, every effort was made to clear the water from the tubing in order to collect a viable sample. Due to presence of water in the vapor probe tubing, samples were unable to be collected at two onsite shallow soil vapor locations (VP-3-7 and VP-6-7) and two offsite locations (VP-10-3.5 and VP-10.-7). Due to the presence of water, samples were unable to be collected from two onsite deep soil vapor locations (VP-2-12 and VP-6-12). Field staff stopped collecting the VP-3-12 and DUP-1 onsite samples after 16 minutes due to water entering into the sample tubing at that time. Water did not appear to have entered the manifold, and although the pressure only dropped from -29 to -18 inches mercury (Hg), the sample was submitted for analysis and reported in Tables 1 and 2. GHD was unable to collect a sample for TO-17 analysis from this location and offsite VP-9-3.5 as water entered the tubing after the TO-15 samples were collected.

Groundwater at the vapor probe locations was within the normal range of fluctuations for the site.

2.1 Soil Vapor Analytical Data Evaluation

Soil vapor samples were analyzed using the sample analytical methods and for the same analytes as those collected in September 2013.

- Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Methyl-tert- butyl ether (MTBE) and naphthalene by EPA Method TO-15
- Naphthalene by EPA Method TO-17
- Oxygen (O_2), carbon dioxide (CO_2), nitrogen (N_2), methane (CH_4), and helium by ASTM D-1946 (GC/TCD)
- Air phase hydrocarbon (APH) fractions (Sp) aromatics C8-C12 modified TO-15 GC/MS Full Scan
- APH fractions (Sp) aliphatics C5-C12 modified TO-15 GC/MS Full Scan

2.1.1 Chemical Analysis Results

Soil vapor analytical laboratory reports are included in Attachment B and soil vapor analytical data are summarized in Tables 1 and 2. Soil vapor analytical data were compared to the LTCP vapor intrusion to indoor air criteria. Laboratory results indicate the following:

- Petroleum hydrocarbons were detected above laboratory reporting limits in one shallow off-site soil vapor sample VP-7-3.5 and two onsite deep soil vapor samples.
- No benzene was detected above laboratory reporting limits in shallow soil vapor samples onsite or offsite. Benzene was detected above laboratory reporting limits in one deep onsite soil vapor sample, VP-5-12 at 45 µg/m3, which is below the LTCP residential and commercial criterion.
- No ethylbenzene was detected above laboratory reporting limits in any soil vapor samples onsite or offsite.
- No naphthalene was detected above laboratory reporting limits in any soil vapor samples onsite or offsite in shallow or deep depth by either analytical method.
- No helium was detected with the exception of 0.22% in VP-8-3.5, which is an acceptable concentration, based on the DTSC's guidance which states an ambient air leak up to 5% is acceptable if quantitative trace testing is performed by shrouding. Therefore the analytical data are considered valid.
- O_2 concentrations in the bioattenuation zone (top 5 feet) at all sampled probe locations are $\geq$ 4%, indicating there is sufficient O_2 to support biodegration of the hydrocarbons.
- Aliphatic (non-carcinogenic) hydrocarbons were detected in onsite locations VP-1-12, VP-3-12/DUP-1, VP-5-12, and offsite VP-7-3.5/DUP-2.
- No aromatic (carcinogenic) hydrocarbons were detected above laboratory reporting limits.

3. Conclusions and Recommendations

Comparing the soil vapor data from September 2013 (pre-remediation) with the November 2016 data (post-remediation) shows that concentrations of petroleum hydrocarbons have generally decreased in both the on- and offsite vapor probe locations due to DPE source removal efforts and the enhanced bioattenuation resulted from the DPE operation. In addition, several locations show that there is CO_2 present indicating an active bioattenuation zone is present and methane has been eliminated to below detection limits.

Based on the results of the post remediation vapor sampling and current site conditions, no further soil vapor sampling is recommended. Results of the onsite and offsite soil vapor sampling demonstrate that human health is protected. Soil vapor concentrations at the offsite locations are below the LTCP residential criteria during both the pre and post remediation sampling events. There is no risk of vapor intrusion to the onsite automotive repair shop. Onsite shallow soil vapor concentrations collected are below LTCP commercial criteria.

Shallow soil vapor samples VP-3-7 and VP-6-7 were unable to be collected due to the presence of water in the vapor tubing; additional lines of evidence indicate there is no risk at these locations. There is no building at these locations, the surrounding surface is capped by concrete and asphalt, there is no foreseeable change in land use, and a vertical separation of at least 10 feet from groundwater onsite by these locations.

Please contact Judy Gilbert at (510) 420-3314 if you have any questions or require additional information.

Sincerely,
GHD

Judy Gilbert

Brandon S. Wilken, PG 7564

JG/cw/65
Encl.

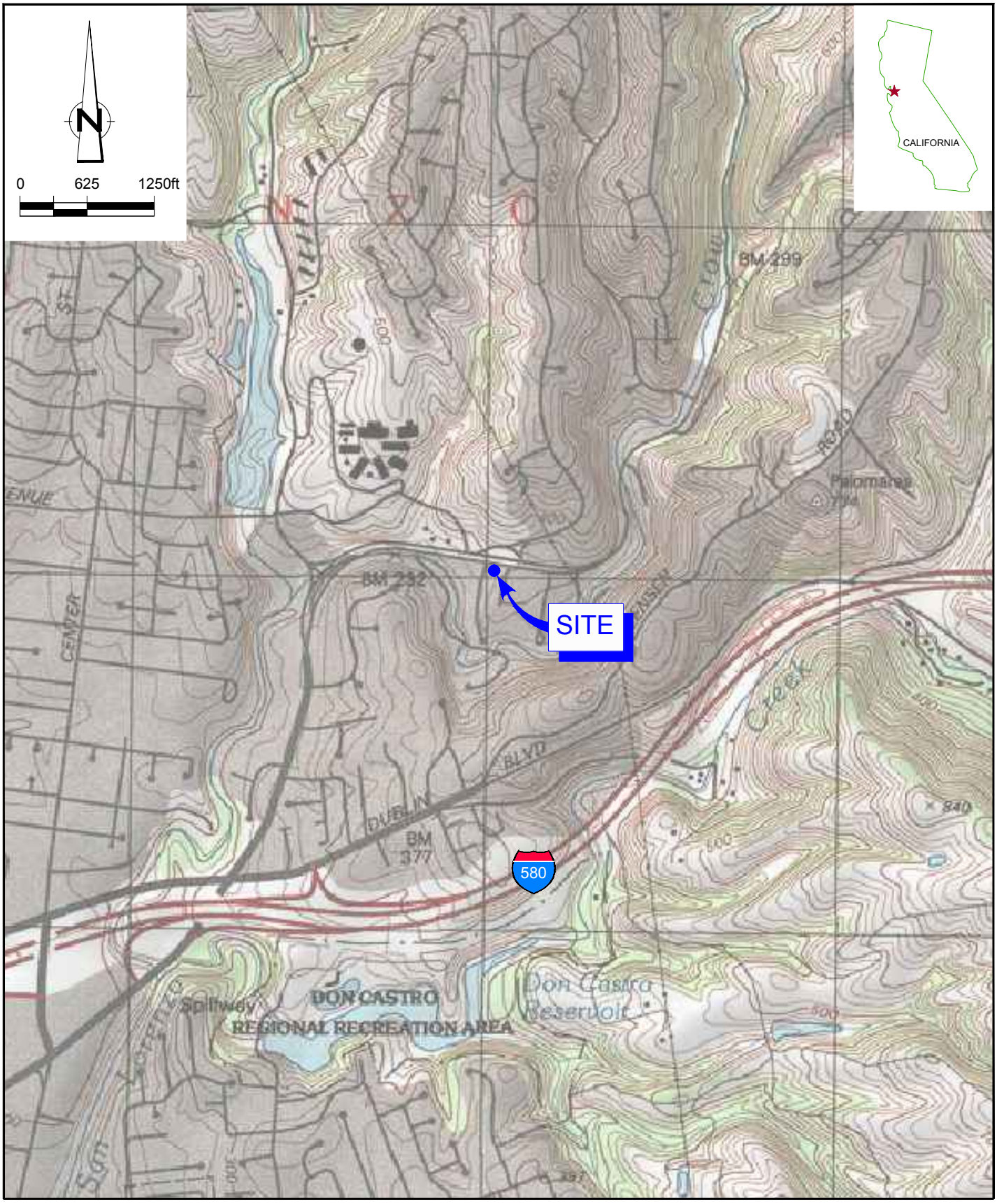
Figure 1	Vicinity Map
Figure 2	Site Plan

Table 1	Cumulative Soil Vapor Analytical Data
Table 2	APH Soil Vapor Analytical Data
Table 3	Historic Soil Vapor Data Results

Attachment A	Regulatory Correspondence
Attachment B	Laboratory Analytical Reports

cc: Ms. Carryl MacLeod, Chevron *(electronic copy)*
Mr. Kevin Hinkley, Property Owner
Ms. Diane Riggs, Forest Creek Townhomes Association

Figures



SOURCE: TOPO! MAPS

FORMER CHEVRON STATION 95607
5269 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

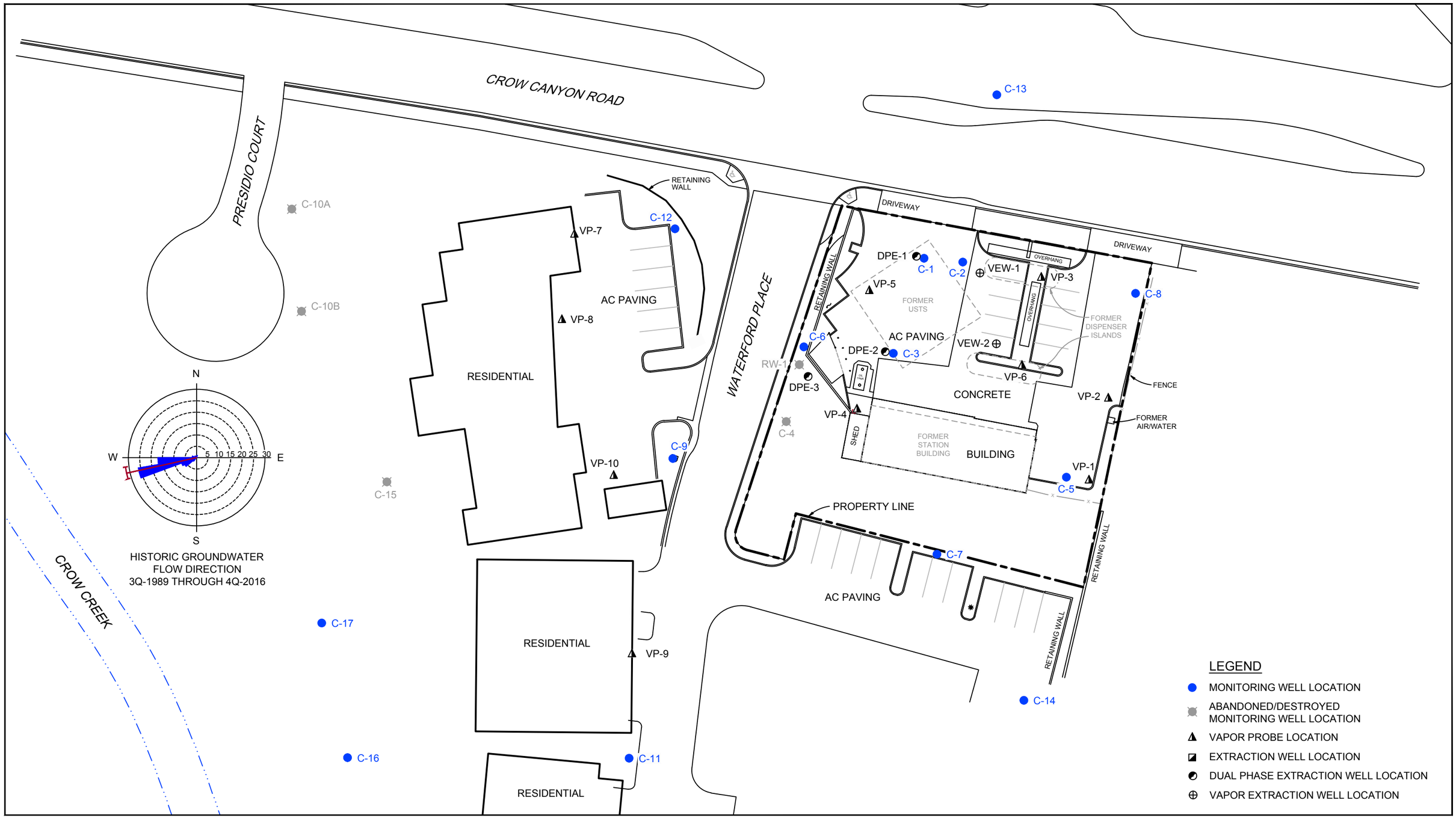
311950-95

Dec 1, 2016

VICINITY MAP

FIGURE 1

CAD File: P:\drawings\311000s\311950\311950-REPORT\311950-95(065)\311950-95(065)GN\311950-95(065)GN-WA001.dwg



BASEMAP MODIFIED FROM DRAWING PROVIDED BY MORROW SURVEYING, JANUARY 15, 2014

0 20 40ft

FORMER CHEVRON STATION 95607
5269 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

311950-95

Dec 1, 2016

SITE PLAN

FIGURE 2

CAD File: P:\drawings\311000s\311950\311950-REPORT\311950-95(065)\311950-95(065)GN\311950-95(065)GN-WA002.dwg

Tables

Table 1

Cumulative Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, California

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes[1]	MTBE	Napthalene	Naphtalane (TO-17)	Oxygen	N_2	CO_2	Methane	He
			← Reported in micrograms per cubic meter ($\mu g/m^3$) →								← Reported in % Volume →				
LTCP Soil Gas Criteria-Residential				***<85***		***<1100***			***<93***	***<93***	--	--	--	--	--
LTCP Soil Gas Criteria-Commercial				***<280***		***<3600***			***<310***	***<310***	--	--	--	--	--
VP-1-7	9/17/2013	7	<240	<3.7	<4.4	<5.0	<5.0	<4.2	<24	<2.5	15	77	7.6	<0.00023	<0.12
VP-1-7	**11/9/2016**	**7**	**<470**	**<3.7**	**<4.4**	**<5.0**	**<5.0**	**<17**	**<12**	**<17**	**13**	**80**	**7.1**	**<0.00023**	**<0.12**
VP-1-12	9/17/2013	12	<230	<3.6	4.3	<4.9	<5.0	<4.1	<24	<2.5	8.9	76	15	<0.00023	<0.11
VP-1-12DUP	9/17/2013	12	--	--	--	--	--	--	--	<2.5	--	--	--	--	--
VP-1-12	**11/9/2016**	**12**	**<490**	**<3.8**	**6.1**	**<5.2**	**<5.2**	**<17**	**<13**	**<17**	**11**	**79**	**10**	**<0.00024**	**<0.12**
VP-2-7	9/17/2013	7	860	5	8.2	<5.6	<5.6	<4.6	30	<2.5	8.7	76	15	0.0021	<0.13
VP-2-7	**11/9/2016**	**7**	**<480**	**<3.7**	**<4.4**	**<5.0**	**<5.0**	**<17**	**<12**	**<17**	**7.4**	**80**	**13**	**<0.00023**	**<0.12**
VP-2-12	9/17/2013	12	3,600	16	57	6.3	32.4	<4.6	<27	<2.5	1.6	79	19	0.37	<0.13
VP-2-12[a]	**11/9/2016**	**12**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VP-3-7	9/17/2013	7	3,100,000	<1200	<1400	<1600	<1600	<1400	<8000	<2.5	1.9	95	2.4	0.31	<0.11
VP-3-7[a]	**11/9/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VP-3-12	9/17/2013	12	710,000	<160	<180	<210	<210	<180	<1000	<2.5	1.4	91	7.1	0.63	<0.12
VP-3-12	**11/9/2016**	**12**	**61,000**	**<16**	**<19**	**<22**	**<22**	**<72**	**<52**	--	**17**	**80**	**2.9**	**0.13**	**<0.10**
VP-3-12/DUP-1	**11/9/2016**	**12**	**180,000**	**<99**	**<120**	**<130**	**<130**	**<440**	**<320**	--	**8.0**	**82**	**9.4**	**0.42**	**<0.31**
VP-4-5.5	9/17/2013	5.5	<240	<3.8	<4.5	<5.2	<5.2	<4.3	<25	<2.5	21	79	0.3	<0.00024	<0.12
VP-4-5.5	**11/9/2016**	**5.5**	**<490**	**<3.8**	**<4.5**	**<5.2**	**<5.2**	**<17**	**<13**	**<17**	**18**	**80**	**1.7**	**<0.00024**	**<0.12**
VP-5-7	9/18/2013	7	6,400	15	18	<5.0	11	<4.2	<24	8.3	4.5	77	18	0.063	<0.12
VP-5-7	**11/10/2016**	**7**	**<480**	**<3.8**	**<4.4**	**<5.1**	**<5.1**	**<17**	**<12**	**<17**	**2.5**	**82**	**15**	**0.014**	**<0.12**
VP-5-12	9/18/2013	12	20,000	30	37	6.9	29.6	<4.2	<24	<2.5	3.3	74	23	0.13	<0.12
VP-5-12	**11/10/2016**	**12**	**61,000**	**45**	**<14**	**<17**	**<17**	**<56**	**<40**	**<17**	**5.1**	**74**	**21**	**0.052**	**<0.12**
VP-6-7	9/18/2013	7	27,000,000	<2,800	<3,300	81,000	97,000	<3100	<18,000	1900 E	10	80	9.1	0.12	<0.13
VP-6-7DUP	9/18/2013	7	28,000,000	<4,100	<4,900	80,000	97,000	<4600	<27,000	110	11	79	9.1	0.11	<0.13
VP-6-7[a]	**11/9/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VP-6-12[a]	9/18/2013	12	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-6-12[a]	**11/9/2016**	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-7-3.5	9/16/2013	3.5	1600	19	15	<5.7	13	<4.7	<27	<2.5	1.9	82	16	0.071	<0.13
VP-7-3.5	**11/10/20016**	**3.5**	**31,000**	**<7.6**	**<8.9**	**<10**	**<10**	**<34**	**<25**	**<17**	**6.4**	**79**	**14**	**0.26**	**<0.12**
VP-7-3.5/DUP-2	**11/10/2016**	**3.5**	**35,000**	**<7.9**	**<9.3**	**<11**	**<11**	**<36**	**<26**	**<17**	**5.3**	**78**	**16**	**0.28**	**<0.12**
VP-7-7	9/16/2013	7	1600	12	17	7.5	38.0	<4.7	<27	<2.5	7.5	87	4	0.046	1.2
VP-7-7	**11/10/2016**	**7**	**<480**	**<3.7**	**<4.4**	**<5.1**	**<5.1**	**<17**	**<12**	**<17**	**3.9**	**88**	**8.3**	**0.0044**	**<0.12**
VP-8-3.5	9/16/2013	3.5	4400	67	78	17	71	<8.5	<49	24	13	86	0.8	0.0076	<0.12
VP-8-3.5	**11/10/2016**	**3.5**	**<1000**	**<8.2**	**<9.7**	**<11**	**<11**	**<37**	**<27**	**<17**	**11**	**86**	**3.1**	**0.0042**	**0.22**
VP-8-7	9/16/2013	7	2600	62	47	<22	30	<18	<100	4.1	15	81	1.6	0.0044	2.7
VP-8-7	**11/10/2016**	**7**	**<1000**	**<7.9**	**<9.3**	**<11**	**<11**	**<36**	**<26**	**<17**	**12**	**80**	**8.2**	**0.0014**	**<0.25**
VP-9-3.5	9/17/2013	3.5	9700	56	66	60	162	<4.3	27	<2.5	11	87	1.5	0.0048	0.82
VP-9-3.5DUP	9/17/2013	3.5	6900	56	66	9.0	64	<4.3	<25	--	12	86	1.6	0.0049	0.75
VP-9-3.5	**11/11/2016**	**3.5**	**<850**	**<6.7**	**<7.9**	**<9.1**	**<9.1**	**<30**	**<22**	--	**11**	**85**	**4.3**	**0.0028**	**<0.21**
VP-9-7	9/17/2013	7	5600	23	55	<9.0	29	<7.5	<43	--	14	69	6.3	0.0031	11
VP-9-7	**11/11/2016**	**7**	**<760**	**<6.0**	**<7.0**	**<8.1**	**<8.1**	**<27**	**<20**	**<17**	**13**	**74**	**13**	**0.0048**	**<0.19**
VP-10-3.5	9/16/2013	3.5	2100	48	44	10	46	<4.5	<26	3.0	15	82	3.2	0.00053	<0.13
VP-10-3.5[a]	**11/10/2016**	**3.5**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
VP-10-7	9/16/2013	7	41,000	51	130	36	161	<11	<65	2.6	1.7	82	16	0.068	<0.12
VP-10-7[a]	**11/10/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Table 1

Cumulative Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, California

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes[1]	MTBE	Napthalene	Naphtalane (TO-17)	Oxygen	N_2	CO_2	Methane	He
			Reported in micrograms per cubic meter ($\mu g/m^3$)								*Reported in % Volume*				
LTCP Soil Gas Criteria-Residential				***<85***		***<1100***			***<93***	***<93***	--	--	--	--	--
LTCP Soil Gas Criteria-Commercial				***<280***		***<3600***			***<310***	***<310***	--	--	--	--	--
Trip Blank			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--	0.23	100	<0.010	<0.00010	<0.050
Lab Blank 11A			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--	<0.10	<0.5	<0.010	<0.00010	--
Lab Blank 11B			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--	--	--	--	--	<0.050
Lab Blank 11C			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--					
Lab Blank 12A			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--	<0.10	<0.5	<0.010	<0.00010	--
Lab Blank 12B			<100	<1.6	<1.9	<2.2	<2.2	<1.8	<10	--	--	--	--	--	<0.050
Lab Blank 20A			--	--	--	--	--	--	--	<2.5	--	--	--	--	--
Lab Blank 20B			--	--	--	--	--	--	--	<2.5	--	--	--	--	--

Explanations:

1 = Total xylenes obtained by adding results of m,p-Xylene and o-Xylene
fbg = feet below grade
TPHg = Total Petroleum Hydrocarbons as Gasoline
MTBE = Methyl tert-butyl ehter
-- = Not analyzed
<n = Not above laboratory reporting limit
mg/m^3 = micrograms per cubic meter
E= Exceeds Instrument Calibration Range
LTCP Soil Gas Criteria = Low Threat Closure Policy, Appendix 4 - Soil Gas Sampling - No Bioattenuation Zone
Bold = Exceeds the LTCP criteria
Benzene, toluene, ethylbenzene, and xylenes (BTEX), Methyl tertiary-butyl ether (MTBE), and Naphthalene analyzed by EPA Method TO-15 GC/MS Full Scan
Naphthalene analyzed by EPA Method TO-17
Helium, oxygen, carbon dioxide (CO_2), methane and nitrogen by ASTM D-1946 unless otherwise noted.
[a] Not sampled due to water in the tubing.

Table 2

APH Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, 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)*	← *Reported in micrograms per cubic meter (µg/m^3)* →					
LTCP Soil Gas Criteria-Residential			***NE***	***NE***	***NE***	***NE***	***NE***	***NE***
LTCP Soil Gas Criteria-Commercial			***NE***	***NE***	***NE***	***NE***	***NE***	***NE***
VP-1-7	9/17/2013	7	<75	<95	<140	<160	<110	<130
VP-1-7	**11/9/2016**	**7**	**<75**	**<95**	**<140**	**<160**	**<110**	**<130**
VP-1-12	9/17/2013	12	<74	<93	<130	<160	<110	<120
VP-1-12DUP	9/17/2013	12	--	--	--	--	--	--
VP-1-12	**11/9/2016**	**12**	**210**	**<99**	**<140**	**<170**	**<120**	**<130**
VP-2-7	9/17/2013	7	<83	<100	<150	<180	<130	<140
VP-2-7	**11/9/2016**	**7**	**<75**	**<95**	**<140**	**<160**	**<110**	**<130**
VP-2-12	9/17/2013	12	<83	280	190	580	<130	<140
VP-2-12[a]	**11/9/2016**	**12**	--	--	--	--	--	--
VP-3-7	9/17/2013	7	620,000	1,600,000	<44,000	<53,000	<38,000	<42,000
VP-3-7[a]	**11/9/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**
VP-3-12	9/17/2013	12	270,000	350,000	<5,600	<6,800	<4,800	<5,300
VP-3-12	**11/9/2016**	**12**	**18,000**	**34,000**	**710**	**<690**	**<490**	**<540**
VP-3-12/DUP-1	**11/9/2016**	**12**	**62,000**	**100,000**	**<3,600**	**<4,300**	**<3,000**	**<3,400**
VP-4-5.5	9/17/2013	5.5	<78	<98	<140	<170	<120	<130
VP-4-5.5	**11/9/2016**	**5.5**	**<78**	**<99**	**<140**	**<170**	**<120**	**<130**
VP-5-7	9/18/2013	7	1100	1000	280	770	<110	<130
VP-5-7	**11/10/2016**	**7**	**<76**	**<96**	**<140**	**<160**	**<120**	**<130**
VP-5-12	9/18/2013	12	9000	3900	430	1300	<110	<130
VP-5-12	**11/10/2016**	**12**	**15,000**	**37,000**	**1,700**	**<540**	**<380**	**<420**
VP-6-7	9/18/2013	7	2,800,000	9,800,000	850,000	1,000,000	900,000	210,000
VP-6-7DUP	9/18/2013	7	3,000,000	10,000,000	820,000	980,000	860000	180,000
VP-6-7	**11/9/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**
VP-6-12[a]	9/18/2016	12	**--**	**--**	**--**	**--**	**--**	**--**
VP-6-12[a]	**11/9/2016**	**12**	**--**	**--**	**--**	**--**	**--**	**--**
VP-7-3.5	9/16/2013	3.5	97	<110	<150	<180	<130	<140
VP-7-3.5	**11/10/2016**	**3.5**	**14,000**	**15,000**	**<280**	**<330**	**<230**	**<260**
VP-7-3.5/DUP-2	**11/10/2016**	**3.5**	**15,000**	**16,000**	**<290**	**<340**	**<240**	**<270**
VP-7-7	9/16/2013	7	<84	<110	<150	<180	<130	<140
VP-7-7	**11/10/20016**	**7**	**<76**	**<96**	**<140**	**<160**	**<120**	**<130**
VP-8-3.5	9/16/2013	3.5	450	420	<270	<330	<230	<260
VP-8-3.5	**11/10/2016**	**3.5**	**<170**	**<210**	**<300**	**<360**	**<250**	**<280**
VP-8-7	9/16/2013	7	<320	<410	<580	<690	<490	<550
VP-8-7	**11/10/2016**	**7**	**<160**	**<200**	**<290**	**<340**	**<240**	**<270**
VP-9-3.5	9/17/2013	3.5	1100	960	570	<160	490	<130
VP-9-3.5DUP	9/17/2013	3.5	1100	850	270	<170	<120	<130
VP-9-3.5	**11/11/2016**	**3.5**	**<140**	**<170**	**<240**	**<290**	**<200**	**<230**
VP-9-7	9/17/2013	7	210	<170	<240	540	<200	<230
VP-9-7	**11/11/2016**	**7**	**<120**	**<150**	**<220**	**<260**	**<180**	**<200**
VP-10-3.5	9/16/2013	3.5	<82	<100	<150	<180	<120	<140
VP-10-3.5[a]	**11/10/2016**	**3.5**	**--**	**--**	**--**	**--**	**--**	**--**

Table 2

APH Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, California

VP-10-7	9/16/2013	7	330	510	700	19,000	480	<340
VP-10-7[a]	**11/10/2016**	**7**	**--**	**--**	**--**	**--**	**--**	**--**
Lab Blank 10A/10B			<32	<41	<58	<70	<49	<55
Lab Blank 10C/10D			<32	<41	<58	<70	<49	<55
Lab Blank 10E/10F			<32	<41	<58	<70	<49	<55
Lab Blank 12A/12B			<32	<41	<58	<70	<49	<55
Lab Blank 12C/12D			<32	<41	<58	<70	<49	<55

Notes:

APH = Air Phase Hydrocarbon Fractions analyses by EPA Method TO-15 GC/MS Full Scan.
fbg = Feet below grade.
mg/m^3 = Micrograms per cubic meter
LTCP= Low Threat Closure Policy
NE = Not Established
<x = Not detectedabove laboratory reporting limit x.
-- = Not analyzed/not applicable.
[a] Not sampled due to water in the tubing.

Table 3

Historic Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, California

Sample ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Oxygen	Carbon Dioxide	Methane
			parts per billion by volume (ppbv)					%	
ESL Table E-4, Shallow Soil Gas - Residential Exposure			***42 (13.15)****	***31,000 (8,227)****	***490 (113)****	***10,000 (2,303)****	***NE***	***NE***	***NE***
SV-1	8/19/1996	3	<4.3	<4.3	<4.3	<8.6	22	0.076	<0.002
SV-2	8/19/1996	8	<6.1	<6.1	<6.1	<12.2	1.4	28	0.010
SV-3	8/19/1996	8	<4.4	7.6	<4.4	6.7	21	0.25	<0.002
SV-3	8/20/1996	25	2,100	3,800	680	2,300	21	0.58	0.004
SV-4	8/20/1996	3	<4.3	<4.3	<4.3	<4.6	14	9.3	<0.002
SV-4	8/20/1996	8	<4.2	<4.2	<4.2	5.7	21	0.35	<0.002
SV-4	8/20/1996	11	<4.2	6.0	<4.2	<8.4	21	0.80	0.007
SV-4	8/20/1996	25	38,000	140,000	20,000	83,000	21	0.37	0.002
SV-4 DUP	8/20/1996	25	39,000	140,000	22,000	87,000	21	0.35	0.002
SV-5	8/20/1996	12	6.2	32	11	39	22	0.091	<0.002
SV-6	8/20/1996	3	29	42	6.4	25.4	0.51	0.054	0.005
SV-7	8/20/1996	3	<4.2	5.1	<4.2	6.8	21	0.47	<0.002
SV-8	8/20/1996	3	40	83	9.5	59	19	3.6	<0.002
SV-9	7/30/1998	3	<4.0	4.7	<4.0	<4.0	NA	NA	NA
SV-10	7/30/1998	3	6.9	<3.9	<3.9	<3.9	NA	NA	NA
SV-11	7/30/1998	3	<4.0	<4.0	<4.0	<4.0	NA	NA	NA
SV-12	7/30/1998	6	<3.9	<3.9	<3.9	<3.9	NA	NA	NA
SV-13	7/30/1998	6.5	<4.0	<4.0	<4.0	<4.0	NA	NA	NA
SV-14	7/30/1998	6	<4.0	<4.0	<4.0	<4.0	NA	NA	NA
SV-15	7/30/1998	6	<4.0	<4.0	<4.0	<4.0	NA	NA	NA
SV-16	7/30/1998	6	<4.0	<4.0	<4.0	<4.0	NA	NA	NA

Table 3

Historic Soil Vapor Analytical Data
Former Chevron Station 95607
5269 Crow Canyon Road
Castro Valley, California

Sample ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Oxygen	Carbon Dioxide	Methane
			parts per billion by volume (ppbv)					%	
ESL Table E-4, Shallow Soil Gas - Residential Exposure			***42 (13.15)****	***31,000 (8,227)****	***490 (113)****	***10,000 (2,303)****	***NE***	***NE***	***NE***

Notes:

Benzene, toluene, ethylbenzene and total xylenes (BTEX) Modified EPA Method TO-14.

<x = Indicates chemical not detected at or above reporting limit x.

ESL = Environmental Screening Levels, San Francisco Regional Water Quality Control Board (SF-RWQCB), Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final November 2007 (Revised May 2008).

* Initial number is in micrograms per cubic meter (µg/m3) as quoted by SF-RWQCB which was converted to converted to (ppbv) using Air Toxics Units Conversion Calculator (http://www.airtoxics.com/cclasses/unitcalc.html).

NA = Not analyzed.

NE = Not established.

Attachment A
Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
REBBECA GEBHART, Interim Director

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

September 22, 2016

Ms. Carryl MacLeod
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
(sent via electronic mail to:
cmacleod@chevron.com)

Kevin & Julia Hinkley
Kevin Hinkley Service
5269 Crow Canyon Road
Castro Valley, CA 94552

Subject: Conditional Approval of Work Plan; Fuel Leak Case No. RO0000350 and GeoTracker Global ID T0600100344, Chevron #9-5607, 5269 Crow Canyon Road, Castro Valley, CA 94552

Dear Ms. MacLeod, and Mr. and Ms. Hinkley:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the case file including the *Soil Vapor Sampling Work Plan*, dated July 28, 2016, and the *Third Quarter 2016 Groundwater Monitoring and Sampling Report,* dated September 14, 2016. The reports were prepared and submitted on your behalf by GHD Services, Inc (GHD). Thank you for submitting the reports. The work plan proposes to sample all on- and off-site vapor sampling locations in order to obtain post-remediation soil vapor concentrations.

Based on ACDEH staff review of the documents the proposed scope of work is conditionally approved for implementation provided that the technical comments below are incorporated during the proposed field investigation. Submittal of a further revised work plan or work plan addendum for this scope of work is not required unless an alternate scope of work outside that described in the work plan or technical comments below is proposed. We request that you 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. **Conditional Work Plan Approval** – The referenced work plan proposes a series of actions with which ACDEH is in general agreement of undertaking. Please submit a report by the date specified below.
    a. **Shroud Tracer Concentration** – Only to clarify, ACDEH requests that the shroud tracer concentration be reported in order to ensure any leak is within acceptable Department of Toxic Substances Control (DTSC) guidance criteria.
2. **Quarterly Rebound Groundwater Monitoring** – Review of the referenced groundwater monitoring report indicates that downgradient well C-17 was not accessible due to poison oak and berry bushes. Please ensure the path for well access is cleared prior to the October / Fall 2016 groundwater monitoring event. The prior October event documented the highest concentration of Total Petroleum Hydrocarbons as gasoline at the well; approximately an order of magnitude above the Regional Water Quality Control Board's Environmental Screening Level Fresh Water Ecotox Habitat Goal. The data will be of importance to the deferred dilution – attenuation analysis.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACDEH 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 21, 2016** – Third Quarter 2016 Groundwater Monitoring Report
  File to be named: RO350_GWM_R_yyyy-mm-dd

- **December 2, 2016** – Soil Vapor Investigation
  File to be named: RO350_SWI_R_yyyy-mm-dd

- **January 27, 2017** – Fourth Quarter 2016 Groundwater Monitoring Report
  File to be named: RO350_GWM_R_yyyy-mm-dd

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

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm. If your email address is not listed on the first page of this letter, or in the list of cc's listed below, ACDEH is requesting your email address to help expedite communications and to help lower overall costs.

Should you have any questions, please contact 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=ACEH, ou=ACEH, email=mark.detterman@acgov.org, c=US
Date: 2016.09.22 14:03:57 -07'00'

Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist

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

cc: Judy Gilbert, GHD Services, Inc, 5900 Hollis Street, Suite A, Emeryville, CA 94608
(Sent via electronic mail to: jgilbert@CRAworld.com)

Brandon Wilken, GHD Services, Inc, 5900 Hollis Street, Suite A, Emeryville, CA 94608
(Sent via electronic mail to: bwilken@craworld.com)

Dilan Roe, ACDEH, (Sent via E-mail to: dilan.roe@acgov.org)
Mark Detterman, ACDEH, (Sent via electronic mail to: mark.detterman@acgov.org)
Geotracker, Electronic Files

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). 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, 6835, 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, later 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 SLIC)	**REVISION DATE:** May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) 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.

Gilbert, Judy

From: Detterman, Mark, Env. Health <Mark.Detterman@acgov.org>
Sent: Thursday, November 03, 2016 11:30 AM
To: Gilbert, Judy
Cc: MacLeod, Carryl G
Subject: RE: Former Chevron 95607 - Soil Vapor Sampling Report ~COR 311950~

Hi Judy,
Thanks for the reminder call. I've extended the due date to December 16, 2016 per your request. If needed, you can use this email to document the extension.
Regards,

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

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

From: Gilbert, Judy [mailto:Judy.Gilbert@ghd.com]
Sent: Monday, October 31, 2016 2:37 PM
To: Detterman, Mark, Env. Health
Cc: MacLeod, Carryl G
Subject: Former Chevron 95607 - Soil Vapor Sampling Report ~COR 311950~

Hi Mark – I am requesting an extension until December 16, 2016 for submittal of the Soil Vapor Investigation report for the referenced site. According to the September 22, 2016 directive letter regarding the soil vapor sampling, the report is due on December 2, 2016. We were scheduled to sample the vapor probes this week (11/1 to 11/3). However, due to more than 1-inch of rain on Sunday in Castro Valley, the sampling is postponed to be in accordance with the DTSC's soil gas investigation advisory, which indicates vapor sampling should not occur during a significant rain event and should only occur after five days without a significant rain event. The forecast does not call for a significant amount of rain over the next 10 days. The sampling is rescheduled for 11/9 to 11/11. Please let me know if you approve this request or if you have questions.

Thanks

Judy A. Gilbert
Sr. Project Manager

GHD
T: +1 510-420-3314 | M: +1 510-495-5572 | E: judy.gilbert@ghd.com
5900 Hollis Street, Suite A, Emeryville, CA 94608 | www.ghd.com
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

Attachment B
Laboratory Analytical Reports

eurofins | Air Toxics

11/29/2016
Ms. Judy Gilbert
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chevron 95607
Project #: 311950
Workorder #: 1611201

Dear Ms. Judy Gilbert

The following report includes the data for the above referenced project for sample(s) received on 11/11/2016 at Air Toxics Ltd.

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

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

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1611201

Work Order Summary

CLIENT:	Ms. Judy Gilbert GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	510-420-3314	**P.O. #**	NWENV009560700801
FAX:	510-420-9170	**PROJECT #**	311950 Chevron 95607
DATE RECEIVED:	11/11/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/29/2016		

FRACTION #	NAME	TEST
01A	VP-1-7	Modified TO-17 VI
02A	VP-1-12	Modified TO-17 VI
03A	VP-2-7	Modified TO-17 VI
04A	VP-4-5.5	Modified TO-17 VI
05A	VP-5-7	Modified TO-17 VI
06A	VP-5-12	Modified TO-17 VI
07A	VP-7-3.5	Modified TO-17 VI
08A	DUP-2	Modified TO-17 VI
09A	VP-7-7	Modified TO-17 VI
10A	VP-8-3.5	Modified TO-17 VI
11A	VP-8-7	Modified TO-17 VI
12A	VP-9-7	Modified TO-17 VI
13A	Lab Blank	Modified TO-17 VI
14A	CCV	Modified TO-17 VI
15A	LCS	Modified TO-17 VI
15AA	LCSD	Modified TO-17 VI

CERTIFIED BY: Heidi Hayes DATE: 11/29/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified EPA Method TO-17 (VI Tubes)
GHD
Workorder# 1611201

Twelve TO-17 VI Tube samples were received on November 11, 2016. The laboratory performed the analysis via modified EPA Method TO-17 using GC/MS in the full scan mode. TO-17 'VI' sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

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

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

Requirement	***TO-17***	***ATL Modifications***
Initial Calibration	%RSD</=30% with 2 allowed out up to 40%	VOC list: %RSD</=30% with 2 allowed out up to 40% SVOC list: %RSD</=30% with 2 allowed out up to 40%
Daily Calibration	%D for each target compound within +/-30%.	Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene within +/-40%D
Audit Accuracy	70-130%	Second source recovery limits for Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene = 60-140%.
Distributed Volume Pairs	Collection of distributed volume pairs required for monitoring ambient air to insure high quality.	If site is well-characterized or performance previously verified, single tube sampling may be appropriate. Distributed pairs may be impractical for soil gas collection due to configuration and volume constraints.
Analytical Precision	</=20% RPD	<30% RPD for Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A sampling volume of 0.06 L was used to convert ng to ug/m3 for the associated Lab Blank.

The field surrogate, Naphthalene-d8, in sample VP-2-7 exceeded the laboratory limits of 50-150%.

Definition of Data Qualifying Flags

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

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

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-17

Client Sample ID: VP-1-7

Lab ID#: 1611201-01A

No Detections Were Found.

Client Sample ID: VP-1-12

Lab ID#: 1611201-02A

No Detections Were Found.

Client Sample ID: VP-2-7

Lab ID#: 1611201-03A

No Detections Were Found.

Client Sample ID: VP-4-5.5

Lab ID#: 1611201-04A

No Detections Were Found.

Client Sample ID: VP-5-7

Lab ID#: 1611201-05A

No Detections Were Found.

Client Sample ID: VP-5-12

Lab ID#: 1611201-06A

No Detections Were Found.

Client Sample ID: VP-7-3.5

Lab ID#: 1611201-07A

No Detections Were Found.

Client Sample ID: DUP-2

Lab ID#: 1611201-08A

No Detections Were Found.

Client Sample ID: VP-7-7

Lab ID#: 1611201-09A

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Summary of Detected Compounds
EPA METHOD TO-17

Client Sample ID: VP-7-7

Lab ID#: 1611201-09A

No Detections Were Found.

Client Sample ID: VP-8-3.5

Lab ID#: 1611201-10A

No Detections Were Found.

Client Sample ID: VP-8-7

Lab ID#: 1611201-11A

No Detections Were Found.

Client Sample ID: VP-9-7

Lab ID#: 1611201-12A

No Detections Were Found.

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Client Sample ID: VP-1-7
Lab ID#: 1611201-01A
EPA METHOD TO-17

File Name:	**6112811**	**Date of Extraction: NA**	**Date of Collection: 11/9/16 11:40:00 AM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 04:13 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

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

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Client Sample ID: VP-1-12

Lab ID#: 1611201-02A

EPA METHOD TO-17

File Name:	**6112812**	**Date of Extraction: NA**	**Date of Collection: 11/9/16 12:17:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 04:53 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	96	50-150

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Client Sample ID: VP-2-7

Lab ID#: 1611201-03A

EPA METHOD TO-17

File Name:	**6112813**	**Date of Extraction: NA**	**Date of Collection: 11/9/16 9:30:00 AM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 05:33 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	47 Q	50-150

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Client Sample ID: VP-4-5.5

Lab ID#: 1611201-04A

EPA METHOD TO-17

File Name:	**6112814**	**Date of Extraction: NA**	**Date of Collection: 11/9/16 12:50:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 06:13 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	82	50-150

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Client Sample ID: VP-5-7
Lab ID#: 1611201-05A
EPA METHOD TO-17

File Name:	**6112815**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 10:04:00 A**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 06:53 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	80	50-150

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Client Sample ID: VP-5-12

Lab ID#: 1611201-06A

EPA METHOD TO-17

File Name:	**6112816**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 10:54:00 A**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 07:32 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	104	50-150

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Client Sample ID: VP-7-3.5

Lab ID#: 1611201-07A

EPA METHOD TO-17

File Name:	**6112817**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 3:04:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 08:12 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	67	50-150

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Client Sample ID: DUP-2

Lab ID#: 1611201-08A

EPA METHOD TO-17

File Name:	**6112818**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 3:04:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 08:52 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	100	50-150

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Client Sample ID: VP-7-7

Lab ID#: 1611201-09A

EPA METHOD TO-17

File Name:	**6112819**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 3:35:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 09:32 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	101	50-150

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Client Sample ID: VP-8-3.5

Lab ID#: 1611201-10A

EPA METHOD TO-17

File Name:	**6112820**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 2:25:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 10:11 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	100	50-150

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Client Sample ID: VP-8-7
Lab ID#: 1611201-11A
EPA METHOD TO-17

File Name:	**6112821**	**Date of Extraction: NA**	**Date of Collection: 11/10/16 1:48:00 PM**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 10:51 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	61	50-150

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Client Sample ID: VP-9-7
Lab ID#: 1611201-12A
EPA METHOD TO-17

File Name:	**6112822**	**Date of Extraction: NA**	**Date of Collection: 11/11/16 10:30:00 A**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 11:30 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600
Container Type: TO-17 VI Tube

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

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Client Sample ID: Lab Blank

Lab ID#: 1611201-13A

EPA METHOD TO-17

File Name:	**6112807**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 12:14 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	17	Not Detected	Not Detected

Air Sample Volume(L): 0.0600

Container Type: NA - Not Applicable

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

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Client Sample ID: CCV
Lab ID#: 1611201-14A
EPA METHOD TO-17

File Name:	**6112802**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 08:54 AM**

Compound	%Recovery
Naphthalene	119

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

Surrogates	%Recovery	Method Limits
Naphthalene-d8	101	50-150

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Client Sample ID: LCS
Lab ID#: 1611201-15A
EPA METHOD TO-17

File Name:	**6112803**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 09:34 AM**

Compound	%Recovery	Method Limits
Naphthalene	107	70-130

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

Surrogates	%Recovery	Method Limits
Naphthalene-d8	105	50-150

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Client Sample ID: LCSD
Lab ID#: 1611201-15AA
EPA METHOD TO-17

File Name:	**6112804**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/16 10:14 AM**

Compound	%Recovery	Method Limits
Naphthalene	104	70-130

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

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

TO-17 SAMPLE COLLECTION

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

Project Manager: Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company: GHD Email: Judy.Gilbert@GHD.com
Address: 5900 Hollis St. A City: Emeryville State: CA Zip: 94608
Phone: 510-420-3314 Fax: 510-495-5572

Project Info:
P.O. #:
Project #: 311950
Project Name: Chevron 95607

Turn Around Time: ☐ Normal ☐ Rush _____ specify

Reporting Units: ☐ ppmv ☐ ppbv ☐ µg/m3 ☐ mg/m3

Lab I.D.	Field Sample I.D. (Location)	Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor/Outdoor % RH	Indoor/Outdoor Temp	Indoor Air	Outdoor Air	Soil Vapor	Other ( )
01A	VP-1-7	60143465	11/09/16	11:40	1140			60ml	54	74	☐	☐	☒	☐
02A	VP-1-12	60137622	"	12:17	1217			"	54	75	☐	☐	☒	☐
03A	VP-2-7	60147038	"	930	930			"	54	70	☐	☐	☒	☐
04A	VP-4-5,5	60150573	"	1250 ~~12:45~~	~~12:47~~ 1250 &I			"	52	80	☐	☐	☒	☐
05A	VP-5-7	60145501	11/10/16	1003	1004			"	63	70	☐	☐	☒	☐
06A	VP-5-12	60150347	"	1054	1054			"	61	71	☐	☐	☒	☐
07A	VP-7-3,5	60143690	"	1504	1504			"	48	75	☐	☐	☒	☐
08A	Dup-2	60149649	"	1504	1504			"	48	75	☐	☐	☒	☐
09A	VP-7-7	60155335	"	1535	1535			"	48	75	☐	☐	☒	☐
10A	VP-8-3,5	60130915	"	1425	1425			"	48	75	☐	☐	☒	☐

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/11/16 1620	[signature]	11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Analysis:
Naphthalene by TO-17

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		3.8c	Good	Yes No None	16112011

TO-17 SAMPLE COLLECTION

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.

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

Project Manager: Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company: GHD Email:
Address: 5900 Hollis st A City: Emeryville State: CA Zip: 94608
Phone: 510-420-3314 Fax: 510-495-5572

Project Info:
P.O. #:
Project #: 311950
Project Name: Chevron 95607

Turn Around Time: ☒ Normal ☐ Rush (specify)

Reporting Units: ☐ ppmv ☐ ppbv ☐ µg/m3 ☐ mg/m3

Lab I.D.	Field Sample I.D. (Location)	Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor/Outdoor % RH	Indoor/Outdoor Temp	Indoor Air	Outdoor Air	Soil Vapor	Other ( )
11A	VP-8-7	G0143763	11/10/16	1348	1348			60mL	48	75	☐	☐	☒	☐
12A	VP-9-7	G0147226	11/11/16	1030	1030			1L	70	70	☐	☐	☒	☐
											☐	☐	☐	☐
											☐	☐	☐	☐
											☐	☐	☐	☐
											☐	☐	☐	☐
											☐	☐	☐	☐
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											☐	☐	☐	☐
											☐	☐	☐	☐
											☐	☐	☐	☐

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/11/16 1620	[signature] FEDEX	11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Analysis:
Naphthalene by TO-17

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	HD		3.8°C	Good	Yes No (None)	161201

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11/29/2016
Ms. Judy Gilbert
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chevron 95607
Project #: 311950
Workorder #: 1611212A

Dear Ms. Judy Gilbert

The following report includes the data for the above referenced project for sample(s) received on 11/11/2016 at Air Toxics Ltd.

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

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

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1611212A

Work Order Summary

CLIENT:	Ms. Judy Gilbert GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	510-420-3314	**P.O. #**	NWENV009560700801
FAX:	510-420-9170	**PROJECT #**	311950 Chevron 95607
DATE RECEIVED:	11/11/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/29/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP-1-7	TO-15	3.5 "Hg	15.4 psi
02A	VP-1-12	TO-15	4.9 "Hg	15 psi
03A	VP-2-7	TO-15	4.3 "Hg	14.6 psi
04A	VP-4-5.5	TO-15	4.9 "Hg	14.9 psi
05A	VP-5-7	TO-15	4.3 "Hg	14.9 psi
06A	VP-5-12	TO-15	3.9 "Hg	14.9 psi
07A	VP-8-7	TO-15	17.8 "Hg	14.9 psi
08A	VP-7-3.5	TO-15	4.3 "Hg	15.1 psi
09A	Dup-2	TO-15	5.5 "Hg	14.9 psi
10A	VP-7-7	TO-15	3.9 "Hg	15.2 psi
11A	VP-8-3.5	TO-15	6.3 "Hg	15.2 psi
12A	VP-9-3.5	TO-15	15.5 "Hg	15 psi
13A	VP-9-7	TO-15	13.9 "Hg	14.7 psi
14A	VP-3-12	TO-15	0.3 psi	15.1 psi
15A	Dup-1	TO-15	20.2 "Hg	15 psi
16A	Lab Blank	TO-15	NA	NA
16B	Lab Blank	TO-15	NA	NA
17A	CCV	TO-15	NA	NA
17B	CCV	TO-15	NA	NA
18A	LCS	TO-15	NA	NA
18AA	LCSD	TO-15	NA	NA
18B	LCS	TO-15	NA	NA
18BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 11/29/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
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LABORATORY NARRATIVE
EPA Method TO-15
GHD
Workorder# 1611212A

Fifteen 1 Liter Summa Canister (100% Certified) samples were received on November 11, 2016. 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 number of samples received did not match the information on the Chain of Custody (COC). Samples VP-3-12 and Dup-1 were added to the analytical request.

Despite the use of flow controllers for sample collection, the final canister vacuums for sample VP-3-12 were measured at ambient pressure in the field. These ambient pressure readings were confirmed by the laboratory upon sample receipt.

Samples VP-8-7, VP-9-3.5 and Dup-1 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

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.

The hydrocarbon profile present in samples VP-5-12, VP-7-3.5, Dup-2, VP-3-12 and Dup-1 did not resemble that of commercial gasoline. Results were calculated using the response factor derived from the gasoline calibration.

Dilution was performed on samples VP-5-12, VP-7-3.5, Dup-2, VP-3-12 and Dup-1 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: VP-1-7

Lab ID#: 1611212A-01A

No Detections Were Found.

Client Sample ID: VP-1-12

Lab ID#: 1611212A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	1.6	4.5	6.1

Client Sample ID: VP-2-7

Lab ID#: 1611212A-03A

No Detections Were Found.

Client Sample ID: VP-4-5.5

Lab ID#: 1611212A-04A

No Detections Were Found.

Client Sample ID: VP-5-7

Lab ID#: 1611212A-05A

No Detections Were Found.

Client Sample ID: VP-5-12

Lab ID#: 1611212A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	3.8	14	12	45
TPH ref. to Gasoline (MW=100)	380	15000	1600	61000

Client Sample ID: VP-8-7

Lab ID#: 1611212A-07A

No Detections Were Found.

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

Client Sample ID: VP-7-3.5

Lab ID#: 1611212A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	240	7600	970	31000

Client Sample ID: Dup-2

Lab ID#: 1611212A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	250	8500	1000	35000

Client Sample ID: VP-7-7

Lab ID#: 1611212A-10A

No Detections Were Found.

Client Sample ID: VP-8-3.5

Lab ID#: 1611212A-11A

No Detections Were Found.

Client Sample ID: VP-9-3.5

Lab ID#: 1611212A-12A

No Detections Were Found.

Client Sample ID: VP-9-7

Lab ID#: 1611212A-13A

No Detections Were Found.

Client Sample ID: VP-3-12

Lab ID#: 1611212A-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	500	15000	2000	61000

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

Client Sample ID: Dup-1

Lab ID#: 1611212A-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	3100	45000	13000	180000

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Client Sample ID: VP-1-7

Lab ID#: 1611212A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111620**	**Date of Collection:**	**11/9/16 11:36:00 AM**
Dil. Factor:	**2.32**	**Date of Analysis:**	**11/16/16 09:44 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Methyl tert-butyl ether	4.6	Not Detected	17	Not Detected
Naphthalene	2.3	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	470	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: VP-1-12

Lab ID#: 1611212A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111621**	**Date of Collection: 11/9/16 12:04:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/16/16 10:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	1.6	4.5	6.1
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	490	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: VP-2-7

Lab ID#: 1611212A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111622**	**Date of Collection: 11/9/16 9:25:00 AM**	
Dil. Factor:	**2.33**	**Date of Analysis: 11/16/16 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
Naphthalene	2.3	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	480	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: VP-4-5.5

Lab ID#: 1611212A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111623**	**Date of Collection:**	**11/9/16 12:46:00 PM**
Dil. Factor:	**2.41**	**Date of Analysis:**	**11/16/16 11:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	490	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: VP-5-7

Lab ID#: 1611212A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111617**	**Date of Collection:**	**11/10/16 9:58:00 AM**
Dil. Factor:	**2.35**	**Date of Analysis:**	**11/16/16 07:06 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
Naphthalene	2.4	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	480	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: VP-5-12

Lab ID#: 1611212A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111616**	**Date of Collection:**	**11/10/16 10:47:00 A**
Dil. Factor:	**7.71**	**Date of Analysis:**	**11/16/16 06:39 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	3.8	14	12	45
Ethyl Benzene	3.8	Not Detected	17	Not Detected
Toluene	3.8	Not Detected	14	Not Detected
m,p-Xylene	3.8	Not Detected	17	Not Detected
o-Xylene	3.8	Not Detected	17	Not Detected
Methyl tert-butyl ether	15	Not Detected	56	Not Detected
Naphthalene	7.7	Not Detected	40	Not Detected
TPH ref. to Gasoline (MW=100)	380	15000	1600	61000

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: VP-8-7

Lab ID#: 1611212A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111619**	**Date of Collection: 11/10/16 1:40:00 PM**	
Dil. Factor:	**4.95**	**Date of Analysis: 11/16/16 07:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.5	Not Detected	7.9	Not Detected
Ethyl Benzene	2.5	Not Detected	11	Not Detected
Toluene	2.5	Not Detected	9.3	Not Detected
m,p-Xylene	2.5	Not Detected	11	Not Detected
o-Xylene	2.5	Not Detected	11	Not Detected
Methyl tert-butyl ether	9.9	Not Detected	36	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
TPH ref. to Gasoline (MW=100)	250	Not Detected	1000	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: VP-7-3.5

Lab ID#: 1611212A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111614**	**Date of Collection: 11/10/16 2:59:00 PM**	
Dil. Factor:	**4.73**	**Date of Analysis: 11/16/16 05:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.4	Not Detected	7.6	Not Detected
Ethyl Benzene	2.4	Not Detected	10	Not Detected
Toluene	2.4	Not Detected	8.9	Not Detected
m,p-Xylene	2.4	Not Detected	10	Not Detected
o-Xylene	2.4	Not Detected	10	Not Detected
Methyl tert-butyl ether	9.5	Not Detected	34	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
TPH ref. to Gasoline (MW=100)	240	7600	970	31000

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: Dup-2

Lab ID#: 1611212A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111613**	**Date of Collection: 11/10/16**	
Dil. Factor:	**4.93**	**Date of Analysis: 11/16/16 05:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.5	Not Detected	7.9	Not Detected
Ethyl Benzene	2.5	Not Detected	11	Not Detected
Toluene	2.5	Not Detected	9.3	Not Detected
m,p-Xylene	2.5	Not Detected	11	Not Detected
o-Xylene	2.5	Not Detected	11	Not Detected
Methyl tert-butyl ether	9.9	Not Detected	36	Not Detected
Naphthalene	4.9	Not Detected	26	Not Detected
TPH ref. to Gasoline (MW=100)	250	8500	1000	35000

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: VP-7-7

Lab ID#: 1611212A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111612**	**Date of Collection: 11/10/16 3:31:00 PM**	
Dil. Factor:	**2.34**	**Date of Analysis: 11/16/16 05:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
Naphthalene	2.3	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	480	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: VP-8-3.5

Lab ID#: 1611212A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112109**	**Date of Collection:**	**11/10/16 2:19:00 PM**
Dil. Factor:	**5.16**	**Date of Analysis:**	**11/21/16 04:32 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.6	Not Detected	8.2	Not Detected
Ethyl Benzene	2.6	Not Detected	11	Not Detected
Toluene	2.6	Not Detected	9.7	Not Detected
m,p-Xylene	2.6	Not Detected	11	Not Detected
o-Xylene	2.6	Not Detected	11	Not Detected
Methyl tert-butyl ether	10	Not Detected	37	Not Detected
Naphthalene	5.2	Not Detected	27	Not Detected
TPH ref. to Gasoline (MW=100)	260	Not Detected	1000	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: VP-9-3.5

Lab ID#: 1611212A-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111611**	**Date of Collection:**	**11/11/16 9:42:00 AM**
Dil. Factor:	**4.18**	**Date of Analysis:**	**11/16/16 04:36 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.1	Not Detected	6.7	Not Detected
Ethyl Benzene	2.1	Not Detected	9.1	Not Detected
Toluene	2.1	Not Detected	7.9	Not Detected
m,p-Xylene	2.1	Not Detected	9.1	Not Detected
o-Xylene	2.1	Not Detected	9.1	Not Detected
Methyl tert-butyl ether	8.4	Not Detected	30	Not Detected
Naphthalene	4.2	Not Detected	22	Not Detected
TPH ref. to Gasoline (MW=100)	210	Not Detected	850	Not Detected

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

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

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Client Sample ID: VP-9-7

Lab ID#: 1611212A-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111610**	**Date of Collection:**	**11/11/16 10:24:00 A**
Dil. Factor:	**3.73**	**Date of Analysis:**	**11/16/16 04:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.9	Not Detected	6.0	Not Detected
Ethyl Benzene	1.9	Not Detected	8.1	Not Detected
Toluene	1.9	Not Detected	7.0	Not Detected
m,p-Xylene	1.9	Not Detected	8.1	Not Detected
o-Xylene	1.9	Not Detected	8.1	Not Detected
Methyl tert-butyl ether	7.5	Not Detected	27	Not Detected
Naphthalene	3.7	Not Detected	20	Not Detected
TPH ref. to Gasoline (MW=100)	190	Not Detected	760	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: VP-3-12

Lab ID#: 1611212A-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111609**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**9.93**	**Date of Analysis: 11/16/16 03:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.0	Not Detected	16	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Methyl tert-butyl ether	20	Not Detected	72	Not Detected
Naphthalene	9.9	Not Detected	52	Not Detected
TPH ref. to Gasoline (MW=100)	500	15000	2000	61000

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	91	70-130

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Client Sample ID: Dup-1

Lab ID#: 1611212A-15A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111608**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**61.8**	**Date of Analysis: 11/16/16 03:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	31	Not Detected	99	Not Detected
Ethyl Benzene	31	Not Detected	130	Not Detected
Toluene	31	Not Detected	120	Not Detected
m,p-Xylene	31	Not Detected	130	Not Detected
o-Xylene	31	Not Detected	130	Not Detected
Methyl tert-butyl ether	120	Not Detected	440	Not Detected
Naphthalene	62	Not Detected	320	Not Detected
TPH ref. to Gasoline (MW=100)	3100	45000	13000	180000

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1611212A-16A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111607**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 12:58 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	2.0	Not Detected	7.2	Not Detected
Naphthalene	1.0	Not Detected	5.2	Not Detected
TPH ref. to Gasoline (MW=100)	50	Not Detected	200	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1611212A-16B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112108**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 01:21 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	2.0	Not Detected	7.2	Not Detected
Naphthalene	1.0	Not Detected	5.2	Not Detected
TPH ref. to Gasoline (MW=100)	50	Not Detected	200	Not Detected

Container Type: NA - Not Applicable

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

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Client Sample ID: CCV

Lab ID#: 1611212A-17A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 09:48 AM**	

Compound	%Recovery
Benzene	106
Ethyl Benzene	100
Toluene	103
m,p-Xylene	100
o-Xylene	105
Methyl tert-butyl ether	84
Naphthalene	64
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	105	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: CCV

Lab ID#: 1611212A-17B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 10:38 AM**	

Compound	%Recovery
Benzene	102
Ethyl Benzene	96
Toluene	104
m,p-Xylene	98
o-Xylene	98
Methyl tert-butyl ether	84
Naphthalene	64
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	84	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1611212A-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 10:13 AM**	

Compound	%Recovery	Method Limits
Benzene	111	70-130
Ethyl Benzene	108	70-130
Toluene	107	70-130
m,p-Xylene	107	70-130
o-Xylene	109	70-130
Methyl tert-butyl ether	87	70-130
Naphthalene	129	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1611212A-18AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 10:38 AM**	

Compound	%Recovery	Method Limits
Benzene	109	70-130
Ethyl Benzene	108	70-130
Toluene	106	70-130
m,p-Xylene	108	70-130
o-Xylene	108	70-130
Methyl tert-butyl ether	87	70-130
Naphthalene	132	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCS

Lab ID#: 1611212A-18B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 11:03 AM**	

Compound	%Recovery	Method Limits
Benzene	104	70-130
Ethyl Benzene	103	70-130
Toluene	100	70-130
m,p-Xylene	103	70-130
o-Xylene	105	70-130
Methyl tert-butyl ether	82	70-130
Naphthalene	132	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	102	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 1611212A-18BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 11:27 AM**	

Compound	%Recovery	Method Limits
Benzene	106	70-130
Ethyl Benzene	101	70-130
Toluene	102	70-130
m,p-Xylene	102	70-130
o-Xylene	105	70-130
Methyl tert-butyl ether	83	70-130
Naphthalene	130	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	103	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 Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company GHD Email Judy.gilbert@ghd.com
Address 5900 Hollis St. A City Emeryville State CA Zip 94608
Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
01A	VP-1-7	34649	11-9-16	1136	TPHg, BTEX, MTBE by	-30	-5		
02A	VP-1-12	3035	↓	1204	TO-15; O_2, CO_2,	-24	-5		
03A	VP-2-7	1L1620	↓	925	N_2, CH_4, and helium	-27	-5		
04A	VP-4-5.5	37839	↓	1246	by ASTM D-1946;	-29	-5		
05A	VP-5-7	1L1514	11-10-16	958	APH + 5P aromatics	-29	-5		
06A	VP-5-12	1L2729	↓	1047	C8-C12 by TO-15 mod,	-28	-5		
07A	~~VP-6-7 BS~~ VP-8-7	00696	11-10-16	1340	APH 5P aliphatics C5-C12	-30	-19.5		
08A	VP-7-3.5	34088	↓	1459	mod TO-15	-24	-6		
09A	Dup-2	1L1538	↓			-24	-6		
10A	VP-7-7	1L1948	↓	1531		-30	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	11/11/16 1620		11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		4	Good	Yes No (None)	161212

Form 1293 rev.11

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

Project Manager Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company GHD Email Judy.Gilbert@ghd.com
Address 5900 Hollis St. A City Emeryville State CA Zip 94608
Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
11A	VP-8-3.5	1L1706	11-10-16	1419	TPHg, BTEX, MTBE, by TO-15; O_2, CO_2, N_2, CH_4, and helium by ASTM D-1946 APH, SP, C-8-C12 + SP aliphatics C5-C12 by TO-15	-24	-5.5		
12A	VP-9-3.5	1L1534	11-11-16	942		-25	-16		
13A	VP-9-7	15755	"	1024		-28	-14		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/11/16 1620	[signature]	11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		NA	Good	Yes No None	161212

Form 1293 rev.11

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11/29/2016
Ms. Judy Gilbert
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chevron 95607
Project #: 311950
Workorder #: 1611212B

Dear Ms. Judy Gilbert

The following report includes the data for the above referenced project for sample(s) received on 11/11/2016 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1611212B

Work Order Summary

CLIENT:	Ms. Judy Gilbert GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	510-420-3314	**P.O. #**	NWENV009560700801
FAX:	510-420-9170	**PROJECT #**	311950 Chevron 95607
DATE RECEIVED:	11/11/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/29/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP-1-7	Modified TO-15 APH	3.5 "Hg	15.4 psi
01B	VP-1-7	Modified TO-15 APH	3.5 "Hg	15.4 psi
02A	VP-1-12	Modified TO-15 APH	4.9 "Hg	15 psi
02B	VP-1-12	Modified TO-15 APH	4.9 "Hg	15 psi
03A	VP-2-7	Modified TO-15 APH	4.3 "Hg	14.6 psi
03B	VP-2-7	Modified TO-15 APH	4.3 "Hg	14.6 psi
04A	VP-4-5.5	Modified TO-15 APH	4.9 "Hg	14.9 psi
04B	VP-4-5.5	Modified TO-15 APH	4.9 "Hg	14.9 psi
05A	VP-5-7	Modified TO-15 APH	4.3 "Hg	14.9 psi
05B	VP-5-7	Modified TO-15 APH	4.3 "Hg	14.9 psi
06A	VP-5-12	Modified TO-15 APH	3.9 "Hg	14.9 psi
06B	VP-5-12	Modified TO-15 APH	3.9 "Hg	14.9 psi
07A	VP-8-7	Modified TO-15 APH	17.8 "Hg	14.9 psi
07B	VP-8-7	Modified TO-15 APH	17.8 "Hg	14.9 psi
08A	VP-7-3.5	Modified TO-15 APH	4.3 "Hg	15.1 psi
08B	VP-7-3.5	Modified TO-15 APH	4.3 "Hg	15.1 psi
09A	Dup-2	Modified TO-15 APH	5.5 "Hg	14.9 psi
09B	Dup-2	Modified TO-15 APH	5.5 "Hg	14.9 psi
10A	VP-7-7	Modified TO-15 APH	3.9 "Hg	15.2 psi
10B	VP-7-7	Modified TO-15 APH	3.9 "Hg	15.2 psi
11A	VP-8-3.5	Modified TO-15 APH	6.3 "Hg	15.2 psi
11B	VP-8-3.5	Modified TO-15 APH	6.3 "Hg	15.2 psi
12A	VP-9-3.5	Modified TO-15 APH	15.5 "Hg	15 psi

Continued on next page

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WORK ORDER #: 1611212B

Work Order Summary

CLIENT:	Ms. Judy Gilbert GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	510-420-3314	**P.O. #**	NWENV009560700801
FAX:	510-420-9170	**PROJECT #**	311950 Chevron 95607
DATE RECEIVED:	11/11/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/29/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
12B	VP-9-3.5	Modified TO-15 APH	15.5 "Hg	15 psi
13A	VP-9-7	Modified TO-15 APH	13.9 "Hg	14.7 psi
13B	VP-9-7	Modified TO-15 APH	13.9 "Hg	14.7 psi
14A	VP-3-12	Modified TO-15 APH	0.3 psi	15.1 psi
14B	VP-3-12	Modified TO-15 APH	0.3 psi	15.1 psi
15A	Dup-1	Modified TO-15 APH	20.2 "Hg	15 psi
15B	Dup-1	Modified TO-15 APH	20.2 "Hg	15 psi
16A	Lab Blank	Modified TO-15 APH	NA	NA
16B	Lab Blank	Modified TO-15 APH	NA	NA
16C	Lab Blank	Modified TO-15 APH	NA	NA
16D	Lab Blank	Modified TO-15 APH	NA	NA
17A	CCV	Modified TO-15 APH	NA	NA
17B	CCV	Modified TO-15 APH	NA	NA
17C	CCV	Modified TO-15 APH	NA	NA
17D	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 11/29/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 & VPH Fractions
GHD
Workorder# 1611212B

Fifteen 1 Liter Summa Canister (100% Certified) samples were received on November 11, 2016. 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. (Please note that benzene constitutes the >C5-C7 aromatic range and toluene constitutes the >C7-C8 aromatic range. Benzene and toluene concentrations are reported on the TO-15 workorder fraction.)

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

The number of samples received did not match the information on the Chain of Custody (COC). Samples VP-3-12 and Dup-1 were added to the analytical request.

Despite the use of flow controllers for sample collection, the final canister vacuums for sample VP-3-12 were measured at ambient pressure in the field. These ambient pressure readings were confirmed by the laboratory upon sample receipt.

Samples VP-8-7, VP-9-3.5 and Dup-1 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

Dilution was performed on samples VP-5-12, VP-7-3.5, Dup-2, VP-3-12 and Dup-1 due to matrix interference.

The C6-C8 Aliphatic Hydrocarbon result in sample VP-5-12, VP-7-3.5, Dup-2, VP-3-12 and Dup-1 is reported as biased high due to an unknown hydrocarbon co-eluting with surrogate 1,2-Dichloroethane-d4. Since there was no resolution between the unknown and the surrogate, the peak area originating from 1,2-Dichloroethane-d4 could not be discounted and thus was unavoidably included in the calculation for this analytical fraction. The unknown hydrocarbon was classified and reported in the C6-C8 Aliphatic range.

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: VP-1-7

Lab ID#: 1611212B-01A

No Detections Were Found.

Client Sample ID: VP-1-7

Lab ID#: 1611212B-01B

No Detections Were Found.

Client Sample ID: VP-1-12

Lab ID#: 1611212B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	66	78	210

Client Sample ID: VP-1-12

Lab ID#: 1611212B-02B

No Detections Were Found.

Client Sample ID: VP-2-7

Lab ID#: 1611212B-03A

No Detections Were Found.

Client Sample ID: VP-2-7

Lab ID#: 1611212B-03B

No Detections Were Found.

Client Sample ID: VP-4-5.5

Lab ID#: 1611212B-04A

No Detections Were Found.

Client Sample ID: VP-4-5.5

Lab ID#: 1611212B-04B

No Detections Were Found.

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

Client Sample ID: VP-5-7

Lab ID#: 1611212B-05A

No Detections Were Found.

Client Sample ID: VP-5-7

Lab ID#: 1611212B-05B

No Detections Were Found.

Client Sample ID: VP-5-12

Lab ID#: 1611212B-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	77	4700	250	15000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	77	9100	320	37000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	77	300	450	1700

Client Sample ID: VP-5-12

Lab ID#: 1611212B-06B

No Detections Were Found.

Client Sample ID: VP-8-7

Lab ID#: 1611212B-07A

No Detections Were Found.

Client Sample ID: VP-8-7

Lab ID#: 1611212B-07B

No Detections Were Found.

Client Sample ID: VP-7-3.5

Lab ID#: 1611212B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	47	4500	150	14000

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

Client Sample ID: VP-7-3.5

Lab ID#: 1611212B-08A

>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	47	3600	190	15000

Client Sample ID: VP-7-3.5

Lab ID#: 1611212B-08B

No Detections Were Found.

Client Sample ID: Dup-2

Lab ID#: 1611212B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	49	4800	160	15000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	49	3900	200	16000

Client Sample ID: Dup-2

Lab ID#: 1611212B-09B

No Detections Were Found.

Client Sample ID: VP-7-7

Lab ID#: 1611212B-10A

No Detections Were Found.

Client Sample ID: VP-7-7

Lab ID#: 1611212B-10B

No Detections Were Found.

Client Sample ID: VP-8-3.5

Lab ID#: 1611212B-11A

No Detections Were Found.

Client Sample ID: VP-8-3.5

Lab ID#: 1611212B-11B

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

Client Sample ID: VP-8-3.5

Lab ID#: 1611212B-11B

No Detections Were Found.

Client Sample ID: VP-9-3.5

Lab ID#: 1611212B-12A

No Detections Were Found.

Client Sample ID: VP-9-3.5

Lab ID#: 1611212B-12B

No Detections Were Found.

Client Sample ID: VP-9-7

Lab ID#: 1611212B-13A

No Detections Were Found.

Client Sample ID: VP-9-7

Lab ID#: 1611212B-13B

No Detections Were Found.

Client Sample ID: VP-3-12

Lab ID#: 1611212B-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	99	5600	320	18000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	99	8300	410	34000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	99	120	580	710

Client Sample ID: VP-3-12

Lab ID#: 1611212B-14B

No Detections Were Found.

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

Client Sample ID: Dup-1

Lab ID#: 1611212B-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	620	19000	2000	62000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	620	25000	2500	100000

Client Sample ID: Dup-1

Lab ID#: 1611212B-15B

No Detections Were Found.

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Client Sample ID: VP-1-7

Lab ID#: 1611212B-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111620a**	**Date of Collection: 11/9/16 11:36:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 11/16/16 09:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	75	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	95	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	Not Detected	160	Not Detected

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

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Client Sample ID: VP-1-7

Lab ID#: 1611212B-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111620c**	**Date of Collection: 11/9/16 11:36:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 11/16/16 09:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	23	Not Detected	110	Not Detected
>C10-C12 Aromatic Hydrocarbons	23	Not Detected	130	Not Detected

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

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Client Sample ID: VP-1-12

Lab ID#: 1611212B-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111621a**	**Date of Collection: 11/9/16 12:04:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/16/16 10:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	66	78	210
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	24	Not Detected	99	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	24	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	24	Not Detected	170	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-1-12

Lab ID#: 1611212B-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111621c**	**Date of Collection: 11/9/16 12:04:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/16/16 10:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	24	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	24	Not Detected	130	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-2-7

Lab ID#: 1611212B-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111622a**	**Date of Collection: 11/9/16 9:25:00 AM**	
Dil. Factor:	**2.33**	**Date of Analysis: 11/16/16 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	75	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	95	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	Not Detected	160	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-2-7

Lab ID#: 1611212B-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111622c**	**Date of Collection: 11/9/16 9:25:00 AM**	
Dil. Factor:	**2.33**	**Date of Analysis: 11/16/16 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	23	Not Detected	110	Not Detected
>C10-C12 Aromatic Hydrocarbons	23	Not Detected	130	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-4-5.5

Lab ID#: 1611212B-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111623a**	**Date of Collection: 11/9/16 12:46:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/16/16 11:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	Not Detected	78	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	24	Not Detected	99	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	24	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	24	Not Detected	170	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-4-5.5

Lab ID#: 1611212B-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111623c**	**Date of Collection: 11/9/16 12:46:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/16/16 11:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	24	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	24	Not Detected	130	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-5-7

Lab ID#: 1611212B-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111617a**	**Date of Collection: 11/10/16 9:58:00 AM**	
Dil. Factor:	**2.35**	**Date of Analysis: 11/16/16 07:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	24	Not Detected	76	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	24	Not Detected	96	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	24	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	24	Not Detected	160	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-5-7

Lab ID#: 1611212B-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111617c**	**Date of Collection: 11/10/16 9:58:00 AM**	
Dil. Factor:	**2.35**	**Date of Analysis: 11/16/16 07:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	24	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	24	Not Detected	130	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-5-12

Lab ID#: 1611212B-06A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111616a**	**Date of Collection: 11/10/16 10:47:00 A**	
Dil. Factor:	**7.71**	**Date of Analysis: 11/16/16 06:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	77	4700	250	15000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	77	9100	320	37000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	77	300	450	1700
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	77	Not Detected	540	Not Detected

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

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Client Sample ID: VP-5-12

Lab ID#: 1611212B-06B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111616c**	**Date of Collection: 11/10/16 10:47:00 A**	
Dil. Factor:	**7.71**	**Date of Analysis: 11/16/16 06:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	77	Not Detected	380	Not Detected
>C10-C12 Aromatic Hydrocarbons	77	Not Detected	420	Not Detected

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

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Client Sample ID: VP-8-7

Lab ID#: 1611212B-07A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111619a**	**Date of Collection: 11/10/16 1:40:00 PM**	
Dil. Factor:	**4.95**	**Date of Analysis: 11/16/16 07:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	50	Not Detected	160	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	50	Not Detected	200	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	50	Not Detected	290	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	50	Not Detected	340	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-8-7

Lab ID#: 1611212B-07B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111619c**	**Date of Collection: 11/10/16 1:40:00 PM**	
Dil. Factor:	**4.95**	**Date of Analysis: 11/16/16 07:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	50	Not Detected	240	Not Detected
>C10-C12 Aromatic Hydrocarbons	50	Not Detected	270	Not Detected

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

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Client Sample ID: VP-7-3.5

Lab ID#: 1611212B-08A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111614a**	**Date of Collection: 11/10/16 2:59:00 PM**	
Dil. Factor:	**4.73**	**Date of Analysis: 11/16/16 05:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	47	4500	150	14000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	47	3600	190	15000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	47	Not Detected	280	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	47	Not Detected	330	Not Detected

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

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Client Sample ID: VP-7-3.5

Lab ID#: 1611212B-08B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111614c**	**Date of Collection: 11/10/16 2:59:00 PM**	
Dil. Factor:	**4.73**	**Date of Analysis: 11/16/16 05:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	47	Not Detected	230	Not Detected
>C10-C12 Aromatic Hydrocarbons	47	Not Detected	260	Not Detected

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

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Client Sample ID: Dup-2

Lab ID#: 1611212B-09A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111613a**	**Date of Collection: 11/10/16**	
Dil. Factor:	**4.93**	**Date of Analysis: 11/16/16 05:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	49	4800	160	15000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	49	3900	200	16000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	49	Not Detected	290	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	49	Not Detected	340	Not Detected

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

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Client Sample ID: Dup-2

Lab ID#: 1611212B-09B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111613c**	**Date of Collection: 11/10/16**	
Dil. Factor:	**4.93**	**Date of Analysis: 11/16/16 05:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	49	Not Detected	240	Not Detected
>C10-C12 Aromatic Hydrocarbons	49	Not Detected	270	Not Detected

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

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Client Sample ID: VP-7-7

Lab ID#: 1611212B-10A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111612a**	**Date of Collection: 11/10/16 3:31:00 PM**	
Dil. Factor:	**2.34**	**Date of Analysis: 11/16/16 05:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	76	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	96	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	140	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	Not Detected	160	Not Detected

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

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Client Sample ID: VP-7-7

Lab ID#: 1611212B-10B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111612c**	**Date of Collection: 11/10/16 3:31:00 PM**	
Dil. Factor:	**2.34**	**Date of Analysis: 11/16/16 05:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	23	Not Detected	120	Not Detected
>C10-C12 Aromatic Hydrocarbons	23	Not Detected	130	Not Detected

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

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Client Sample ID: VP-8-3.5

Lab ID#: 1611212B-11A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112109a**	**Date of Collection: 11/10/16 2:19:00 PM**	
Dil. Factor:	**5.16**	**Date of Analysis: 11/21/16 04:32 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	52	Not Detected	170	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	52	Not Detected	210	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	52	Not Detected	300	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	52	Not Detected	360	Not Detected

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

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Client Sample ID: VP-8-3.5

Lab ID#: 1611212B-11B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112109c**	**Date of Collection: 11/10/16 2:19:00 PM**	
Dil. Factor:	**5.16**	**Date of Analysis: 11/21/16 04:32 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	52	Not Detected	250	Not Detected
>C10-C12 Aromatic Hydrocarbons	52	Not Detected	280	Not Detected

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

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Client Sample ID: VP-9-3.5

Lab ID#: 1611212B-12A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111611a**	**Date of Collection: 11/11/16 9:42:00 AM**	
Dil. Factor:	**4.18**	**Date of Analysis: 11/16/16 04:36 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	42	Not Detected	140	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	42	Not Detected	170	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	42	Not Detected	240	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	42	Not Detected	290	Not Detected

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

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Client Sample ID: VP-9-3.5

Lab ID#: 1611212B-12B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111611c**	**Date of Collection: 11/11/16 9:42:00 AM**	
Dil. Factor:	**4.18**	**Date of Analysis: 11/16/16 04:36 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	42	Not Detected	200	Not Detected
>C10-C12 Aromatic Hydrocarbons	42	Not Detected	230	Not Detected

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

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Client Sample ID: VP-9-7

Lab ID#: 1611212B-13A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111610a**	**Date of Collection: 11/11/16 10:24:00 A**	
Dil. Factor:	**3.73**	**Date of Analysis: 11/16/16 04:09 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	37	Not Detected	120	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	37	Not Detected	150	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	37	Not Detected	220	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	37	Not Detected	260	Not Detected

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

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Client Sample ID: VP-9-7

Lab ID#: 1611212B-13B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111610c**	**Date of Collection: 11/11/16 10:24:00 A**	
Dil. Factor:	**3.73**	**Date of Analysis: 11/16/16 04:09 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	37	Not Detected	180	Not Detected
>C10-C12 Aromatic Hydrocarbons	37	Not Detected	200	Not Detected

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

eurofins | Air Toxics

Client Sample ID: VP-3-12

Lab ID#: 1611212B-14A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111609a**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**9.93**	**Date of Analysis: 11/16/16 03:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	99	5600	320	18000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	99	8300	410	34000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	99	120	580	710
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	99	Not Detected	690	Not Detected

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

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Client Sample ID: VP-3-12

Lab ID#: 1611212B-14B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111609c**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**9.93**	**Date of Analysis: 11/16/16 03:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	99	Not Detected	490	Not Detected
>C10-C12 Aromatic Hydrocarbons	99	Not Detected	540	Not Detected

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

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Client Sample ID: Dup-1

Lab ID#: 1611212B-15A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111608a**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**61.8**	**Date of Analysis: 11/16/16 03:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	620	19000	2000	62000
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	620	25000	2500	100000
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	620	Not Detected	3600	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	620	Not Detected	4300	Not Detected

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

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Client Sample ID: Dup-1

Lab ID#: 1611212B-15B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111608c**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**61.8**	**Date of Analysis: 11/16/16 03:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	620	Not Detected	3000	Not Detected
>C10-C12 Aromatic Hydrocarbons	620	Not Detected	3400	Not Detected

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

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Client Sample ID: Lab Blank

Lab ID#: 1611212B-16A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111607a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 12:58 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#: 1611212B-16B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111607c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 12:58 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1611212B-16C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112108a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 01:21 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#: 1611212B-16D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112108c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 01:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1611212B-17A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111605a**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 12:08 PM**

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	88
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	91
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	105
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	98

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1611212B-17B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3111605c**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/16/16 12:08 PM**

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons	92
>C10-C12 Aromatic Hydrocarbons	87

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1611212B-17C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112105a**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 11:52 AM**

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	76
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	88
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	107
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	110

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1611212B-17D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3112105c**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/21/16 11:52 AM**

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons	92
>C10-C12 Aromatic Hydrocarbons	95

Container Type: NA - Not Applicable

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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 Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company GHD Email Judy.gilbert@ghd.com
Address 5900 Hollis St. A City Emeryville State CA Zip 94608
Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
01A	VP-1-7	34649	11-9-16	1136	TPHg, BTEX, MTBE by	-30	-5		
02A	VP-1-12	3035	↓	1204	TO-15; O_2, CO_2,	-24	-5		
03A	VP-2-7	1L1620	↓	925	N_2, CH_4, and helium	-27	-5		
04A	VP-4-5.5	37839	↓	1246	by ASTM D-1946;	-29	-5		
05A	VP-5-7	1L1514	11-10-16	958	APH + 5P aromatics	-29	-5		
06A	VP-5-12	1L2729	↓	1047	C8-C12 by TO-15 mod,	-28	-5		
07A	~~VP-6-7 BS~~ VP-8-7	00696	11-10-16	1340	APH 5P aliphatics C5-C12	-30	-19.5		
08A	VP-7-3.5	34088	↓	1459	mod TO-15	-24	-6		
09A	Dup-2	1L1538	↓			-24	-6		
10A	VP-7-7	1L1948	↓	1531		-30	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	11/11/16 1620		11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		4	Good	Yes No (None)	161212

Form 1293 rev.11

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

Project Manager Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company GHD Email Judy.Gilbert@ghd.com
Address 5900 Hollis St. A City Emeryville State CA Zip 94608
Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
11A	VP-8-3.5	1L1706	11-10-16	1419	TPHg, BTEX, MTBE, by TO-15; O_2, CO_2, N_2, CH_4, and helium by ASTM D-1946 APH, SP, C-8-C12 + SP aliphatics C5-C12 by TO-15	-24	-5.5		
12A	VP-9-3.5	1L1534	11-11-16	942		-25	-16		
13A	VP-9-7	15755	"	1024		-28	-14		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/11/16 1620	[signature]	11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		NA	Good	Yes No None	161212

Form 1293 rev.11

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11/29/2016
Ms. Judy Gilbert
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chevron 95607
Project #: 311950
Workorder #: 1611212C

Dear Ms. Judy Gilbert

The following report includes the data for the above referenced project for sample(s) received on 11/11/2016 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1611212C

Work Order Summary

CLIENT:	Ms. Judy Gilbert GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	510-420-3314	**P.O. #**	NWENV009560700801
FAX:	510-420-9170	**PROJECT #**	311950 Chevron 95607
DATE RECEIVED:	11/11/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/29/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP-1-7	Modified ASTM D-1946	3.5 "Hg	15.4 psi
02A	VP-1-12	Modified ASTM D-1946	4.9 "Hg	15 psi
03A	VP-2-7	Modified ASTM D-1946	4.3 "Hg	14.6 psi
04A	VP-4-5.5	Modified ASTM D-1946	4.9 "Hg	14.9 psi
05A	VP-5-7	Modified ASTM D-1946	4.3 "Hg	14.9 psi
06A	VP-5-12	Modified ASTM D-1946	3.9 "Hg	14.9 psi
07A	VP-8-7	Modified ASTM D-1946	17.8 "Hg	14.9 psi
08A	VP-7-3.5	Modified ASTM D-1946	4.3 "Hg	15.1 psi
09A	Dup-2	Modified ASTM D-1946	5.5 "Hg	14.9 psi
10A	VP-7-7	Modified ASTM D-1946	3.9 "Hg	15.2 psi
11A	VP-8-3.5	Modified ASTM D-1946	6.3 "Hg	15.2 psi
12A	VP-9-3.5	Modified ASTM D-1946	15.5 "Hg	15 psi
13A	VP-9-7	Modified ASTM D-1946	13.9 "Hg	14.7 psi
14A	VP-3-12	Modified ASTM D-1946	0.3 psi	15.1 psi
15A	Dup-1	Modified ASTM D-1946	20.2 "Hg	15 psi
16A	Lab Blank	Modified ASTM D-1946	NA	NA
16B	Lab Blank	Modified ASTM D-1946	NA	NA
17A	LCS	Modified ASTM D-1946	NA	NA
17AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 11/29/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
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 - 95630
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LABORATORY NARRATIVE
Modified ASTM D-1946
GHD
Workorder# 1611212C

Fifteen 1 Liter Summa Canister (100% Certified) samples were received on November 11, 2016. 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 minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 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 number of samples received did not match the information on the Chain of Custody (COC). Samples VP-3-12 and Dup-1 were added to the analytical request.

Despite the use of flow controllers for sample collection, the final canister vacuums for sample VP-3-12 were measured at ambient pressure in the field. These ambient pressure readings were confirmed by the laboratory upon sample receipt.

Samples VP-8-7, VP-9-3.5 and Dup-1 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

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-1-7

Lab ID#: 1611212C-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	13
Nitrogen	0.23	80
Carbon Dioxide	0.023	7.1

Client Sample ID: VP-1-12

Lab ID#: 1611212C-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	11
Nitrogen	0.24	79
Carbon Dioxide	0.024	10

Client Sample ID: VP-2-7

Lab ID#: 1611212C-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	7.4
Nitrogen	0.23	80
Carbon Dioxide	0.023	13

Client Sample ID: VP-4-5.5

Lab ID#: 1611212C-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.7

Client Sample ID: VP-5-7

Lab ID#: 1611212C-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-5-7

Lab ID#: 1611212C-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	2.5
Nitrogen	0.24	82
Carbon Dioxide	0.024	15
Methane	0.00024	0.014

Client Sample ID: VP-5-12

Lab ID#: 1611212C-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	5.1
Nitrogen	0.23	74
Carbon Dioxide	0.023	21
Methane	0.00023	0.052

Client Sample ID: VP-8-7

Lab ID#: 1611212C-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.49	12
Nitrogen	0.49	80
Carbon Dioxide	0.049	8.2
Methane	0.00049	0.0014

Client Sample ID: VP-7-3.5

Lab ID#: 1611212C-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	6.4
Nitrogen	0.24	79
Carbon Dioxide	0.024	14
Methane	0.00024	0.26

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

Client Sample ID: Dup-2

Lab ID#: 1611212C-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	5.3
Nitrogen	0.25	78
Carbon Dioxide	0.025	16
Methane	0.00025	0.28

Client Sample ID: VP-7-7

Lab ID#: 1611212C-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	3.9
Nitrogen	0.23	88
Carbon Dioxide	0.023	8.3
Methane	0.00023	0.0044

Client Sample ID: VP-8-3.5

Lab ID#: 1611212C-11A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	11
Nitrogen	0.26	86
Carbon Dioxide	0.026	3.1
Methane	0.00026	0.0042
Helium	0.13	0.22

Client Sample ID: VP-9-3.5

Lab ID#: 1611212C-12A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.42	11
Nitrogen	0.42	85
Carbon Dioxide	0.042	4.3
Methane	0.00042	0.0028

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

Client Sample ID: VP-9-7

Lab ID#: 1611212C-13A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.37	13
Nitrogen	0.37	74
Carbon Dioxide	0.037	13
Methane	0.00037	0.0048

Client Sample ID: VP-3-12

Lab ID#: 1611212C-14A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.20	17
Nitrogen	0.20	80
Carbon Dioxide	0.020	2.9
Methane	0.00020	0.13

Client Sample ID: Dup-1

Lab ID#: 1611212C-15A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.62	8.0
Nitrogen	0.62	82
Carbon Dioxide	0.062	9.4
Methane	0.00062	0.42

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Client Sample ID: VP-1-7

Lab ID#: 1611212C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111809**	**Date of Collection: 11/9/16 11:36:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 11/18/16 09:39 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	13
Nitrogen	0.23	80
Carbon Dioxide	0.023	7.1
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

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

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Client Sample ID: VP-1-12

Lab ID#: 1611212C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111810**	**Date of Collection: 11/9/16 12:04:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/18/16 10:06 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	11
Nitrogen	0.24	79
Carbon Dioxide	0.024	10
Methane	0.00024	Not Detected
Helium	0.12	Not Detected

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

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Client Sample ID: VP-2-7

Lab ID#: 1611212C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111811**	**Date of Collection: 11/9/16 9:25:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 11/18/16 10:31 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	7.4
Nitrogen	0.23	80
Carbon Dioxide	0.023	13
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

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

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Client Sample ID: VP-4-5.5

Lab ID#: 1611212C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111812**	**Date of Collection: 11/9/16 12:46:00 PM**	
Dil. Factor:	**2.41**	**Date of Analysis: 11/18/16 10:59 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.7
Methane	0.00024	Not Detected
Helium	0.12	Not Detected

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

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Client Sample ID: VP-5-7

Lab ID#: 1611212C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111813**	**Date of Collection: 11/10/16 9:58:00 AM**	
Dil. Factor:	**2.35**	**Date of Analysis: 11/18/16 11:23 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	2.5
Nitrogen	0.24	82
Carbon Dioxide	0.024	15
Methane	0.00024	0.014
Helium	0.12	Not Detected

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

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Client Sample ID: VP-5-12

Lab ID#: 1611212C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111814**	**Date of Collection: 11/10/16 10:47:00 A**	
Dil. Factor:	**2.31**	**Date of Analysis: 11/18/16 11:59 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	5.1
Nitrogen	0.23	74
Carbon Dioxide	0.023	21
Methane	0.00023	0.052
Helium	0.12	Not Detected

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

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Client Sample ID: VP-8-7

Lab ID#: 1611212C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111815**	**Date of Collection: 11/10/16 1:40:00 PM**	
Dil. Factor:	**4.93**	**Date of Analysis: 11/18/16 01:17 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.49	12
Nitrogen	0.49	80
Carbon Dioxide	0.049	8.2
Methane	0.00049	0.0014
Helium	0.25	Not Detected

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

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Client Sample ID: VP-7-3.5

Lab ID#: 1611212C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111816**	**Date of Collection: 11/10/16 2:59:00 PM**	
Dil. Factor:	**2.36**	**Date of Analysis: 11/18/16 02:06 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	6.4
Nitrogen	0.24	79
Carbon Dioxide	0.024	14
Methane	0.00024	0.26
Helium	0.12	Not Detected

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

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Client Sample ID: Dup-2

Lab ID#: 1611212C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111817**	**Date of Collection: 11/10/16**	
Dil. Factor:	**2.47**	**Date of Analysis: 11/18/16 03:16 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	5.3
Nitrogen	0.25	78
Carbon Dioxide	0.025	16
Methane	0.00025	0.28
Helium	0.12	Not Detected

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

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Client Sample ID: VP-7-7

Lab ID#: 1611212C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111818**	**Date of Collection: 11/10/16 3:31:00 PM**	
Dil. Factor:	**2.34**	**Date of Analysis: 11/18/16 03:40 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	3.9
Nitrogen	0.23	88
Carbon Dioxide	0.023	8.3
Methane	0.00023	0.0044
Helium	0.12	Not Detected

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

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Client Sample ID: VP-8-3.5

Lab ID#: 1611212C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111808**	**Date of Collection: 11/10/16 2:19:00 PM**	
Dil. Factor:	**2.58**	**Date of Analysis: 11/18/16 09:09 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	11
Nitrogen	0.26	86
Carbon Dioxide	0.026	3.1
Methane	0.00026	0.0042
Helium	0.13	0.22

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

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Client Sample ID: VP-9-3.5

Lab ID#: 1611212C-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111819**	**Date of Collection: 11/11/16 9:42:00 AM**	
Dil. Factor:	**4.18**	**Date of Analysis: 11/18/16 04:04 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.42	11
Nitrogen	0.42	85
Carbon Dioxide	0.042	4.3
Methane	0.00042	0.0028
Helium	0.21	Not Detected

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

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Client Sample ID: VP-9-7

Lab ID#: 1611212C-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111820**	**Date of Collection: 11/11/16 10:24:00 A**	
Dil. Factor:	**3.72**	**Date of Analysis: 11/18/16 04:32 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.37	13
Nitrogen	0.37	74
Carbon Dioxide	0.037	13
Methane	0.00037	0.0048
Helium	0.19	Not Detected

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

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Client Sample ID: VP-3-12

Lab ID#: 1611212C-14A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111821**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**1.99**	**Date of Analysis: 11/18/16 04:57 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.20	17
Nitrogen	0.20	80
Carbon Dioxide	0.020	2.9
Methane	0.00020	0.13
Helium	0.10	Not Detected

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

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Client Sample ID: Dup-1

Lab ID#: 1611212C-15A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111822**	**Date of Collection: 11/9/16 4:36:00 PM**	
Dil. Factor:	**6.19**	**Date of Analysis: 11/18/16 05:21 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.62	8.0
Nitrogen	0.62	82
Carbon Dioxide	0.062	9.4
Methane	0.00062	0.42
Helium	0.31	Not Detected

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

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Client Sample ID: Lab Blank

Lab ID#: 1611212C-16A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111806**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/16 07:48 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#: 1611212C-16B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111807c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/16 08:21 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#: 1611212C-17A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/16 06:33 AM**	

Compound	%Recovery	Method Limits
Oxygen	96	85-115
Nitrogen	95	85-115
Carbon Dioxide	102	85-115
Methane	102	85-115
Helium	102	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1611212C-17AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10111828**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/16 08:11 PM**	

Compound	%Recovery	Method Limits
Oxygen	96	85-115
Nitrogen	94	85-115
Carbon Dioxide	102	85-115
Methane	101	85-115
Helium	103	85-115

Container Type: NA - Not Applicable

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

Project Manager Judy Gilbert
Collected by: (Print and Sign) Ben Summerset
Company GHD Email Judy.gilbert@ghd.com
Address 5900 Hollis St. A City Emeryville State CA Zip 94608
Phone 510-420-0700 Fax 510-420-9170

Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
01A	VP-1-7	34649	11-9-16	1136	TPHg, BTEX, MTBE by	-30	-5		
02A	VP-1-12	3035	↓	1204	TO-15; O_2, CO_2,	-24	-5		
03A	VP-2-7	1L1620	↓	925	N_2, CH_4, and helium	-27	-5		
04A	VP-4-5.5	37839	↓	1246	by ASTM D-1946;	-29	-5		
05A	VP-5-7	1L1514	11-10-16	958	APH + 5P aromatics	-29	-5		
06A	VP-5-12	1L2729	↓	1047	C8-C12 by TO-15 mod,	-28	-5		
07A	~~VP-6-7 BS~~ VP-8-7	00696	11-10-16	1340	APH 5P aliphatics C5-C12	-30	-19.5		
08A	VP-7-3.5	34088	↓	1459	mod TO-15	-24	-6		
09A	Dup-2	1L1538	↓			-24	-6		
10A	VP-7-7	1L1948	↓	1531		-30	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	11/11/16 1620		11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		4	Good	Yes No (None)	161212

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Project Info:
P.O. #
Project # 311950
Project Name Chevron 95607

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)
11A	VP-8-3.5	1L1706	11-10-16	1419	TPHg, BTEX, MTBE, by TO-15; O_2, CO_2, N_2, CH_4, and helium by ASTM D-1946 APH, SP, C-8-C12 + SP aliphatics C5-C12 by TO-15	-24	-5.5		
12A	VP-9-3.5	1L1534	11-11-16	942		-25	-16		
13A	VP-9-7	15755	"	1024		-28	-14		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/11/16 1620	[signature]	11/11/16 1620
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	H/D		NA	Good	Yes No None	161212

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