Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
cmacleod@chevron.com

January 12, 2016

RECEIVED
By Alameda County Environmental Health 2:35 pm, Jan 13, 2016

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 #RO 0350

I have reviewed the attached Monthly Remedial Progress Report – November 2015.

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: Monthly Remedial Progress Report – November 2015

January 12, 2016 Reference No. 311950

Mr. Mark Detterman
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502

Re: Monthly Remedial Progress Report – November 2015
Former Chevron Station 9-5607
5269 Crow Canyon Road
Castro Valley, California
Fuel Leak Case RO0350

Dear Mr. Detterman:

GHD, on behalf of Chevron Environmental Management Company (EMC), is providing this *Monthly Remedial Progress Report – November 2015* (Report), for the site referenced above (Figure 1). This report was prepared in accordance with Alameda County Environmental Health Services (ACEHS) Approval of the Remedial Action Plan, dated December 11, 2013. This report includes a monthly and cumulative summary of the dual-phase extraction (DPE) system operations for the reporting period between October 29, 2015 and November 25, 2015 (Tables 1 through 4).

The soil vapor extraction (SVE) and groundwater extraction and treatment (GWET) systems (collectively referred to as the DPE system) operated continuously from October 29, 2015 until a temporary shutdown occurred on the SVE system on November 11, 2015 and the GWE system on November 14, 2015 due to a low internal temperature alarm. The DPE system was restarted on November 18, 2015. In addition, the DPE system shutdown on November 23, 2015 due to a power outage at the site. The DPE system was restarted on November 25, 2015. On November 9, 2015, GHD collected compliance effluent samples from the SVE and GWET systems. During the reporting period, approximately 0.03 pounds of TPHg and 0.0001 pounds of benzene were removed via the dissolved phase (Table 2). In addition, approximately 737 pounds of TPHg and 9.3 pounds of benzene were removed via the vapor phase (Table 4). A summary of the DPE system operational performance for the month of November 2015 is presented below.

GHD Services Inc.
5900 Hollis Street Suite A Emeryville California 94608 USA
T 510 420 0700 **F** 510 420 9170 **W** www.ghd.com

VAPOR-PHASE EXTRACTION DATA - NOVEMBER 2015

Soil Vapor Influent Flow Rate (average scfm)	141 scfm
Soil Vapor Laboratory Influent Concentrations (TPHg ppmv)	870 ppmv
Soil Vapor Laboratory Influent Concentrations (Benzene ppmv)	13 ppmv
Soil Vapor Mass Removal (lb TPHg/period)	737 pounds
Soil Vapor Mass Removal (lb Benzene/period)	9.3 pounds
Soil Vapor Extraction Period Operating Uptime (hours)	447.7 hours
Soil Vapor Treatment Destruction Efficiency (%)	>99.5%

ppmv – parts per million by volume

scfm – standard cubic feet per minute

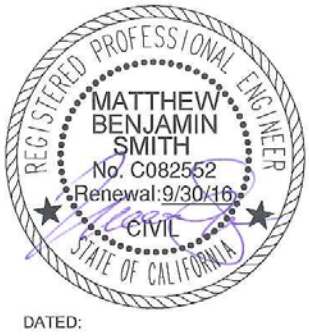
DISSOLVED-PHASE EXTRACTION DATA - NOVEMBER 2015

Maximum Groundwater Extraction Rate (gpm)	0.49 gpm
Average Groundwater Extraction Rate (gpm)	0.36 gpm
Dissolved-Phase Mass Removal Rate (lb TPHg/period)	0.03 pounds
Dissolved-Phase Mass Removal Rate (lb Benzene/period)	0.0001 pounds
Total Volume Groundwater Treated (gallons)	11,200 gallons
Groundwater Extraction Period Operating Uptime (hours)	513.5 hours

gpm – gallons per minute

Please contact Judy Gilbert of GHD at (510) 420-3314, if you have any questions or comments.

Sincerely,
GHD



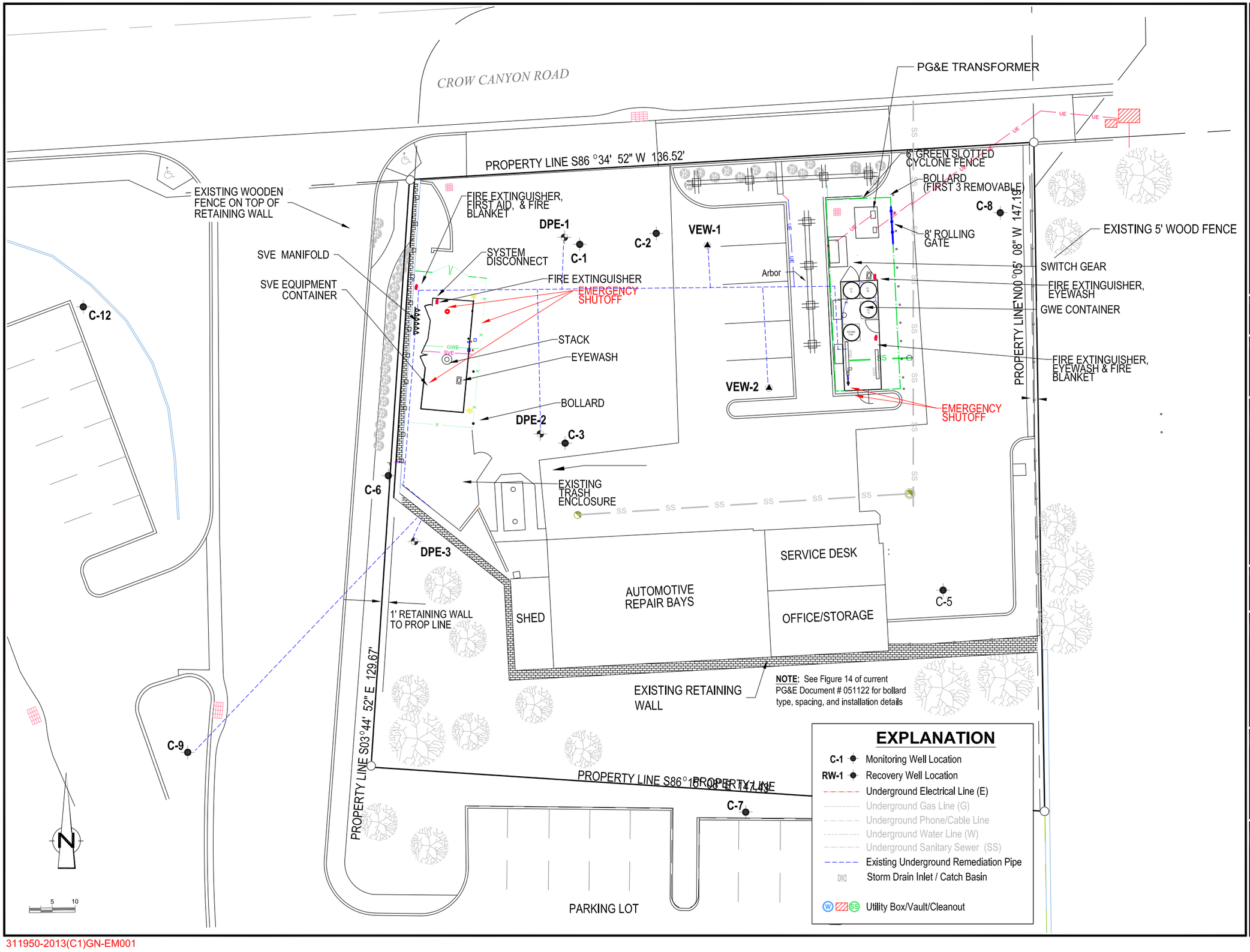
Matthew B. Smith, PE 82552

bcf/mws/55

Figure 1	General Site Plan
Table 1	Groundwater Extraction & Treatment System – Influent and Effluent Hydrocarbon Concentration Data
Table 2	Groundwater Extraction & Treatment System - Operational Data and Dissolved Phase Hydrocarbons Mass Removal Data
Table 3	Soil Vapor Extraction System - Operational Data
Table 4	Soil Vapor Extraction System - Analytical and Mass Removal Data
Attachment A	Eurofins Lancaster Laboratory Analytical Report
Attachment B	Eurofins Air Toxics Laboratory Analytical Report

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

Figure



311950-2013(C1)GN-EM001

CLIENT

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY

PROJECT

FORMER CHEVRON STATION #9-5607
5269 CROW CANYON ROAD
CASTRO VALLEY, CA

TITLE

GENERAL SITE PLAN

PROJECT #311950

DRAWING STATUS

N°	Revision	Date	By
1	RELOCATE GWE TRAILER	10/12/13	DK
1	ADD SVE-1 AND SVE-2	10/23/13	DK
2	RELOCATE GWE TRAILER	3/25/14	DS
3	AS-BUILT	10/10/14	DS

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL.

GHD
5900 HOLLIS STREET, SUITE A
EMERYVILLE CA 94608
PHONE: 510.420.0700
FAX: 510.420.9170
WWW.GHD.COM

Source Reference:

Designed By: DS	Date: 10/10/2014	Drawing N°: FIG 1
Drafted By: DS	Date: 10/10/2014	
Reviewed By: DK	Date: 10/23/2014	
Scale: 1:10		

Tables

Table 1
Groundwater Extraction and Treatment System
Influent and Effluent Hydrocarbon Concentration Data
Former Chevron Station # 9-5607
5269 Crow Canyon Road, Castro Valley, California

	Influent						Midfluent 1						Midfluent 2						Effluent						
Sample Date (mm/dd/yy)	TPHg Conc. (µg/L)	Benzene Conc. (µg/L)	Toluene Conc. (µg/L)	Ethylbenzene Conc. (µg/L)	Xylenes Conc. (µg/L)	MTBE Conc. (µg/L)	TPHg Conc. (µg/L)	Benzene Conc. (µg/L)	Toluene Conc. (µg/L)	Ethylbenzene Conc. (µg/L)	Xylenes Conc. (µg/L)	MTBE Conc. (µg/L)	TPHg Conc. (µg/L)	Benzene Conc. (µg/L)	Toluene Conc. (µg/L)	Ethylbenzene Conc. (µg/L)	Xylenes Conc. (µg/L)	MTBE Conc. (µg/L)	TPHg Conc. (µg/L)	Benzene Conc. (µg/L)	Toluene Conc. (µg/L)	Ethylbenzene Conc. (µg/L)	Xylenes Conc. (µg/L)	MTBE Conc. (µg/L)	pH[a]
09/12/14	6,000	1,800	19	120	94	4.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	7.4
10/13/14	7,500	1,600	37	76	630	4.0	<50	2.0	<0.5	<0.5	<0.5	<0.5	NM	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
11/06/14	8,000	990	140	100	590	<10	<50	2.0	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
12/02/14	7,000	780	150	160	810	4.0	<50	2.0	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	7.3
01/14/15	3,700	290	36	33	390	3.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
02/04/15	4,100	190	14	<0.5	350	3.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
03/03/15	4,300	280	45	43	320	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	6.8
04/16/15	1,800	180	6.0	0.8	92	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
05/14/15	2,900	570	16	42	89	3.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
06/23/15	380	3.0	<0.5	<0.5	5.0	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	7.2
07/20/15	480	2.0	<0.5	<0.5	6.0	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
08/05/15	380	1.0	<0.5	<0.5	3.0	3.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
09/02/15	1,300	120	3.0	2.0	14	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	7.2
10/01/15	1,100	56	1.0	0.7 J	6.0	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	7.4
11/09/15	340	1.0	<0.5	<0.5	1.0	2.0	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NM	NM	NM	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<0.5	

Notes and Abbreviations:

mm/dd/yy = month/day/year
Conc. = concentration
TPHg = total petroleum hydrocarbons quantified as gasoline
MTBE = methyl tertiary butyl ether
µg/L = micrograms per liter
<X.X = not detected at or below the detection limit indicated
a = pH measured in the field
J = estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
NM = Not meaured due to nondetect at MID-1

TPHg analyzed by EPA Method 8015M.

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B.

MTBE analyzed by EPA Method 8260B.

Table 2
Groundwater Extraction and Treatment System
Operational Data and Dissolved Phase Hydrocarbons Mass Removal Data
Former Chevron Station # 9-5607
5269 Crow Canyon Road, Castro Valley, California

Date (mm/dd/yy)	Well IDs	Operatin Time (hours)	Totalizer Reading (gallons)	Period Volume (gallons)	Period Operational Flow Rate (gpm)	Cumulative Volume (gallons)	TPHg			Benzene			MTBE		
							TPHg Concentration (µg/L)	Period Removal[2] (pounds)	Cumulative Removal (pounds)	Benzene Concentration (µg/L)	Period Removal[2] (pounds)	Cumulative Removal (pounds)	MTBE Concentration (µg/L)	Period Removal[2] (pounds)	Cumulative Removal (pounds)
9/12/14 9:00	DPE-1 - DPE-3, C-9	---	330,400	0	---	0	---	---	---	---	---	---	---	---	---
9/12/14 14:00	DPE-1 - DPE-3, C-9	5.0	331,500	1,100	3.67	1,100	6,000	0.06	0.06	1,800	0.02	0.02	4.0	0.00004	0.00004
9/29/14 14:00	DPE-1 - DPE-3, C-9	5.5	332,000	500	1.52	1,600	---	0.03	0.08	---	0.01	0.02	---	0.00002	0.00005
10/6/14 11:00	DPE-1 - DPE-3, C-9	5.0	332,700	700	2.33	2,300	---	0.04	0.12	---	0.01	0.03	---	0.00002	0.00008
10/13/14 14:00	DPE-1 - DPE-3, C-9	106.0	341,085	8,385	1.32	10,685	7,500	0.52	0.64	1,600	0.11	0.15	4.0	0.0003	0.0004
10/20/14 11:30	DPE-1 - DPE-3, C-9	166.0	348,600	7,515	0.75	18,200	---	0.47	1.1	---	0.10	0.25	---	0.0003	0.0006
10/27/14 11:00	DPE-1 - DPE-3, C-9	117.0	354,200	5,600	0.80	23,800	---	0.35	1.5	---	0.07	0.32	---	0.0002	0.0008
11/6/14 13:15	DPE-1 - DPE-3, C-9	67.0	364,390	10,190	2.53	33,990	8,000	0.68	2.1	990	0.08	0.41	10	0.0009	0.002
11/21/14 13:50	DPE-1 - DPE-3, C-9	188.6	373,033	8,643	0.76	42,633	---	0.58	2.7	---	0.07	0.48	---	0.0007	0.002
12/2/14 15:15	DPE-1 - DPE-3, C-9	113.3	379,635	6,602	0.97	49,235	7,000	0.39	3.1	780	0.04	0.52	4.0	0.0002	0.003
12/16/14 11:30	DPE-1 - DPE-3, C-9	249.1	399,600	19,965	1.34	69,200	---	1.17	4.3	---	0.13	0.65	---	0.0007	0.003
12/31/14 10:30	DPE-1 - DPE-3, C-9	359.1	436,625	37,025	1.72	106,225	---	2.16	6.4	---	0.24	0.89	---	0.001	0.004
1/14/15 11:25	DPE-1 - DPE-3, C-9	336.5	461,160	24,535	1.22	130,760	3,700	0.76	7.2	290	0.06	0.95	3.0	0.0006	0.005
1/23/15 14:35	DPE-1 - DPE-3, C-9	219.1	472,688	11,528	0.88	142,288	---	0.36	7.5	---	0.03	0.98	---	0.0003	0.005
2/4/15 11:00	DPE-1 - DPE-3, C-9	281.0	486,220	13,532	0.80	155,820	4,100	0.46	8.0	190	0.02	1.0	3.0	0.0003	0.006
2/17/15 14:30	DPE-1 - DPE-3, C-9	82.3	491,310	5,090	1.03	160,910	---	0.17	8.2	---	0.01	1.0	---	0.0001	0.006
3/3/15 14:25	DPE-1 - DPE-3, C-9	167.0	504,915	13,605	1.36	174,515	4,300	0.49	8.7	280	0.03	1.0	2.0	0.0002	0.006
3/11/15 11:45	DPE-1 - DPE-3, C-9	25.9	507,364	2,449	1.58	176,964	---	0.09	8.8	---	0.01	1.0	---	0.00004	0.006
3/16/15 12:00	DPE-1 - DPE-3, C-9	28.7	509,837	2,473	1.44	179,437	---	0.09	8.8	---	0.01	1.1	---	0.00004	0.006
4/2/15 9:30	DPE-1 - DPE-3, C-9	223.8	525,400	15,563	1.16	195,000	---	0.56	9.4	---	0.04	1.1	---	0.0003	0.006
4/16/15 14:30	DPE-1 - DPE-3, C-9	340.8	546,110	20,710	1.01	215,710	1,800	0.31	9.7	180	0.03	1.1	2.0	0.0003	0.007
4/30/15 10:20	DPE-1 - DPE-3, C-9	236.9	559,100	12,990	0.91	228,700	---	0.20	9.9	---	0.02	1.1	---	0.0002	0.007
5/14/15 12:15	DPE-1 - DPE-3, C-9	21.2	562,200	3,100	2.44	231,800	2,900	0.08	10.0	570	0.01	1.2	3.0	0.0001	0.007
5/29/15 9:30	DPE-1 - DPE-3, C-9	259.6	576,000	13,800	0.89	245,600	---	0.33	10.3	---	0.07	1.2	---	0.0002	0.007
6/23/15 11:45	DPE-1 - DPE-3, C-9	602.3	597,000	21,000	0.58	266,600	380	0.07	10.4	3.0	0.0005	1.2	2.0	0.0004	0.008
7/20/15 9:00	DPE-1 - DPE-3, C-9	645.2	616,830	19,830	0.51	286,430	480	0.08	10.5	2.0	0.0003	1.2	2.0	0.0003	0.008
8/5/15 15:15	DPE-1 - DPE-3, C-9	390.2	627,335	10,505	0.45	296,935	380	0.03	10.5	1.0	0.0001	1.2	3.0	0.0003	0.008
8/19/15 15:00	DPE-1 - DPE-3, C-9	335.8	635,900	8,565	0.43	305,500	---	0.03	10.5	---	0.0001	1.2	---	0.0002	0.008
9/2/15 14:00	DPE-1 - DPE-3, C-9	239.0	641,700	5,800	0.40	311,300	1,300	0.06	10.6	120	0.006	1.2	2.0	0.0001	0.009
9/16/15 17:30	DPE-1 - DPE-3, C-9	339.5	649,900	8,200	0.40	319,500	---	0.09	10.7	---	0.008	1.2	---	0.0001	0.009
10/1/15 14:00	DPE-1 - DPE-3, C-9	356.5	650,430	530	0.02	320,030	1,100	0.005	10.7	56	0.0002	1.2	2.0	0.00001	0.009
10/22/15 18:30	DPE-1 - DPE-3, C-9	342.1	661,400	10,970	0.53	331,000	---	0.10	10.8	---	0.005	1.2	---	0.0002	0.009
10/28/15 16:37	DPE-1 - DPE-3, C-9	142.1	663,200	1,800	0.21	332,800	---	0.02	10.8	---	0.0008	1.2	---	0.00003	0.009
11/9/15 12:15	DPE-1 - DPE-3, C-9	283.6	669,730	6,530	0.38	339,330	340	0.02	10.8	1.0	0.0001	1.2	2.0	0.00011	0.009
11/18/15 13:10	DPE-1 - DPE-3, C-9	111.1	670,913	1,183	0.18	340,513	---	0.00	10.8	---	0.00001	1.2	---	0.00002	0.009
11/25/15 17:34	DPE-1 - DPE-3, C-9	118.8	674,400	3,487	0.49	344,000	---	0.01	10.8	---	0.00003	1.2	---	0.00006	0.009
	Total Extracted Volume (gal):					**344,000**	**Pounds Removed:**	**0.03**	**10.8**	**Pounds Removed:**	**0.0001**	**1.2**	**Pounds Removed:**	**0.0002**	**0.009**
	Average Operational Flow Rate (gpm)[3]:					**0.76**	**Gallons Removed[4]:**	**0.01**	**1.78**	**Gallons Removed[4]:**	**0.00001**	**0.17**	**Gallons Removed[4]:**	**0.00003**	**0.001**

Reporting Period: 10/29/2015 - 11/25/2015

Number of Days during Reporting Period	28	days
Gallons of Extracted Ground Water	11,200	gal
Average Flow Rate	0.36	gpm
Pounds of TPHg Removed	0.03	lbs
TPHg Removal Rate	0.001	lbs/day
Pounds of Benzene Removed	0.0001	lbs
Benzene Removal Rate	0.000003	lbs/day
Pounds of MTBE Removed	0.0002	lbs
MTBE Removal Rate	0.00001	lbs/day

Cumulative Results Since Start-up:

Number Days since Startup	439	days
Cumulative Total Gallons Extracted	344,000	gal
Average Flow Rate[3]	0.76	gpm
Cumulative Pounds of TPHg Removed	10.8	lbs
TPHg Removal Rate	0.02	lbs/day
Cumulative Pounds of Benzene Removed	1.2	lbs
Benzene Removal Rate	0.003	lbs/day
Cumulative Pounds of MTBE Removed	0.009	lbs
MTBE Removal Rate	0.00002	lbs/day

Formulas and Assumptions:

1. Hour meter readings taken at the end of the site visit
2. Mass Removed During the Period = Volume of Water Extracted (gallons) x Concentration (µg/L) x (g/10^6 µg) x (lb/4
3. When concentration of individual parameters were not detected, the concentration was assumed to be half the d
   Average Flow Rate = (Volume of Extracted Water (gal) / Number of Operational Days) * (60 minutes/hour) * (24 hc
4. Gallons Removed = (Mass (lb) / Density (g/cc)) x 453.6 (g/lb) x (L/1000 cc) x (gal/3.785 L)
   Density: = 0.73 g/cc TPHg
   = 0.88 g/cc Benzene
   = 0.74 g/cc MTBE

Abbreviations:

TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether
L = liter
gal = gallon
gpm = gallon per minute
µg/L = micrograms per liter
g = grams
cc = cubic centimeter
lb = pounds

Table 3
Dual Phase Extraction System
Operational Data
Former Chevron Station # 9-5607
5269 Crow Canyon Road, Castro Valley, California

Date (mm/dd/yy hh:mm)	Operating Wells (open)	Operating Time (hours)	Hour Meter (hours)	System Uptime (%)	Period Operation (hours)	Blower Vacuum (inHg)	INF-1 Vacuum (inHg)	INF-1 Temperature (°F)	INF-1 Measured Flow (acfm)	INF-1 Calculated Flow (scfm)	INF-2 Pressure[1] (inH_2O)	INF-2 Temperature (°F)	INF-2 Measured Flow[1] (acfm)	INF-2 Calculated Flow (scfm)	Effluent Flow Rate (scfm)	Effluent Flow Rate (scfh)	Effluent Vapor (cubic feet)	Dilution Air (% open)	Pre-Oxidizer Temp (°F)	Post-Oxidizer Temp (°F)	INF-2 OVA (ppmv)	Effluent PID (ppmv)	Mass Removal based on OVA (ppd)	Destruction Efficiency (%)
9/12/14 14:00	C-9, DPE-1 - DPE3, VE-1, VE-2	0.0	4013.5	0%	0.0	NM	3.00	NM	NM	NM	10.0	155	294	259	259	15,517	0	20	747	NM	8,000	20.0	663.8	99.8%
9/29/14 14:00	C-9, DPE-1 - DPE3, VE-1, VE-2	5.5	4019.0	1.3%	5.5	15.0	2.81	93	165	143	11	189	255	213	213	12,784	70,312	20	880	NM	NM	0.0	NM	100.0%
10/6/14 11:00	C-9, DPE-1 - DPE3, VE-1, VE-2	5.0	4024.0	3.0%	5.0	15.0	2.81	83	144	127	10	176	255	217	217	13,014	65,070	25	899	NM	560	0.2	39.0	100.0%
10/13/14 14:00	C-9, DPE-1 - DPE-3	106.0	4130.0	62.0%	106.0	14.5	2.35	68	191	176	10.9	180	268	227	227	13,621	1,443,865	0	750	883	1,100	5.0	80.1	99.5%
10/20/14 11:30	C-9, DPE-1 - DPE-3	166.0	4296.0	100%	166.0	15.0	3.18	79	140	123	10.5	171	255	219	219	13,133	2,180,062	0	750	927	650	0.3	45.6	100.0%
10/27/14 11:00	C-9, DPE-1, DPE-2	117.0	4413.0	69.9%	117.0	15.0	4.14	61	161	141	11.6	160	270	236	236	14,189	1,660,164	0	750	897	700	0.4	53.1	99.9%
11/6/14 13:15	C-9, DPE-3, DPE-2	67.0	4480.0	27.7%	67.0	20.0	5.00	61	146	123	10.7	61	146	152	123	7,394	495,403	0	701	900	1,250	0.0	60.9	100.0%
11/21/14 13:50	C-9, DPE-3, DPE-2	188.6	4668.6	52.3%	188.6	20.0	5.30	68	132	109	11.1	174	176	151	109	6,517	1,229,109	0	698	809	558	0.4	27.0	99.9%
12/2/14 15:15	C-9, DPE-3, DPE-2	113.3	4781.9	42.7%	113.3	20.0	7.40	63	103	78	3.3	169	157	133	78	4,696	532,051	0	697	785	1,215	0.5	51.8	100.0%
12/16/14 11:30	C-9, DPE-3, DPE-2	249.1	5031.0	75.0%	249.1	18.5	10.20	64	61	41	4.3	172	118	100	100	5,977	1,488,981	0	700	750	1,650	3.0	52.7	99.8%
12/31/14 10:30	C-9, DPE-3, DPE-2	359.1	5390.1	100%	359.1	22.0	10.00	72	133	88	7.2	179	133	112	112	6,710	2,409,733	0	698	707	425	5.0	15.2	98.8%
1/14/15 11:25	C-9, DPE-3, DPE-2	336.5	5726.6	99.9%	336.5	23.0	8.10	71	148	107	9.8	176	148	126	126	7,550	2,540,450	0	700	752	1,000	0.5	40.4	100%
1/23/15 14:35	C-9, DPE-3, DPE-2	219.1	5945.7	100.0%	219.1	23.0	7.10	76	157	118	9.6	174	157	134	134	8,030	1,759,403	0	700	764	915	3.5	39.3	99.6%
2/4/15 11:00	C-9, DPE-2	281.0	6226.7	98.8%	281.0	22.0	8.30	75	137	98	5.9	183	137	114	114	6,848	1,924,213	0	698	738	715	0.7	26.2	99.9%
2/17/15 14:30	C-9, DPE-2	82.3	6309.0	26.1%	82.3	21.5	10.10	62	136	91	6.9	170	136	116	116	6,955	572,382	0	698	682	515	0.1	19.2	100.0%
3/3/15 14:25	C-9, DPE-1	167.0	6476.0	49.7%	167.0	23.0	11.10	79	118	73	4.0	185	118	98	98	5,853	977,400	0	690	698	295	0.4	9.2	99.9%
3/11/15 11:45	C-9, DPE-3	25.9	6501.9	13.7%	25.9	23.0	10.90	67	118	75	7.2	151	118	104	104	6,226	161,266	0	710	740	480	0.2	16.0	100.0%
3/16/15 12:00	C-9, DPE-3	28.7	6530.6	23.9%	28.7	23.0	10.20	67	121	80	7.1	175	121	102	102	6,145	176,359	0	700	689	235	0.0	7.7	100.0%
4/2/15 9:30	C-9, DPE-3	223.8	6754.4	55.2%	223.8	23.0	8.40	73	146	104	10.0	177	146	124	124	7,445	1,666,264	0	698	688	125	0.4	5.0	99.7%
4/16/15 14:30	DPE-2, DPE-3	340.8	7095.2	99.9%	340.8	23.0	8.40	87	137	95	6.8	199	137	112	112	6,696	2,282,011	0	699	700	210	0.6	7.5	99.7%
4/30/15 10:20	DPE-1, DPE-2	236.9	7332.1	71.4%	236.9	23.0	8.20	86	137	96	4.6	193	137	112	112	6,722	1,592,355	0	701	699	140	0.8	5.0	99.4%
5/14/15 12:15	DPE-1, VEW-2	21.2	7353.3	6.3%	21.2	23.0	13.00	81	98	54	1.9	187	223	183	183	10,970	232,565	40	698	693	75	0.0	4.4	100.0%
5/29/15 9:30	DPE-1, VEW-2	259.6	7612.9	72.7%	259.6	23.0	11.80	79	44	26	4.2	180	118	98	98	5,901	1,531,975	50	699	724	190	2.3	6.0	98.8%
6/23/15 11:45	DPE-1, VEW-2	177.9	7790.8	29.5%	177.9	23.0	10.06	79	175	114	5.6	190	118	97	97	5,830	1,037,208	0	700	746	280	2.0	8.7	99.3%
7/4/15 3:35	DPE-1, VEW-2	132.6	7923.4	51.8%	132.6	SVE SYSTEM DOWN FOR REPAIR																		
10/22/15 18:30	DPE-1, VEW-1	6.2	7929.6	0.2%	6.2	22.5	5.40	79	105	84	6.0	180	157	131	131	7,886	48,894	0	700	761	174	0.0	7.3	100.0%
10/28/15 16:37	DPE-1, VEW-1	22.8	7952.4	16.0%	22.8	NM	5.80	NM	NM	NM	NM	NM	176	NM	NM	NM	NM	0	700	773	NM	NM	NM	NM
11/9/15 12:15	DPE-1, VEW-2	284.3	8236.7	100%	284.3	23.0	8.00	55	66	50	6.5	175	176	149	149	8,921	2,536,202	0	699	762	250	0.0	11.9	100.0%
11/18/15 13:10	DPE-1, VEW-2	44.6	8281.3	20.6%	44.6	22.5	7.10	64	81	63	6.4	171	157	133	133	8,006	357,082	0	701	734	153	0.8	6.6	99.5%
11/25/15 17:34	DPE-1, VEW-2	118.8	8400.1	68.9%	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Cumulative Results Since Startup: 9/12/2014 to 11/25/2015

Number Days Since Startup	**439 days**
Number of Hours Operated Since Startup	**4268 hours**

Abbreviations and Notes:

Reporting period: GWE off from 7/4/2015 to 10/22/2015 for system repairs.

- mm/dd/yy = month/day/year
- hh:mm = hour : minute
- inHg = inches of mercury
- inH_2O = inches of water
- °F = degrees Fahrenheit
- acfm = actual cubic feet per minute
- scfm = standard cubic feet per minute (flow in scfm = flow in acfm * [operating pressure{abs} / standard pressure {abs}] * [standard temperature {abs} / operating temperature {abs}])
- % = percentage
- INF-1 = pre-dilution system influent
- INF-2 = post-dilution system influent
- NM = not measured
- LEL = Lower Explosive Limit
- ppmv = parts per million by volume
- PID = photo-ionization detector
- FID = flame ionization detector
- OVA = organic vapor analyzer
- ppd = pounds per day
- 1. = INF-2 flow read from chart recorder. INF-2 pressure used to convert acfm to scfm.
- 2. = water in pipe; unable to measure accurate concentration/ LEL readings

Compliance:

BAAQMD Requirements:

Flow Rate < 300 scfm

Oxidizer Temperature > 600 degrees Fahrenheit in electric catalytic mode and > 1400 degrees in thermal catalytic mode

Benzene Emission Limit < 0.017ppd

Destruction Efficiency (measured as hexane)

98.50%	VOC >2,000 ppmv
97.00%	VOC >200 and <2,000 ppmv
90.00%	VOC < 200 ppmv

Note: If outlet VOC < 10 ppmv, destruction efficiency requirement is waived

Table 4
Dual Phase Extraction System
Analytical Data
Former Chevron Station # 9-5607
5269 Crow Canyon Road, Castro Valley, California

Date	Concentrations[1]									TPHg			Benzene			MTBE			VOC		
	INF-2					Effluent															
(mm/dd/yy hh:mm)	Operating Wells	TPHg (ppmv)	Benzene (ppmv)	MTBE (ppmv)	VOC (ppmv)	TPHg (ppmv)	Benzene (ppmv)	MTBE (ppmv)	VOC (ppmv)	Removal Rate[2, 6] (ppd)	Cumulative Removed[7] (pounds)	Emission Rate[2, 6] (ppd)	Removal Rate[3, 6] (ppd)	Cumulative Removed[7] (pounds)	Emission Rate[3, 6] (ppd)	Removal Rate[4, 6] (ppd)	Cumulative Removed[7] (pounds)	Emission Rate[4, 6] (ppd)	Removal Rate[5, 6] (ppd)	Emission Rate[5, 6] (ppd)	Destruction Efficiency (%)
9/12/14 14:00	C9, DPE-1 - DPE3, VE-1, VE-2	4,200	44	38	4,282	46	0.39	0.19	46.58	405.2	0.0	4.4	3.3	0.0	0.03	3.2	0.0	0.02	355.3	3.9	98.9%
9/29/14 14:00	C9, DPE-1 - DPE3, VE-1, VE-2	--	--	--	--	--	--	--	--	333.8	84.7	3.7	2.7	0.7	0.03	2.7	0.7	0.01	292.7	3.2	98.9%
10/6/14 11:00	C9, DPE-1 - DPE3, VE-1, VE-2	--	--	--	--	--	--	--	--	339.8	155 c	3.7	2.8	1.3	0.03	2.7	1.2	0.01	298.0	3.2	98.9%
10/13/14 11:00	C9, DPE-1 - DPE-3	1,500	10	< 20	1,530	<5	< 0.5	< 0.5	< 6.0	127.0	1186 c	0.42	0.7	8.9	0.04	1.5	10.5	0.04	111.4	0.4	99.6%
10/20/14 11:30	C9, DPE-1 - DPE-3	--	--	--	--	--	--	--	--	122.5	2049 c	0.41	0.6	13.3	0.04	1.4	20.6	0.04	107.4	0.4	99.6%
10/27/14 11:00	C9, DPE-1, DPE2	--	--	--	--	--	--	--	--	132.3	2670 c	0.44	0.7	16.6	0.04	1.6	27.9	0.04	116.1	0.5	99.6%
11/6/14 13:15	C9, DPE-2, DPE3	--	--	--	--	--	--	--	--	85.0	2973 c	0.23	0.4	18.2	0.02	1.0	31.5	0.02	74.5	0.2	99.6%
11/21/14 13:50	C9, DPE-2, DPE-3	585*	0.01	0.01	585	0.31	0.0020	< 0.0020	0.31	32.9	3436 c	0.01	0.0	19.9	0.00007	0.0	35.4	0.00007	28.3	0.01	99.9%
12/2/14 15:15	C9, DPE-2, DPE-3	1,000	12	8.8	1,021	0.23	0.0012	< 0.0010	0.23	49.6	3631 c	0.007	0.5	21.0	0.00003	0.4	36.3	0.00003	43.5	0.006	100.0%
12/16/14 11:30	C9, DPE-2, DPE-3	--	--	--	--	--	--	--	--	37.2	4081 c	0.009	0.3	25.2	0.00004	0.3	39.8	0.00003	32.6	0.007	100.0%
12/31/14 10:30	C9, DPE-2, DPE-3	--	--	--	--	--	--	--	--	41.7	4671 c	0.010	0.4	30.7	0.00004	0.3	44.4	0.00004	36.6	0.008	100.0%
1/14/15 11:25	C9, DPE-2, DPE-3	870	13	4.7	888	0.08	<0.0010	<0.0010	0.08	40.8	5250 c	0.004	0.5	36.8	0.00004	0.2	48.0	0.00004	35.8	0.003	100.0%
1/23/15 14:35	C9, DPE-2, DPE-3	--	--	--	--	--	--	--	--	43.4	5635 c	0.004	0.5	41.3	0.00004	0.2	49.8	0.00004	38.1	0.00	100.0%
2/4/15 11:00	C-9, DPE-2	800	17	7.3	824	1.5	0.014	0.0012	1.52	34.1	6088 c	0.06	0.6	47.5	0.0005	0.3	52.6	0.00004	30.2	0.06	99.8%
2/17/15 14:30	C-9, DPE-2	--	--	--	--	--	--	--	--	34.6	6206 c	0.06	0.6	49.5	0.0005	0.3	53.6	0.00005	30.7	0.06	99.8%
3/3/15 14:25	C-9, DPE-1	320	5.4	2.5	328	0.076	<0.0010	<0.0010	0.078	11.6	6367 c	0.003	0.2	52.0	0.00003	0.1	54.8	0.00003	10.3	0.002	100.0%
3/11/15 11:45	C-9, DPE-3	--	--	--	--	--	--	--	--	12.4	6380 c	0.003	0.2	52.2	0.00003	0.1	54.9	0.00003	10.9	0.003	100.0%
3/16/15 12:00	C-9, DPE-3	--	--	--	--	--	--	--	--	12.2	6395 c	0.003	0.2	52.4	0.00003	0.1	55.0	0.00003	10.8	0.003	100.0%
4/2/15 9:30	C-9, DPE-3	--	--	--	--	--	--	--	--	14.8	6521 c	0.004	0.2	54.1	0.00004	0.1	55.9	0.00004	13.1	0.003	100.0%
4/16/15 14:30	DPE-2, DPE-3	250	2.7	1.1	254	0.84	0.008	0.002	0.85	10.4	6700 c	0.03	0.1	56.1	0.0003	0.0	56.9	0.00007	9.1	0.03	99.7%
4/30/15 10:20	DPE-1, DPE-2	--	--	--	--	--	--	--	--	10.4	6803 c	0.04	0.1	56.9	0.0003	0.0	57.3	0.00007	9.1	0.03	99.7%
5/14/15 12:15	DPE-1, VEW-2	160	2.8	0.71	164	0.11	<0.032	<0.036	0.18	10.9	6812 c	0.008	0.1	57.0	0.002	0.0	57.3	0.002	9.6	0.01	99.9%
5/29/15 9:30	DPE-1, VEW-2	--	--	--	--	--	--	--	--	5.9	6903 c	0.004	0.1	58.3	0.001	0.0	57.7	0.001	5.2	0.01	99.9%
6/23/15 11:45	DPE-1, VEW-2	2,300	35.0	11.0	2,346	0.48	<0.032	<0.0010	0.51	83.4	7234 c	0.02	1.0	62.2	0.001	0.4	59.1	0.00003	73.1	0.02	100.0%
7/4/15 3:35	DPE-1, VEW-2	SVE SYSTEM OFF FOR REPAIR		--	--	--	--	--	--	83.4 a	7694 c	0.02 a	1.0 a	67.7 a	0.001 a	0.4 a	61.0 a	0.00003 a	73.1 a	0.02 a	100.0% a
10/22/15 18:30	DPE-1, VEW-1	1,000	18	9.0	1,027	0.26	<0.0010	<0.0010	0.26	49.0 b	7707 c	0.01 b	0.7 b	67.9 b	0.00004 b	0.4 b	61.1 b	0.00004 b	43.3 b	0.01 b	100.0% b
10/28/15 16:37	DPE-1, VEW-1	--	--	--	--	--	--	--	--	49.0 b,c	7753 c	0.01 b,c	0.7 b,c	68.5 b,c	0.00004 b,c	0.4 b,c	61.5 b,c	0.00004 b,c	43.3 b,c	0.01 b,c	100.0% b,c
11/9/15 12:15	DPE-1, VEW-2	870	13	6.2	889	0.58	0.0010	<0.0010	0.58	48.3	8325 c	0.03	0.6	75.9	0.00005	0.3	65.6	0.00005	42.4	0.03	99.9%
11/18/15 13:10	DPE-1, VEW-2	--	--	--	--	--	--	--	--	43.3	8410 c	0.03	0.5	76.9	0.00004	0.3	66.1	0.00004	38.1	0.02	99.9%
11/25/15 18:10	DPE-1, VEW-2	--	--	--	--	--	--	--	--	43.3 c	8491 c	0.03 c	0.5 c	77.9 c	0.00004 c	0.3 c	66.6 c	0.00004 c	38.1 c	0.02 c	99.9% c
										Period Pounds Removed[9]:	**TPHg =**	**737**	**Benzene =**	**9.3**		**MTBE =**	**5.13**			
										Total Pounds Removed:	**TPHg =**	**8,491**	**Benzene =**	**77.9**		**MTBE =**	**66.6**			

Reporting Period: November 2015	
Number Days in Reporting Period	**28**
Pounds of TPHg Removed during Reporting Period	**737**
Average TPHg Removal Rate (lb/day)	**26.3**
Pounds of Benzene Removed during Reporting Period	**9.34**
Average Benzene Removal Rate (lb/day)	**0.33**
Pounds of MtBE Removed during Reporting Period	**5.13**
Average MtBE Removal Rate (lb/day)	**0.183**
Cumulative Results Since Startup: 9/12/2014 through 11/25/2015	
Number Days in Since Startup	**439**
Cumulative Pounds of TPHg Removed Since Startup	**8,491**
Average TPHg Removal Rate (lb/day) Since Startup	**78.3**
Cumulative Pounds of Benzene Removed Since Startup	**77.9**
Average Benzene Removal Rate (lb/day) Since Startup	**0.66**
Cumulative pounds of MtBE Removed Since Startup	**5.13**
Average MtBE Removal Rate (lb/day) Since Startup	**0.61**

Notes:

1. TPHg, Benzene, and MTBE analyzed by EPA Method 8015/8020. Vapor samples were collected in 1-liter tedlar bags unless otherwise noted.
2. Molecular weight of TPHg assumed to be 100 lb/lb-mole as hexane.
3. Molecular weight of Benzene assumed to be 78 lb/lb-mole.
4. Molecular weight of MTBE assumed to be 88 lb/lb-mole.
5. Molecular weight of VOCs assumed to be 86 lb/lb-mole as hexane.
6. Removal/Emission Rate (ppd) = C (ppmv) x Q (scfm) x (1lb-mole/386ft^3) x MW (lb/lb-mole) x 60 min/hr x 24 hr/day x 10^{-6}
   C = concentration
   Q = flow
   MW = molecular weight
7. Cumulative TPHg / Benzene / MTBE removed = Previous Total + (Average of Previous and Current Removal Rates * Operation Interval)
8. Inflluent not measured due to water in vapor stream. Individual well samples were collected at a lower vacuum at this time.
9. Reporting period: SVE system off for repair from 7/4/2015 to 8/19/2015.

a. Air sample was not taken before system malfunction occurred. Used 6/23/15 sample data to calculate removal and efficiency rate and cumulative removed.
b. Air sample was taken on 10/15/15, but no readings were taken during this time. Used 10/22/15 operational data to calculate removal and efficiency rate and cumulative removed.
c. Air flow was not taken during this time, so the flow rate from the previous event was used to calculate removal and efficiency rate and cumulative removed.

* Laboratory reading was 1.3 ppmv. However, this is unlikely due to laboratory samples taken the month before and afterwards. Therefore, the field OVA reading was used in place of the laboratory sample result.

Abbreviations:

mm/dd/yy = month/day/year
hh:mm = hours : minutes
TPHg = total petroluem hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether
VOC = volatile organic compounds
ppmv = parts per million by volume
ppd = pounds per day
lb = pounds
ft^3 = cubic feet
scfm = standard cubic feet per minute
INF-1 = pre-dilution system influent
INF-2 = post-dilution system influent
TBD = Sample taken during this time and are awaiting results
n/a = Not available due to SVE equipment malfunction

BAAQMD Requirements:

Flow Rate < 300 scfm
Oxidizer Temperature > 600 deg Fahrenheit in electric catalytic mode and > 1400 degrees in thermal catalytic mode
Benzene Emission Limit < 0.017 ppd
Destruction efficiency (measured as hexane)
98.50% VOC >2,000 ppmv
97.00% VOC >200 and <2,000 ppmv
90.00% VOC < 200 ppmv
Note: If outlet VOC < 10 ppmv, destruction efficiency requirement is waived

Attachment A
Eurofins Lancaster Laboratory Analytical Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

December 02, 2015

Project: 95607

Submittal Date: 11/11/2015
Group Number: 1608480
PO Number: 0015164161
Release Number: HETRICK
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LL) #
EFF-1-W-151109 Grab Groundwater	8129140
MID-1-W-151109 Grab Groundwater	8129142
INF-1-W-151109 Grab Groundwater	8129143

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	GHD	Attn: Andy Leung
ELECTRONIC COPY TO	GHD	Attn: Matt B. Smith
ELECTRONIC COPY TO	CRA	Attn: Judy Gilbert
ELECTRONIC COPY TO	Chevron	Attn: GHD EDD

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

Sample Description: EFF-1-W-151109 Grab Groundwater
Facility# 95607 CRAW
5269 Crow Canyon Rd-Castro T0600100344

LL Sample # WW 8129140
LL Group # 1608480
Account # 10880

Project Name: 95607

Collected: 11/09/2015 10:00 by GB

Submitted: 11/11/2015 09:25
Reported: 12/02/2015 16:35

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

CAST1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10945	Benzene	71-43-2	N.D.	0.5	1	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10945	Toluene	108-88-3	N.D.	0.5	1	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	100	1

General Sample Comments

CA ELAP Lab Certification No. 2792
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE	SW-846 8260B	1	P153232AA	11/19/2015 21:48	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P153232AA	11/19/2015 21:48	Hu Yang	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	15319A20A	11/16/2015 00:51	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15319A20A	11/16/2015 00:51	Brett W Kenyon	1

*=This limit was used in the evaluation of the final result

Sample Description: MID-1-W-151109 Grab Groundwater
Facility# 95607 CRAW
5269 Crow Canyon Rd-Castro T0600100344

LL Sample # WW 8129142
LL Group # 1608480
Account # 10880

Project Name: 95607

Collected: 11/09/2015 10:20 by GB

Submitted: 11/11/2015 09:25
Reported: 12/02/2015 16:35

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

CASTM

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10945	Benzene	71-43-2	N.D.	0.5	1	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10945	Toluene	108-88-3	N.D.	0.5	1	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	100	1

General Sample Comments

CA ELAP Lab Certification No. 2792
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE	SW-846 8260B	1	P153232AA	11/19/2015 22:15	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P153232AA	11/19/2015 22:15	Hu Yang	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	15319A20A	11/16/2015 01:18	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15319A20A	11/16/2015 01:18	Brett W Kenyon	1

*=This limit was used in the evaluation of the final result

Sample Description: INF-1-W-151109 Grab Groundwater
Facility# 95607 CRAW
5269 Crow Canyon Rd-Castro T0600100344

LL Sample # WW 8129143
LL Group # 1608480
Account # 10880

Project Name: 95607

Collected: 11/09/2015 10:30 by GB

Submitted: 11/11/2015 09:25
Reported: 12/02/2015 16:35

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

CASTI

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10945	Benzene	71-43-2	1	0.5	1	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	2	0.5	1	1
10945	Toluene	108-88-3	N.D.	0.5	1	1
10945	Xylene (Total)	1330-20-7	1	0.5	1	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	340	50	100	1

General Sample Comments

CA ELAP Lab Certification No. 2792
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	BTEX/MTBE	SW-846 8260B	1	P153232AA	11/19/2015 22:41	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P153232AA	11/19/2015 22:41	Hu Yang	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	15319A20A	11/16/2015 01:46	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15319A20A	11/16/2015 01:46	Brett W Kenyon	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: ChevronTexaco Group Number: 1608480
Reported: 12/02/2015 16:35

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P153232AA	Sample number(s): 8129140,8129142-8129143								
Benzene	N.D.	0.5	1	ug/l	98		78-120		
Ethylbenzene	N.D.	0.5	1	ug/l	88		78-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	97		75-120		
Toluene	N.D.	0.5	1	ug/l	93		80-120		
Xylene (Total)	N.D.	0.5	1	ug/l	92		80-120		
Batch number: 15319A20A	Sample number(s): 8129140,8129142-8129143								
TPH-GRO N. CA water C6-C12	N.D.	50.	100	ug/l	97	100	71-138	3	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: P153232AA	Sample number(s): 8129140,8129142-8129143 UNSPK: P129000								
Benzene	32 (2)	172 (2)	78-120	14	30				
Ethylbenzene	97	104	78-120	5	30				
Methyl Tertiary Butyl Ether	118 (2)	111 (2)	75-120	1	30				
Toluene	86	124*	80-120	11	30				
Xylene (Total)	101	107	80-120	5	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX/MTBE
Batch number: P153232AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8129140	102	102	94	95
8129142	101	98	94	95
8129143	101	100	95	95

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: ChevronTexaco Group Number: 1608480
Reported: 12/02/2015 16:35

Surrogate Quality Control

Blank	101	100	94	95
LCS	100	101	94	95
MS	100	102	94	94
MSD	99	100	94	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 15319A20A

	Trifluorotoluene-F
8129140	88
8129142	89
8129143	93
Blank	87
LCS	97
LCSD	99
Limits:	63-135

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Environmental Analysis Request/Chain of Custody

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111015-05 Acct. # 10880 Group # 1608480 Sample # 8129140-43

Client: **Chevron EMC**	
Project Name/#: Castro Valley	Site ID #: 95607
Project Manager: Judy Gilbert	P.O. #: Direct Bill To Chevron
Sampler: GREG BRUSKI	PWSID #:
Phone #: 707 332 8265	Quote #:
State where sample(s) were collected: GWE Effluent	

Matrix: Sediment ☐ / Soil ☐; Water: Ground ☑, Surface ☐, Potable ☐, NPDES ☐; Other:

Analyses Requested / Preservation Codes

Sample Identification	Collection Date	Collection Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-g by 8015M	BTEX by 8260	MTBE by 8260							Remarks
EFF-1	11.9.15	1000	X			X		6	X	X	X							
MID-2	11.9.15	1010	X			X		6	X	X	X							HOLD MID-2, SAMPLE ONLY IF MID-1 > N.D.
MID-1	11.9.15	1020	X			X		6	X	X	X							
INF-1	11.9.15	1030	X			X		6	X	X	X							

For Lab Use Only
SF #: ____
SCR #: ____

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
O = Other

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☒ Phone ☐

E-mail Address: Judy.Gilbert@ghd.com matthew.b.smith@ghd.com

Phone:

Data Package Options (please check if required)

Type I (Validation/non-CLP)	☐	MA MCP	☐
Type III (Reduced non-CLP)	☐	CT RCP	☐
Type IV (CLP SOW)	☐	TX TRRP-13	☐
Type VI (Raw Data Only)	☐		

EDD Required? Yes ☑ No ☐ If yes, format: Zip File

Relinquished by	Date	Time	Received by	Date	Time
[signature] SECURED LOCATION GHD	11.9.15	1600	[signature]	11/10/15	1252
[signature]	10NOV15	1630	FX		
			[signature]	11/11/15	0925

Relinquished by Commercial Carrier:
UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.6 °C

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7045 0713

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Attachment B
Eurofins Air Toxics Laboratory Analytical Report

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11/23/2015
Ms. Judy Gilbert
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Castro Valley
Project #: 311950 2014.7 94.09
Workorder #: 1511135

Dear Ms. Judy Gilbert

The following report includes the data for the above referenced project for sample(s) received on 11/10/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 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 the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1511135

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. #**	311950 2014.7 94.09
FAX:	510-420-9170	**PROJECT #**	311950 2014.7 94.09 Castro Valley
DATE RECEIVED:	11/10/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	11/23/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	EFF	Modified TO-3	Tedlar Bag	Tedlar Bag
02A	INF	Modified TO-3	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified TO-3	NA	NA
04A	LCS	Modified TO-3	NA	NA
04AA	LCSD	Modified TO-3	NA	NA
04B	LCS	Modified TO-3	NA	NA
04BB	LCSD	Modified TO-3	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 11/23/15

Technical Director

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

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

LABORATORY NARRATIVE
Modified TO-3
GHD
Workorder# 1511135

Two Client Tedlar Bag samples were received on November 10, 2015. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and flame ionization detection. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system.

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

Requirement	***TO-3***	***ATL Modifications***
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch </= 20 samples.
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation DL = A+3.3S, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The recovery of surrogate Fluorobenzene in sample INF was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and O-Xylene.

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
MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: EFF

Lab ID#: 1511135-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	0.0010	0.0033
Toluene	0.0010	0.0038	0.0029	0.011
Total Xylenes	0.0020	0.0087	0.0072	0.031
TPH (Gasoline Range)	0.025	0.10	0.58	2.4

Client Sample ID: INF

Lab ID#: 1511135-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.057	0.18	13 M	42 M
Toluene	0.057	0.22	2.0	7.4
Ethyl Benzene	0.057	0.25	2.7	12
Total Xylenes	0.11	0.50	11	48
Methyl tert-butyl ether	0.057	0.20	6.2	22
TPH (Gasoline Range)	1.4	5.8	870	3600

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Client Sample ID: EFF

Lab ID#: 1511135-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111108**	**Date of Collection: 11/9/15 1:25:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 02:10 PM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	0.0010	0.0033
Toluene	0.0010	0.0038	0.0029	0.011
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
Total Xylenes	0.0020	0.0087	0.0072	0.031
Methyl tert-butyl ether	0.0010	0.0036	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	0.58	2.4

Container Type: Client Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	92	75-150
Fluorobenzene (PID)	113	75-125

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Client Sample ID: INF

Lab ID#: 1511135-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111109**	**Date of Collection: 11/9/15 1:30:00 PM**	
Dil. Factor:	**57.1**	**Date of Analysis: 11/11/15 02:49 PM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.057	0.18	13 M	42 M
Toluene	0.057	0.22	2.0	7.4
Ethyl Benzene	0.057	0.25	2.7	12
Total Xylenes	0.11	0.50	11	48
Methyl tert-butyl ether	0.057	0.20	6.2	22
TPH (Gasoline Range)	1.4	5.8	870	3600

M = Reported value may be biased due to apparent matrix interferences.
Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: Client Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	211 Q	75-150
Fluorobenzene (PID)	212 Q	75-125

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Client Sample ID: Lab Blank

Lab ID#: 1511135-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 11:45 AM**	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
Total Xylenes	0.0020	0.0087	Not Detected	Not Detected
Methyl tert-butyl ether	0.0010	0.0036	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	93	75-150
Fluorobenzene (PID)	114	75-125

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Client Sample ID: LCS

Lab ID#: 1511135-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111104b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 10:52 AM**	

Compound	%Recovery	Method Limits
Benzene	101	75-125
Toluene	95	75-125
Ethyl Benzene	98	75-125
Total Xylenes	98	75-125
Methyl tert-butyl ether	106	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	108	75-125

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Client Sample ID: LCSD

Lab ID#: 1511135-04AA

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111110b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 03:34 PM**	

Compound	%Recovery	Method Limits
Benzene	100	75-125
Toluene	94	75-125
Ethyl Benzene	96	75-125
Total Xylenes	96	75-125
Methyl tert-butyl ether	105	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	102	75-125

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Client Sample ID: LCS

Lab ID#: 1511135-04B

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 09:28 AM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	95	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	90	75-150

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Client Sample ID: LCSD

Lab ID#: 1511135-04BB

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	**d111111**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/15 04:13 PM**	

Compound	%Recovery	Method Limits
TPH (Gasoline Range)	91	75-125

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	87	75-150