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Via e-mail

May 30, 2017

Mr. Luis Negrón Project Manager US EPA-Region 2 Caribbean Environmental Protection Division City View Plaza II, Suite 7000 Guaynabo, Puerto Rico 00968

RE: Pfizer Pharmaceuticals, LLC, Barceloneta Site, EPA ID PRD090346909 SVE – CMS Pilot Study - Progress Report for the Period from January thru March 2017

Dear Mr. Negrón:

On behalf of Pfizer Pharmaceuticals, LLC (PPLLC), please find attached the progress report prepared by ERTEC that summarizes soil vapor extraction (SVE) Pilot Test activities and data obtained during the period from January thru March 2017.

If you have any questions, please don't hesitate to contact me at 908-901-8630 or Wanda Morales with ERTEC at 787-792-8902.

Sincerely,

William G. Gierke, P.G., Senior Manager

Pfizer Inc.

cc. Ron Schott (Pfizer)

Jorge Esquilín and Ruth Llorens (Pfizer)



SVE SYSTEM PROGRESS REPORT NO. 6 JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475

Prepared for:

US ENVIRONMENTAL PROTECTION AGENCY City View Plaza II Building, 7th Floor, Suite 7000 #48 Rd. 165 Km. 1.2 Guaynabo, PR 00968-8069

May 30, 2017

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TABLE OF CONTENT

	PAGE
1.0	INTRODUCTION1
2.0 2.1 2.2	
3.0	VALIDATED ANALYTICAL RESULTS4
4.0	SVE INDIVIDUAL EXTRACTION WELL TESTING4
5.0 5.1	SVE SYSTEM MAINTENANCE / DOWNTIME
6.0	MASS REMOVAL AND EMISSIONS CALCULATIONS
7.0	EQB CONSTRUCTION PERMIT REQUIREMENTS LOG
8.0	RECOMMENDATIONS
9.0	SVE MONITORING AND SAMPLING SCHEDULE7
	FIGURE
1. S	VE System Location
	TABLES
2. A 3. S 4. Ir 5. Ir 6. C 7. Ir 8. V 9. Ir 10.Ir	VE System Operation and Maintenance Log Imbient Temperature, Barometric Pressure and Humidity Readings VE System Vacuum and Pressure Readings Inlet-1 Monitoring Data Inlet-2 Monitoring Data Inlet-1 Monitoring Data Inlet-1, Inlet-2 and Outlet Sampling Data Inlet-1, Inlet-2 and Outlet Sampling Data Inlet-1 Mass Removal Calculations Inlet-2 Mass Removal Calculations Inlet-3 Mass Removal Calculations Inlet-4 Mass Removal Calculations Inlet-5 Mass Removal Calculations Inlet-6 Mass Removal Calculations Inlet-7 Mass Removal Calculations Inlet-8 Mass Removal Calculations Inlet-9 Mass Removal Calculations



TABLE OF CONTENT (cont.)

APPENDICES

- 1. Pfizer Rain Data
- 2. Copy of Chain of Custody
- 3. Data Validation Reports
- 4. PR Chemist Certification Results
- 5. SVE Individual Extraction Well Testing Technical Letter April 18, 2017
 6. Mass Removal/ Emission Rate and EQB Carbon Efficiency Formulas



SVE SYSTEM PROGRESS REPORT NO. 6 JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Date Prepared:

May 30, 2017

Period Covered:

January 3 to March 31, 2017

Project:

SVE Pilot Test, Pfizer Pharmaceuticals, LLC

Barceloneta, Puerto Rico

Prepared by:

Wanda I. Morales

Project Manager

1.0 INTRODUCTION

This progress report contains a summary of the Soil Vapor Extraction (SVE) system operations and maintenance activities performed from January thru March 2017 at the Pfizer Pharmaceuticals LLC site in Barceloneta, Puerto Rico in accordance with the Environmental Quality Board (EQB) construction permit - revised on May 2015. System operation for this reporting period was performed from seven (7) extraction wells: AB-10, AB-10B, AB-19, AB-21, AB-23, B-1 and B-4. **Figure 1** presents the location of the SVE system with extraction wells.

This report includes system operational register including downtime, maintenance, carbon exchange activities, summary of data collected, validated analytical results, mass removal and emissions calculations, and EQB construction permit data requirements.

2.0 WORK PERFORMED DURING JANUARY TO MARCH 2017

Start up of the SVE system began on January 3, 2017 for this reporting period. Site activities included system monitoring for operation and maintenance (O&M) parameters and emissions permit parameters, collection of monthly air samples, and SVE system monthly verification. Other activities performed during this period included an updated concentration testing of individual SVE wells during January and February 2017 as requested by Pfizer and carbon exchange activities during March 2017.

SVE System Progress Report No. 6
January to March 2017
Pfizer Pharmaceuticals LLC
Barceloneta, PR
May 30, 2017

2.1 SVE System Operation

The SVE system operated from Monday thru Friday during January, February and March 2017 except on the dates indicated in **Table 1** and **Section 4.0** of this report. **Table 1** presents a summary of system operation including startup and shutdown dates, hourly meter readings, sampling dates, operational time, and cumulative hours for carbon unit and SVE system, maintenance activities and carbon exchange dates. SVE O&M activities included the collection of the following data:

- Ambient temperature, barometric pressure and humidity readings summarized in
 Table 2.
- SVE extraction wells and system vacuum/pressure readings summarized in **Table 3**.
- Extraction wells combined sampling port (INLET-1) vacuum, flow rate, temperature, Organic Vapor Analyzer (OVA), Lower Explosive Limit (LEL), oxygen (O₂), carbon monoxide (CO) and hydrogen sulfide (H₂S) readings summarized in **Table 4**.
- Sampling port after bleeder valve (INLET-2) pressure, flow rate, temperature, OVA, LEL, O₂, CO and H₂S readings summarized in **Table 5**.
- Outlet stack sampling port (OUTLET) pressure, flow rate, temperature, OVA, LEL, O₂, CO and H₂S readings summarized in **Table 6**.

Ambient readings were obtained with a portable weather station. Vacuum, pressure and temperature readings were obtained from gauges installed at the SVE system. Flow rate readings were obtained with portable anemometer. OVA readings were obtained with a portable OVA equipped with a photoionization detector (PID), and LEL, O₂, CO and H₂S readings with an explosimeter from Tedlar bags collected at each sampling port. Monitoring instruments were calibrated daily. Rain data as provided by Pfizer is included in **Appendix 1**.

2.2 Sample Collection Activities

Monthly samples were obtained from SVE system on January 17, February 21 and March 28, 2017 as described below:



Date	INLET-1 (header pipe from extraction wells)	INLET-2 (sample after bleeder valve)	OUTLET (exhaust stack)
January 17, 2017	INLET-1-16	INLET-2-16	OUTLET-16
February 21, 2017	INLET-1-16	INLET-2-16	OUTLET-16
March 28, 2017	INLET-1-17	INLET-2-17	OUTLET-17

Co-located samples were obtained during each sampling event as identified as:

- INLET-P from sample INLET-2-16 on January 17, 2017
- INLET-P from sample INLET-2-16 on February 21, 2017
- OUTLET-Q from sample OUTLET-17 on March 28, 2017

Due to an oversight, samples collected on February 21, 2017 were identified with the same sequential number as samples collected on January 17, 2017.

Grab samples for the analysis of selected Volatile Organic Compounds (VOCs), total VOCs reported as non-Methane Organic Compounds as Carbon, and Methane were obtained in Summa canisters from each sampling port. Vapor samples for Methanol analysis were obtained in Sorbent Tubes with a sampling pump for a period of 8-minutes at each sampling location. Sampling data for INLET-1, INLET-2 and OUTLET sampling ports are included in **Table 7**.

Samples collected in Summa canisters were stored and sealed in cardboard boxes for shipment via FedEx to Test America-Burlington in Vermont. Samples collected and shipped on January 17, 2017 were delivered by FedEx on January 19, 2017. Vapor samples and co-located samples collected in Summa canisters were analyzed for:

- Selected VOCs by EPA Method TO-15
- Total VOCs by EPA Method 25C and reported as Total Non-Methane Organic Carbon (TNMOC)
- Methane by EPA Method 3C

Trip blanks were analyzed for selected VOCs by Method TO-15 and Total VOCs by Method 25C.

Samples collected in Sorbent Tubes were preserved in ice for shipment via FedEx to Test America-Phoenix in Arizona. Sorbent tubes samples collected and shipped on January 17, 2017 were delivered by FedEx to TA-Phoenix on January 19, 2017. According to the laboratory samples temperature upon receipt was 0.9 degrees



SVE System Progress Report No. 6
January to March 2017
Pfizer Pharmaceuticals LLC
Barceloneta, PR
May 30, 2017

Centigrade. Vapor samples and co-located samples collected in Sorbent Tubes were analyzed for:

Methanol by NIOSH 2000

Proper chain-of-custody documentation accompanied the sample to the laboratory. Copies of chain of custody are included in **Appendix 2**.

3.0 VALIDATED ANALYTICAL RESULTS

Analytical results for vapor samples collected during this period were validated in accordance to EPA Region II Standard Operating Procedure (Analysis of VOCs in Air Contained in Canisters by Method TO-15, SOP HW-31 Revision 6, June 2014).

No validation guidelines are available for NIOSH 2000 (Methanol). Data validation was performed in accordance to the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of VOCs in Air Contained in Canisters by Method TO-15, SOP HW-31 Revision 6, June 2014).

A summary of validated analytical results for air samples obtained during this period are included in **Table 8**. Copies of the data validation reports are included in **Appendix 3**. Analytical results were also certified by a PR chemist as required by EQB construction permit. Copy of PR chemist certified results are included in **Appendix 4**.

4.0 SVE INDIVIDUAL EXTRACTION WELL TESTING

Testing of each individual SVE wells AB-10, AB-10B, AB-19, AB-21, AB-23, B-1 and B-4 was performed on January and February 2017 as requested by Pfizer. The objective of the individual testing was to determine target compound concentrations at each extraction well to help evaluate system performance and if modifications to system operations are appropriate to increase mass removal. The following activities were performed:

- January 27, 2017 Screening of each extraction well using the PID. Based on screening results, Pfizer requested individual testing activities at each well, including collection of field parameters and soil gas sample for VOCs by EPA Method TO-15.
- February 14 to 17, 2017 Monitoring and sampling activities of individual extraction wells.



SVE System Progress Report No. 6 January to March 2017 Pfizer Pharmaceuticals LLC Barceloneta, PR May 30, 2017

A summary of field procedures, field monitoring data obtained and analytical results was provided in a technical letter submitted to Pfizer on April 18, 2017. A copy of this letter is included in **Appendix 5**.

5.0 SVE SYSTEM MAINTENANCE / DOWNTIME

Table 1 includes a summary of SVE system operation since year 2015. The system operated for a total of <u>1167 hours</u> during the period from January thru March 2017. Details of system operational and accumulative time in hours are included in **Table 1**. The SVE operation was performed from Monday thru Friday except for the following:

- January 2, 2017 System off due to local Holiday.
- January 4, 2017 System off due to elevated carbon entrance temperatures. SVE operation resumed on January 9, 2017.
- February 7, 2017 System off due to elevated carbon entrance temperatures. SVE operation resumed on February 8, 2017.
- March 22, 2017 System off due to carbon efficiency less than 90 percent. Carbon exchange activities were performed on March 23 and 24, 2017. SVE operation resumed on March 27, 2017 after installation of unused carbon vessel and system verification activities.

As indicated in **Table 1**, system verification was performed on the following dates:

- January 16, 2017
- February 6, 2017
- March 6, 2017

Other maintenance activities included replacement of vacuum gauge at extraction well AB-10B and INLET-1 on March 13, 2017.

5.1 Management of Investigation Derived Waste

The following container was generated during this period:

Tedlar bags/tubing: 1 UN-approved 15-gallons plastic container.



6.0 MASS REMOVAL AND EMISSIONS CALCULATIONS

The mass removal and emission rate calculations were performed based on analytical results for air samples obtained during January, February and March 2017. Mass removal calculations for INLET-1 (combined extraction wells samples) and INLET-2 (samples after bleeder valve) are included in **Tables 9** and **10**, respectively. Emission rate calculations for OUTLET (exhaust stack samples) are included in **Table 11**.

Data used for mass removal and emission rate calculation included:

- Vacuum/pressure readings in inches of Mercury (in Hg)
- Temperature readings in Fahrenheit degrees (°F)
- Flow rate in actual feet per minute (AFPM)
- Barometric pressure (in Hg)

Mass removal and emission rate are presented in pounds per hour (lbs/hr) and pounds per day (lbs/day). During the reporting period, an estimated total mass of 3.0 pounds of VOCs were removed. Emission rates are compared to EQB construction permit emissions requirement of 3 lbs/hr or 15 lbs/day. As indicated in **Table 11**, emissions were well below EQB requirements.

The relation used for mass removal and emission rate calculation is included in **Appendix 6** for reference. Total amount of mass removed per period of operation since August 2015 from seven extraction wells is summarized below:

Operational Period	Operational Time (hours)	Operational Time (days)	Mass Removed (lbs)
August to December 2015	869.5	36	14.0
January to March 2016	548.5	23	3.5
April to June 2016	1268	53	4.3
July to October 2016	1044	43.5	1.0
November to December 2016	538	22	8.2
January to March 2017	1167	49	3.0
TOTAL	5435	227	34



SVE System Progress Report No. 6
January to March 2017
Pfizer Pharmaceuticals LLC
Barceloneta, PR
May 30, 2017

7.0 EQB CONSTRUCTION PERMIT REQUIREMENTS LOG

EQB construction permit require daily monitoring of the following data:

- Temperature reading prior to carbon vessel unit
- Temperature reading at exhaust stack (OUTLET sampling port)
- OVA readings at extraction wells combined sampling port (INLET-1)
- OVA readings at exhaust stack (OUTLET sampling port)

Permit shutdown criteria include:

- Temperature equal or above to 120 °F at carbon vessel entrance
- Temperature equal or above to 140 °F at exhaust stack
- Carbon efficiency below 90 % (based on EQB permit formula included in Appendix 6).

Monitoring data for EQB requirements are summarized in **Table 12**. As indicated in the table system operational parameters are in compliance with permit requirements.

8.0 RECOMMENDATIONS

Analytical testing of air samples obtained from individual extraction wells (AB-10, AB-10B, AB-19, AB-21, AB-23, B-1 and B-4) was performed on February 2017 to determine target compound concentrations at each extraction well. Based on sample results obtained during February 2017 it is recommended to continue SVE operation by extracting from those wells with the highest benzene concentrations: B-1, B-4 and AB-10B to maximize vacuum and mass removal.

9.0 SVE MONITORING AND SAMPLING SCHEDULE

- Start SVE operation with three extraction wells: B-1, B-4 and AB-10B.
- SVE operation: continuous operation from Monday thru Friday.
- Sampling activities: Monthly air samples.

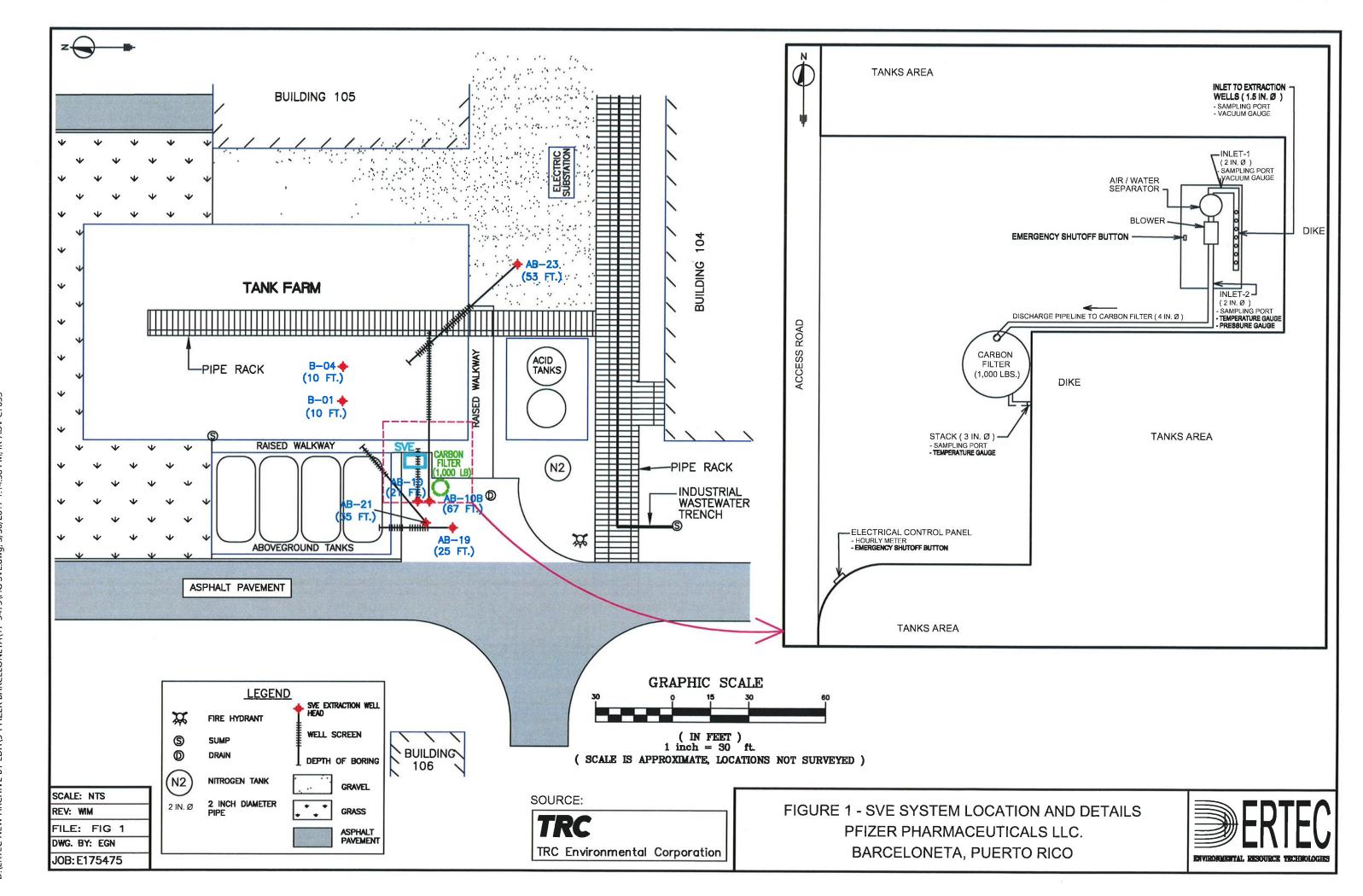


FIGURE

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JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

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TABLES

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

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																					skend.							
Description	Start up after carbon vessel exchange, system verification & monitoring.	Start up and O&M monitoring.	O&M monitoring. System off for the weekend.	Start up and O&M monitoring.	O&M monitoring.	O&M monitoring.	Bi-weekly sampling.	O&M monitoring. System off for the weekend.	Start up and O&M monitoring.	O&M monitoring.	O&M monitoring.	O&M monitoring.	O&M monitoring. System off for the weekend.	Start up and O&M monitoring.	O&M monitoring.	Bi-weekly sampling.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	O&M monitoring.	O&M monitoring; system monthly verification. System off for the holiday & weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	Bi-weekly sampling.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.
SVE System Cumulative Operational Time (hours)		A 4	169.1					268.7					370.2					470.3			518.5					619.0		
Carbon Unit Cumulative Operational Time (hours)	1.1	The second	28.4					128	9 (2)				229.5					329.6			377.8					478.3		
Operational Time (hours)	1.1		27.3				A CONTRACTOR	9.66					101.5					100.1			48.2		1			100.5		
Hourly Meter Reading	1996.3 1997.4		2024.7					2124.3					2225.8					2325.9		10.00	2374.1					2474.6		
SVE Off Time	1530		1305					1404					1500					1440			1200					1400		
SVE On Time	1435	950		1020					928					1100					945			940		The state of the			1040	
Date	28-Oct-15	29-Oct-15	30-Oct-15	2-Nov-15	3-Nov-15	4-Nov-15	5-Nov-15	6-Nov-15	9-Nov-15	10-Nov-15	11-Nov-15	12-Nov-15	13-Nov-15	16-Nov-15	17-Nov-15	18-Nov-15	19-Nov-15	20-Nov-15	23-Nov-15	24-Nov-15	25-Nov-15	30-Nov-15	1-Dec-15	2-Dec-15	3-Dec-15	4-Dec-15	7-Dec-15	8-Dec-15



, ,	SVE System Cumulative	Operational Description Time	(hours)	OVA/Temp monitoring.	OVA/Temp monitoring.	718.9 OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	Bi-weekly sampling.	OVA/Temp monitoring.	818.4 OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	869.5 O&M monitoring. System off for the holidays.	YEAR 2016	Start up; system monthly verification; O&M monitoring.	O&M monitoring.	Monthly sampling.	942.9 OVA/Temp monitoring. System off due to carbon efficiency <90%.	Carbon vessel removal from SVE area.	Carbon exchange activities 2 vessels.	Carbon refill activities 2 vessels.	Installation of carbon vessel at SVE system. System verification.	943.9 Start up; system monthly verification; O&M monitoring.	971.0 O&M monitoring. System off for the weekend.	Start up and O&M monitoring.	O&M monitoring.	Monthly sampling.	O&M monitoring.	1070.5 O&M monitoring. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.
	Carbon Unit Operational Cumulative	Time Operational (hours))			99.9 578.2					99.5 677.7			51.1 728.8					73.4 802.2					1.0 1.0	27.1 28.1					99.5 127.6		
	Hourly	Meter Reading	,			2574.5					2674.0			2725.1		2725.1			2798.5				2798.5	2799.5	2826.6					2926.1		
	SVE OF	Time				1445					1445			1340					1230				1515		1320					1320		
	SVE OR	Time					1112		A STATE OF THE PARTY.			1030				1106		Of the latest of					1420	1010		1000		A Property of the			1030	
		Date		9-Dec-15	10-Dec-15	11-Dec-15	14-Dec-15	15-Dec-15	16-Dec-15	17-Dec-15	18-Dec-15	21-Dec-15	22-Dec-15	23-Dec-15		11-Jan-16	12-Jan-16	13-Jan-16	14~Jan-16	17-Feb-16	18-Feb-16	23-Feb-16	24-Feb-16	25-Feb-16	26-Feb-16	29-Feb-16	1-Mar-16	2-Mar-16	3-Mar-16	4-Mar-16	7-Mar-16	8-Mar-16



Description		OVA/Temp monitoring.	OVA/Temp monitoring.	O&M monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the holidays.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	Monthly sampling.	Monthly sampling. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	O&M monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.
SVE System Cumulative Operational	Time (hours)			1167.1					1267.7			1319.6					1418.3					1517.3					1617.5			
Carbon Unit Cumulative Operational	Time			224.2					324.8			376.7		(*			475.4					574.4					674.6			
Operational Time	(hours)			9.96					100.6			51.9					98.7					0.66					100.2			
Hourly	Reading			3022.7					3123.3			3175.2					3273.9		The state of the s			3372.9					3473.1			
SVE Off				1115																							1450			
SVE On					1010					1030			1130					1005				1312	1030					1100		
Date		9-Mar-16	10-Mar-16	11-Mar-16	14-Mar-16	15-Mar-16	16-Mar-16	17-Mar-16	18-Mar-16	21-Mar-16	22-Mar-16	23-Mar-16	28-Mar-16	29-Mar-16	30-Mar-16	31-Mar-16	1-Apr-16	4-Apr-16	5-Apr-16	6-Apr-16	7-Apr-16	8-Apr-16	11-Apr-16	12-Apr-16	13-Apr-16	14-Apr-16	15-Apr-16	18-Apr-16	19-Apr-16	20-Apr-16

Date	SVE On Time	SVE Off Time	Hourly Meter Reading	Operational Time (hours)	Carbon Unit Cumulative Operational	SVE System Cumulative Operational	Description
			i cauiii g	(sinoii)	(hours)	(hours)	
21-Apr-16							OVA/Temp monitoring.
22-Apr-16		1420	3572.5	99.4	774.0	1716.9	OVA/Temp monitoring. System off for the weekend.
25-Apr-16	1020						Start up and O&M monitoring.
26-Apr-16							OVA/Temp monitoring.
27-Apr-16							OVA/Temp monitoring.
28-Apr-16							OVA/Temp monitoring.
29-Apr-16			3673.0	100.5	874.5	1817.4	OVA/Temp monitoring. System off for the weekend.
2-May-16	1030						Start up and O&M monitoring.
3-May-16							OVA/Temp monitoring.
4-May-16							OVA/Temp monitoring.
5-May-16	なないと大き様	The second second	Section 1	方というとはなる	是 · 中央 ·		Monthly sampling.
6-May-16			3772.2	99.2	973.7	1916.6	OVA/Temp monitoring. System off for the weekend.
9-May-16	1000						Start up; system monthly verification; O&M monitoring.
10-May-16						The second second	OVA/Temp monitoring.
11-May-16							OVA/Temp monitoring.
12-May-16							OVA/Temp monitoring.
13-May-16			3869.0	96.8	1070.5	2013.4	OVA/Temp monitoring. System off for the weekend.
16-May-16	955						Start up and O&M monitoring.
17-May-16							OVA/Temp monitoring.
18-May-16							OVA/Temp monitoring.
19-May-16					A THE SAME THE PERSON NAMED IN		OVA/Temp monitoring.
20-May-16	1240		3967.7	98.7	1169.2	2112.1	OVA/Temp monitoring. System off for the weekend.
23-May-16	945						Start up and O&M monitoring.
24-May-16		1111			A. A. A.		OVA/Temp monitoring.
25-May-16							OVA/Temp monitoring.
26-May-16							OVA/Temp monitoring.
27-May-16			4068.0	100.3	1269.5	2212.4	OVA/Temp monitoring. System off for the weekend and holiday.
31-May-16	1050						Start up; O&M monitoring. Replaced vacuum gauge at air filter.
1-Jun-16							OVA/Temp monitoring.



TABLE 1

	SVE On	SVE Off	Hourly	Operational	Carbon Unit Cumulative	SVE System Cumulative	
Date	Time	Time	Meter Reading	Time (hours)	Operational Time	Operational Time	Description
2-Jun-16					is in one		OVA/Temp monitoring.
3-Jun-16			4143.4	75.4	1344.9	2287.8	OVA/Temp monitoring. System off for the weekend.
6-Jun-16	1140						Start up and O&M monitoring.
7-Jun-16							OVA/Temp monitoring.
8-Jun-16							OVA/Temp monitoring.
9-Jun-16							OVA/Temp monitoring.
10-Jun-16		1515	4242.8	99.4	1444.3	2387.2	OVA/Temp monitoring. System off for the weekend. Replaced vacuum gauge at air filter.
13-Jun-16	1100						Start up; system monthly verification; O&M monitoring.
14-Jun-16							OVA/Temp monitoring.
15-Jun-16							OVA/Temp monitoring.
16-Jun-16							OVA/Temp monitoring.
17-Jun-16			4341.8	99.0	1543.3	2486.2	OVA/Temp monitoring. System off for the weekend.
20-Jun-16	1030						Start up and O&M monitoring.
21-Jun-16							OVA/Temp monitoring.
22-Jun-16							OVA/Temp monitoring.
23-Jun-16							OVA/Temp monitoring.
24-Jun-16			4441.2	99.4	1642.7	2585.6	OVA/Temp monitoring. System off for the weekend.
27-Jun-16	1015						Start up and O&M monitoring.
28-Jun-16				A CONTRACTOR OF THE PERSON NAMED IN COLUMN TO PERSON NAMED IN COLUMN T			OVA/Temp monitoring.
29-Jun-16							OVA/Temp monitoring.
30-Jun-16							Monthly sampling.
1-Jul-16		1450	4541.6	100.4	1743.1	2686.0	OVA/Temp monitoring. System off for the weekend.
5-Jul-16	1020						Start up and O&M monitoring.
6-Jul-16			4570.4	28.8	1771.9	2714.8	OVA/Temp monitoring. System off due to carbon efficiency <90%.
8-Jul-16							Used carbon vessel removal from SVE area.
12-Jul-16							Installation of unused carbon vessel at SVE system. Maintenance of blower motor unit.
13-Jul-16	1020		4570.4				Start up; system monthly verification; O&M monitoring.
14-Jul-16							OVA/Temp monitoring.



					Corbon Unit	CVE Cyctom	
Date	SVE On	SVE Off	Hourly	Operational Time	Cumulative Operational	Cumulative	Description
	Time	Lime	Reading	(hours)	Time	Time	
					(hours)	(hours)	
15-Jul-16			4621.2	50.8	50.8	2765.6	OVA/Temp monitoring. SVE found off: notification to Pfizer for system verification.
20-Jul-16	1230		4621.2				System electrical verification performed. Start up and O&M monitoring.
21-Jul-16							OVA/Temp monitoring.
22-Jul-16	1500		4671.8	50.6	101.4	2816.2	Monthly sampling. System off for the weekend.
26-Jul-16	920						Start up and O&M monitoring.
27-Jul-16							OVA/Temp monitoring.
28-Jul-16							OVA/Temp monitoring.
29-Jul-16			4748.3	76.5	177.9	2892.7	OVA/Temp monitoring. System off for the weekend.
1-Aug-16							System start up delayed due to rain water accumulation at SVE area.
8-Aug-16	1100						Start up; system monthly verification; O&M monitoring.
9-Aug-16							OVA/Temp monitoring.
10-Aug-16							OVA/Temp monitoring.
11-Aug-16		The state of the s					Monthly sampling.
12-Aug-16			4847.1	98.8	276.7	2991.5	OVA/Temp monitoring. System off for the weekend.
15-Aug-16	1130						Start up and O&M monitoring.
16-Aug-16							OVA/Temp monitoring.
17-Aug-16							OVA/Temp monitoring.
18-Aug-16							OVA/Temp monitoring.
19-Aug-16		No.	4946.3	99.2	375.9	3090.7	OVA/Temp monitoring. System off for the weekend.
22-Aug-16	1335						Start up and O&M monitoring.
23-Aug-16							OVA/Temp monitoring.
24-Aug-16							OVA/Temp monitoring.
25-Aug-16		1335	5018.1	71.8	447.7	3162.5	OVA/Temp monitoring. System off due to temperature >120 °F at carbon entrance.
29-Aug-16	1130						Start up and O&M monitoring.
30-Aug-16							OVA/Temp monitoring.
31-Aug-16							OVA/Temp monitoring.
1-Sep-16							OVA/Temp monitoring.
2-Sep-16		1500	5117.6	99.5	547.2	3262.0	OVA/Temp monitoring. System off for the weekend.
6-Sep-16	1100						Start up and O&M monitoring.



		Description			OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	Monthly sampling.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. Electrical power failure in PR.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring. System off due to carbon efficiency <90%.	System verification; replacement of system gauges. Carbon exchange activities 2	Carbon refill activities 2 vessels. Installation of carbon vessel at SVE system.	Start up; system monthly verification; O&M monitoring.	
stem	ative	ional	O	rs)		OVA		Start	OVA	OVA	Mont		Start	OVA	OVA		Start	OVA	OVA	OVA		Start	OVA	OVA	OVA/		Start		Syste	Carb	Start	
t SVE System		o	Time	(hours)			3337.6					3438.6				3500.0					3600.1					3700.7		3729.7				
Carbon Unit	Cumulative	Operational	Time	(hours)			622.8					723.8				785.2					885.3					985.9		1014.9				
	Operational	Time	(hours)				75.6					101.0				61.4					100.1					100.6		29.0				
	Hourly	Meter	Reading	200			5193.2					5294.2				5355.6					5455.7					5556.3		5585.3			5585.3	
	30 1/13	Time									Managina a San	1450				1508					1356					1456		1347				
	7/13	Time		1000				945					935				930					1010					910				1100	
		Date			7-Sep-16	8-Sep-16	9-Sep-16	12-Sep-16	13-Sep-16	14-Sep-16	15-Sep-16	16-Sep-16	19-Sep-16	20-Sep-16	21-Sep-16	23-Sep-16	26-Sep-16	27-Sep-16	28-Sep-16	29-Sep-16	30-Sep-16	3-Oct-16	4-Oct-16	5-Oct-16	6-Oct-16	7-Oct-16	10-Oct-16	11-Oct-16	15-Nov-16	16-Nov-16	17-Nov-16	



	Description			Start up and O&M monitoring.	O&M monitoring.	OVA/Temp monitoring. System off for the holiday & weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	Monthly sampling.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up; system monthly verification; O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	Start up and O&M monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring.	OVA/Temp monitoring. System off for the weekend.	7	Start up and O&M monitoring.	OVA/Temp monitoring. System off due to temperature >120 °F at carbon entrance.
SVE System	Cumulative Operational	Time	(hours)			3810.0									The second second	4015.2					4114.8				4192.0				4267.9	YEAR 2017		4296.6
Carbon Unit	Cumulative Operational	Time	(hours)			80.3										285.5					385.1				462.3				538.2			566.9
	Operational Time	(hours)				53.7										205.2					99.66				77.2				75.9			28.7
	Hourly Meter	Reading				5665.6									10 10 10	5870.8					5970.4				6047.6				6123.5			6152.2
	SVE Off	ЭШ				1448					1600					1538					1440				1438				1400			1433
	SVE On	Ш		910			940					925					1100					930				945					1000	
THE SAME	Date			21-Nov-16	22-Nov-16	23-Nov-16	28-Nov-16	29-Nov-16	30-Nov-16	1-Dec-16	2-Dec-16	5-Dec-16	6-Dec-16	7-Dec-16	8-Dec-16	9-Dec-16	12-Dec-16	13-Dec-16	14-Dec-16	15-Dec-16	16-Dec-16	20-Dec-16	21-Dec-16	22-Dec-16	23-Dec-16	27-Dec-16	28-Dec-16	29-Dec-16	30-Dec-16		3-Jan-17	4-Jan-17



					Carbon Unit	SVF System	
	SVE On	SVE OF	Hourly	Operational	Cumulative	Cumulative	
Date	Time	Time	Meter Reading	Time (hours)	Operational Time	Operational Time	Description
					(hours)	(hours)	
9-Jan-17	915						Start up and O&M monitoring.
10-Jan-17							OVA/Temp monitoring.
11-Jan-17		3					OVA/Temp monitoring.
12-Jan-17							OVA/Temp monitoring.
13-Jan-17		1535	6254.8	102.6	669.5	4399.2	OVA/Temp monitoring. System off for the weekend.
16-Jan-17	950				A. A. S. S.		Start up; system monthly verification; O&M monitoring.
17-Jan-17	To the Control	The state of the s			The State of the S		Monthly sampling.
18-Jan-17							OVA/Temp monitoring.
19-Jan-17							OVA/Temp monitoring.
20-Jan-17		1620	6357.1	102.3	771.8	4501.5	OVA/Temp monitoring. System off for the weekend.
23-Jan-17	1030						OVA/Temp monitoring.
24-Jan-17						A	OVA/Temp monitoring.
25-Jan-17							OVA/Temp monitoring.
26-Jan-17							OVA/Temp monitoring.
27-Jan-17		1400	6456.4	99.3	871.1	4600.8	OVA/Temp monitoring. System off for the weekend.
30-Jan-17	1030				9		Start up and O&M monitoring.
31-Jan-17							OVA/Temp monitoring.
1-Feb-17							OVA/Temp monitoring.
2-Feb-17							OVA/Temp monitoring.
3-Feb-17		1440	6556.6	100.2	971.3	4701.0	OVA/Temp monitoring. System off for the weekend.
6-Feb-17	1008						Start up; system monthly verification; O&M monitoring.
7-Feb-17			6583.8	27.2	998.5	4728.2	OVA/Temp monitoring. System off due to temperature >120 °F at carbon entrance.
8-Feb-17	1030						Start up and O&M monitoring.
9-Feb-17							OVA/Temp monitoring.
10-Feb-17		1440	6635.2	51.4	1049.9	4779.6	OVA/Temp monitoring. System off for the weekend.
13-Feb-17	950						Start up and O&M monitoring.
14-Feb-17							OVA/Temp monitoring. Individual extraction wells monitoring and sampling activities: extraction well B-1.
15-Feb-17							OVA/Temp monitoring. Individual extraction wells monitoring and sampling activities: extraction wells AB-10B & B-4.



Date	SVE On Time	SVE Off Time	Hourly Meter Reading	Operational Time (hours)	Carbon Unit Cumulative Operational Time (hours)	SVE System Cumulative Operational Time (hours)	Description
16-Feb-17							OVA/Temp monitoring. Individual extraction wells monitoring and sampling activities: extraction wells AB-23 & AB-21.
17-Feb-17		1500	6736.2	101.0	1150.9	4880.6	OVA/Temp monitoring. Individual extraction wells monitoring and sampling activities: extraction wells AB-10. & AB-19. SVE off for the weekend
20-Feb-17	902						Start up and O&M monitoring.
21-Feb-17	A STANKE STANK						Monthly sampling.
22-Feb-17							OVA/Temp monitoring.
23-Feb-17							OVA/Temp monitoring.
24-Feb-17			6838.2	102.0	1252.9	4982.6	OVA/Temp monitoring. System off for the weekend.
27-Feb-17	1000						Start up and O&M monitoring.
28-Feb-17							OVA/Temp monitoring.
1-Mar-17							OVA/Temp monitoring.
2-Mar-17							OVA/Temp monitoring.
3-Mar-17		1434					OVA/Temp monitoring. System off for the weekend.
6-Mar-17	915						Start up; system monthly verification; O&M monitoring.
7-Mar-17					TITE		OVA/Temp monitoring.
8-Mar-17							OVA/Temp monitoring.
9-Mar-17		100					OVA/Temp monitoring.
10-Mar-17		1410	7039.3	201.1	1454.0	5183.7	OVA/Temp monitoring. System off for the weekend.
13-Mar-17	1050						Start up; O&M monitoring. Replaced vacuum gauge at wells AB-10B and INLET-1.
14-Mar-17							OVA/Temp monitoring.
15-Mar-17							OVA/Temp monitoring.
16-Mar-17					80		OVA/Temp monitoring.
17-Mar-17		1359	7138.4	99.1	1553.1	5282.8	OVA/Temp monitoring. System off for the weekend.
20-Mar-17	1030			The second second second second			OVA/Temp monitoring.
21-Mar-17							OVA/Temp monitoring.
22-Mar-17			7189.7	51.3	1604.4	5334.1	OVA/Temp monitoring. System off due to carbon efficiency <90%.
23-Mar-17							Used carbon vessel removal from SVE system. Began installation of unused carbon vessel at SVE system. System verification.
24-Mar-17	1400	1428					Complete installation of unused carbon vessel at SVE system. System verification.



TABLE 1

Date	SVE On Time	SVE Off Time	Hourly Meter Reading	Operational Time (hours)		Carbon Unit SVE System Cumulative Cumulative Operational Operational Time Time (hours)	Description
27-Mar-17	1035						Start up and O&M monitoring.
28-Mar-17	TO THE REAL PROPERTY.			では、一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一			Monthly sampling.
29-Mar-17							OVA/Temp monitoring.
30-Mar-17							OVA/Temp monitoring.
31-Mar-17			7290.5	100.8	1705.2	5434.9	5434.9 OVA/Temp monitoring. System off for the weekend.

TABLE 2

AMBIENT TEMPERATURE, BAROMETRIC PRESSURE AND HUMIDITY READINGS
SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

Date	Activity Description	Reading Time	Temperature °F	Barometric Pressure in Hg	Humidity %
			•		
0 1 47		1040	97.9	29.77	42
3-Jan-17	Monitoring	1320	95.7	29.65	39
9-Jan-17	Monitoring	930	84.4	29.80	63
9-3411-17	Monitoring	1325	96.6	29.74	46
16-Jan-17	Monitoring	1050	102.2	29.80	26
10-Jan-17	Monitoring	1305	97.9	29.74	31
17-Jan-17	Sampling	1012	104.5	29.80	27
17-Jan-17	Sampling	1305	97.0	29.74	32
00 Jan 47	Manikasina	1100	113.2	29.70	20
23-Jan-17	Monitoring	1300	108.0	29.65	20
07.147	## W = 2	1055	106.3	29.80	22
27-Jan-17	Monitoring	1230	104.4	29.80	28
00 1 47	B.B 14 - 1	1110	111.9	29.74	20
30-Jan-17	Monitoring	1330	102.9	29.77	31
0 = 1 47		1120	104.9	29.77	28
6-Feb-17	Monitoring	1225	104.0	29.77	30
0 5 1 47		1120	113.0	29.77	20
8-Feb-17	Monitoring	1330	115.3	29.71	20
		1055	107.2	29.71	24
13-Feb-17	Monitoring	1300	99.5	29.68	32
		950	111.6	29.65	20
20-Feb-17	Monitoring	1325	97.3	29.59	34
04 = 1 4=	. "	925	85.3	29.56	46
21-Feb-17	Sampling	1310	107.6	29.59	20
07.5 1.47		1055	99.5	29.77	40
27-Feb-17	Monitoring	1300	99.9	29.77	25
0.14 47		1150	73.8	29.77	61
6-Mar-17	Monitoring	1340	79.0	29.77	68
		1100	98.4	29.74	33
13-Mar-17	Monitoring	1300	105.4	29.71	30

TABLE 2

AMBIENT TEMPERATURE, BAROMETRIC PRESSURE AND HUMIDITY READINGS
SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

Date	Activity Description	Reading Time	Temperature °F	Barometric Pressure in Hg	Humidity %
		1130	98.1	29.71	44
20-Mar-17	Monitoring	1308	103.3	29.68	34
07.14 47	Manthadas	1039	82.9	29.69	50
27-Mar-17	Monitoring	1300	111.7	29.62	26
28-Mar-17	Campling	950	108.0	29.66	23
∠o-iviar-1/	Sampling	1215	90.9	29.66	60

Notes:

°F

Degrees Farenheit

in Hg

Inches of Mercury

%

Percentage

TABLE 3

SVE SYSTEM VACUUM AND PRESSURE READINGS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Date	Activity Description	Time	AB-10 Vacuum in Hg	AB-10B Vacuum in Hg	AB-21 Vacuum in Hg	AB-19 Vacuum in Hg	AB-23 Vacuum in Hg	B-1 Vacuum in Hg	B-4 Vacuum in Hg	SVE Pressure in H ₂ O	Air Filter-1 Vacuum in Hg	Air Filter-2 Vacuum in Hg
6	100	1100	2.5	2.5	2.5	2.0	2.5	3.0	2.5	0.34	2.0	3.0
0-0all-17	Montoling	1350	3.5		3.5	3.0	4.0	3.5	3.0	0.34	3.0	4.0
6	: :: :: :: :: :: :: :: :: :: :: :: :: :	1010	1.5	1.5	<u>t.</u>	1.0	2.0	2.0	1.5	0.30	1.0	2.5
9-0an-17	Monitoring	1345	2.0	2.0	2.0	1.5	2.5	2.5	2.0	0.30	2.0	3.0
7		1100	2.5	2.5	2.5	2.0	3.0	3.0	2.5	0.38	3.0	4.0
Io-Jan-II	Monitoring	1307	3.0	3.0	3.5	3.0	3.5	3,5	3.0	0.38	3.0	4.0
1		1022	5:1	1.5	2.0	1.0	2.0	2.0	7.7	0.32	3.0	4.0
11-Jan-11	Sampling	1310	2.5	2.5	2.5	2.0	3.0	2.5	2.0	0.30	3.0	4.0
00 00	4,000	1135	3.0	3.5	3.5	3.0	3.5	3.5	3.0	0.40	3.0	4.0
72-2all-17	BUILDING	1305	2.5	3.0	3.0	2.5	3.0	3.0	2.5	0.36	2.5	4.0
27-Jan-17	Monitoring	1100	2.5	2.5	2.5	2.0	3.0	2.5	2.0	0.32	2.5	4.0
20 00 17	Mocination	1130	3.0	3.5	3.5	3.0	4.0	4.0	3.5	0.44	2.5	4.0
30-0all-17	Billionillo	1330	3.0	3.0	3.0	2.5	3.5	3.0	3.0	0.40	2.5	4.0
6 Ech 47	Modicalia	1125	3.0	3.5	3.5	3.0	4.0	4.0	3.5	0.44	2.5	4.0
/1-09-1-0	BILLON	1230	3.0		3.5	3.0	3.5	3.5	3.0	0.44	2.5	4.0
8-Feb-17	Monitoring	1130	3.0	3.0	3.5	3.0	3.5	3.5	3.0	0.34	2.5	4.0
13 Ech 17	Monitoring	1100	2.0	2.0	2.0	1.5	2.0	2.0	1.5	0.26	2.0	3.0
1-091-01		1310	2.5	2.5	2.5	2.0	3.0	2.5	2.0	0.30	2.0	4.0
20. Eah. 17	Monitorio	1015	1.5	2.0	2.0	1.5	2.0	2.0	2.0	0.38	2.0	3.0
100		1345	3.0	2.0	3.0	3.0	3.5	3.5	3.0	0.32	1.0	3.0
24-Fob-17	Samuling	932	1.5	1.5	1.5	1.5	2.0	2.0	1.5	0.36	2.0	3.0
/1-na-17	Sampung	1315	2.5	2.5	3.0	2.5	3.0	3.0	2.5	0.34	2.0	4.0

TABLE 3

SVE SYSTEM VACUUM AND PRESSURE READINGS
SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

Date	Activity Description	Time	AB-10 Vacuum in Hg	AB-10B Vacuum in Hg	AB-21 Vacuum in Hg	AB-19 Vacuum in Hg	AB-23 Vacuum in Hg	B-1 Vacuum in Hg	B-4 Vacuum in Hg	SVE Pressure in H ₂ O	Air Filter-1 Vacuum in Hg	Air Filter-1 Air Filter-2 Vacuum Vacuum in Hg in Hg
27-Feb-17	Monitoring	1100	2.0	2.0	3.0	1.5	2.5	3.0	3.0	0.34	2.0	3.0
6-Mar-17	Monitoring	1153	1.5	1.5	1.5	1.0	2.0	1.5	1.0	0.46	1.5	2.5
13-Mar-17	Monitoring	1145	2.0	3.5	3.0	1.5	2.5 3.5	3.0	3.0	0.30	2.0	3.0
20-Mar-17	Monitoring	1310	2.5	3.5	2.5	2.0	3.0	2.5	2.5	0.28	1.0	3.0
27-Mar-17	Monitoring	1150 1310	2.0	3.0	2.0	1.5	3.0	3.0	1.5	0.40	2.0	3.0
28-Mar-17	Sampling	1030	3.0	3.0	3.0	1.5	2.5	3.0	1.5 2.5	0.32	2.0	3.0

Notes: in H₂O in Hg

Inches of water

Inches of Mercury

TABLE 4

INLET-1 MONITORING DATA SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

4	Activity	į	Vacuum	mn	Flow Rate	Temperature	ature	OVA	LEL	o ²	8	H ₂ S
Date	Description	9	(in H ₂ O)	(in Hg)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
4/2/2047	9	1100	30.0	2.2	1773	82.0	27.8	60.1	0	17.8	0	0
113/2011	MOIIICHIIG	1350	30.0	2.2	1710	94.0	34.4	64.7	0	16.3	0	0
		Average:	30.0	2.2	1742	88.0	31.1					
!		1010	25.0	<u>6</u>	1694	82.0	27.8	53.2	0	16.8	0	0
1/9/2017	Monitoring	1345	25.0	8:	1728	86.0	30.0	57.1	0	17.3	0	0
		Average:	25.0	4.8	1711	84.0	28.9					
000	:	1100	30.0	2.2	1797	86.0	30.0	59.0	0	17.3	0	0
1/16/201/	Monitoring	1307	31.0	2.3	1465	90.0	32.2	64.2	0	17.7	0	0
		Average:	30.5	2.2	1631	88.0	31.1					
		1022	30.0	2.2	1560	80.0	26.7	51.5	0	18.7	0	0
1/17/2017	Sampling		30.0	2.2	1555	80.0	26.7					
		1310	29.0	2.1	1585	0.06	32.2	62.1	0	18.5	0	0
		Average:	29.7	2.2	1567	83.3	28.5					
1,000,000,1		1135	30.0	2.2	2120	90.0	32.2	60.1	0	18.0	0	0
1102/02/1	MOTITION	1305	28.0	2.1	2130	0.06	32.2	59.1	0	18.0	0	0
		Average:	29.0	2.1	2125	90.0	32.2					
1/27/2017	Monitoring	1100	29.0	2.1	1443	0.06	32.2	61.8	0	18.6	0	0
1/20/2017	Monitorio	1130	31.0	2.3	2043	94.0	34.4	59.4	0	17.6	0	0
1/30/201/	BILLIOINI	1330	32.0	2.4	1537	93.0	33.9	57.8	0	17.5	0	0
		Average:	31.5	2.3	1790	93.5	34.2					
71001910	Monitoring	1125	32.0	2.4	2003	90.0	32.2	0.99	0	17.7	0	0
2/0/2017	BI III IOIII IOINI	1230	33.0	2.4	1969	92.0	33.3	2.99	0	18.0	0	0
		Average:	32.5	2.4	1986	91.0	32.8					
2/8/2017	Monitoring	1130	27.0	2.0	2041	0.96	35.6	56.4	0	18.0	0	0
2/13/2017	Monitoring	1100	20.0	1.5	1284	90.0	32.2	55.8	0	17.5	0	0
102017	B	1310	20.0	<u>t</u> . t	1296	96.0	35.6	55.3	0	17.5	0	0
		Avei age.	20.0	<u>.</u>	1230	93.0	55.8					

TABLE 4

INLET-1 MONITORING DATA
SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

1 2	Activity	i.	Vacuum	um	Flow Rate	Temperature	ıture	OVA	TEI	02		8	H ₂ S
Date	Description	e III	(in H ₂ O)	(in Hg)	(ft/min)	(°F)	(0°)	(mdd)	(%)	(%)	Ĭ,	(mdd)	(mdd)
1.400,000,0		1015	27.0	2.0	1461	86.0	30.0	57.6	0	18.1		0	0
2/20/2017	Monitoring	1345	27.0	2.0	1517	98.0	36.7	56.6	0	17.8		0	0
		Average:	27.0	2.0	1489	92.0	33.3						
		932	27.0	2.0	1849	79.0	26.1	53.1	0	18.0		0	0
2/21/2017	Sampling		27.0	2.0	1504	82.0	27.8						
		1315	27.0	2.0	1509	92.0	33.3	53.8	0	18.7		0	0
		Average:	27.0	2.0	1621	84.3	29.1						
7,400,70,0		1100	20.0	1.5	1966	88.0	31.1	8.79	0	19.9		0	0
2/2//2017	Monitoring	1308	27.0	2.0	1445	92.0	33.3	63.4	0	20.3		0	0
		Average:	23.5	1.7	1706	0.06	32.2						
3/6/2017	Monitoring	1153	27.0	2.0	1869	75.0	23.9	9.09	0	20.5		0	0
1400,040		1145	22.0	1.6	1229	94.0	34.4	50.5	0	20.3		0	0
3/13/2017	Monitoring	1305	22.0	1.6	1093	0.76	36.1	50.6	0	20.1		0	0
		Average:	22.0	1.6	1161	95.5	35.3						
3/20/2017	Monitoring	1310	22.0	1.6	1124	0.86	36.7	62.2	0	20.3		0	0
7,700,701,0		1150	24.0	1.8	2605	86.0	30.0	47.1	0	20.5		0	0
3/2//2017	IVIOUITORING	1310	24.0	1.8	2522	0.76	36.1	62.7	0	20.5		0	0
		Average:	24.0	1.8	2564	91.5	33.1						
		1030	23.0	1.7	1553	0.06	32.2	57.7	0	20.3		0	0
3/28/2017	Sampling		23.0	1.7	1544	88.0	31.1						
		1406	23.0	1.7	1346	84.0	28.9	51.8	0	20.4		0	0
		Average:	23.0	1.7	1481	87.3	30.7						
Notes:													
in H ₂ O	Inches of water	L		ပွ	Degrees Celsius			8	Carbon monoxide	o)			
in Hg	Inches of Mercury	ury		ı,	Organic vapor analyzer	nalyzer		H ₂ S	Hydrogen sulfide				
ft/min	Feet per minute	: U -			Lower explosive limit	limit		%	Percentage				
Ļ.	Degrees Farenheit	nheit		O ₂	Oxygen			mdd	Parts per million				

Page 2 of 2 D770710a E175475

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INLET-2 MONITORING DATA SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

4	Activity	i	Pressure	sure	Flow Rate	Temperature	ıture	OVA	LEL	02	8	H ₂ S
Date	Description	e III	(in H ₂ O)	(in Hg)	(ft/min)	(°F)	(၁ _၀)	(mdd)	(%)	(%)	(mdd)	(mdd)
1,000		1100	8.0	9.0	4920	110.0	43.3	16.5	0	19.5	0	0
1/3/201/	Monitoring	1350	8.0	9.0	4939	116.0	46.7	19.3	0	20.0	0	0
		Average:	8.0	9.0	4930	113.0	45.0					
0000	:	1010	8.0	0.6	4829	108.0	42.2	15.4	0	20.1	0	0
1/9/201	Monitoring	1345	8.0	9.0	4835	108.0	42.2	15.0	0	20.0	0	0
		Average:	8.0	9.0	4832	108.0	42.2					
0000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1100	8.0	9.0	4792	112.0	44.4	15.4	0	19.7	0	0
1/10/201/	Monitoring	1307	8.0	9.0	4546	114.0	45.6	15.5	0	19.9	0	0
		Average:	8.0	9.0	4669	113.0	45.0					
		1022	8.0	9.0	5493	108.0	42.2	13.6	0	20.3	0	0
1/17/2017	Sampling		8.0	9.0	5481	108.0	42.2					
		1310	8.0	9.0	4898	112.0	44.4	16.0	0	20.0	0	0
		Average:	8.0	9.0	5291	109.3	43.0					
7,00,00,4		1135	8.0	9.0	4613	117.0	47.2	17.0	0	20.2	0	0
1/23/2017	Monitoring	1305	8.0	9.0	4692	114.0	45.6	16.3	0	20.4	0	0
		Average:	8.0	9.0	4653	115.5	46.4					
1/27/2017	Monitoring	1100	8.0	9.0	4644	114.0	45.6	14.3	0	20.3	0	0
7,00,007	4	1130	8.0	9.0	4574	120.0	48.9	19.0	0	20.2	0	0
1102/06/1	DI IONI	1330	8.0	9.0	4628	117.0	47.2	16.7	0	20.3	0	0
		Average:	8.0	9.0	4601	118.5	48.1					
2/6/2017	Conceptor	1125	8.0	9.0	4490	114.0	45.6	16.0	0	19.8	0	0
210/2017	SI III IOI III IOI III IO	1230	8.0	9.0	4426	118.0	47.8	18.0	0	20.0	0	0
		Average:	8.0	9.0	4458	116.0	46.7					
2/8/2017	Monitoring	1130	8.0	9.0	4546	120.0	48.9	14.8	0	20.3	0	0
2/43/2047	Monitoring	1100	8.0	9.0	4763	110.0	43.3	10.4	0	20.0	0	0
		1310 Average:	8.0 8.0	0.0	4774 4769	116.0	46.7 45.0	15.0	0	20.0	0	0

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SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO INLET-2 MONITORING DATA

TABLE 5

	Activity		Pres	Pressure	Flow Rate	Temperature	rature	OVA	LEL	ဝိ	03	H,S
Date	Description	Time	(in H ₂ O)	(in Hg)	(ff/min)	(°F)	(၁၀)	(mdd)	(%)	(%)	(mdd)	(mdd)
7,00,00,0		1015	8.0	9.0	4727	110.0	43.3	16.2	0	20.0	0	0
71.07/07/7	Monitoring	1345	8.0	9.0	4810	118.0	47.8	15.1	0	20.2	0	0
		Average:	8.0	9.0	4769	114.0	45.6					
		932	8.0	9.0	4752	104.0	40.0	14.0	0	20.2	0	0
2/21/2017	Sampling		8.0	9.0	4679	108.0	42.2					
		1315	8.0	9.0	4536	114.0	45.6	14.8	0	20.3	0	0
		Average:	8.0	9.0	4656	108.7	42.6					
7,500,700,0	 	1100	8.0	9.0	4720	112.0	44.4	15.6	0	20.4	0	0
71.0717717	Monitoring	1308	8.0	9.0	4772	115.0	46.1	15.4	0	20.8	0	0
		Average:	8.0	9.0	4746	113.5	45.3					
3/6/2017	Monitoring	1153	8.0	9.0	4743	100.0	37.8	17.5	0	20.8	0	0
7,007,047	7.0	1145	8.0	9.0	4891	112.0	44.4	12.6	0	20.7	0	0
3/10/2017	Morntoning	1305	8.0	9.0	4736	116.0	46.7	12.0	0	20.7	0	0
		Average:	8.0	9.0	4814	114.0	45.6					
3/20/2017	Monitoring	1310	8.0	9.0	4797	118.0	47.8	14.5	0	20.7	0	0
710017016		1150	8.0	9.0	4924	110.0	43.3	10.4	0	20.7	0	0
3/2/1/2011	MOFILICATING	1310	8.0	9.0	4799	115.0	46.1	15.3	0	20.6	0	0
		Average:	8.0	9.0	4862	112.5	44.7					
		1030	8.0	9.0	4788	114.0	45.6	12.7	0	20.7	0	0
3/28/2017	Sampling		8.0	9.0	4812	108.0	42.2					
		1406	8.0	9.0	4833	108.0	42.2	13.0	0	20.7	0	0
-		Average:	8.0	9.0	4811	110.0	43.3					
Notes:									a.			
in H ₂ O	Inches of water			ပွ	Degrees Celsius			00	Carbon monoxide			
in Hg	Inches of Mercury	ury			Organic vapor analyzer	nalyzer		H ₂ S	Hydrogen sulfide			
ft/min	Feet per minute	4			Lower explosive limit	limit		%	Percentage			
ሖ	Degrees Farenheit	heit		02	Oxygen			mdd	Parts per million			

Page 2 of 2 D770710a E175475

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TABLE 6
OUTLET MONITORING DATA
SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

	Activity		Pressure	sure	Flow Rate	Temperature	ture	OVA	FE	o,	8	H,S
Date	Description	Time	(in H ₂ O)	(in Hg)	(ft/min)	(%)	(၁၀)	(mdd)	(%)	(%)	(mdd)	(mdd)
		1100	0.0	0.0	2779	82.0	27.8	0.0	0	20.2	0	0
1/3/2017	Monitoring	1350	0.0	0.0	2720	98.0	36.7	0.2	0	20.1	0	0
		Average:	0.0	0.0	2750	90.0	32.2					
		1010	0 0	0.0	2810	92.0	33.3	0.2	0	20.3	0	0
1/9/2017	Monitoring	1345	0.0	0.0	2831	96.0	35.6	0.0	0	20.1	0	0
		Average:	0.0	0.0	2821	94.0	34.4					
1,000		1100	0.0	0.0	2831	0.06	32.2	0.3	0	19.9	0	0
1/16/201/	Monitoring	1307	0.0	0.0	2636	94.0	34.4	0.3	0	20.0	0	0
		Average:	0.0	0.0	2734	92.0	33.3					
		1022	0.0	0.0	2478	93.0	33.9	0.3	0	20.1	0	0
1/17/2017	Sampling		0.0	0.0	2506	94.0	34.4					
		1310	0.0	0.0	2717	94.0	34.4	0.3	0	20.0	0	0
		Average:	0.0	0.0	2567	93.7	34.3					
1,00,00,1		1135	0.0	0.0	2864	92.0	33.3	0.0	0	20.4	0	0
1/23/2017	MOTHIOINING	1305	0.0	0.0	2744	0.76	36.1	0.0	0	20.5	0	0
		Average:	0.0	0.0	2804	94.5	34.7					
1/27/2017	Monitoring	1100	0:0	0.0	2553	98.0	36.7	0.1	0	20.4	0	0
1/20/2017	4000	1130	0.0	0.0	2691	96.0	35.6	0.5	0	20.3	0	0
1130/2011	BILLIONIO	1330	0.0	0.0	2773	100.0	37.8	9.0	0	20.3	0	0
		Average:	0.0	0.0	2732	98.0	36.7					
7/6/2017	Monitoring	1125	0.0	0.0	2633	94.0	34.4	0.2	0	20.0	0	0
2/0/2017	Billiomori	1230	0.0	0.0	2619	0.66	37.2	0.4	0	20.2	0	0
		Average:	0.0	0.0	2626	96.5	35.8					
2/8/2017	Monitoring	1130	0.0	0.0	2678	0.96	35.6	6.0	0	20.4	0	0
2/13/2017	Monitoring	1100	0.0	0.0	2747	92.0	33.3	0.5	0 0	20.3	00	00
		Average:	0.0	0.0	2742	96.0	35.6	2	Þ	-	Þ	o

Carbon monoxide Hydrogen sulfide

Percentage Parts per million

CO H₂S %

> Organic vapor analyzer Lower explosive limit

့ 0^A Oxygen

O₂

Degrees Farenheit

Inches of Mercury Feet per minute

Inches of water

Notes: in H₂O in Hg ff/min

Degrees Celsius

TABLE 6

OUTLET MONITORING DATA SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

	Activity		Pressure	ure	Flow Rate	Temperature	ature	OVA	LEF	ò	8	H ₂ S
Date	Description	Time	(in H ₂ O)	(in Hg)	(ft/min)	(°F)	(၃)	(mdd)	(%)	(%)	(mdd)	(mdd)
		1015	0	0	2626	92.0	33.3	1.0	0	20.1	0	0
2/20/2017	Monitoring	1345	0.0	0.0	2589	100.0	37.8	4.1	0	20.3	0	0
		Average:	0.0	0.0	2608	96.0	35.6					
		932	0.0	0.0	2439	92.0	33.3	0.8	0	20.4	0	0
2/21/2017	Sampling		0.0	0.0	2471	95.0	35.0					
		1315	0.0	0.0	2636	0.76	36.1	0.8	0	20.9	0	0
		Average:	0.0	0.0	2515	94.7	34.8					
740017010	N. Constitution of the con	1100	0.0	0.0	2707	94.0	34.4	1.6	0	20.7	0	0
2/2/1201/	Monitoring	1308	0.0	0.0	2715	0.76	36.1	2.0	0	20.9	0	0
		Average:	0.0	0.0	2711	95.5	35.3					
3/6/2017	Monitoring	1153	0.0	0.0	2520	88.0	31.1	5.	0	20.8	0	0
7,000,04,0		1145	0.0	0.0	2850	84.0	28.9	3.5	0	20.7	0	0
3/13/201/	MOUNTAIN	1305	0.0	0.0	2872	95.0	35.0	3.6	0	20.6	0	0
		Average:	0.0	0.0	2861	89.5	31.9					
3/20/2017	Monitoring	1310	0.0	0.0	2803	100.0	37.8	4.5	0	20.7	0	0
7,001,701,0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1150	0.0	0.0	2733	96.0	35.6	0.0	0	20.7	0	0
3/21/2011	MOTITORING	1310	0.0	0.0	2702	102.0	38.9	0.0	0	20.7	0	0
		Average:	0.0	0.0	2718	0.66	37.2					
		1030	0.0	0.0	2623	100.0	37.8	0.0	0	20.7	0	0
3/28/2017	Sampling		0.0	0.0	2636	100.0	37.8					
		1406	0.0	0.0	2522	0.66	37.2	0.3	0	20.8	0	0
		Average:	0.0	0.0	2594	2.66	37.6					

Page 2 of 2 D770710a E175475

TABLE 7

INLET-1, INLET-2 AND OUTLET SAMPLING DATA SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

		JAI	NUARY 2	017 MONTHLY S	AMPLES			
Sampling Date	Sample ID	Sample	Time	Sampling Point Temperature	Ambient Temperature	Samplir Vacı	_	Barometric Pressure
Date		Туре		(°F)	(°F)	(in H ₂ O)	(in Hg)	(in Hg)
1/17/17	INLET-1-16	Grab	1055	83.0	101.5	30	2.2	29.80
1/17/17	INLET-2-16	Grab	1059	110.0	99.0	8.0	0.6	29.80
1/17/17	INLET-P (Co-located sample of INLET-2-16)	Grab	1059	110.0	99.0	8.0	0.6	29.80
1/17/17	OUTLET-16	Grab	1103	94.0	98.2	0.0	0.0	29.80

		FEB	RUARY 2	2017 MONTHLY	SAMPLES			
Sampling Date	Sample ID	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Samplin Vacı	•	Barometric Pressure
		.,,,,		(°F)	(°F)	(in H₂O)	(in Hg)	(in Hg)
2/21/17	INLET-1-16	Grab	1030	82.0	86.2	27	2.0	29.59
2/21/17	INLET-2-16	Grab	1033	108.0	86.0	8.0	0.6	29.59
2/21/17	INLET-P (Co-located sample of INLET-2-16)	Grab	1033	108.0	86.0	8.0	0.6	29.59
2/21/17	OUTLET-16	Grab	1038	95.0	85.6	0.0	0.0	29.59

	M.	ARCH 20	17 MONTHLY SA	MPLES			
Sample ID	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	•	-	Barometric Pressure
	.,,,,		(°F)	(°F)	(in H₂O)	(in Hg)	(in Hg)
INLET-1-17	Grab	1256	88.0	87.8	23	1.7	29.65
INLET-2-17	Grab	1300	108.0	87.4	8.0	0.6	29.65
OUTLET-17	Grab	1308	100.0	87.1	0.0	0.0	29.62
OUTLET-Q (Co-located sample of OUTLET-17)	Grab	1308	100.0	87.1	0.0	0.0	29.62
	INLET-1-17 INLET-2-17 OUTLET-17 OUTLET-Q (Co-located	Sample ID Sample Type INLET-1-17 Grab INLET-2-17 Grab OUTLET-17 Grab OUTLET-17 Grab	Sample ID Sample Time INLET-1-17 Grab 1256 INLET-2-17 Grab 1300 OUTLET-17 Grab 1308 OUTLET-Q (Co-located Grab 1308	Sample ID Sample Type Time Sampling Point Temperature INLET-1-17 Grab 1256 88.0 INLET-2-17 Grab 1300 108.0 OUTLET-17 Grab 1308 100.0 OUTLET-Q (Co-located Grab 1308 100.0	Sample Type Time Temperature Temperature (°F) Temperature (°F) INLET-1-17 Grab 1256 88.0 87.8 INLET-2-17 Grab 1300 108.0 87.4 OUTLET-17 Grab 1308 100.0 87.1 OUTLET-Q (Co-located Grab 1308 100.0 87.1	Sample ID Sample Type Time Sampling Point Temperature (°F) Ambient Temperature (in H₂O) Sampling Point Temperature (°F) Ambient Temperature (in H₂O) INLET-1-17 Grab 1256 88.0 87.8 23 INLET-2-17 Grab 1300 108.0 87.4 8.0 OUTLET-17 Grab 1308 100.0 87.1 0.0	Sample ID Sample Type Time Temperature Sampling Point Temperature (°F) Ambient Temperature (in H₂O) Sampling Point Vacuum (in H₂O) (in H₂O) (in Hg) INLET-1-17 Grab 1256 88.0 87.8 23 1.7 INLET-2-17 Grab 1300 108.0 87.4 8.0 0.6 OUTLET-17 Grab 1308 100.0 87.1 0.0 0.0

Notes:

°F Degrees Farenheit

in H₂O

Inches of water

in Hg

Inches of Mercury



TABLE 8

VALIDATED ANALYTICAL RESULTS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Sai	mple ID:	INLET-1-16	INLET-2-16	INLET-P	OUTLET-16	TB-011717
	Date:	1/17/2017	1/17/2017	Co-located sample of INLET-2-16	1/17/2017	Trip Blank 1/17/2017
VOCs (EPA Method TO-1	15)	(ppbv)	(ppbv)	(ppbv)	(ppbv)	(ppbv)
Acetone		700J	3900U	4500U	11J	5.0U
Isopropyl alcohol		1900U	3900U	4500U	25U	0.15J
Methylene chloride		190U	390U	450U	90	0.50U
n-Hexane		78U	160U	180U	1.3	0.20U
Chloroform		36J	160U	180U	1.0U	0.20U
Tetrahydrofuran		70000	13000	14000	25U	5.0U
Benzene		1900	360	380	0.21J	0.20U
Toluene		12000	2200	2400	1.1	0.058J
Chlorobenzene		78U	160U	180U	1.0U	0.20U
Ethylbenzene		3600	690	730	1.0U	0.091J
m,p-Xylene		17000	3200	3400	2.5U	0.10J
o-Xylene		2300	450	480	1.0U	0.20U
Xylene (total)		19000	3700	3900	3.5U	0.10J
Methyl iodide		ND	ND	ND	ND	ND
Total NMOC (EPA Metho	d 25C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)
Non-Methane Organic Compo Carbon	ound as	630	160	130	45	6.0U
VOCs (EPA Method 3C)		(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)
Methane		0.067U	0.064U	0.066U	0.067U	NA
Other (NIOSH 2000)		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Methanol		53.5J	30.5J	32.6J	18.2J	NA

Sample ID:	INLET-1-16	INLET-2-16	INLET-P	OUTLET-16	TB022117
Date:	2/21/2017	2/21/2017	Co-located sample of INLET-2-16	2/21/2017	Trip Blank 2/21/2017
VOCs (EPA Method TO-15)	(ppbv)	(ppbv)	(ppbv)	(ppbv)	(ppbv)
Acetone	640J	2300U	2200U	71J	5.0U
Isopropyl alcohol	1500U	2300U	2200U	150U	5.0U
Methylene chloride	150U	230U	220U	27	0.50U
n-Hexane	60U	93U	90U	5.8U	0.20U
Chloroform	34J	93U	90U	5.8U	0.20U
Tetrahydrofuran	60000	15000	14000	680	5.0U
Benzene	1400	290	290	5.8U	0.20U
Toluene	11000	2200	2200	2.5J	0.20U
Chlorobenzene	60U	93U	90U	5.8U	0.20U
Ethylbenzene	3400	740	720	5.8U	0.20U
m,p-Xylene	16000	3500	3400	15U	0.50U
o-Xylene	2300	460	470	5.8U	0.20U
Xylene (total)	18000	4000	3900	20U	0.70U
Methyl iodide	ND	ND	ND	ND	ND
Total NMOC (EPA Method 25C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)
Non-Methane Organic Compound as Carbon	490	130	120	27	6.0U
VOCs (EPA Method 3C)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)
Methane	0.071U	0.069U	0.064U	0.066U	NA
Other (NIOSH 2000)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Methanol	1.60UJ	36.1J	34.5J	7.73J	NA

TABLE 8

VALIDATED ANALYTICAL RESULTS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Sample ID:	INLET-1-17	INLET-2-17	OUTLET-17	OUTLET-Q	TB032817
Date:	3/28/2017	3/28/2017	3/28/2017	Co-located sample of OUTLET-17	Trip Blank 3/28/2017
VOCs (EPA Method TO-15)	(ppbv)	(ppbv)	(ppbv)	(ppbv)	(ppbv)
Acetone	15000U	1700U	11	5.1	5.0U
Isopropyl alcohol	15000U	1700U	8.1	7.8	5.0U
Methylene chloride	1500U	58J	0.11J	0.50U	0.50U
n-Hexane	600U	68U	0.20U	0.20U	0.20U
Chloroform	600U	68U	0.20U	0.20U	0.20U
Tetrahydrofuran	42000	8100	5.0U	5.0U	5.0U
Benzene	1100	190	0.36	0.093J	0.20U
Toluene	9700	1700	0.20	0.41	0.20U
Chlorobenzene	600U	68U	0.20U	0.20U	0.20U
Ethylbenzene	3600	610	0.20U	0.20U	0.20U
m,p-Xylene	18000	2900	0.50U	0.50U	0.50U
o-Xylene	2500	400	0.20U	0.20U	0.20U
Xylene (total)	21000	3300	0.70U	0.70U	0.70U
Methyl iodide	ND	ND	ND	ND	ND
Total NMOC (EPA Method 25C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)	(ppm-C)
Non-Methane Organic Compound as Carbon	450	95	27	23	6.0U
VOCs (EPA Method 3C)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)
Methane	0.070U	0.065U	0.068U	0.066U	NA
Other (NIOSH 2000)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Methanol	22.6J	27.2J	4.50J	4.35J	NA

Notes:

ppbv = Parts per billion per volume.

ppm-C = Parts per million as carbon.

%v/v = Percentage per volume.

ppm = Parts per million.

U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

NA = Not applicable.

ND = Not detected.

SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC INLET-1 MASS REMOVAL CALCULATIONS BARCELONETA, PUERTO RICO

January 17, 2017 (Operational time: 233.6 hours from 1/3 to 1/20/2017)

camany 11, 2011 (operational time: 2000 flooring the first control of th			0000														
Compound	MW	Vacuum Vacuum Press.	Vacuum	Press.	Temp.	Temp.	Gas	Gas Constant Pressure	Pressure	Density	ity	INLE	INLET-1-16	Flow Rate Flow Rate	Flow Rate ^{1/}	Mass Remova	emoval
		(in H ₂ O) (in Hg)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(a/L)	(mg/L)	(nddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)
Isopropyl alcohol	60.1	30	2.2	0.07	28.3	301.3	0.0821	24.74	4.43	0.1789	178.9	0	0.00000.0	1555	31.72	0.00000.0	0.000000
Methylene chloride	84.93	30	2.2	0.07	28.3	301.3	0.0821	24.74	6.26	0.2529	252.9	0	0.00000.0	1555	31.72	0.00000.0	0.00000.0
n-Hexane	86.17	30	2.2	0.07	28.3	301.3	0.0821	24.74	6.35	0.2566	256.6	0	0.00000.0	1555	31.72	0.00000.0	0.00000.0
Chloroform	119.38	30	2.2	0.07	28.3	301.3	0.0821	24.74	8.79	0.3554	355.4	36	0.000013	1555	31.72	0.000002	0.000036
Tetrahydrofuran	72.11	30	2.2	0.07	28.3	301.3	0.0821	24.74	5.31	0.2147	214.7	70000	0.015028	1555	31.72	0.001786	0.042858
Benzene	78.11	30	2.2	0.07	28.3	301.3	0.0821	24.74	5.75	0.2326	232.6	1900	0.000442	1555	31.72	0.000053	0.001260
Toluene	92.14	30	2.2	0.07	28.3	301.3	0.0821	24.74	6.79	0.2743	274.3	12000	0.003292	1555	31.72	0.000391	0.009388
Chlorobenzene	112.56	30	2.2	0.07	28.3	301.3	0.0821	24.74	8.29	0.3351	335.1	0	0.00000.0	1555	31.72	0.00000.0	0.00000.0
Ethylbenzene	106.16	30	2.2	0.07	28.3	301.3	0.0821	24.74	7.82	0.3161	316.1	3600	0.001138	1555	31.72	0.000135	0.003245
m,p-Xylene	106.17	30	2.2	0.07	28.3	301.3	0.0821	24.74	7.82	0.3161	316.1	17000	0.005374	1555	31.72	0.000639	0.015324
o-Xylene	106.17	30	2.2	0.07	28.3	301.3	0.0821	24.74	7.82	0.3161	316.1	2300	0.000727	1555	31.72	0.000086	0.002073
Methyl iodide	141.95	30	2.2	0.07	28.3	301.3	0.0821	24.74	10.46	0.4226	422.6	0	0.00000.0	1555	31.72	0.00000.0	0.00000.0
Methanol	32.04	30	2.2	0.07	28.3	301.3	0.0821	24.74	2.36	0.0954	95.4	53500	0.005103	1555	31.72	0.000606	0.014554
																0.003697	0.088739

ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)

						1.											
Compound	MW	MW Vacuum Vacuum Press.	Vacuum	Press.	Temp.	Temp.	Gas	Gas Constant Pressure	Pressure	Density	ity	INLE	INLET-1-16	Flow Rate Flow Rate ^{1/}	low Rate ^{1/}	Mass Removal	moval
		(in H ₂ O)	(in H ₂ O) (in Hg) (atm)	(atm)	(၁ _၀)	(°K)	Cons.	by Temp by MW (g/L) (mg/L) (ppbv) (mg/L) (AFPM) (WSCFM) (lbs/hr) (lbs/day)	by MW	(g/L)	(mg/L)	(hpbv)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Acetone	58.08	30	2.2	0.07	28.3	301.3	0.0821	24.74	4.28 0.1729	0.1729	172.9	200	0.000121	1555	31.72	0.000014	0.000345
Methane	16.04	30	2.2	0.07	28.3	301.3	0.0821	24.74	1.18	0.0478	47.8	0	0.000000	1555	31.72	0.00000.0	0.000000
																0.000014	0.000345

0.863723

Mass Removal Calculations 1/3 to 1/20/2017 for 233.6 hours operation:

Mass Removal Calculations 1/3 to 1/20/2017 for 233.6 hours operation:

0.003360

Notes:				
1/	Flow rate calculation TRC report reference formula:	INLET-1-16	MW	Molecular weight.
	Flow Data	1/17/17	in H_2O	Inches of water.
	Barometric Pressure, (in Hg)	29.80	in Hg	Inches of Mercury.
	Net Sampling Time, (minutes)	0	atm	Atmosphere.
	INLET-1 Temperature (°F)	83	ပွ	Degrees Centigrad
	Static Pressure (in Hg)	2.2	š	Degrees Kelvin.
	INLET-1 Diameter (in)	2	g/L	Grams per liter.
	INLET-1 Area (square feet)	0.0218	mg/L	Milligrams per liter.
	INLET-1 Gas Velocity, (actual feet per minute - afpm)	1555	ppbv	Parts per billion per
	INLET-1 Flow rate, (wet standard cubic feet per minute - wscfm)	31.72	lbs/hr	Pounds per hour.

ts per billion per volume. grees Centigrade. igrams per liter. ies of Mercury. unds per hour. ies of water. grees Kelvin. ms per liter. nosphere.



TABLE 9

INLET-1 MASS REMOVAL CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

February 21, 2017 (Operational time: 481.1 hours from 1/23 to 2/24/2017)

Compound	MV	Vacuum Vacuum Press.	Vacuum		Temp.	Temp.	Gas	Gas Constant Pressure	Pressure	Density	sity	INLE	INLET-1-16	Flow Rate	Flow Rate Flow Rate	Mass Remova	emoval
		(in H ₂ O) (in Hg)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(nddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Isopropyl alcohol	60.1	27	2.0	0.07	27.8	300.8	0.0821	24.69	3.98	0.1613	161.3	0	0.00000.0	1504	30.72	0.00000.0	0.000000
Methylene chloride	84.93	27	2.0	0.07	27.8	300.8	0.0821	24.69	5.63	0.2280	228.0	0	0.00000.0	1504	30.72	0.00000.0	0.00000
n-Hexane	86.17	27	2.0	0.07	27.8	300.8	0.0821	24.69	5.71	0.2313	231.3	0	0.00000.0	1504	30.72	0.00000.0	0.00000
Chloroform	119.38	27	2.0	0.07	27.8	300.8	0.0821	24.69	7.91	0.3205	320.5	34	0.000011	1504	30.72	0.000001	0.000030
Tetrahydrofuran	72.11	27	2.0	0.07	27.8	300.8	0.0821	24.69	4.78	0.1936	193.6	00009	0.011615	1504	30.72	0.001337	0.032078
Benzene	78.11	27	2.0	0.07	27.8	300.8	0.0821	24.69	5.18	0.2097	209.7	1400	0.000294	1504	30.72	0.000034	0.000811
Toluene	92.14	27	2.0	0.07	27.8	300.8	0.0821	24.69	6.11	0.2474	247.4	11000	0.002721	1504	30.72	0.000313	0.007515
Chlorobenzene	112.56	27	2.0	0.07	27.8	300.8	0.0821	24.69	7.46	0.3022	302.2	0	0.00000.0	1504	30.72	0.00000.0	0.00000
Ethylbenzene	106.16	27	2.0	0.07	27.8	300.8	0.0821	24.69	7.04	0.2850	285.0	3400	0.000969	1504	30.72	0.000112	0.002676
m,p-Xylene	106.17	27	2.0	0.07	27.8	300.8	0.0821	24.69	7.04	0.2850	285.0	16000	0.004560	1504	30.72	0.000525	0.012595
o-Xylene	106.17	27	2.0	0.07	27.8	300.8	0.0821	24.69	7.04	0.2850	285.0	2300	0.000656	1504	30.72	0.000075	0.001810
Methyl iodide	141.95	27	2.0	0.07	27.8	300.8	0.0821	24.69	9.41	0.3811	381.1	0	0.00000.0	1504	30.72	0.00000.0	0.000000
Methanol	32.04	27	2.0	0.07	27.8	300.8	0.0821	24.69	2.12	0.0860	0.98	0	0.00000.0	1504	30.72	0.00000.0	0.00000
																0.002396	0.057515

ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)

1.152942

Mass Removal Calculations 1/23 to 2/24/2017 for 481.1 hours operation:

Compound	MW	MW Vacuum Vacuum Press. Temp. Temp.	Vacuum	Press.	Temp.	Temp.	Gas	Gas Constant Pressure	Pressure	Density	sity	INLE	INLET-1-16	Flow Rate Flow Rate ^{1/}	Flow Rate ^{1/}	Mass Removal	emoval
		(in H ₂ O)	(in H ₂ O) (in Hg) (atm)		(၁ွ)	(°K)	Cons.	Cons. by Temp by MW (g/L) (mg/L) (ppbv) (mg/L) (AFPM) (WSCFM) (lbs/hr) (lbs/day)	by MW	(g/L)	(mg/L)	(nqdd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Acetone	58.08	27	2.0	0.07	27.8 300.8		0.0821	24.69	3.85	0.1559 155.9	155.9	640 0.000100	0.000100	1504	30.72	0.000011	0.000276
Methane	16.04	27	2.0	0.07	27.8 300.8	300.8	0.0821	24.69	1.06	1.06 0.0431 43.1	43.1	0	0.000000	1504	30.72	0.00000.0	0.000000
																0.000011	0.000276
										Mass	Removal	Calculatic	ns 1/23 to 2,	'24/2017 for	481.1 hours	Mass Removal Calculations 1/23 to 2/24/2017 for 481.1 hours operation: 0.005525	0.005525
	Notes:																

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MW Molecular weight. in H_2O Inches of water.	in Hg Inches of Mercury.	atm Atmosphere.	°C Degrees Centigrade.	°K Degrees Kelvin.	g/L Grams per liter.	mg/L Milligrams per liter.	ppbv Parts per billion per volume.	lbs/hr Pounds per hour.	lbs/day Pounds per day.
INLET-1-16 2/21/17	29.59	0	82	2	2	0.0218	1504	30.72	
1/ Flow rate calculation TRC report reference formula: Flow Data	Barometric Pressure, (in Hg)	Net Sampling Time, (minutes)	INLET-1 Temperature (°F)	Static Pressure (in Hg)	INLET-1 Diameter (inches)	INLET-1 Area (square feet)	INLET-1 Gas Velocity, (actual feet per minute - afpm)	INLET-1 Flow rate, (wet standard cubic feet per minute - wscfm)	

TABLE 9

INLET-1 MASS REMOVAL CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

alcohol (60.1 23 1.7 0.06 31.1 304.1 0.0821 e chloride 84.93 23 1.7 0.06 31.1 304.1 0.0821 m 119.38 23 1.7 0.06 31.1 304.1 0.0821 ofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 78.11 23 1.7 0.06 31.1 304.1 0.0821 pache 12.56 23 1.7 0.06 31.1 304.1 0.0821 rene 106.16 23 1.7 0.06 31.1 304.1 0.0821 rene 106.16 23 1.7 0.06 31.1 304.1 0.0821 rene 106.17 23 1.7 0.06 31.1 304.1 0.0821 rene 106.17 23 1.7 0.06 31.1 304.1 0.0821 rene 106.17 23 1.7 </th <th>Vacuum Vacuum Press. Temp. Te</th> <th>Temp. Gas</th> <th>Gas Constant Pressure</th> <th>Pressure</th> <th>Density</th> <th>sity</th> <th>INLE</th> <th>INLET-1-17</th> <th>Flow Rate</th> <th>Flow Rate Flow Rate11</th> <th>Mass R</th> <th>Mass Removal</th>	Vacuum Vacuum Press. Temp. Te	Temp. Gas	Gas Constant Pressure	Pressure	Density	sity	INLE	INLET-1-17	Flow Rate	Flow Rate Flow Rate11	Mass R	Mass Removal
talcohol 60.1 23 1.7 0.06 31.1 304.1 0.0821 e chloride 84.93 23 1.7 0.06 31.1 304.1 0.0821 rm 119.38 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rorene 112.56 23 1.7 0.06 31.1 304.1 0.0821 zene 106.16 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	(atm) (°C)		by Temp	by MW	(a/L)	(mg/L)	(hpbv)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
e chloride 84.93 23 1.7 0.06 31.1 304.1 0.0821 rm 119.38 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rorene 112.56 23 1.7 0.06 31.1 304.1 0.0821 zene 106.16 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	0.06 31.1		24.97	3.39	0.1359	135.9	0	0.00000.0	1544	31.60	0.00000.0	0.00000.0
rm 86.17 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 rorene 78.11 23 1.7 0.06 31.1 304.1 0.0821 sene 106.16 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	4.80	0.1921	192.1	0	0.00000.0	1544	31.60	0.00000.0	0.00000.0
rm 119.38 23 1.7 0.06 31.1 304.1 0.0821 rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 92.14 23 1.7 0.06 31.1 304.1 0.0821 nrzene 112.56 23 1.7 0.06 31.1 304.1 0.0821 ne 106.16 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	4.87	0.1949	194.9	0	0.00000.0	1544	31.60	0.00000.0	0.00000.0
rofuran 72.11 23 1.7 0.06 31.1 304.1 0.0821 78.11 23 1.7 0.06 31.1 304.1 0.0821 nrzene 112.56 23 1.7 0.06 31.1 304.1 0.0821 zene 106.16 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	6.74	0.2700	270.0	0	0.00000.0	1544	31.60	0.00000.0	0.00000.0
78.11 23 1.7 0.06 31.1 304.1 0.0821 92.14 23 1.7 0.06 31.1 304.1 0.0821 zene 112.56 23 1.7 0.06 31.1 304.1 0.0821 ne 106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	4.07	0.1631	163.1	42000	0.006850	1544	31.60	0.000811	0.019461
92.14 23 1.7 0.06 31.1 304.1 0.0821 112.56 23 1.7 0.06 31.1 304.1 0.0821 106.16 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 141.95 23 1.7 0.06 31.1 304.1 0.0821	0.06 31.1		24.97	4.41	0.1767	176.7	1100	0.000194	1544	31.60	0.000023	0.000552
112.56 23 1.7 0.06 31.1 304.1 0.0821 106.16 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 141.95 23 1.7 0.06 31.1 304.1 0.0821	0.06 31.1		24.97	5.20	0.2084	208.4	9700	0.002021	1544	31.60	0.000239	0.005743
106.16 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 141.95 23 1.7 0.06 31.1 304.1 0.0821	0.06 31.1		24.97	6.36	0.2546	254.6	0	0.00000.0	1544	31.60	0.00000.0	0.00000.0
106.17 23 1.7 0.06 31.1 304.1 0.0821 106.17 23 1.7 0.06 31.1 304.1 0.0821 16 141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	5.99	0.2401	240.1	3600	0.000864	1544	31.60	0.000102	0.002456
106.17 23 1.7 0.06 31.1 304.1 0.0821 dide 141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	00.9	0.2401	240.1	18000	0.004322	1544	31.60	0.000512	0.012280
141.95 23 1.7 0.06 31.1 304.1 0.0821	31.1		24.97	00.9	0.2401	240.1	2500	0.000600	1544	31.60	0.000071	0.001706
	0.06 31.1		24.97	8.02	0.3211	321.1	0	0.000000.0	1544	31.60	0.00000.0	0.00000.0
31.1 304.1	0.06 31.1	04.1 0.0821	24.97	1.81	0.0725	72.5	22600	0.001638	1544	31.60	0.000194	0.004653

ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)

ASET SINE & INICITIZINE DATA (I SININI SININI E I SINI SSE SINET)	יו מיו	THE STATE OF THE	A CHILD		200												
Compound	MW	MW Vacuum Vacuum Press. Temp.	Vacuum	Press.	Temp.	. Temp.	Gas	Gas Constant Pressure	Pressure	Density	ity	INLE	INLET-1-17	Flow Rate Flow Rate ^{1/}	Flow Rate ^{1/}	Mass Removal	emoval
		(in H ₂ O)	(in H ₂ O) (in Hg) (atm) (°C) (°K)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW (g/L) (mg/L) (ppbv) (mg/L)	(g/L)	(mg/L)	(vddd)		(AFPM)	(WSCFM)	(AFPM) (WSCFM) (lbs/hr) (lbs/day)	(Ibs/day)
Acetone	58.08	23	1.7	90.0	1.7 0.06 31.1 304.1	304.1	0.0821	24.97	3.28	0.1314 131.4	131.4	0	0.00000.0	1544	31.60	0.00000.0	0.00000
Methane	16.04	23	1.7	90.00	31.1 304.1	304.1	0.0821	24.97	0.91	0.0363	36.3	0	0.00000.0	1544	31.60	0.000000	0.00000
9																0.000000	0.00000

0.882910 0.046849

Mass Removal Calculations 2/27 to 3/31/2017 for 452.3 hours operation:

0.00000 Mass Removal Calculations 2/27 to 3/31/2017 for 452.3 hours operation:

Molecular weight.

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		4	

INLET-1-17 MW	3/28/17 in H ₂ O	29.65 in Hg	0 atm	S88	J.7	2 g/L	0.0218 mg/L	1544 ppbv	31.60 lbs/hr
Flow rate calculation TRC report reference formula:	Flow Data	Barometric Pressure, (in Hg)	Net Sampling Time, (minutes)	INLET-1 Temperature (°F)	Static Pressure (in Hg)	INLET-1 Diameter (inches)	INLET-1 Area (square feet)	INLET-1 Gas Velocity, (actual feet per minute - afpm)	INLET-1 Flow rate, (wet standard cubic feet per minute - wscfm)

Inches of water.	Inches of Mercury.	Atmosphere.	Degrees Centigrade.	Degrees Kelvin.	Grams per liter.	Milligrams per liter.	Parts per billion per volume.	Pounds per hour.	Pounds per day.	
in H ₂ O	in Hg	atm	ပ	\$	g/L	mg/L	nddd	lbs/hr	lbs/day	



TABLE 10

INLET-2 MASS REMOVAL CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

January 17, 2017 (Operational time: 233.6 hours from 1/3 to 1/20/2017)

Compound	M M	Pressure Pressure Press.	Pressur	e Press.	Temp.	Temp.	Gas	Gas Constant	Pressure	Density	ity	INE	INLET-2-16	Flow Rate	Flow Rate Flow Rate	Mass Removal	emoval
		(in H ₂ O)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)
Isopropyl alcohol	60.1	8	9.0	0.02	43.3	316.3	0.0821	25.97	1.18	0.0455	45.5	0	0.00000.0	5481	112.68	0.00000.0	0.000000
Methylene chloride	84.93	80	9.0	0.02	43.3	316.3	0.0821	25.97	1.67	0.0642	64.2	0	0.000000	5481	112.68	0.00000.0	0.00000.0
n-Hexane	86.17	80	9.0	0.02	43.3	316.3	0.0821	25.97	1.69	0.0652	65.2	0	0.00000.0	5481	112.68	0.000000	0.000000
Chloroform	119.38	80	9.0	0.02	43.3	316.3	0.0821	25.97	2.34	0.0903	90.3	0	0.00000.0	5481	112.68	0.000000	0.00000.0
Tetrahydrofuran	72.11	80	9.0	0.02	43.3	316.3	0.0821	25.97	1.42	0.0545	54.5	13000	0.000709	5481	112.68	0.000299	0.007182
Benzene	78.11	80	9.0	0.02	43.3	316.3	0.0821	25.97	1.53	0.0591	59.1	360	0.000021	5481	112.68	0.00000	0.000215
Toluene	92.14	80	9.0	0.02	43.3	316.3	0.0821	25.97	1.81	0.0697	2.69	2200	0.000153	5481	112.68	0.0000065	0.001553
Chlorobenzene	112.56	80	9.0	0.02	43.3	316.3	0.0821	25.97	2.21	0.0851	85.1	0	0.00000.0	5481	112.68	0.000000	0.00000.0
Ethylbenzene	106.16	80	9.0	0.02	43.3	316.3	0.0821	25.97	2.09	0.0803	80.3	069	0.0000055	5481	112.68	0.000023	0.000561
m,p-Xylene	106.17	00	9.0	0.02	43.3	316.3	0.0821	25.97	2.09	0.0803	80.3	3200	0.000257	5481	112.68	0.000108	0.002603
o-Xylene	106.17	80	9.0	0.02	43.3	316.3	0.0821	25.97	2.09	0.0803	80.3	450	0.000036	5481	112.68	0.000015	0.000366
Methyl iodide	141.95	80	9.0	0.02	43.3	316.3	0.0821	25.97	2.79	0.1074	107.4	0	0.00000.0	5481	112.68	0.00000.0	0.00000.0
Methanol	32.04	8	9.0	0.02	43.3	316.3	0.0821	25.97	0.63	0.0242	24.2	30500	0.000739	5481	112.68	0.000312	0.007487
																0.000832	0.019968
										Mas	s Remova	l Calculat	ions 1/3 to 1	/20/2017 fo	Mass Removal Calculations 1/3 to 1/20/2017 for 233.6 hours operation:	operation:	0.194355
ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)	NE DATA	(FOR INFO	ORMATIV	/E PURP(SE ONL	۲)											
Compound	MW	Pressure Pressure Press.	Pressur	e Press.	Temp.	Temp.	Gas	Gas Constant	Pressure	Density	ity	INLE	INLET-2-16	Flow Rate	Flow Rate Flow Rate ¹¹	Mass Removal	emoval
		(in H ₂ O)	(in H ₂ O) (in Hg)	(atm)	(၁ _၀)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)
Acetone	58.08	8	9.0	0.02	43.3	316.3	0.0821	25.97	1.14	0.0439	43.9	0	0.000000	5481	112.68	0.000000	0.000000
Methane	16.04	8	9.0	0.02	43.3	316.3	0.0821	25.97	0.32	0.0121	12.1	0	0.000000	5481	112.68	0.00000.0	0.000000
																0.00000.0	0.000000
										Mas	s Remova	I Calculat	ions 1/3 to 1	/20/2017 fo	Mass Removal Calculations 1/3 to 1/20/2017 for 233.6 hours operation:	operation:	0.000000
	Notes:																
	1/	Flow rate calculation TRC report reference formula	calculation	in TRC re	oort refere	ince form	ula:	_	INLET-2-16		~	MW	Molecular weight.	ight.			

EREC

Parts per billion per volume.

mg/L ppbv

5481

INLET-2 Flow rate, (wet standard cubic feet per minute - wscfm)

INLET-2 Gas Velocity, (actual feet per minute - afpm)

INLET-2 Area (square feet)

0.0218

Pounds per hour. Pounds per day.

lbs/hr lbs/day

Milligrams per liter.

Degrees Centigrade.

Degrees Kelvin. Grams per liter.

atm °C °K g/L

110 0.6

Inches of Mercury.

in Hg

Atmosphere.

Inches of water.

in H₂O

1/17/17

29.80

0

Barometric Pressure, (in Hg) Net Sampling Time, (minutes)

Flow Data

INLET-2 Temperature (°F) Static Pressure (in Hg) INLET-2 Diameter (in)

TABLE 10

INLET-2 MASS REMOVAL CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

February 21, 2017 (Operational time: 481.1 hours from 1/23 to 2/24/2017)

repruary 21, 2017 (Operational time: 461.1 nours from 1/23 to 2/24/2017)	peration	al time: 40	I.I nour	S Iroin 1/2	T7/7 01 07	(1107)											
Compound	MW	Pressure	Pressure Pressure Press.	e Press.	Temp.	Temp.	Gas	Gas Constant	Pressure	Density	ity	INLE	INLET-2-16	Flow Rate	Flow Rate"	Mass F	Mass Removal
		(in H ₂ O)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Isopropyl alcohol	60.1	8	9.0	0.02	42.2	315.2	0.0821	25.88	1.18	0.0456	45.6	0	0.00000.0	4679	95.84	0.00000.0	0.000000
Methylene chloride	84.93	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.67	0.0645	64.5	0	0.00000.0	4679	95.84	0.00000.0	0.000000
n-Hexane	86.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.69	0.0654	65.4	0	0.00000.0	4679	95.84	0.00000.0	0.000000
Chloroform	119.38	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.34	9060.0	9.06	0	0.00000.0	4679	95.84	0.00000.0	0.000000
Tetrahydrofuran	72.11	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.42	0.0547	54.7	15000	0.000821	4679	95.84	0.000295	0.007073
Benzene	78.11	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.53	0.0593	59.3	290	0.000017	4679	95.84	0.00000	0.000148
Toluene	92.14	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.81	0.0699	6.69	2200	0.000154	4679	95.84	0.000055	0.001326
Chlorobenzene	112.56	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.21	0.0854	85.4	0	0.00000.0	4679	95.84	0.00000.0	0.000000
Ethylbenzene	106.16	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	740	0.000060	4679	95.84	0.000021	0.000514
m,p-Xylene	106.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	3500	0.000282	4679	95.84	0.000101	0.002430
o-Xylene	106.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	460	0.000037	4679	95.84	0.000013	0.000319
Methyl iodide	141.95	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.79	0.1077	107.7	0	0.000000	4679	95.84	0.00000.0	0.000000
Methanol	32.04	8	9.0	0.02	42.2	315.2	0.0821	25.88	0.63	0.0243	24.3	36100	0.000878	4679	95.84	0.000315	0.007564
																0.000807	0.019374
										Mass	Removal	Calculati	Mass Removal Calculations 1/23 to 2/24/2017 for 481.1 hours operation:	/24/2017 for	481.1 hours	operation:	0.388375
ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)	NE DATA	(FOR INF	ORMATI	VE PURP	OSE ONL	(Y)											
Compound	MW	Pressure	Pressur	Pressure Pressure Press.	Temp.	Temp.	Gas	Gas Constant	Pressure	Density	ity	INLE	INLET-2-16	Flow Rate	Flow Rate ^{1/}	Mass F	Mass Removal
		(in H ₂ O)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(vddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)
Acetone	58.08	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.14	0.0441	44.1	0	0.000000	4679	95.84	0.00000.0	0.000000
Methane	16.04	8	9.0	0.02	42.2	315.2	0.0821	25.88	0.32	0.0122	12.2	0	0.00000.0	4679	95.84	0.00000.0	0.000000
																0.00000.0	0.000000
										Mass	Removal	Calculati	Mass Removal Calculations 1/23 to 2/24/2017 for 481.1 hours operation:	124/2017 for	481.1 hours	operation:	0.000000
	Notes:																
	1/	Flow rate	calculation	on TRC re	Flow rate calculation TRC report reference formula:	ence form	ıula:	_	INLET-2-16		_	MW	Molecular weight.	ight.			
		Flow Data							2/21/17		_	in H ₂ O	Inches of water.	er.			
		Barometr	ic Pressu	Barometric Pressure, (in Hg)	_				29.59		-	in Hg	Inches of Mercury.	rcury.			
		Net Samp	Jing Time	Net Sampling Time, (minutes)	(s)				0			atm	Atmosphere.				
		INICTOTO	Tamporo	(DO/ Carry					400		1	00	20000000	time de			

Parts per billion per volume.

Pounds per hour. Pounds per day.

lbs/day lbs/hr vdqq

Milligrams per liter.

0.0218 4679 95.84

INLET-2 Flow rate, (wet standard cubic feet per minute - wscfm)

INLET-2 Gas Velocity, (actual feet per minute - afpm)

INLET-2 Area (square feet)

INLET-2 Temperature (°F) Static Pressure (in Hg) INLET-2 Diameter (in)

7

Degrees Centigrade.

Degrees Kelvin. Grams per liter.

atm °C °K g/L mg/L

108

TABLE 10

INLET-2 MASS REMOVAL CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

March 28, 2017 (Operational time: 452.3 hours from 2/27 to 3/31/2017)

		-			1								-		The second second		
Compound	×	Pressure Pressure Press.	Pressure	Press.	Temp.	Temp.	Gas	Gas Constant Pressure	Pressure	Density	ilty	N N	INLET-2-17	Flow Rate	Flow Rate Flow Kate"	Mass F	Mass Removal
		(in H ₂ O)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(ppbv)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Isopropyl alcohol	60.1	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.18	0.0456	45.6	0	0.00000.0	4812	98.76	0.000000.0	0.000000
Methylene chloride	84.93	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.67	0.0645	64.5	58	0.000004	4812	98.76	0.000001	0.000033
n-Hexane	86.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.69	0.0654	65.4	0	0.00000.0	4812	98.76	0.00000.0	0.000000
Chloroform	119.38	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.34	9060.0	9.06	0	0.00000.0	4812	98.76	0.00000.0	0.000000
Tetrahydrofuran	72.11	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.42	0.0547	54.7	8100	0.000443	4812	98.76	0.000164	0.003936
Benzene	78.11	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.53	0.0593	59.3	190	0.000011	4812	98.76	0.000004	0.000100
Toluene	92.14	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.81	0.0699	6.69	1700	0.000119	4812	98.76	0.000044	0.001056
Chlorobenzene	112.56	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.21	0.0854	85.4	0	0.00000.0	4812	98.76	0.00000.0	0.00000
Ethylbenzene	106.16	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	610	0.000049	4812	98.76	0.000018	0.000436
m,p-Xylene	106.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	2900	0.000234	4812	98.76	0.000086	0.002075
o-Xylene	106.17	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.09	0.0806	9.08	400	0.000032	4812	98.76	0.000012	0.000286
Methyl iodide	141.95	80	9.0	0.02	42.2	315.2	0.0821	25.88	2.79	0.1077	107.7	0	0.00000.0	4812	98.76	0.00000.0	0.000000
Methanol	32.04	8	9.0	0.02	42.2	315.2	0.0821	25.88	0.63	0.0243	24.3	27200	0.000661	4812	98.76	0.000245	0.005873
																0.000575	0.013795
										Mass	Removal	Calculatic	ons 2/27 to 3/	/31/2017 for	Mass Removal Calculations 2/27 to 3/31/2017 for 452.3 hours operation:	operation:	0.259978
ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)	NE DATA	(FOR INFO	RMATIV	E PURPC	SE ONL	۲)											
Compound	MW	Pressure Pressure Press.	Pressure	Press.	Temp.	Temp.	Gas	Gas Constant	Pressure	Density	ity	INLE	INLET-2-17	Flow Rate	Flow Rate Flow Rate1/	Mass F	Mass Removal
		(in H ₂ O)	(in Hg)	(atm)	(၁ွ)	(°K)	Cons.	by Temp	by MW	(g/L)	(mg/L)	(vddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)
Acetone	58.08	80	9.0	0.02	42.2	315.2	0.0821	25.88	1.14	0.0441	44.1	0	0.00000.0	4812	98.76	0.00000.0	0.000000
Methane	16.04	8	9.0	0.02	42.2	315.2	0.0821	25.88	0.32	0.0122	12.2	0	0.00000.0	4812	98.76	0.00000.0	0.000000
																0.00000.0	0.00000
										Mass	Removal	Calculatic	ons 2/27 to 3,	/31/2017 for	Mass Removal Calculations 2/27 to 3/31/2017 for 452.3 hours operation:	operation:	0.000000
	Notes:																
	1/	Flow rate calculation TRC report reference formula:	calculation	TRC rep	oort refere	ance form	ula:	_	NLET-2-17			MW	Molecular weight.	ght.			
		Flow Data							3/28/17			in H ₂ O	Inches of water.	er.			
		Barometric Pressure, (in Hg)	c Pressure	è, (in Hg)					29.65			in Hg	Inches of Mercury.	.cnry.			
		Net Sampling Time, (minutes)	ling Time,	(minutes	•				0			_	Atmosphere.				
		INLET-2 Temperature (°F)	emperatu	re (°F)					108		5		Degrees Centigrade.	tigrade.			
		Static Pressure (in Hg)	ssure (in I	√g)					9.0			×	Degrees Kelvin	'n.			

Milligrams per liter. Parts per billion per volume.

Grams per liter.

0.0218 4812 98.76

INLET-2 Flow rate, (wet standard cubic feet per minute - wscfm)

INLET-2 Gas Velocity, (actual feet per minute - afpm)

INLET-2 Diameter (in) INLET-2 Area (square feet) Pounds per hour. Pounds per day.

mg/L ppbv lbs/hr lbs/day

OUTLET AIR EMISSIONS CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Column C						, 100		ite	E	ET 46	Flow Date	Flow Rate		Emissions Rate	
Column C	Compound	MA	lemp.	lemp.	cas	Gas constant	חבווי	olt.)		21-12	JOW INGIG	annu mon	1	TEN CHOICE	
Heading Head			(၃)	(°K)	Cons.	by Temp	(a/L)	(mg/L)	(hpbv)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)	(tons/yr)
14.136 84.4 37.4 0.0821 25.24 3.364.7 3364.7 90 0.000333 2506 121.72 0.000138 0.00334 0.00344 3.44 3.74 3.74 0.0821 25.24 3.4139 3.413.9 1.3 0.000004 2506 121.72 0.00002 0.000004 0.000004 0.000004 0.0000000 0.000000 0.0000000 0.0000000 0.0000000 0.0000000 0.000000 0.	Isopropyl alcohol	60.1	34.4	307.4	0.0821	25.24	2.3810	2381.0	0	0.000000	2506	121.72	0.00000.0	0.000000	0.000000
86.17 34.4 307.4 0.0821 2.5.24 3.4139 3413.9 1.3 0.000004 2506 121.72 0.000000 0.000000 uran 72.11 34.4 307.4 0.0821 25.24 4.7296 47296 0.000000 2506 121.72 0.000000 0.000000 uran 72.11 34.4 307.4 0.0821 25.24 2.8568 2.000000 2506 121.72 0.00000 0.000000 92.14 34.4 307.4 0.0821 25.24 3.6504 3650.4 1.1 0.000000 2506 121.72 0.00000 0.000000 per 112.56 34.4 307.4 0.0821 25.24 4.4594 4.4594 0.000000 2506 121.72 0.000000 0.000000 per 106.16 34.4 307.4 0.0821 25.24 4.4594 4.4594 0.000000 2506 121.72 0.000000 0.000000 per 106.16 0.000000 2506	Methylene chloride	84.93	34.4	307.4	0.0821	25.24	3.3647	3364.7	06	0.000303	2506	121.72	0.000138	0.003314	0.000605
uran 72.11 34.4 307.4 0.0821 25.24 4.7296 47296 0.000000 2506 121.72 0.000000 0.000000 uran 72.11 34.4 307.4 0.0821 25.24 2.8568 2.856.8 0 0.000000 2506 121.72 0.000000 0.000000 gene 11.3 34.4 307.4 0.0821 25.24 3.034.5 3.04.0 0.21 0.000001 2506 121.72 0.000000 0.000000 gene 112.56 34.4 307.4 0.0821 25.24 3.650.4 1.1 0.000000 2506 121.72 0.000000 0.000000 ne 106.16 34.4 307.4 0.0821 25.24 4.459.4 4.459.4 0 0.000000 2506 121.72 0.000000 0.000000 ne 106.16 34.4 307.4 0.0821 25.24 4.206.2 4.206.2 0 0.000000 2506 121.72 0.000000 0.000000 <	n-Hexane	86.17	34.4	307.4	0.0821	25.24	3.4139	3413.9	1.3	0.000004	2506	121.72	0.000002	0.000049	0.00000
ofuran 72.11 34.4 307.4 0.0821 25.24 2.8568 2856.8 0 0.000000 2506 121.72 0.000000 0.000000 78.11 34.4 307.4 0.0821 25.24 3.094.5 3094.5 0.21 0.000001 2506 121.72 0.000000 0.000007 rene 112.56 34.4 307.4 0.0821 25.24 4.4594 4.459.4 0 0.000000 2506 121.72 0.000000 0.000000 rene 106.16 34.4 307.4 0.0821 25.24 4.459.4 0 0.000000 2506 121.72 0.000000 0.000000 rene 106.17 34.4 307.4 0.0821 25.24 4.206.8 4.206.8 0 0.000000 2506 121.72 0.000000 0.000000 rene 106.17 34.4 307.4 0.0821 25.24 4.206.2 0 0.000000 2506 121.72 0.000000 0.000000 0.000000	Chloroform	119.38	34.4	307.4	0.0821	25.24	4.7296	4729.6	0	0.000000	2506	121.72	0.000000	0.00000.0	0.000000
78.11 34.4 307.4 0.0821 25.24 3.694.5 3094.5 0.21 0.000001 2506 121.72 0.000000 0.000007	Tetrahydrofuran	72.11	34.4	307.4	0.0821	25.24	2.8568	2856.8	0	0.000000	2506	121.72	0.000000	0.000000	0.000000
92.14 34, 307,4 0.0821 25.24 3.6504 3650,4 1.1 0.000004 2506 121.72 0.000002 0.000044 inzene 112.56 34,4 307.4 0.0821 25.24 4.4594 4459.4 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2058 4205.8 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 2506 121.72 0.000000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 0.000000 0.20000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 0.000000 0.20000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 0.000000 0.20000 0.0000000 in 112.56 34,4 307.4 0.0821 25.24 4.2052 4206.2 0 0.000000 0.000000 0.200000 0.0000000 0.20000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.2000000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.200000 0.0000000 0.200000 0.000000 0.200000 0.200000 0.2000000 0.2000000 0.2000000 0.200000 0.200000 0.200000 0.200000 0.200000 0.200000 0.200000 0.200000 0.20	Benzene	78.11	34.4	307.4	0.0821	25.24	3.0945	3094.5	0.21	0.000001	2506	121.72	0.00000.0	0.000007	0.000001
12.56 34.4 307.4 0.0821 25.24 4.4594 4459.4 0 0.000000 2506 121.72 0.000000 0.000000 106.16 34.4 307.4 0.0821 25.24 4.2058 4205.8 0 0.000000 2506 121.72 0.000000 0.000000 106.17 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000 0.000000 106.17 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000 0.000000 11.95 34.4 307.4 0.0821 25.24 5.6237 5623.7 5623.7 0.000000 0.023102 2506 121.72 0.000000 0.000000 32.04 34.4 307.4 0.0821 25.24 1.2694 1269.4 18200 0.023102 2506 121.72 0.010534 0.252812 20.010576 0.252812 0.010576 0.2552812 20.010576 0.2552812 0.010576 0.2552812 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576 0.010576 0.255225 20.010576 0.255225 0.010576 0.255225 20.010576 0.255225 0.010576	Toluene	92.14	34.4	307.4	0.0821	25.24	3.6504	3650.4	1.1	0.000004	2506	121.72	0.000002	0.000044	0.000008
tene 106.16 34.4 307.4 0.0821 25.24 4.2058 4205.8 0.000000 2506 121.72 0.000000 0.000000 ie 106.17 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000 0.000000 dide 141.95 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000 0.000000 dide 141.95 34.4 307.4 0.0821 25.24 5.6237 5623.7 0 0.000000 2506 121.72 0.00000 0.00000 32.04 34.4 307.4 0.0821 25.24 1.269.4 18200 0.023102 2506 121.72 0.010534 0.252812 32.04 34.4 307.4 0.0821 25.24 1.269.4 1269.4 18200 0.023102 2506 121.72 0.010534 0.252812 32.04	Chlorobenzene	112.56	34.4	307.4	0.0821	25.24	4.4594	4459.4	0	0.000000	2506	121.72	0.000000	0.000000	0.000000
106.17 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000	Ethylbenzene	106.16	34.4	307.4	0.0821	25.24	4.2058	4205.8	0	0.000000	2506	121.72	0.00000.0	0.000000	0.00000.0
106.17 34.4 307.4 0.0821 25.24 4.2062 4206.2 0 0.000000 2506 121.72 0.000000 0.000000 0.000000 0.000000 0.000000	m,p-Xylene	106.17	34.4	307.4	0.0821	25.24	4.2062	4206.2	0	0.00000	2506	121.72	0.00000.0	0.00000.0	0.000000
dide 141.95 34.4 307.4 0.0821 25.24 5.623.7 5623.7 0.000000 0.000000 2506 121.72 0.010534 0.252812 32.04 34.4 307.4 0.0821 25.24 1.2694 1269.4 18200 0.023102 2506 121.72 0.010534 0.252812 Colspan="6">Colspa	o-Xylene	106.17	34.4	307.4	0.0821	25.24	4.2062	4206.2	0	0.00000	2506	121.72	0.000000	0.00000.0	0.00000.0
32.04 34.4 307.4 0.0821 25.24 1.269.4 1269.4 18200 0.023102 2506 121.72 0.010534 0.252812 0.010534 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.256225 0.010576 0.0256225 0.0256250 0.0256225 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.0256200 0.	Methyl iodide	141.95	34.4	307.4	0.0821	25.24	5.6237	5623.7	0	0.000000	2506	121.72	0.00000.0	0.00000.0	0.00000.0
0.010676 0.256225 EQB Temporary Emissions Permit Requirement: 3 16 16	Methanol	32.04	34.4	307.4	0.0821	25.24	1.2694	1269.4	18200	0.023102	2506	121.72	0.010534	0.252812	0.046138
8													0.010676	0.256225	0.046761
									EQB Ten	nporary Emiss	ions Permit	Requirement:		16	

2.493926
operation:
233.6 hours
/2017 for 2:
1/3 to 1/20
Calculations
Emissions

ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)	E DATA (F	OR INFORM	MATIVE F	URPOSE	ONLY)									
Compound	WW	Temp." Temp.	Temp.	Gas	Gas Gas Constant	Density	sity	OUTL	OUTLET-16	Flow Rate	Flow Rate ^{2/}	Ш	Emissions Rate	
		(၁)	(°K)	Cons.	(°K) Cons. by Temp	(a/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)	(tons/yr)
Acetone	58.08	34.4	307.4 0.0821	0.0821	25.24	2.3010	2301.0	11	0.000025	2506	121.72	0.000012	0.000277	0.000051
Methane	16.04	34.4	307.4 0.0821	0.0821	25.24	0.6355	635.5	0	0.000000	2506	121.72	0.000000	0.000000	0.00000
												0.000012	0.000277	
								Emissions Ca	Emissions Calculations 1/3 to 1/20/2017 for 233.6 hours operation:	to 1/20/2017	for 233.6 hour.		0.002696	
	Notes:													
	1/	Flow Rate	calculatio	in TRC re	Flow Rate calculation TRC report reference formula:	rmula:		OUTLET-16		MW	Molecular weight.	jht.		
		Flow Data						1/17/17		ပွ	Degrees Centigrade.	grade.		
		Barometric Pressure, (in Hg)	: Pressure	3, (in Hg)				29.80		٧°	Degrees Kelvin.	نے		
		Net Sampling Time, (minutes)	ling Time,	(minutes)	_			0		g/L	Grams per liter.	ن		
		Stack Temperature (°F)	nperature	(°F)				94		mg/L	Milligrams per liter.	liter.		
		Static Pressure (in Hg)	ssure (in h	-Jg)				0		ppbv	Parts per billion per volume.	n per volume.		
		Stack Diameter (inches)	meter (inc	hes)				က		lbs/hr	Pounds per hour.	ur.		
		Stack Area (square feet)	a (square	feet)				0.0491		lbs/day	Pounds per day.	ıy.		
		Stack Gas	; Velocity,	(actual fe	Stack Gas Velocity, (actual feet per minute - afpm)	fpm)		2506		tons/yr	Tons per year.	6		
		Stack Flow	v rate. (we	at standar	Stack Flow rate, (wet standard cubic feet per minute - wscfm)	ninute - wsc	ifm)	121.72						

SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 **OUTLET AIR EMISSIONS CALCULATIONS** PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

February 21, 2017 (Operational time: 481.1 hours from 1/23 to 2/24/201	erational ti	me: 481.1	hours fro	om 1/23 to	2/24/2017)									
Compound	MW	Temp.	Temp.	Gas	Gas Constant	Density	ity	OUTLET-16	ET-16	Flow Rate	Flow Rate"	Ш	Emissions Rate	
		(၁ွ)	(°K)	Cons.	by Temp	(a/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)	(tons/yr)
Isopropyl alcohol	60.1	35.0	308.0	0.0821	25.29	2.3767	2376.7	0	0.000000	2471	118.96	0.00000.0	0.000000	0.000000
Methylene chloride	84.93	35.0	308.0	0.0821	25.29	3.3587	3358.7	27	0.000091	2471	118.96	0.000040	0.000970	0.000177
n-Hexane	86.17	35.0	308.0	0.0821	25.29	3,4077	3407.7	0	0.000000	2471	118.96	0.00000.0	0.000000	0.00000
Chloroform	119.38	35.0	308.0	0.0821	25.29	4.7210	4721.0	0	0.000000	2471	118.96	0.00000.0	0.000000	0.000000
Tetrahydrofuran	72.11	35.0	308.0	0.0821	25.29	2.8517	2851.7	089	0.001939	2471	118.96	0.000864	0.020739	0.003785
Benzene	78.11	35.0	308.0	0.0821	25.29	3.0890	3089.0	0	0.000000	2471	118.96	0.00000.0	0.000000	0.000000
Toluene	92.14	35.0	308.0	0.0821	25.29	3.6438	3643.8	2.5	0.000009	2471	118.96	0.000004	0.000097	0.000018
Chlorobenzene	112.56	35.0	308.0	0.0821	25.29	4,4513	4451.3	0	0.000000	2471	118.96	0.00000.0	0.000000	0.000000
Ethylbenzene	106.16	35.0	308.0	0.0821	25.29	4.1982	4198.2	0	0.00000.0	2471	118.96	0.00000.0	0.00000	0.000000
m,p-Xylene	106.17	35.0	308.0	0.0821	25.29	4.1986	4198.6	0	0.00000.0	2471	118.96	0.00000.0	0.000000	0.000000
o-Xylene	106.17	35.0	308.0	0.0821	25.29	4.1986	4198.6	0	0.000000	2471	118.96	0.00000.0	0.000000	0.000000
Methyl iodide	141.95	35.0	308.0	0.0821	25.29	5.6136	5613.6	0	0.000000	2471	118.96	0.00000.0	0.000000	0.00000.0
Methanol	32.04	35.0	308.0	0.0821	25.29	1.2671	1267.1	7730	0.009794	2471	118.96	0.004365	0.104752	0.019117
												0.005273	0.126558	0.023097
								EQB Tem	EQB Temporary Emissions Permit Requirement:	ions Permit F	Requirement:	3	15	

ACETONE & METHANE DATA (FOR INFORMATIVE PURPOSE ONLY)

2.536962

Emissions Calculations 1/23 to 2/24/2017 for 481.1 hours operation:

Compound	MW	Temp.	Temp. Temp.	Gas	Gas Gas Constant	Density	sity	OUTL	OUTLET-16	Flow Rate	Flow Rate"	Ū	Emissions Rate	
		(၁ွ)	(°K)	Cons.	by Temp	(a/L)	(mg/L)	(hddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(lbs/day)	(tons/yr)
Acetone	58.08	35.0	308.0	308.0 0.0821	25.29	2.2969	2296.9	71	0.000163	2471	118.96	0.000073	0.001744	0.000318
Methane	16.04	35.0	308.0 0.0821	0.0821	25.29	0.6343	634.3	0	0.000000	2471	118.96	0.00000	0.00000	0.000000
										5		0.000073	0.001744	
							ш	missions Calc	ulations 1/23	to 2/24/2017	for 481.1 hour	Emissions Calculations 1/23 to 2/24/2017 for 481.1 hours operation: 0.034962	0.034962	
	Notes:													
	1/	Flow Rate	calculatic	in TRC re	Flow Rate calculation TRC report reference formula:	mula:		OUTLET-16		MW	Molecular weight.	jht.		
		Flow Data						2/21/17		္	Degrees Centigrade.	grade.		

Parts per billion per volume. Milligrams per liter. Pounds per hour. Pounds per day. Degrees Kelvin. Grams per liter. Tons per year. lbs/day tons/yr lbs/hr ppbv mg/L 0.0491 2471 0 96 က

OUTLET AIR EMISSIONS CALCULATIONS SVE PROGRESS REPORT NO. 6 - JANUARY TO MARCH 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

March 28, 2017 (Operational time: 452.3 hours from 2/27 to 3/31/2017)

maich 26, 2017 (Operational tillie: 452.3 flours from 2/21 to 3/3 f/2017)	monal mile	. 432.3 IIO	1011011011	O 01 17/7	111771101									
Compound	MW	Тетр.	Temp.	Gas	Gas Constant	Density	sity	OUTLET-17	ET-17	Flow Rate	Flow Rate ^{1/}	Ū	Emissions Rate	
		(၁ွ)	(°K)	Cons.	by Temp	(g/L)	(mg/L)	(nddd)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)	(tons/yr)
Isopropyl alcohol	60.1	37.8	310.8	0.0821	25.51	2.3555	2355.5	8.1	0.000019	2636	125.89	0.00000	0.000216	0.000039
Methylene chloride	84.93	37.8	310.8	0.0821	25.51	3.3286	3328.6	0.11	0.000000	2636	125.89	0.00000	0.000004	0.000001
n-Hexane	86.17	37.8	310.8	0.0821	25.51	3.3772	3377.2	0	0.00000	2636	125.89	0.000000	0.000000	0.000000
Chloroform	119.38	37.8	310.8	0.0821	25.51	4.6788	4678.8	0	0.00000	2636	125.89	0.000000	0.000000	0.00000.0
Tetrahydrofuran	72.11	37.8	310.8	0.0821	25.51	2.8262	2826.2	0	0.000000	2636	125.89	0.00000	0.000000	0.00000.0
Benzene	78.11	37.8	310.8	0.0821	25.51	3.0614	3061.4	98.0	0.000001	2636	125.89	0.000001	0.000012	0.000002
Toluene	92.14	37.8	310.8	0.0821	25.51	3.6112	3611.2	0.20	0.000001	2636	125.89	0.000000	0.000008	0.000001
Chlorobenzene	112.56	37.8	310.8	0.0821	25.51	4.4115	4411.5	0	0.00000	2636	125.89	0.000000	0.000000	0.000000
Ethylbenzene	106.16	37.8	310.8	0.0821	25.51	4.1607	4160.7	0	0.00000	2636	125.89	0.00000	0.00000	0.000000
m,p-Xylene	106.17	37.8	310.8	0.0821	25.51	4.1611	4161.1	0	0.000000	2636	125.89	0.00000	0.00000	0.000000
o-Xylene	106.17	37.8	310.8	0.0821	25.51	4.1611	4161.1	0	0.00000	2636	125.89	0.000000	0.000000	0.000000
Methyl iodide	141.95	37.8	310.8	0.0821	25.51	5.5634	5563.4	0	0.00000	2636	125.89	0.000000	0.000000	0.000000
Methanol	32.04	37.8	310.8	0.0821	25.51	1.2557	1255.7	4500	0.005651	2636	125.89	0.002665	0.063956	0.011672
												0.002675	0.064197	0.011716

EQB Temporary Emissions Permit Requirement:

Emissions Calculations 2/27 to 3/31/2017 for 452.3 hours operation:

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Compound		Temp. Temp.	Gas	Gas Constant	Density	sity	OUTLET-17	ET-17	Flow Rate	Flow Rate"	Ш	Emissions Rate	a
	(ွင)		(°K) Cons.	by Temp	(g/L)	(mg/L)	(hpbv)	(mg/L)	(AFPM)	(WSCFM)	(lbs/hr)	(Ibs/day)	(tons/yr)
Acetone 58.08	8 37.8		310.8 0.0821	25.51	2.2763	2276.3	11	0.000025	2636	125.89	0.000012	0.000283	0.000052
Methane 16.04	- 1	37.8 310.8 0.0821	0.0821	25.51	0.6287	628.7	0	0.000000	2636	125.89	0.00000.0	0.000000	0.000000
											0.000012	0.000283	
						Ш	missions Calc	ulations 2/27	to 3/31/2017 1	Emissions Calculations 2/27 to 3/31/2017 for 452.3 hours operation:	s operation:	0.005341	
Notes:													
/1	Flow Rat	te calculatic	on TRC re	Flow Rate calculation TRC report reference formula:	rmula:		OUTLET-17		MW	Molecular weight.] .		
	Flow Data	[a	11				3/28/17		၁	Degrees Centigrade.	rade.		
	Baromet	Barometric Pressure, (in Hg)	e, (in Hg)				29.62		×	Degrees Kelvin.			
	Net Sam	Net Sampling Time, (minutes)	, (minutes,	_			0		g/L (Grams per liter.			
	Stack Te	Stack Temperature (°F)	(°F)				100		mg/L I	Milligrams per liter.	iter.		
	Static Pr	Static Pressure (in Hg)	Hg)				0		ppbv	Parts per billion per volume.	per volume.		
	Stack Di	Stack Diameter (inches)	;hes)				ဗ		lbs/hr	Pounds per hour.	.i.		
	Stack Ar	Stack Area (square feet)	feet)				0.0491		lbs/day F	Pounds per day.			
	Stack G	as Velocity,	actual fe	Stack Gas Velocity, (actual feet per minute - afpm)	fpm)		2636		tons/yr	Tons per year.			
	Stack Flo	ow rate, (we	et standan	Stack Flow rate, (wet standard cubic feet per minute - wscfm)	minute - wsc	fm)	125.89						

ERTEC

TABLE 12

DATE	ACTIVITY DESCRIPTION	TEMPERATURE READING			DAILY DINGS	CARBON EFFICIENCY	INLET-1 F	LOW RATE
	EQB Permit Criteria:	120 ° F	140 ° F			<90%		117
		Carbon Entrance	OUTLET	INLET-1	OUTLET		AFPM	(WSCFM)
3-Jan-17	O&M Monitoring	110	82	60.1	0.0	100	1773	36.19
3-0an-17	Odivi Monitoring	116	98	64.7	0.2	100	1710	34.00
4-Jan-17	OVA/Temp Monitoring	120	100	49.5	0.3	99		
0 1 47	001414	106	92	53.2	0.2	100	1694	34.62
9-Jan-17	O&M Monitoring	106	96	57.1	0.0	100	1728	34.98
10-Jan-17	OVA/Temp Monitoring	110	96	43.5	0.3	99		
11-Jan-17	OVA/Temp Monitoring	104	92	44.7	0.2	100		
12-Jan-17	OVA/Temp Monitoring	102	90	43.6	0.4	99		
13-Jan-17	OVA/Temp Monitoring	106	94	59.2	0.3	99		
		82	80					
		108	90	59.0	0.3	99	1797	36.45
16-Jan-17	O&M Monitoring	112	94	64.2	0.3	100	1465	29.44
		112	94	- · · -	0.0			
		100	90					
		107	93	51.5	0.3	99	1560	32.00
17-Jan-17	Sampling	108	94					
		108	94	62.1	0.3	100	1585	31.85
		107	96					
18-Jan-17	OVA/Temp Monitoring	106	94	43.3	0.4	99		
19-Jan-17	OVA/Temp Monitoring	112	94	40.8	0.3	99		
00 17	0.45	110	98	68.0	0.0	100		
20-Jan-17	OVA/Temp Monitoring	111	97	68.4	0.0	100		
		94	86					
23-Jan-17	O&M Monitoring	117	92	60.1	0.0	100	2120	42.54
25-Jan-17	Oddy Worlding	117	97					
		113	97	59.1	0.0	100	2130	42.66
24-Jan-17	OVA/Temp Monitoring	116	100	41.4	0.5	99		
25-Jan-17	OVA/Temp Monitoring	104	100	32.0	0.2	99		
26-Jan-17	OVA/Temp Monitoring	116	96	39.0	0.4	99		
		113	98	61.8	0.1	100	1443	29.06
	OVA/Temp Monitoring	110	98					
27-Jan-17	Ovarient Monitoring	110	30					

Page 1 of 4 D770710a E175475 - ERTEC

TABLE 12

DATE	ACTIVITY DESCRIPTION	TEMPERATURE READING			DAILY DINGS	CARBON EFFICIENCY	INLET-1 F	LOW RATE
	EQB Permit Criteria:	120 ° F	140 ° F			<90%		117
		Carbon Entrance	OUTLET	INLET-1	OUTLET		AFPM	(WSCFM)
		100	88					
30-Jan-17	O&M Monitoring	118	96	59.4	0.5	99	2043	40.76
30-Jan-17	Odivi Monitoring	116	100					
		116	100	57.8	0.6	99	1537	30.75
31-Jan-17	OVA/Temp Monitoring	114	100	32.5	0.3	99		
1-Feb-17	OVA/Temp Monitoring	114	100	38.9	1.1	97		
2-Feb-17	OVA/Temp Monitoring	108	98	37.1	0.8	98		
3-Feb-17	O&M Monitoring	114	100	55.6	0.6	99		
		90	90					
6-Feb-17	O&M Monitoring	112	94	66.0	0.2	100	2003	40.29
		114	99	66.7	0.4	99	1969	39.47
7-Feb-17	OVA/Temp Monitoring	120	98	37.7	0.4	99		
		94	92					
		118	96	56.4	0.9	98	2041	40.61
8-Feb-17	O&M Monitoring	118	98	00.1	0.0			
		118	98					
9-Feb-17	OVA/Temp Monitoring	110	102	34.2	1.4	96		
10-Feb-17	OVA/Temp Monitoring	115	100	54.4	1.5	97		
		88	84					
		110	92	55.8	0.5	99	1284	25.77
13-Feb-17	O&M Monitoring	114	97					
		114	100	55.3	1.0	98	1296	25.71
		112	98					
		112	96					
14-Feb-17	O&M Monitoring ^{1/}	116	97	438	1.0	100		
14-1 CD-17	Calvi Worldoning	116	98	473	0.8	100		
		116	99					
		111	96	44.2	1.1	98		
15-Feb-17	O&M Monitoring ^{1/}	116	97					
		116	98					
		110	94	51.5	1.5	97		
16-Feb-17	O&M Monitoring ^{1/}	116	98					
		112	100					

TABLE 12

DATE	ACTIVITY DESCRIPTION	TEMPERATURI READING			DAILY DINGS	CARBON EFFICIENCY	INLET-1 F	LOW RATE
	EQB Permit Criteria:	120 ° F	140 ° F			<90%		117
		Carbon Entrance	OUTLET	INLET-1	OUTLET		AFPM	(WSCFM)
		108	96	55.0	0.4	99		
17-Feb-17	O&M Monitoring ^{1/}	117	98					
		118	100					
		108	92	57.6	1.0	98	1461	29.48
20-Feb-17	O&M Monitoring ^{1/}		100	56.6	1.4	98	1517	29.88
		116	100	0.00	1.4	90	1317	29.00
		98	92	53.1	0.8	98	1849	37.67
21-Feb-17	Sampling	100	95					
		112	97	53.8	0.8	99	1509	30.05
22-Feb-17	OVA/Temp Monitoring	114	96	36.7	1.2	97		
		440	1400	07.0	4.0			
23-Feb-17	OVA/Temp Monitoring	110	100	37.3	1.6	96		
24-Feb-17	OVA/Temp Monitoring	119	101	53.9	1.4	97		
		86	85					
27-Feb-17	O&M Monitoring	109	94	67.8	1.6	98	1966	39.69
2 0.0	<u> </u>	111	97	63.4	2.0	97	1445	28.96
			0.	00.1		0.	11.10	20.53
28-Feb-17	OVA/Temp Monitoring	108	100	35.2	2.1	94		
1-Mar-17	OVA/Temp Monitoring	110	96	35.8	2.4	93		
2-Mar-17	OVA/Temp Monitoring	114	98	35.2	3.1	91		
3-Mar-17	OVA/Temp Monitoring	116	100	47.1	2.9	94		
6-Mar-17	O&M Monitoring	88	88	60.6	1.5	98	1869	38.65
		55					, , , ,	
7-Mar-17	OVA/Temp Monitoring	86	88	35.7	1.9	95		
8-Mar-17	OVA/Temp Monitoring	106	90	36.8	2.7	93		
9-Mar-17	OVA/Temp Monitoring	104	92	31.8	3.0	91		
10-Mar-17	OVA/Temp Monitoring	110	94	52.0	3.0	94		
13-Mar-17	O&M Monitoring	110	84	50.5	3.5	93	1229	24.52
		114	95	50.6	3.6	93	1093	21.66
14-Mar-17	OVA/Temp Monitoring	110	98	33.1	3.1	91		
15-Mar-17	OVA/Temp Monitoring	114	100	35.5	3.2	91		
16-Mar-17	OVA/Temp Monitoring	114	100	39.4	3.4	91		

TABLE 12

DATE	ACTIVITY DESCRIPTION	TEMPERATURE READING			DAILY	CARBON EFFICIENCY	INLET-1 F	LOW RATE
	EQB Permit Criteria:	120 ° F	140 ° F			<90%		117
		Carbon Entrance	OUTLET	INLET-1	OUTLET		AFPM	(WSCFM)
17-Mar-17	OVA/Temp Monitoring	112	97	47.3	3.7	92		
20-Mar-17	O&M Monitoring	115	100	62.2	4.5	93	1124	22.21
21-Mar-17	OVA/Temp Monitoring	116	102	49.0	4.0	92		
22-Mar-17	OVA/Temp Monitoring	96	96	32.2	4.1	87		
		90	90					
27-Mar-17	O&M Monitoring	108	96	47.1	0.0	100	2605	52.63
		115	102	62.7	0.0	100	2522	49.82
		110	98					
28-Mar-17	Sampling	112	100	57.7	0.0	100	1553	31.12
20-War-17	Samping	100	100					
		100	99	51.8	0.3	99	1346	27.27
29-Mar-17	OVA/Temp Monitoring	112	100	32.4	0.2	99		
30-Mar-17	OVA/Temp Monitoring	110	98	31.2	0.2	99		
31-Mar-17	OVA/Temp Monitoring	112	100	61.7	0.9	99		

Notes:

°F Degrees Farenheit.

WSCFM Wet Standard Cubic Feet per Minute

AFPM Actual Feet per Minute

Date System shutdown due to carbon efficiency <90% or carbon entrance or outlet temperature above criteria.

PFIZER RAIN DATA

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475



PFIZER BARCELONETA SITE RAIN DATA

Month	Rain (inches)
January 2017	1.37
February 2017	1.43
March 2017	4.41



COPY OF CHAIN OF CUSTODY

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475



30 Community Drive Suite 11

phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403

Canister Samples Chain of Custody Record

FestAmerica Analytical Testing Corp, assumes no liability with respect to the collection and shipment of these samples.

Other (Please specify in notes section) Landfill Gas Soil Gas 11A InsidmA COCS Indoor Air સંબંધા ચૂલેલાલુક 200-37035 Chain of Custody Ofher (Please specify in notes section) 5 8461-G MT2A 51201 EPA 25C 0001 6 Samples Collected By: JWF/AC (PD) FLETHANE EPA 3C H9A-AM Sisan SI-OI 166h Canister ID Flow Controller Condition Samples Received by: Ω Received by: Temperature (Fahrenheit) Vacuum in Field, 'Hg Email: umorales@erteepr.com Pressure (inches of Hg) (Stop) Opened by Wanda Horales 10 29.80 Site Contact: Wands Morales 601. 2068-166-Standard (Specify) 14 day Canister Vacuum in Field, "Hg Analysis Turnaround Time (Start) Ambient Ambient 000 Time Start | Time Stop Rush (Specify) B 1055 Phone: (787) Interior Interior Project Manager: Date/I me: **0 1/17** / Date/Time: FIEITO Sample Date(s) Start Stop Start Stop Special Instructions/QC Requirements & Comments: 17600 Barcebacks Shipper Name: (784) - 783 - 5555 Sample Identification 9-1 Banebreta Address: Amur A-5 K City/State/Zip Rio Pica Client Contact Information Project Name: Pf. 22 Samples Relinquished by Company: ERTEL, -Lab Use Only Relinquished by: おでけ Site: # Od

30 Community Drive

Suite 11 South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

pnone 802-660-1990 fax 802-660-1919																
Client Contact Information	Project Manager:	_	Dorda		Morale	Samples Collected By: TuF / 1007	ected Bv:	WE/A	100	_	/	/ Jo	COCs	un.		
750	Phone: 78		-767	2				-		-					١	
A. S. Poto Landon	Email: C	pork	1000	ertecpr.com	Com				_		-			-	-	_
-792 -8953	Site Contact:	Work		Monte	,				_	117	(404)	(uor:		_	-	(uop
193- 555F	TA Contact:		13	wick					<i></i> (200				298
が死			Analysis Turnaround Time	nd Time,							30401	2010		_	_	səjol
ta . PR		Standard (Specify)	ecify) /	4 da	1/			5	H			1 111 6				A Ju t
PO#	R	Rush (Specify)	(_Y)					,7	_	+0	glood	E (2) 8			-	, Moechin
				1				CA					ıl	-		
Sample Identification	Sample Date(s)	Time Start	Time Stop	Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flaw Controller ID	Canister ID		HAA-AM DE A43	EPA 25C	-G MTSA	Other (Pi	A 100bnl	JnəidmA	Soil Gas Landfill (Other (Pl
Inct - 2-10	FIFI 10	1059	١	1	١		5980	×	X	X				^	X	
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Special instructions/QC Requirements & Comments:	:S:															
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Robert De Jewis / Rollet Party	V oilial	3	1600		Samples	Samples Received by:	ellell	0	1600							
Samples Relinquished by:	Daté/Time:				Received by:	S. S.	n,	11911	tV	5101						
Relinquished by:	Date/Time:				Received by:	by:										
Lab Use Only Shipper Name: P 2 22	10 to	28.01		PSCS Opened by:	1	Condition: (14)										
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30 Community Drive

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Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Other (Please specify in notes section)

r / of / cocs	Other (Please specify in notes section) Sample Type Sample Type Sample Type Indoor Air Ambient Air Soil Gas	X					(SEEDALT)	*											
Samples Collected By: JPVF /AK / RED	Flow Controller Canister ID C	X											N.		¥	Samples Received by: Fed Ex oil 1717 (200	S101 41/9/11		Conditions A. T. T. C.
Project Manager: Wand Hoaks	Site Contact: Dande Healer Site Contact: Den Denich TA Contact: Den Denich Analysis Turnaround Time Standard (Specify) Rush (Specify) Rush (Specify) Sample Sample Sample Sample Time Start Time Stop (Start) (Start) (Start)	SOII HHIO	DV.	41 23	イ、大) 10	,	Temperature (Fahrenheit)	Am	Start 94 98.2	Stop	Pressure (inches of Hg)	Interior Ambient	Start 0 29.80	Stop		1/4 D (600)	Date/Time:	Date/Time: Received by	Opened Over 1
2-bb0-1990 fax 802-660-1919 ntact Information : <i>EETEC PS</i>	Address: Anu. Fl. A.S. Dro Landrau City/State/Zip Rio Picchell, M. 00934 Phone: Tra - 492 - 5903 FAX: Tra - 492 - 5555 Project Name: Pf. W. Barcharte SVE Site: Barcharte Pk. PO#	Outlet - 16	5											O O O O O O O O O O O O O O O O O O O	Special Instructions/QC Requirements & Comments:	Robert De Jan / Roppette	Samples Reinquished by:	Relinquished by:	Labluse Only ShippenNamer (C

30 Community Drive Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

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rmation	Project Manager: Wanda MolAci Samples Collected By: True 14 /	2000 20
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Special Instructions/QC Requirements & Comments:	Ha comple	
is / Robbeston	Date/Time; (600 Samples Received by: 1/7 1/2 1/600	
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TestAmerica

Analysis Method(s)/Analyte(s) Lab Number: 1000 Fedex 0/17/17 X Sampling Pressure (mmHg) 26132 Joiné Degran, Aures Claudis Sampling Standard Level II: Data Package: Area Wiped Level IV: Level III: ٠: ر -ر (Liters) 9 550-76133 Chain of Custody Total Minutes Sampled. Start Time Stop Time (Badge Only) festAmerica Laboratories, Inc.; Phoenix Laboratory - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 602.437.3340 Fax 602.454.3303 Cd 00 00 00 Sampler Name and Phone Number: Rolerto De Elul THE LEADER IN ENVIRONMENTAL TESTING 1138 हटा। 128 E-Mail Address: Write Rety Orthe 19-10 Phone: 787-792-870 Project Name: Pfile Barce bracka z z Soil Aleilio סבון ביוציוים DELLE THEIR 0117/11/30 0 のナカダーター Samples Rellaquished By: Sample Information 5 Business Days (Standard) Rushes are subject to availability. (Surcharges apply) Sample Identification Name/Number Send Report To: LX XXXXX HORALS Phone: 787-792-7024 Hardcopy Results: 4 Business Days Project Number: E-Mail Results: P.O. Number: **Turn Around Request** Inkt -2-16 I Ald -1-16 3 EDD: なりかの Imlet Roberts De Jejus 2 Business Days Rob Landrace 1 Business Day **Same Day** City, State, Zip: Rio Picchas, PR OD921 E-Mail Address: womorales a cfice pr. Com 1 9 7 7 9 3 Side state and the reverse side Flow Rate 500 ٥. 5.0 5.0 Morales www.testamericainc.com or Call 1.866.772.5227 A OFFICIAL A 073.00% A CRISKEDS Tube Aogsood Pump 1D Address: Ame St. A-S Contact Name: Wander Sample Receipt Media Type: Filter, Passive Badge, Tube or Wipe Time: Tuck July uctions / Special Requirements: July X がこで Sample Seals Intact: Sample Seals Intact: Date; Send Invoice To: Total # of Samples: E-Mail Address: Lab# (Internal Use Temperature 102 hal 3

30 Community Drive

South Burlington, VT 05403

COCs Soil Gas TIA InsidmAl 100bn of Other (Please specify in notes section) 9761-0 MTSA EPA 25C EPA 3C at-ot-11 930LN TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples. 31-OT Sampled By: Roberto De Ports, Fasel Roberta, Issue Matter Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet Can Cart ID (600 Flow Controller Readout (ml/min) 0935 GC/MS Analyst Signature (TO-15) Can Size 0 2005 200-37474 Chain of Custody Can ID Date/Time/ Flow Reg. ID Date/Time: Incoming Pressure Fedt, (Fab) Canisters Received by: Fod EX Outgoing Carister Pressure ("Hg) (Lab) Interior Теглр. Mullimum Minimum 8 Site Contact: Wayde Morales TA Contact: Dow Palls Palko Interior (F) (Start) Тетр. E-mail: or les @ or tech r. con Received by Received by Temperature (Fahrenhelt) Phone: (181) 792-0902 Pressure (inches of Hg) Pressure In Fleid wanda Morales Canister Project Name: Hoter Bar Colone Manalysis Turnaround Time Maximum Maximum Pressure In Fjeld Canister Time Time in Field Start (24 Stop (24 ("Hg) hr clock) hr clock) (Start) 02 [2] 17 @ 1600 Standard (Specify) Rush (Specify) 29.59 $\overset{\circ}{\mathscr{E}}$ Special Instructions/QC Requirements & Comments: 0221171030 Amblent Ambient Date/Time: Date/Time: Ladresser 54. 45 Poto. Caudray City/State/Zip Rtb Redras, PRoofd Phone: (181) 792 — 64°02. FAX: (189) 103 — KEYE Sample Date(s) Start Stop Start Stop phone 802-660-1990 fax 802-660-1919 Roberto 10 Apr 26 3 (5) Site: Barcelougta, PR Company: ERTEC 75 Sample Identification Client Confact Information Samples Relinquished by: -1-Relinquished by: 12 P

Other (Please specify in notes section) Helium Prefill for High Methane (LF Gas)

30 Community Drive

South Burlington, VT 05403

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

phone 802-660-1990 fax 802-660-1919

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Other (Please specify in notes seelion) Helium Prefill for High Methane (LF Gas) COCS TiA JasidmA\ Tooba of Other (Please specify in noles section) EPA 25C EPA 3C ALCTO-15 10-1E Sampled By: Robertope Jeacles, Take L-RAPERO, Josulo, Maldeyand, Can Cert ID 8 1600 Flow
Controller
Can Size Readout
(L) 47 GC/MS Analyst Signature (TO-15) 9 0 5252 5122 Can 10 Date/Time/ Flow Reg. ID Date/Time: Date/Time: Canister Pressure ("Hg) (Lab) FEDEX 不多元 Outgoing Canister Pressure "Hg) (Lab Canisters Received by: Carrier: Interior Minimum 108 68 Received by: (F) (Start) E-mail condergo to pr. Com Site Contact: Wanda Morales TA Contact: 704 Pale POKP Temperature (Fahrenheit) Pressure (inches of Hg) Phone (781) 792 -8902 Pressure In Field anister wauda Morales Project Manager: Maximum Maximum Canister Pressure in Fleld 1600 Start (24 Stop (24 ("Hg) hr clock) hr clock) 86.0 29.59 Rush (Specify) Date/Time: 1/2 @ Special Instructions/QC Requirements & Comments: 022112 1033 0221 (171033) Amblent Ambient Date/Time: Date/TIme Start Sample Date(s) Start Stop 2 Stop City/State/Zip Rio PP Edrax, PR 0092 Phone: (981) 792-6,902 Address: 54, 45 Rpto. Van drau Canisters Shipped by: Sample Identification IN187-2-10 Client Contact Information Samples Relinquished by: Company: ERTEL, Haleti Relinquished by:

30 Community Drive Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples.

Other (Please specify in notes section) Helium Prefill for High Methane (LF Gas) COCS candfill Gas Soil Gas Indoor IAmbient Air of Other (Please specify in notes section) ASTM D-1946 EPA 25C EPA 3C AJDEP LL-TO-15 31-OT Sampled By: Poberto R Test, Fosé L. R. Vera, Fosue, Malkingh Can Cart ID Flow Controller Can Size Readout (L) (ml/mln) Date/Time: 1/17 @ 1600 GC/MS Analyst Signature (TO-15) 0 3040 0 Can ID Flow Reg. ID Canister Pressure ("Hg) (Lab) Ted DX Canisters Received by: FedEx Pressure ("Hg) (Lab) Outgoing Canister Сапіег: Minimum 26 (F) (Start) Received by: Site Contact: Wanda Nor ales E-mail: vales (e) er techn. com Temperature (Fahrenhelt) TA Contact: Doll, Dall 19 CK. Pressure (inches of Hg) yord/es Phone: (181) 192-8902 Pressure In Field Canister ("Hg) (Slop) roject Name: pf928x 8ax 000 kg th Analysis Turnaround Time Maximum Махітит Canister Pressure in Fleid ("Hg) (Start) (a) 1600 Standard (Specify) Wayda Project Manager: Start (24 Stop (24 ("hr clock) (4 29.59 85.6 Rush (Specify) Special Instructions/QC Requirements & Comments: 0221121038 Ambient Ambient Date/Time: Date/Time: Sample Date(s) City/State/Zip RPoPPedArty 5 P.0002/ Phone: (781) 192 - 6902 FAX: (781) 783 - 5 F 5 5 Start Start Stop Stop Address. 194 As to the Landrau Rober to De Jerus Outleto 10 Sample Identification Client Contact Information Samples Relinquished by: Site: Barly low to, Company: CLTC Relinquished by:

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples. 30 Community Drive Suite 11 South Burlington, VT 05403 phone 802-660-1990 fax 602-660-1919

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30 Community Drive

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Company:

Client Contact Information

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Canister Samples Chain of Custody Record

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Lab Use Only

30 Community Drive

Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

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30 Community Drive

phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

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Other (Please specify in notes section)

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30 Community Drive Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

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TestAmerica

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Lab Number:

TestAmerica Laboratories, Inc.; Phoenix Laboratory - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 602.437.3340 Fax 602.454.9303 www.testamericainc.com or Call 1.866.772.5227

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DATA VALIDATION REPORTS

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475





March 6, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Data Validation Report for the SVE TO-15 Air Monitoring of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for selected volatile organic compounds in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

Inlet 1-16 Inlet-2-16 Inlet-P Outlet-16 TB-011717

The laboratory performed well, but some qualifications of sample results were necessary. See Section XIV. The data package was received for validation on February 17, 2017.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the method detection limit (MDL) and the reporting limit (RL), were not removed by the validator unless they were superseded by a qualifier resulting from the validation effort.

All samples were analyzed for acetone, isopropyl alcohol, methylene chloride, n-hexane, chloroform, tetrahydrofuran, benzene, toluene, chlorobenzene, ethylbenzene, m,p-xylenes, and o-xylene in conformance with the specifications of USEPA Compendium Method TO-15. In addition, methyl iodide was included in a library search as a tentatively identified compound (TIC) because this compound was not included in any of the calibration standards. The validation effort was restricted to the reported results and supporting data for these compounds.



Ms. Wanda Morales March 6, 2017 Page 2 of 2

Results were also reported for total xylenes. The laboratory-reported concentrations for total xylenes were obtained by adding the concentrations for m,p-xylenes and o-xylene.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid S. Carpenter

Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 16-5440

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group: 200-37035 Selected Volatile Organic Compounds in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

Date: March 6, 2017



INTRODUCTION

Enclosed is the validation report for selected volatile organic compounds in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

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I. Holding Times, Preservation, and Sample Integrity

All TO-15 analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. GC/MS Instrument Performance Checks

Results were reported for four bromofluorobenzene (BFB) instrument performance checks. Requirements for all instrument performance checks were met.

III. Calibration

These samples were analyzed on two single gas chromatography/mass spectrometry (GC/MS) systems identified as "CHC" and "CHW." Manual integrations were performed on the peak areas for benzene in the 0.2 and 0.5 parts per billion volume to volume (ppb v/v) initial calibration standards analyzed on CHC. Documentation of these integrations were included in the data package and confirming they were properly performed and correctly incorporated into the associated quantitation reports. No evidence was presented in the data package to indicate that any other manual integrations were performed on any of the project-specified target compounds or on any of the internal standards in any of the calibration standards.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

ICs were established on January 24, 2017, on instrument CHC and on November 15, 2016, on instrument CHW. An ICV was analyzed following each IC. EPA Region II-specified acceptance criteria were met for all standards.

B. Continuing Verification (CV)

Documentation of two CV standards (one on each instrument) associated with the reported samples was present in the data package. All EPA Region II-specified acceptance criteria were met for these standards.

IV. Blanks

A laboratory blank was analyzed in each analytical sequence containing the site samples. No project-specified target analytes were detected above the method detection limit (MDL) in either laboratory blank.



A trip blank (TB-111717) was submitted with the samples in this data set. The following project-specified target compounds were reported at estimated concentrations below the reporting limit in TB-111717:

Compound	ppb v/v
Isopropyl alcohol	0.15
Toluene	0.058
Ethylbenzene	0.091
m,p-Xylenes	0.10

Based on contamination in the associated trip blank, results for isopropyl alcohol in the less diluted analysis of Inlet-1-16, in Inlet-2-16, and Inlet-P were qualified as less than the sample-specific reporting limit (U). Results for isopropyl alcohol and the remaining compounds noted above were either not detected or were greater than the action level for qualification based on blank contamination and no further action was required. No other project-specified target analytes required qualification based on trip blank contamination.

V. Surrogate Recoveries

The use of a surrogate compound is not addressed in Method TO-15. A surrogate compound was not employed in the analyses of these samples.

VI. Laboratory Check Standard (Audit Accuracy Standard)

A 10 ppbv laboratory check standard (identified as LCS) was analyzed in each analytical sequence containing the reported samples. Each LCS was spiked with all project-specified target analytes. All recoveries of the target analytes were within the laboratory-established analyte-specific quality control limits as included on the summary forms.

VII. Laboratory Replicate Analyses

A laboratory replicate analysis was not reported in this data package.

VIII. Field Duplicates

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The validation guidance document does not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported concentrations greater than the RL and ± RL for



concentrations below the RL in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet 2-16. Acceptable reproducibility between positively paired results was achieved for tetrahydrofuran, benzene, toluene, ethylbenzene, m,p-xylenes, and o-xylene. Results for isopropyl alcohol in these samples were previously qualified based on blank contamination and the remaining project-specified target analytes were not detected in either of these samples; therefore, no further quantitative evaluation of precision could be made from these data.

IX. Internal Standard Performance

The validator confirmed that the areas and retention times of all three internal standards were within the method-specified acceptance limits for the reported site and quality control analyses.

X. Target Compound Identification

When detected, the target analyte was correctly identified with acceptable supporting mass spectral data present in the data package.

XI. Compound Quantitation and Reporting Limits (RLs)

Unadjusted RLs were equal to the low concentration standard used to establish the IC for the project-specified target compounds and are supported by the reported data. All sample results were correctly calculated and accurately reported, including adjustments for dilutions where necessary.

Inlet 1-16 was reanalyzed at a dilution necessary to obtain a reliable result for tetrahydrofuran. The concentration for tetrahydrofuran only was taken from the more diluted analysis of Inlet 1-16. The Form I for the less diluted analyses of Inlet 1-16 was "hybridized" by the validator to reflect the results recommended for use from both analyses of this sample. The Form I from the more diluted analysis of this sample has been marked "Do Not Use" for clarity.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.



XII. Tentatively Identified Compounds (TICs)

Since methyl iodide was not included in any of the calibration standards, a library search was performed for this compound. Methyl iodide was not detected in any of the samples in this SDG. The Form I TIC represents not detected for methyl iodide only.

XIII. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

The samples were shipped by FedEx on the date of collection (01/17/17) but were not received by the laboratory until 01/19/17. A reason for the delayed arrival at the laboratory was not provided.

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

The Laboratory Analytical Data Forms also include a column identified as MDL. Unadjusted MDLs for the target compounds are not supported by the data as received. Therefore, it is recommended that the RLs rather than the MDLs be used as the lowest supported limit of detection.

XIV. Overall Assessment

Based on the findings of the validation effort, the sample results were qualified as follows:

- Based on contamination in the associated trip blank, results for isopropyl alcohol in the less diluted analysis of Inlet-1-16, in Inlet-2-16, and Inlet-P were qualified as less than the sample-specific reporting limit (U).
- The concentration of tetrahydrofuran in the less diluted analyses of Inlet 1-16 exceeded the calibration range of the instrument and was qualified as estimated (J) on this basis.



Inlet 1-16 was reanalyzed at a dilution necessary to obtain a reliable result for tetrahydrofuran. The concentration for tetrahydrofuran only was taken from the more diluted analysis of Inlet 1-16. The Form I for the less diluted analyses of Inlet 1-16 was "hybridized" by the validator to reflect the results recommended for use from both analyses of this sample. The Form I from the more diluted analysis of this sample has been marked "Do Not Use" for clarity.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the MDL and the RL were not removed by the validator unless they were superseded by a qualification resulting from the validation effort.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the TO-15 data reported in SDG 200-37035.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Inlet -1-16

03/06/17

Lab Sample ID: Client Matrix:

200-37035-1

Air

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113644

Instrument ID:

CHC.i

Prep Method:

Summa Canister

N/A

Lab File ID:

23705_16.D

Dilution: Analysis Date:

388 3880

Prep Batch: - 03/06/17

Initial Weight/Volume: Final Weight/Volume: Injection Volume:

200 mL 200 mL 200 mL

Prep Date:

01/30/2017 2206 01/30/2017 2206

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Acetone	700	J	500	1900
Isopropyl alcohol	1 10- 1900	J- 4	50	1900
Methylene Chloride	190	U	26	190
n-Hexane	78	U	18	78
Chloroform	36	J	9.7	78
Tetrahydrofuran	77000 70,000		470 470 V	1 900 19000
Benzene	1900		11	78
Toluene	12000		14	78
Chlorobenzene	78	U	9.7	78
Ethylbenzene	3600		13	78
m,p-Xylene	17000		30	190
Xylene, o-	2300		16	78
Xylene (total)	19000		16	270
Analyte	Result (ug/m3)	Qualifier	MDL	RL
Acetone	1700	J	1200	4600
Isopropyl alcohol	260. 4 800	+ 4	120	4800
Methylene Chloride	670	U	00	
a Harrana	0.0	U	92	670
n-Hexane	270	U	63	670 270
Chloroform	270 170		63 47	270 380
	270		63	270
Chloroform Tetrahydrofuran Benzene	270 170	J U	63 47	270 380
Chloroform Tetrahydrofuran	270 170 230000 21<i>0</i>,000	J U	63 47 1 400 1 4, 000	270 380 5 788- \$7,00 0
Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene	270 170 230000 210,000 6100	J U	63 47 1 408 1 4,000 35	270 380 5 700- \$ 7, 000 250
Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene	270 170 230000 210,000 6100 46000	1 - E	63 47 1 408 1 4, 00 0 35 51	270 380 5 700- \$7,000 250 290
Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene	270 170 230000 	1 - E	63 47 1 408 1 4, 000 35 51 45	270 380 5 788- \$7,000 250 290 360
Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene	270 170 230000 	1 - E	63 47 1 488 1 4, 00 0 35 51 45 57	270 380 5 700- \$7,000 250 290 360 340

03/06/17

Client: Ertec

Inlet -1-16 en 03/06/17 INLET-1-16

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

200-37035-1

Lab Sample ID: Client Matrix:

Air

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15 Prep Method:

Summa Canister

388

Analysis Date: Prep Date:

Cas Number

Dilution:

01/30/2017 2206

01/30/2017 2206

Analysis Batch: 200-113644

N/A Prep Batch:

Instrument ID:

Lab File ID:

CHC.i 23705_16.D

Initial Weight/Volume: 200 mL Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-4-16 Inlet-1-16 DZ

Lab Sample ID:

200-37035-1

Client Matrix:

ear 03/06/17

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air						
Analysis Method:	TO-15	Analysis Batch:	200-113644	Inst	rument ID:	CHC.j
Prep Method:	Summa Canister	Prep Batch:	N/A		File ID:	237,05_17.D
Dilution:	3880				al Weight/Volume:	20 mL
Analysis Date:	01/30/2017 2259	Run Type:	DL		I Weight/Volume:	200 mL
Prep Date:	01/30/2017 2259	, , , ,			ction Volume: /	200 mL
				,0		200 1112
Analyte		Result (p	pb v/v)	Qualifier	MDX/	RL
Acetone		19000		U	5000	19000
Isopropyl alcohol		19000		U	5000	19000
Methylene Chlorid	e	1900		U	260	1900
n-Hexane		780		U	0180	780
Chloroform		780		U	0/97	780
Tetrahydrofuran		70000		8 /	4700	19000
Benzene		1800		_	/ 110	780
Toluene		11000		0 3	140	780
Chlorobenzene		780		u //	97	780
Ethylbenzene		3200		er /	130	780
m,p-Xylene		13000		B'//	300	1900
Xylene, o-		2000		P'/	160	780
Xylene (total)		15000	P	Þ	160	2700
A			9/			
Analyte		Result (u	g/m3) //	Qualifier	MDL	RL
Acetone		46000		U	12000	46000
Isopropyl alcohol		48000	/ /	U	1200	48000
Methylene Chloride	9	6700		U	920	6700
n-Hexane		2700		IJ	630	2700
Chloroform		3800		IJ	470	3800
Tetrahydrofuran		210000/		Ø	14000	57000
Benzene		5600/			350	2500
Toluene		~ 400 <i>0</i> 0		3 *	510	2900
Chlorobenzene		~ ≥3600		J	450	3600
Ethylbenzene		14000			570	3400
m,p-Xylene		59000		8	1300	8400
Xylene, o-		8800		8	670	3400
Xylene (total)	(3 800 65000	Ţ	8	670	12000
		У /				
			ماماد	03/06	117	
		/			•	
	/					

Client: Ertec

INLET-1-16 Inlet -1-16 DL ese 03/06/16

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

Lab Sample ID: Client Matrix:

200-37035-1

Аіг

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Summa Canister

Analysis Batch: Prep Batch:

200-113644

N/A

Instrument ID:

CHC.i

Prep Method: Dilution:

3880

Lab File ID: Initial Weight/Volume:

23705_17.D

Final Weight/Volume:

20 mL

Analysis Date: Prep Date:

Cas Number

01/30/2017 2259 01/30/2017 2259 Run Type:

DL

Injection Volume:

200 mL

<u>Øualifier</u>

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

None

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-10 +nlet-2-16 ese 03/06/17

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

TO-15 Volatile	Organic	Compounds	in Ambient	Аіг
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TO-15 Volatile Organic Compounds in Ambient Air						
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 787 01/28/2017 0100 01/28/2017 0100	Analysis Batch: Prep Batch:	200-113625 N/A	5	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 23692_15.d 16 mL 200 mL 200 mL
Analyte		Result (p	pb v/v)	Qualifie	er MDL	RL
Acetone		3900		U	1000	3900
Isopropyl alcohol		190 39	00	J- 4	100	3900
Methylene Chloride	9	390		U	54	390
n-Hexane		160		U	36	160
Chloroform		160		U	20	160
Tetrahydrofuran		13000			940	3900
Benzene		360			22	160
Toluene		2200			28	160
Chlorobenzene		160		U	20	160
Ethylbenzene		690			27	160
m,p-Xylene		3200			61	390
Xylene, o-		450			31	160
Xylene (total)		3700			31	550
Analyte		Result (ug	g/m3)	Qualifie	r MDL	RL
Acetone		9300		Ú	2400	9300
Isopropyl alcohol		460 ዓት	00 -	+ u	250	9700
Methylene Chloride)	1400		U	190	1400
n-Hexane		550		U	130	550
Chloroform		770		U	96	770
Tetrahydrofuran		38000			2800	12000
Benzene		1100			70	500
Toluene		8300			100	590
Chlorobenzene		720		U	91	720
Ethylbenzene		3000			120	680
m,p-Xylene		14000			260	1700
A VIADA A		0000				

ese 03/06/17

140

140

680

2400

2000

16000

Xylene, o-

Xylene (total)

Client: Ertec

Inlet - 2-16 use 03/06/17

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16 200-37035-2

Date Sampled: 01/17/2017 1059

Lab Sample ID: Client Matrix:

Аіг

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution:

Analysis Date:

Prep Date:

Summa Canister 787

Prep Batch:

N/A

Lab File ID:

23692_15.d

01/28/2017 0100

Initial Weight/Volume: 16 mL

Final Weight/Volume: Injection Volume:

200 mL 200 mL

01/28/2017 0100 **Tentatively Identified Compounds**

Number TIC's Found: 0

Cas Number

Analyte

RT Est. Result (ppb v/v) Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLETOP Inlet-Perc 03/06/17

Lab Sample ID:

200-37035-3

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

780

2700

160

160

TO-15 Volatile Organic Compounds in Ambient Air

			·				
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 900 01/28/2017 0239 01/28/2017 0239	Analysis Batch: Prep Batch:	200-113625 N/A		ht/Volume: 2 ht/Volume: 2	CHW.i 23692_17.d 5 mL 200 mL 200 mL	
		Result (p	nh v/v) Ou	ualifier M	IDL	RL	
Analyte		4500	U U		200	4500	-
Acetone		2 20 48	100 J		20	4500	
Isopropyl alcohol	la.	450	U	6		450	
Methylene Chlorid	le	180	ŭ	4		180	
n-Hexane Chloroform		180	Ū	2		180	
Tetrahydrofuran		14000	-		100	4500	
Benzene		380		2	5	180	
Toluene		2400		3:	2	180	
Chlorobenzene		180	U	2:	3	180	
Ethylbenzene		730		3	1	180	
m,p-Xylene		3400		6	9	450	
Xylene, o-		480		3	6	180	
Xylene (total)		3900		3	6	630	
Analyte		Result (u	ıg/m3) Qı	ualifier M	IDL	RL	
Acetone		11000	U	2	800	11000	
Isopropyl alcohol		538 W	000 J	· 4 2	90	11000	
Methylene Chloric	ie	1600	U		10	1600	
n-Hexane		630	υ		50	630	
Chioroform		880	U		10	880	
Tetrahydrofuran		43000			200	13000	
Benzene		1200		8		580	
Toluene		8900			20	680	
Chlorobenzene		830	U		00	830	
Ethylbenzene		3200			30	780	
m,p-Xylene		15000			00	2000	
V		2400		1	60	780	

ne 03/06/17

2100

17000

Xylene, o-

Xylene (total)

Client: Ertec

INLET-P en 03/06/17

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

Date Sampled: 01/17/2017 1059

Lab Sample ID: Client Matrix:

200-37035-3 Air

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch: 200-113625

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Lab File ID:

23692_17.d

Dilution:

900

Prep Batch:

N/A

Analysis Date:

Initial Weight/Volume:

15 mL

Prep Date:

01/28/2017 0239 01/28/2017 0239 Final Weight/Volume: Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TiC's Found: 0

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

outlet-16 ese 03/06/17

Date Sampled: 01/17/2017 1103

Lab Sample ID: Client Matrix:

200-37035-4

Air

Date Received: 01/19/2017 1015

		THE RESERVE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER, THE PERSON	STORES THE PERSON		
TO-15	Volatile Organic (Compounds	in Amb	ient Air	
Analysis Method: TO-15 Prep Method: Summa Canister Dilution: 5.0 Analysis Date: 01/28/2017 0149 Prep Date: 01/28/2017 0149	Analysis Batch: Prep Batch:	200-113625 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 23692_16.d 40 mL 200 mL 200 mL
Analyte	Result (p	pb v/v)	Qualifie	r MDL	RL
Acetone	11		J	6.5	25
Isopropyl alcohol	25		Ü	0.65	25
Methylene Chloride	90		_	0.34	2.5
n-Hexane	1.3			0.23	1.0
Chloroform	1.0		U	0.13	1.0
Tetrahydrofuran	25		U	6.0	25
Benzene	0.21		J	0.14	1.0
Toluene	1.1			0.18	1.0
Chlorobenzene	1.0		U	0.13	1.0
Ethylbenzene	1.0		U	0.17	1.0
m,p-Xylene	2.5		U	0.39	2.5
Xylene, o-	1.0		U	0.20	1.0
Xylene (total)	3.5		U	0.20	3.5
Analyte	Result (ug	g/m3)	Qualifier	MDL	RL
Acetone	26		J	15	59
sopropyl alcohol	61		U	1.6	61
Methylene Chloride	310			1.2	8.7
n-Hexane	4.7			0.81	3.5
Chloroform	4.9		U	0.61	4.9
Tetrahydrofuran	74		U	18	74
Benzene	0.68	,	J	0.45	3.2
Toluene	4.1			0.66	3.8
Chlorobenzene	4.6		U	0.58	4.6
Ethylbenzene	4.3		U	0.74	4.3
n,p-Xylene	11		U	1.7	11
	4.0	1		0.07	4.0
Kylene, o- Kylene (total)	4.3 15		U U	0.87 0.87	4.3 15

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16 outlet-16 en 03/06/17

Lab Sample ID:

200-37035-4

Summa Canister

01/28/2017 0149

01/28/2017 0149

Client Matrix:

Air

Date Sampled: 01/17/2017 1103

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

5.0

Prep Batch:

N/A

Lab File ID:

23692_16.d

Final Weight/Volume:

Initial Weight/Volume: 40 mL

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Prep Date:

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

Client Matrix:

Air

Date Sampled: 01/17/2017 0000 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch: 200-113625

Instrument ID:

CHW.i

Prep Method:

N/A

Lab File ID:

23692_18.d

Dilution:

1.0

Prep Batch:

Initial Weight/Volume:

Final Weight/Volume:

200 mL

Analysis Date: Prep Date:

01/28/2017 0332 01/28/2017 0332

Summa Canister

Injection Volume:

200 mL 200 mL

116p Date: 01/20/2017 0332		injed	tion volume:	200 ML
Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Acetone	5.0		1.3	5.0
Isopropyl alcohol	0.15	J	0.13	5.0
Methylene Chloride	0.50	U	0.068	0.50
n-Hexane	0.20	U	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	Ü	0.028	0.20
Toluene	0.058	Ĵ	0.035	0.20
Chlorobenzene	0.20	Ü	0.025	0.20
Ethylbenzene	0.091	Ĵ	0.034	0.20
m,p-Xylene	0.10	Ĵ	0.077	0.50
Xylene, o-	0.20	ŭ	0.040	0.20
Xylene (total)	0.10	j	0.040	0.70
Analyte	Result (ug/m3)	Qualifier	MDL	RL
Acetone	12	U	3.1	12
Isopropyl alcohol	0.36	J	0.32	12
Methylene Chloride	1.7	U	0.24	1.7
n-Hexane	0.70	U	0.16	0.70
Chloroform	0.98	U	0.12	0.98
Tetrahydrofuran	15	Ü	3.5	15
Benzene	0.64	ŭ	0.089	0.64
Toluene	0.22	Ĵ	0.13	0.75
Chlorobenzene	0.92	บ	0.13	0.75
Ethylbenzene	0.40	ĵ	0.12	0.92
m,p-Xylene	0.45	J	0.13	2.2
Xylene, o-	0.87			
Xylene (total)	0.43	J J	0.17	0.87
- Arena Arena	0.43	J	0.17	3.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

Client Matrix:

Air

Date Sampled: 01/17/2017 0000

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution:

Analysis Date:

Summa Canister 1.0

Prep Batch:

N/A

Lab File ID:

23692_18.d

Initial Weight/Volume: Final Weight/Volume:

200 mL

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

01/28/2017 0332 01/28/2017 0332

Number TIC's Found: 0

Cas Number

Prep Date:

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



March 6, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the SVE EPA 3C Methane Air Monitoring

of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for methane in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

Inlet 1-16	Inlet-2-16	Inlet-P	Outlet-16	
A				

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on February 17, 2017.

All samples were analyzed for methane only in conformance with the specifications of USEPA Method 3C. The validation effort was restricted to the reported results and supporting data for this compound.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales March 6, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter President

Englid Carpenter



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 16-5440

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37035 Methane in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

March 6, 2017

13104/ESC/CEW 200-37035-EPA 3C



EXECUTIVE SUMMARY

Enclosed is the validation report for methane in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

Inlet 1-16	Inlet-2-16	Inlet-P	Outlet-16	

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on February 17, 2017.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 3C, "Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources." Each standard and sample was analyzed in duplicate. Responses from both analyses were averaged and the average was used to calculate all results as required by the analytical method.

The laboratory modified the analytical method as follows:

- The target analyte list was limited to methane; therefore, the validation effort was restricted to the supporting data for this analyte.
- The initial calibration was established using five concentration levels while a minimum of three concentrations are required by Method 3C. Concentrations of 0.040 percent volume to volume (% v/v), 0.40% v/v, 2.0% v/v, 4.0% v/v, and 99% v/v were used to establish the calibration range for methane.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

These air samples were collected in Summa® Canisters on January 17, 2017. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition with custody seals intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters. Therefore, all requirements for holding times and sample integrity were met. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a thermal conductivity detector (TCD) and a column identified as "CTR-1."

Peaks for methane and carbon monoxide overlap in all calibration standards. Under the analytical conditions used, methane eluted at approximately 7.9 minutes, which was prior to carbon monoxide at 8.6 minutes. The methane peak area was determined by dropping a perpendicular line to the baseline at the onset of the carbon monoxide peak. This served to under-estimate the methane peak area and resulted in a decreased methane calibration factor and an over-estimated methane sample concentration. Methane was not detected in any of the site samples and no action by the validator was necessary.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on August 17, 2015. Documentation of all IC standards was provided in the data package. The calibration factor (CF) was correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (<20%).

An ICV was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set were bracketed by CC standards; therefore, an acceptable analytical sequence was performed. The concentration of each CC standard was 4.0% v/v. Percent difference (%D) values for calculated versus true value of both CC standards were acceptable (<20%).



III. Blanks

A laboratory blank was analyzed with the samples in this data set. Methane was not detected in the laboratory blank.

IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 3C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

The laboratory control sample (LCS) was spiked with methane at 4.0% v/v, and the recovery of methane (99%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet-2-16. Methane was not detected in either of these samples; therefore, no quantitative evaluation of precision could be made from these data.

VII. Compound Identification

Methane was correctly identified in the LCS based on the presence of a response on the quantitation report and a peak in the chromatogram within the retention time window specified for this compound during the associated IC.



VIII. Compound Quantitation and Reporting Limit (RL)

The true value of the low concentration standard used to establish the IC was 0.040% v/v. However, the averaged concentration of reported results for this standard is 0.050% v/v. The RL for these samples was corrected by the validator to reflect an unadjusted concentration of 0.050% v/v on the answer forms in this report. Unadjusted RLs were also properly adjusted by the validator for dilution factors arising from the final canister pressure of each sample. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.

The peaks for methane and carbon monoxide overlapped in all calibration standards. This does present a problem of over-estimated methane results when this compound is detected.

Method 3C specifies agreement between paired responses must be $\leq 5\%$ difference (%D). Acceptable agreement was noted between positive paired responses in the quality control samples.

IX. System Performance

The analytical system did not resolve methane from carbon monoxide at the time of these analyses. The laboratory should ensure the low concentration standard can be used as the RL and resolve the issue with the overlap of peaks for methane and carbon monoxide.

X. Documentation

Chain of custody records were provided in the data package and included the samples in this data set. The following observations were noted:

The samples were shipped the day of sample collection (11/17/17) but were not received by the laboratory until 11/19/17. A reason for the delayed laboratory arrival was not provided.

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact on the site samples upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.



XI. Overall Assessment

Findings of the validation effort resulted in the correction of the unadjusted sample reporting limit to accurately reflect the concentration observed by the laboratory in the low concentration standard used to establish the IC. Unadjusted RLs were also properly adjusted by the validator for dilution factors arising from the final canister pressure of each sample. These corrections were made by the validator to the answer forms in this report. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methane data reported in SDG 200-37035.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16 Inlet-1-16 esc 03/06/17

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

Dilution: Analysis Date:

Prep Date:

1.34

01/23/2017 2007 01/23/2017 2007 Analysis Batch: 200-113629

Prep Batch:

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-01-23 20;07;01 2

Initial Weight/Volume:

2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Result (% v/v)

Qualifier

Methane

0.054 0.067

U

0.054 0.067

0.054 0.067

ese 03/06/17

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

Inlet-2-16 use 03/06/17 INLET-2-16

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

1.29

Dilution: Analysis Date:

Prep Date:

01/23/2017 2111 01/23/2017 2111

200-113629 Analysis Batch:

Prep Batch:

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-01-23 21;11;30 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte Methane Result (% v/v) 0.052- 0.064 Qualifier Ü

0.052 0.064

RL 0.052 0.064

ere 03/06/17

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P Inlet-P ese 03/06/17

Lab Sample ID:

200-37035-3

Client Matrix:

Аіг

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Analysis Batch: 200-113629

Instrument ID:

CH0001.i

Prep Method:

Analysis Date:

Summa Canister

Prep Batch:

Lab File ID:

2017-01-23 22;16;05 2

Dilution:

1.33

N/A

Initial Weight/Volume: 2 mL

01/23/2017 2216

2 mL

Final Weight/Volume: Injection Volume:

2 mL

Prep Date:

01/23/2017 2216

Result (% v/v)

Qualifier

RL

Analyte Methane

0.053-0.066

0.059 0.066

0.053 0.066

use 03/06/17

Client: Ertec

Outlet-16 ere 03/06/17

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37035-4

Client Matrix:

Air

Date Sampled: 01/17/2017 1103

Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: Prep Method:

EPA 3C

Summa Canister

Dilution: 1.34

Analysis Date: Prep Date:

01/23/2017 2320 01/23/2017 2320 Analysis Batch:

Prep Batch:

200-113629

N/A

Instrument ID:

CH0001.i

Lab File ID:

2017-01-23 23;20;34 2

Initial Weight/Volume: 2 mL Final Weight/Volume:

Injection Volume:

2 mL

Analyte Methane

Result (% v/v) 0.064

Qualifier U

RL

0.054 0.067

ere 03/06/17

0.054 0.067



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



March 6, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the SVE EPA 25C NMOC Air Monitoring of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for NMOC in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

Inlet 1-16 Inlet-2-16 Inlet-P Outlet-16 TB-011717

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on February 17, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales March 6, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter

Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 16-5440

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37035 NMOC in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

March 6, 2017

13104/ESC/CEW 200-37035-EPA 25C



EXECUTIVE SUMMARY

Enclosed is the validation report for NMOC in the air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37035.

Inlet 1-16 Inlet-2-16 Inlet-P Outlet-16 TB-011717

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on February 17, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 25C, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon." Each standard, quality control sample and all five site samples were measured in triplicate. Responses from all three analyses were averaged and the average was used to calculate all results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

All NMOC analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all the samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a flame ionization detector (FID) and a stationary phase column identified as "Carbo/Unibeads."

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was established on January 8, 2015. Concentrations of 6.0 parts per million carbon (ppm-C), 750 ppm-C, and 1800 ppm-C were used to establish the IC curve. Documentation of all IC standards was provided in the data package. The calibration factors (CFs) were correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (\leq 15%).

An ICV at 750 ppm-C was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set associated with opening and closing sequence CC standards. The concentration of each CC standard was 750 ppm-C and all %D values for calculated versus true value were acceptable (\leq 10%).

III. Blanks

A laboratory blank was analyzed in the run sequence associated with the samples in this data set. NMOC was not detected above the reporting limit (RL) in the laboratory blanks.

A trip blank (TB-111717) was associated with the samples in this data set. NMOC was not detected above the RL in TB-111717.



IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 25C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

A laboratory control sample (LCS) was analyzed in the analytical sequence containing the site samples. The LCS was spiked with NMOC at 750 ppm-C. The recovery (96%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet 2-16. Agreement between reported NMOC results (21 RPD) was acceptable.

VII. Compound Identification

Where detected, NMOC was correctly identified based on the presence of responses on the quantitation reports and peaks in the chromatograms within the retention time window established for this compound during the associated IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Target compound concentrations and sample-specific RLs were correctly calculated, accurately reported, and properly adjusted for dilution factors based on the final pressure in the canister. All positively reported results met Method 25C specified agreement among the triplicate responses (≤5% RSD).

The unadjusted RL for NMOC is equivalent to the low concentration standard used to establish the IC; therefore, this RL is supported by the data as presented. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.



IX. System Performance

The analytical system was working satisfactorily at the time of these analyses, based on the evaluation of the available raw data.

X. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

The samples were shipped by FedEx on the date of collection (01/17/17) but were not received by the laboratory until 01/19/17. A reason for the delayed arrival at the laboratory was not provided.

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

XI. Overall Assessment

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the NMOC data reported in SDG 200-37035.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16 Inlet-1-16 use 03/06/17

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-113628

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-01-23 20;23;06 2

Dilution:

1.34

Analysis Date:

01/23/2017 2023

Initial Weight/Volume: 2 mL Final Weight/Volume:

2 mL

Prep Date:

01/23/2017 2023

Qualifier

RL

Injection Volume:

RL

Analyte NMOC as Carbon Result (ppm-C)

8.0

8.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16 Inlet - 2-16 use 03/06/17

Lab Sample ID:

200-37035-2

Client Matrix:

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Air

Summa Canister

Prep Method: Dilution:

Analysis Date: Prep Date:

1.29 01/23/2017 2111

01/23/2017 2111

Analysis Batch:

Prep Batch:

200-113628

N/A

Instrument ID:

CH0001.i

2017-01-23 21;11;30 2

Lab File ID: Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Result (ppm-C)

Qualifier

NMOC as Carbon

160

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P Inlet-P use 03/06/17

Lab Sample ID:

200-37035-3

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch: 200-113628

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-01-23 22;16;05 2

Dilution:

1.33

Initial Weight/Volume: 2 mL Final Weight/Volume:

Analysis Date: Prep Date:

01/23/2017 2216 01/23/2017 2216

Injection Volume:

2 mL 2 mL

Analyte

Result (ppm-C)

Qualifier

RL 8.0 RL

NMOC as Carbon

130

8.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-18

outlet-16 ese 03/06/17

Lab Sample ID:

200-37035-4

Client Matrix:

Air

Date Sampled: 01/17/2017 1103 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-113628

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-01-23 23;20;34 2

1.34

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Analysis Date: Prep Date:

01/23/2017 2320 01/23/2017 2320

Injection Volume:

2 mL

Analyte

NMOC as Carbon

Result (ppm-C) 45

Qualifier

RL 8.0

RL 8.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

Client Matrix:

Air

Date Sampled: 01/17/2017 0000 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-113628

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-01-24 00;26;41 2

Dilution:

1.0

Initial Weight/Volume: 2 mL

Analysis Date:

Prep Date:

01/24/2017 0026 01/24/2017 0026 Final Weight/Volume: 2 mL Injection Volume:

2 mL

Analyte

Result (ppm-C)

Qualifier

RL

RL

NMOC as Carbon

6.0

6.0 6.0



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



March 6, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the NIOSH 2000 Air Monitoring for Methanol at the

Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for the methanol air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37035.

Inlet-1-16 Inlet-2-16 Inlet-P Outlet-16

This data package was received for validation on February 17, 2017. The analyses were performed by TestAmerica Phoenix and was identified as Job Number 550-76133.

Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.



Ms. Wanda Morales March 6, 2017 Page 2 of 2

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Charlie E. Westerman, Ph.D. Vice President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 16-5440

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Phoenix Arizona
TestAmerica Vermont Sample Delivery Group Number 200-37035
TestAmerica Phoenix Job Number 550-76133
Methanol in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

March 6, 2017

13104/CEW/ESC 200-37035-NIOSH 2000



EXECUTIVE SUMMARY

Enclosed is the validation report for the methanol air samples collected on January 17, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37035.

Inlet-1-16	Inlet-2-16	Inlet-P	Outlet-16

This data package was received for validation on February 17, 2017. The analyses were performed by TestAmerica Phoenix and was identified as Job Number 550-76133.

Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

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I. Holding Times, Preservation, and Sample Integrity

These air samples were collected using NIOSH silica gel sorbent tubes on January 17, 2017, and were shipped directly to TestAmerica Phoenix. The job narrative stated the samples were received in good condition. A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." The job narrative stated, "the samples arrived in good condition."

A copy of the chain of custody record was also present in the data package and included all samples in this data set. NIOSH 2000 specifies sample stability as "at least 30 days at 5°C." All extractions and analyses were performed within 30 days. An acceptable cooler temperature of 0.9°C was noted on the chain of custody record.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified as "GC14." The GC was equipped with a flame ionization detector (FID) identified as "FID1 A" and a DB-1 column.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on January 24, 2017. NIOSH 2000 specifies that three standards are to be prepared in duplicate and analyzed at three levels as the IC. For this project, four calibration standards at $3.16~\mu g$, $31.6~\mu g$, $31.6~\mu g$, and $3160~\mu g$ were used to establish the calibration curve on each column. Documentation of all IC standards analyzed was provided in the data package. An acceptable coefficient of determination was obtained (1.000).

An initial calibration verification (ICV) standard is not required by NIOSH 2000 but an ICV was analyzed after the IC. A percent drift (%D) value for the data provided was within the laboratory-specified 40% maximum acceptance limit.

B. Continuing Calibration (CC)

The use of CC standards is not a NIOSH 2000 requirement. All samples and the associated quality control samples were analyzed on January 24, 2017, containing bracketing CC standards. Acceptable %D values were observed for both CC standards (laboratory's 20% maximum acceptance limit).

III. Blanks

A laboratory blank was analyzed with the site samples. Methanol was not detected in the laboratory blank. A trip blank was not collected for methanol analysis.



IV. Surrogate Recovery

The use of a surrogate compound is not addressed in NIOSH 2000, and no surrogate compound was employed.

V. Spike Analyses

Recoveries for a laboratory control sample (LCS) and LCS duplicate (LCSD) each spiked at 7.91 µg were included in the analytical sequence containing the site samples. Recoveries (80% and 83%, respectively) and a relative percent difference (RPD) value (4 RPD) were within the laboratory-specified control limits (69-128% and ≤29 RPD).

VI. Co-located Samples

For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet-2-16. Agreement between positively paired results for methanol (7 RPD) was acceptable.

VII. Compound Identification

Where detected, methanol was correctly identified based on the presence of a peak within the retention time window on the single column used to established the IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Sample-specific RLs were correctly calculated and accurately reported. The RL is equivalent to the low concentration standard used to establish the IC and is therefore supported by the data as presented. Laboratory-reported results were reported as total $\mu g/sample$, mg/m3, and ppm. The ppm concentration unites employed on the answer forms are ppmv. NIOSH employs ppm units, where in other situation, ppmv units would be reported.

All analytical site sample results and associated quality control results were acquired on the sample instrument during the same run sequence.

The back and front sections of the 780 mg silica gel tubes were desorbed independently in the customary manner. The resultant extracts were analyzed independently employing sequentially duplicate injections. An explanation for performing the duplicate analyses was not provided. The results are summarized in the following table.



	Anal	ysis	Result	Result	
Sample	Date	Time	μg/sample	Reported	
Inlet-1-16 Back	01/24/17	14:48	<3.36	Yes	
		15:00	<3.36		
Inlet-1-16 Front	01/24/17	16:46	Time μg/sample Re 14:48 <3.36 15:00 <3.36 16:46	Yes	
		16.58	<3.36		
Inlet-2-16 Back	01/24/17	15:12	<3.36	Yes	
		15:24	<3.36		
Inlet-2-16 Front	01/24/17	17:10	63.9	Yes	
		17:21	<3.36	Yes Yes	
Inlet-P Back	01/24/17	15:35	<3.36	Yes	
		15:47	<3.36		
Inlet-P Front	01/24/17	17:33	68.4	Yes	
		17:45	<3.36		
Outlet-16 Back	01/24/17	15:59	<3.36	Yes	
		16:11	<3.36		
Outlet-16 Front	01/24/17	17:57	38.1	Yes	
	01/25/17	07:41	<3.36		

Unfortunately, poor agreement resulted among the results of the duplicate injections of extracts for the front sections for all four field samples. The time interval between some of the associated duplicate injections was only eleven to twelve minutes. Repeated instrument instability would not be expected with such short time intervals. The validator was unable to determine any apparent reason for the poor reproducibility of reported results.

The nature and extent of the variation of duplicate injections of the same solvent extracts was sufficiently divergent and random to suggest that all values should be considered as estimated (UJ, J) and the direction of bias cannot be determined. The reported data are consistent with the presence of low amounts of methanol. Raw data and associated answer forms were provided for each of the individual analyses.

Evidently, the amounts on the "Client Sample Results" were intended to constitute the final answers; however, no explanation for any of the various laboratory actions were provided.



IX. System Performance

NIOSH 2000 states, "at high relative humidity or high methanol concentrations, use a larger tube: 15 cm long, 8-mm ID, with three sections of silica gel (700 mg, 150 mg, and 150 mg). Both high relative humidity and high methanol concentration are potentially present with this project. The sample preparation log in the data package documented the fact that 780 mg two-section silica gel tubes currently available were used for the present work.

X. Documentation

A copy of the chain of custody record was present and included all reported samples.

The following discrepancies were noted with the data package:

The samples collected on January 17, 2017, were relinquished to FedEx on the same day. The samples were received by the laboratory on January 19, 2017. No explanation for the delayed laboratory receipt was provided in the data package.

A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." It is not apparent if custody seals were employed.

The laboratory "received by" signature on the chain of custody record is illegible.

A copy of the FedEx airbill was not included in the data package to document the transfer of the samples from the field to the laboratory.

No explanation was provided for performing duplicate instrumental injections of the four site samples. Poor replication of the various injections of the solvent extracts for the front sections of all four site samples was not addressed in the Job Narrative. The data user is cautioned that for this data set, raw data and associated answer forms were provided for each of the individual extract analyses.

No explanation was provided for the observed divergent results for multiple injections for the four site samples. The laboratory reported the higher concentration observed for each sample. No explanation for the laboratory's selection of the data reported on the final answer forms was provided. The reporting of the higher concentration values would generally be considered the more conservative approach. The Job Narrative stated "No analytical quality issues were noted, other than those described in the Definitions/Glossary page." The Definition/Glossary page noted no analytical quality issues.



The analyses of the front and back sections of the silica gel samples tubes were performed on January 24, 2017. The analysis date for summed values was noted as January 25, 2017, and was corrected by the validator on the Laboratory Analytical Data Forms in Attachment A of this report.

A sample tube size of 780 mg was specified in the sample preparation section but 150 mg was indicated on the answer forms.

The TestAmerica Phoenix data package page numbers were overwritten (obliterated) when the TestAmerica Burling printed the hardcopy data package using their page numbers.

Data presentation issues do not affect the validity of the results, but they could be problematic if these data are reviewed by a regulatory agency or if they are used in litigation.

XI. Overall Assessment

Based on the finding of the validation effort, all sample results were qualified as estimated (J, UJ) due to the lack of reproducibility of multiple duplicate of each associated solvent extract.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methanol data reported in SDG 200-37035.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client Sample Results TestAmerica Job ID: 550-76133-1 Client: TestAmerica Laboratories, Inc. SDG: 16-5440 Project/Site: Pfizer Barceloneta SVE Lab Sample ID: 550-76133-1 Client Sample ID: Inlet-1-16 Matrix: Air Date Collected: 01/17/17 00:00 780 Date Received: 01/19/17 09:30 150 mg Sample Container: IH - Silica Gel tube, Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result Analyzed Dil Fac Prenared ug/Sample ppm Qualifier mg/m3 ug/Sample Analyte 01/24/17 11:24 01/24/17 14:48 1.60 UJ 3.36 \$3.36 UJ 12.10 WJ Methanol Method: 2000 Front - NIOSH 2000 (Modified) RL Result Result Result Analyzed Dil Fac ug/Sample Prepared ppm Qualifier ug/Sample ma/m3 Analyte 01/24/17 11:24 01/24/17 16:46 3.36 53.5 J 70.1 3 112 3 Methanol Method: 2000 Sum - NIOSH 2000 (Modified) RL. Result Result Result Prepared Dil Fac ug/Sample Analyzed ppm Qualifier mg/m3 ug/Sample **Analyte** 01/26/17 13:15 3.36 70.1 J 53.5 Methanol 112 5 24 Lab Sample ID: 550-76133-2 Client Sample ID: Inlet-2-16 Matrix: Air Date Collected: 01/17/17 00:00 780 Date Received: 01/19/17 09:30 Sample Container: IH - Silica Gel tube, 180 mg Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result Dil Fac ppm Qualifier ug/Sample Prepared Analyzed ug/Sample mg/m3 Analyte 01/24/17 11:24 01/24/17 15:12 3.36 2.10 UJ 1.60 \$3.36 UJ Methanol Method: 2000 Front - NIOSH 2000 (Modified) RL Result Result Result Analyzed Dii Fac ppm Qualifier ug/Sample Prepared ug/Sample mg/m3 Analyte 01/24/17 11:24 01/24/17 17:10 3.36 30.5 J 63.9 J 39.9 7 Methanol Method: 2000 Sum - NIOSH 2000 (Modified) RL Result Result Result Dil Fac ppm Qualifier Prepared Analyzed ug/Sample ug/Sample mg/m3 Analyte 01/28/17 13:15 3.36 63.9 J 39.9 🎵 30.5 3 Methanol 24 Lab Sample ID: 550-76133-3 Client Sample ID: Inlet-P Matrix: Air Date Collected: 01/17/17 00:00 780 Date Received: 01/19/17 09:30 Sample Container: IH - Silica Gel tube, 150 mg Sample Air Volume: 1.6 L

cew 02/17/17

01/24/17 11:24 01/24/17 17:33

01/24/17 11:24 01/24/17 15:35

Prepared

Prepared

RL

3.36

RL

ug/Sample

ug/Sample

Analyzed

Analyzed

Dil Fac

Dil Fac

Result

Result

ppm Qualifier

ppm Qualifier

1.60 UJ

32.6 3

Method: 2000 Back - NIOSH 2000 (Modified)

Method: 2000 Front - NIOSH 2000 (Modified)

Analyte

Methanol

Analyte

Methanol

Result

\$3.36

Result

68.4 1

ug/Sample

ug/Sample

Result

mg/m3

Result

ma/m3

42.8 J

K2.10 UJ

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-76133-1

SDG: 16-5440

Client Sample ID: Inlet-P

Date Collected: 01/17/17 00:00

Lab Sample ID: 550-76133-3

Matrix: Air

Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Sum - NIOSH 200	0 (Modified)						
Michiga. 2000 Gam The Grant Land	Result	Result	Result	RL			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	68.4 J	42.8 J	32.6 \	3.36		01/28/17 13:15 24	1

Client Sample ID: Outlet-16

Date Collected: 01/17/17 00:00 Date Received: 01/19/17 09:30

Lab Sample ID: 550-76133-4

Matrix: Air 780

Sample Air Volume: 1.6 L			Sam	ple Contair	ner: IH - Silio	a Gel tube, 1	.50 mg
Method: 2000 Back - NIOSH 20 Analyte Methanol	000 (Modified) Result ug/Sample 43.36 AJ	Result mg/m3	Result ppm Qualifier 1.60 NJ	RL ug/Sample 3.36	Prepared 01/24/17 11:24	Analyzed 01/24/17 15:59	Dil Fac
Method: 2000 Front - NIOSH 2	000 (Modified) Result ug/Sample	Result mg/m3	Result ppm Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	38.1 J	23.8 5	18.2 5	3.36	01/24/17 11:24	01/24/17 17:57	1
Method: 2000 Sum - NIOSH 20	000 (Modified) Result	Result	Result	RL			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	38.1 7	23.8 3	18.2 5	3.36		01/25/17 13:15 24	1

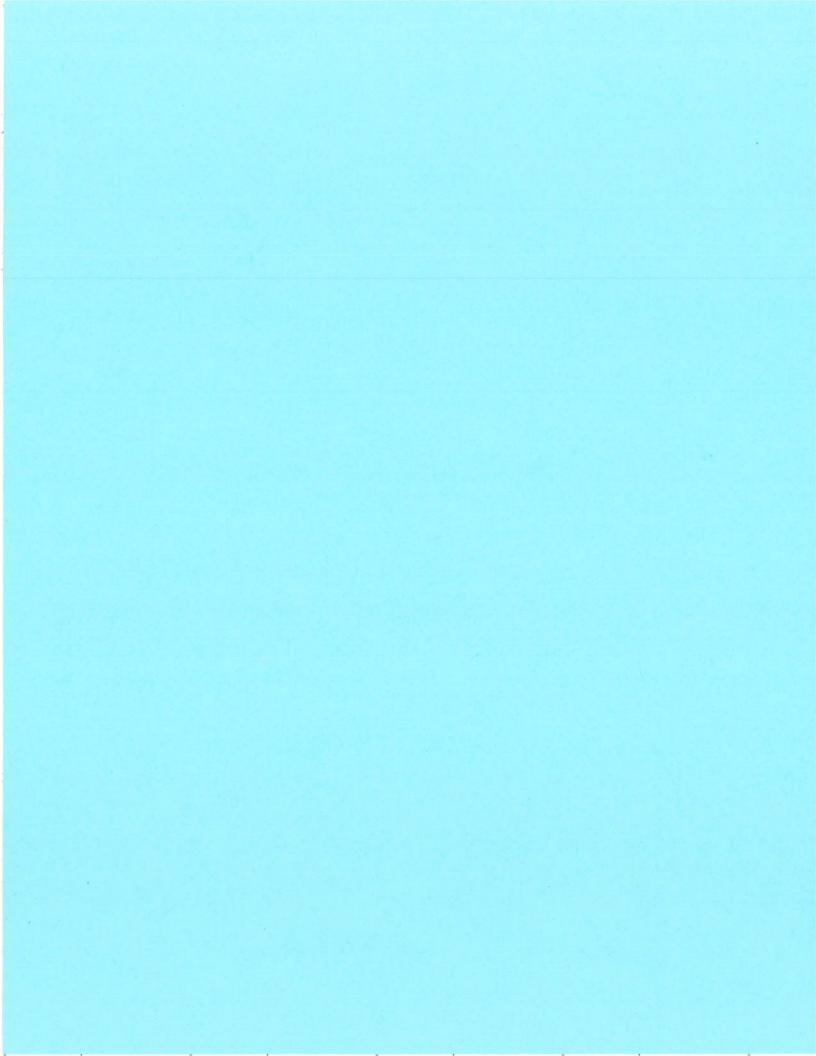
cens 02/17/17



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.





April 12, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Data Validation Report for the SVE TO-15 Air Monitoring of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for selected volatile organic compounds in the air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37474.

Inlet-1-16 Inlet-2-16 Inlet-P Outlet-16 TB012117

The laboratory performed well, but some qualifications of sample results were necessary. See Section XIV. The data package was received for validation on April 10, 2017.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the method detection limit (MDL) and the reporting limit (RL), were not removed by the validator unless they were superseded by a qualifier resulting from the validation effort.

All samples were analyzed for acetone, isopropyl alcohol, methylene chloride, n-hexane, chloroform, tetrahydrofuran, benzene, toluene, chlorobenzene, ethylbenzene, m,p-xylenes, and o-xylene in conformance with the specifications of USEPA Compendium Method TO-15. In addition, methyl iodide was included in a library search as a tentatively identified compound (TIC) because this compound was not included in any of the calibration standards. The validation effort was restricted to the reported results and supporting data for these compounds.



Ms. Wanda Morales April 12, 2017 Page 2 of 2

Results were also reported for total xylenes. The laboratory-reported concentrations for total xylenes were obtained by adding the concentrations for m,p-xylenes and o-xylene.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

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If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid S. Carpenter

Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE

ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group: 200-37474 Selected Volatile Organic Compounds in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

Date: April 12, 2017



INTRODUCTION

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Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

All TO-15 analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. GC/MS Instrument Performance Checks

Results were reported for five bromofluorobenzene (BFB) instrument performance checks. Requirements for all instrument performance checks were met.

III. Calibration

These samples were analyzed on two single gas chromatography/mass spectrometry (GC/MS) systems identified as "CHB" and "CHW." Manual integrations were performed on the peak areas for isopropyl alcohol in the 0.2 2 parts per billion volume to volume (ppb v/v) initial calibration standard analyzed on CHB and for benzene in the 0.2 ppb v/v IC standard analyzed on CHW. Documentation of these integrations were included in the data package and confirming they were properly performed and correctly incorporated into the associated quantitation reports. No evidence was presented in the data package to indicate that any other manual integrations were performed on any of the project-specified target compounds or on any of the internal standards in any of the calibration standards.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

ICs were established on January 25, 2017, on instrument CHB and February 18, 2017, on instrument CHW. An ICV was analyzed following each IC. EPA Region II-specified acceptance criteria were met for all standards.

B. Continuing Verification (CV)

Documentation of three CV standards (one on instrument CHB and two on instrument CHW) associated with the reported samples was present in the data package. All EPA Region II-specified acceptance criteria were met for these standards.

IV. Blanks

A laboratory blank was analyzed in each analytical sequence containing the site samples. No project-specified target analytes were detected above the method detection limit (MDL) in the laboratory blank analyzed on instrument CHB.



Two laboratory blanks were analyzed on instrument CHW. Isopropyl alcohol (0.198 ppb v/v) and methylene chloride (0.0807 ppb v/v) were detected at estimated concentrations below the reporting limit in the laboratory blank analyzed on March 9, 2017. Isopropyl alcohol (0.208 ppb v/v) and chlorobenzene (0.0254 ppb v/v) were detected at estimated concentrations below the reporting limit in the laboratory blank analyzed on March 10, 2017.

Based on contamination in the associated laboratory blank, results for isopropyl alcohol in Outlet-16, the diluted and more diluted analyses of Inlet-1-16, Inlet-2-16, and Inlet-P were qualified as less than the sample-specific reporting limit (U). Results for isopropyl alcohol and the remaining compounds noted above were either not detected or were greater than the action level for qualification based on blank contamination and no further action was required. No other project-specified target analytes required qualification based on trip blank contamination.

A trip blank (TB022117) was submitted with the samples in this data set. No project-specified target compounds were detected in TB022117

V. Surrogate Recoveries

The use of a surrogate compound is not addressed in Method TO-15. A surrogate compound was not employed in the analyses of these samples.

VI. Laboratory Check Standard (Audit Accuracy Standard)

A 10 ppbv laboratory check standard (identified as LCS) was analyzed in each analytical sequence containing the reported samples. Each LCS was spiked with all project-specified target analytes. All recoveries of the target analytes were within the laboratory-established analyte-specific quality control limits as included on the summary forms.

VII. Laboratory Replicate Analyses

A laboratory replicate analysis was not reported in this data package.

VIII. Field Duplicates

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The validation guidance document does not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported concentrations greater than the RL and ± RL for



concentrations below the RL in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet-2-16. Acceptable reproducibility between positively paired results was achieved for tetrahydrofuran, benzene, toluene, ethylbenzene, m,p-xylenes, and o-xylene. Results for isopropyl alcohol in these samples were previously qualified based on blank contamination and the remaining project-specified target analytes were not detected in either of these samples; therefore, no further quantitative evaluation of precision could be made from these data.

IX. Internal Standard Performance

The validator confirmed that the areas and retention times of all three internal standards were within the method-specified acceptance limits for the reported site and quality control analyses.

X. Target Compound Identification

When detected, the target analyte was correctly identified with acceptable supporting mass spectral data present in the data package.

XI. Compound Quantitation and Reporting Limits (RLs)

Unadjusted RLs were equal to the low concentration standard used to establish the IC for the project-specified target compounds and are supported by the reported data. All sample results were correctly calculated and accurately reported, including adjustments for dilutions where necessary.

Inlet 1-16 was reanalyzed at a dilution necessary to obtain a reliable result for tetrahydrofuran. The concentration for tetrahydrofuran only was taken from the more diluted analysis of Inlet 1-16. The Form I for the less diluted analyses of Inlet 1-16 was "hybridized" by the validator to reflect the results recommended for use from both analyses of this sample. The Form I from the more diluted analysis of this sample has been marked "Do Not Use" for clarity.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.

XII. Tentatively Identified Compounds (TICs)

Since methyl iodide was not included in any of the calibration standards, a library search was performed for this compound. Methyl iodide was not detected in any of the samples in this SDG. The Form I TIC represents not detected for methyl iodide only.



XIII. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

The Laboratory Analytical Data Forms also include a column identified as MDL. Unadjusted MDLs for the target compounds are not supported by the data as received. Therefore, it is recommended that the RLs rather than the MDLs be used as the lowest supported limit of detection.

XIV. Overall Assessment

Based on the findings of the validation effort, the sample results were qualified as follows:

- Based on contamination in the associated laboratory blank, results for isopropyl alcohol in Outlet-16, the diluted and more diluted analyses of Inlet-1-16, Inlet-2-16, and Inlet-P were qualified as less than the sample-specific reporting limit (U).
- The concentration of tetrahydrofuran in the less diluted analyses of Inlet 1-16 exceeded the calibration range of the instrument and was qualified as estimated (J) on this basis.

Inlet 1-16 was reanalyzed at a dilution necessary to obtain a reliable result for tetrahydrofuran. The concentration for tetrahydrofuran only was taken from the more diluted analysis of Inlet 1-16. The Form I for the less diluted analyses of Inlet 1-16 was "hybridized" by the validator to reflect the results recommended for use from both analyses of this sample. The Form I from the more diluted analysis of this sample has been marked "Do Not Use" for clarity.

All "E" and "D" qualifiers applied by the laboratory to indicate concentrations that exceeded the calibration range or the instrument and results from a more diluted analysis, respectively, were removed by the validator.



The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the MDL and the RL were not removed by the validator unless they were superseded by a qualification resulting from the validation effort.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the TO-15 data reported in SDG 200-37474.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-18 Inlet-1-16

ese 04/10/17

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 300 , AC 10 03/09/2017 2041 03/09/2017 2041	-	sis Batch: Batch:	200-1147 N/A	80	Final W		CHW.i 24260_10. 176 mL 200 mL 200 mL	d
Analyte Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	Đ	60,000	Result (p 640 1600 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Qualifi JB- U U J- E		MDL 390 39 20 14 7.5 360 8.4 11 7.5 10 23 12	RL 1500 1500 60 60 60 60 60 60 60 60 210	13 00 0
Analyte Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	9	180,000	Result (u 1500 390 3 3 520 210 170 180000 4400 40000 280 15000 68000 10000 79000	g/m3) 7 00	Qualifi J U U U J		MDL 930 96 71 49 37 1100 93 00 27 40 35 44 100 52 52	RL 3600 3700 520 210 290 4400 190 230 280 260 650 260 910	39,000

ere 04/10/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET 1-16 Jalet -1-16

Lab Sample ID:

200-37474-1

Date Sampled: 02/21/2017 1030

Client Matrix:

Air

Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114780

en 04/10/17

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Prep Batch:

Lab File ID:

Dilution:

300

N/A

24260_10.d

Initial Weight/Volume: 176 mL

Analysis Date:

03/09/2017 2041

Final Weight/Volume:

200 mL

Prep Date:

03/09/2017 2041

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Inlet-1-16 bl ere 04/10/17

Lab Sample ID:

Air

Client Matrix:

200-37474-1

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

In the second second		TO-15 Volatile	Organic C	Compounds	in Ami	hient Air			
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 2640 03/10/2017 1554 03/10/2017 1554		sis Batch: Batch:	200-11482 N/A DL		Instrum Lab File Initial W Final W	ent ID:		
Analyte Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o-	e		Result (pi 13000 340- 13 1300 530 530 60000 1400 10000 530 3100 15000 2000 17000		Qualification of the control of the		MDL 3400 340 180 120 66 3200 74 92 66 90 200 110 110	RL 13000 13000 1300 530 530 530 530 530 530 530 530 1300 530	
Analyte Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)		20×)	Result (u 31000 840 3 2 4600 2600 180000 4400 38000 2400 13000 63000 8800 74000	g/m3)	Qualifi U J B D U U U D D D D D D D D D D D	u	MDL 8200 840 620 430 320 9300 240 350 300 390 880 460 460	RL 31000 32000 4600 1900 2600 39000 1700 2000 2400 2300 5700 2300 8000	
			er	١ (١٧)	0/17				

Client: Ertec

Inlet -1-16 DL ese 04/12/17

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID: Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030

Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Prep Method:

Summa Canister

2640

Dilution: Analysis Date: Prep Date:

03/10/2017 1554 03/10/2017 1554

Analysis Batch: 200-114827 Prep Batch:

N/A

DL

Instrument ID: Lab File ID:

CHW.i 24282_06.d

20 mL Initial Weight/Volume: Final Weight/Volume: 200 mL Injection Volume: 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Run Type:

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v) None

Qualifier

Client: Ertec

INLET-2-16 Inlet-2-16 en 04/12/17

Lab Sample ID:

Client Sample ID:

200-37474-2

Client Matrix:

Prep Date:

Air

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15 Prep Method:

Summa Canister

03/09/2017 2221

200-114780 Analysis Batch: Prep Batch:

N/A

Instrument ID: Lab File ID:

CHW.i 24260_12.d

Dilution: Analysis Date: 03/09/2017 2221

467

Initial Weight/Volume: 29 mL

Final Weight/Volume: 200 mL Injection Volume:

200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Acetone	2300	U	610	2300
Isopropyl alcohol	120 - 23 00	18- U	61	2300
Methylene Chloride	230	U	32	230
n-Hexane	93	U	21	93
Chloroform	93	U	12	93
Tetrahydrofuran	15000		560	2300
Benzene	290		13	93
Toluene	2200		16	93
Chlorobenzene	93	U	12	93
Ethylbenzene	740		16	93
m,p-Xylene	3500		36	230
Xylene, o-	460		19	93
Xylene (total)	4000		19	330
Analyte	Result (ug/m3)	Qualifier	MDL	RL
Acetone	5500	Ü	1400	5500
Isopropyl alcohol	200 5700	AB U	150	5700
Methylene Chloride	810	U	110	810
n-Hexane	330	U	76	330
Chloroform	460	U	57	460
Tetrahydrofuran	44000		1700	6900
Benzene	920		42	300
Toluene	8300		62	350
Chlorobenzene	430	U	54	430
			69	410
Ethylbenzene	3200		US	410
Ethylbenzene m,p-Xylene	3200 15000		160	1000
•				

ese 04/12/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET 2-16 Les 04/12/17

Lab Sample ID:

200-37474-2

Client Matrix:

Аіг

Date Sampled: 02/21/2017 1033

Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:

TO-15

Analysis Batch:

200-114780

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

Dilution:

467

24260_12.d

Analysis Date:

03/09/2017 2221 03/09/2017 2221

Initial Weight/Volume: 29 mL Final Weight/Volume: 200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Prep Date:

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLEIP Inlet P ese 04/12/17

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

	TO	-15 Volatile Organic (Compound	s in Ambien	t Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 449 03/10/2017 1643 03/10/2017 1643	Analysis Batch: Prep Batch:	200-1148 N/A	Lat Init Fin	trument ID: o File ID: ial Weight/Volume: al Weight/Volume: ection Volume:	CHW.i 24282_07.d 28 mL 200 mL 200 mL	
Analyte Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene	e	Result (p 2200 120 220 90 90 14000 290 2200 90 720 3400	pb v/v)	Qualifier U JB U U U U U	MDL 580 58 31 21 11 540 13 16 11	RL 2200 2200 220 90 90 2200 90 90 90 90	
Xylene, o- Xylene (total) Analyte		470 3900 Result (u	ıg/m3)	Qualifier	18 18 MDL	90 310 RL	
Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene	е	5300 308 500 500 500 500 500 500 500 5	\$ 00	O A A	1400 140 110 73 55 1600 40 59 52 66 150	5300 5500 780 320 440 6600 290 340 410 390 970	

ese 04/12/17

78

78

390

1400

2000 17000

Xylene (total)

Xylene, o-

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLETE Inlet-P ere 04/12/17

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Summa Canister

Analysis Batch:

200-114827

Instrument ID:

CHW.i

Prep Method:

Prep Batch:

N/A

Lab File ID:

24282_07.d

Dilution:

449

Initial Weight/Volume:

Analysis Date:

03/10/2017 1643

Final Weight/Volume: 200 mL

28 mL

Prep Date:

03/10/2017 1643

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None

Client: Ertec

Outlet-16 ese 04/12/17 **OUTLET-16**

Client Sample ID: Lab Sample ID:

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038 Date Received: 02/22/2017 0935

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Olient Matrix.	7311				
	1	TO-15 Volatile Organic Co	ompounds in Aml	pient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 29.2 03/10/2017 1733 03/10/2017 1733		200-114827 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24282_08.d 32 mL 200 mL 200 mL
Analyte		Result (pp	b v/v) Qualifi	er MDL	RL
		71	J	38	150
Acetone					150
Isopropyl alcohol		44 150) 18 -		150
Methylene Chlorid	le	27		2.0	
n-Hexane		5.8	U	1.3	5.8
Chloroform		5.8	U	0.73	5.8
Tetrahydrofuran		680		35	150
Benzene		5.8	U	0.82	5.8
Toluene		2.5	J	1.0	5.8
Chlorobenzene		5.8	U	0.73	5.8
Ethylbenzene		5.8	U	0.99	5.8
m,p-Xylene		15	U	2.2	15
Xylene, o-		5.8	U	1.2	5.8
Xylene (total)		20	U	1.2	20
71,701.0 (1010.)					
Analyte		Result (ug	/m3) Qualif	ier MDL	RL
Acetone		170	J	90	350
Isopropyl alcohol		- 33 150	J₽ '	4 9.3	360
Methylene Chlorid	ie	95		6.9	51
n-Hexane		21	U	4.7	21
Chloroform		29	U	3.6	29
Tetrahydrofuran		2000		100	430
Benzene		19	U	2.6	19
Toluene		9.3	J	3.9	22
Chlorobenzene		27	Ü	3.4	27
Ethylbenzene		25	Ŭ	4.3	25
•		63	Ü	9.8	63
m,p-Xylene		25	Ü	5.1	25
Xylene, o-			U	5.1	89
Xylene (total)		89	U	٥,١	09

ere 04/12/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038

Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Summa Canister

03/10/2017 1733

03/10/2017 1733

Analyte

Analysis Batch:

200-114827

Instrument ID:

CHW.i

Prep Method: Dilution:

Analysis Date:

Prep Date:

Cas Number

29.2

Prep Batch:

N/A

Lab File ID:

24282_08.d

Initial Weight/Volume:

32 mL

Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

TB022117

Lab Sample ID:

200-37474-5

Client Matrix:

Air

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds In Ambient Air

Analysis Method: TO-15

Analysis Batch: 200-114595

Instrument ID:

CHB.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

N/A

Lab File ID: Initial Weight/Volume:

24174-24.D 200 mL

Analysis Date:

Prep Date:

Xylene (total)

03/04/2017 0924 03/04/2017 0924 Final Weight/Volume: Injection Volume:

0.17

200 mL 200 mL

3.0

Prep Date: 03/04/2017 0924		Injectio	on Volume:	200 ML
Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	5.0	U	0.13	5.0
Methylene Chloride	0.50	U	0.068	0.50
n-Hexane	0.20	U	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	U	0.028	0.20
Toluene	0.20	U	0.035	0.20
Chlorobenzene	0.20	U	0.025	0.20
Ethylbenzene	0.20	U	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	U	0.040	0.20
Xylene (total)	0.70	U	0.040	0.70
Analyte	Result (ug/m3)	Qualifier	MDL	RL
Acetone	12	U	3.1	12
Isopropyl alcohol	12	U	0.32	12
Methylene Chloride	1.7	U	0.24	1.7
n-Hexane	0.70	U	0.16	0.70
Chloroform	0.98	U	0.12	0.98
Tetrahydrofuran	15	U	3.5	15
Benzene	0.64	U	0.089	0.64
Toluene	0.75	U	0.13	0.75
Chlorobenzene	0.92	U	0.12	0.92
Ethylbenzene	0.87	บ	0.15	0.87
m,p-Xylene	2.2	υ	0.33	2.2
Xylene, o-	0.87	U	0.17	0.87
				0.0

3.0

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

TB022117

Lab Sample ID:

200-37474-5

03/04/2017 0924

03/04/2017 0924

Client Matrix:

Air

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:

TO-15

Summa Canister

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method: Dilution: Analysis Date:

Prep Date:

1.0

Prep Batch:

N/A

Lab File ID:

24174-24.D

Initial Weight/Volume: Final Weight/Volume:

200 mL 200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



April 12, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Validation Report for the SVE EPA 3C Methane Air Monitoring

of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for methane in the air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37474.

Inlet-1-16	Inlet-2-16	Inlet-P	Outlet-16	

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on April 10, 2017.

All samples were analyzed for methane only in conformance with the specifications of USEPA Method 3C. The validation effort was restricted to the reported results and supporting data for this compound.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales April 12, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter
Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37474 Methane in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

April 12, 2017

13104/ESC/CEW 200-37474-EPA 3C



EXECUTIVE SUMMARY

Enclosed is the validation report for methane in the air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37474.

Inlet-1-16 Inlet-2-16 Inlet-P Outlet-16	ilet-1-16	Inlet-2-16	Inlet-P	Outlet-16

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on April 10, 2017.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 3C, "Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources." Each standard and sample was analyzed in duplicate. Responses from both analyses were averaged and the average was used to calculate all results as required by the analytical method.

The laboratory modified the analytical method as follows:

- The target analyte list was limited to methane; therefore, the validation effort was restricted to the supporting data for this analyte.
- The initial calibration was established using five concentration levels while a minimum of three concentrations are required by Method 3C. Concentrations of 0.040 percent volume to volume (% v/v), 0.40% v/v, 2.0% v/v, 4.0% v/v, and 99% v/v were used to establish the calibration range for methane.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

These air samples were collected in Summa® Canisters on February 21, 2017. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition with custody seals intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters. Therefore, all requirements for holding times and sample integrity were met. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a thermal conductivity detector (TCD) and a column identified as "CTR-1."

Peaks for methane and carbon monoxide overlap in all calibration standards. Under the analytical conditions used, methane eluted at approximately 7.9 minutes, which was prior to carbon monoxide at 8.6 minutes. The methane peak area was determined by dropping a perpendicular line to the baseline at the onset of the carbon monoxide peak. This served to under-estimate the methane peak area and resulted in a decreased methane calibration factor and an over-estimated methane sample concentration. Methane was not detected in any of the site samples and no action by the validator was necessary.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on August 17, 2015. Documentation of all IC standards was provided in the data package. The calibration factor (CF) was correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (<20%).

An ICV was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set were bracketed by CC standards; therefore, an acceptable analytical sequence was performed. The concentration of each CC standard was 4.0% v/v. Percent difference (%D) values for calculated versus true value of both CC standards were acceptable (<20%).



III. Blanks

A laboratory blank was analyzed with the samples in this data set. Methane was not detected in the laboratory blank.

IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 3C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

The laboratory control sample (LCS) was spiked with methane at 4.0% v/v, and the recovery of methane (100%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet-2-16. Methane was not detected in either of these samples; therefore, no quantitative evaluation of precision could be made from these data.

VII. Compound Identification

Methane was correctly identified in the LCS based on the presence of a response on the quantitation report and a peak in the chromatogram within the retention time window specified for this compound during the associated IC.

VIII. Compound Quantitation and Reporting Limit (RL)

The true value of the low concentration standard used to establish the IC was 0.040% v/v. However, the averaged concentration of reported results for this standard is 0.050% v/v. The RL for these samples was corrected by the validator to reflect an unadjusted concentration of 0.050% v/v on the answer forms in this report. Unadjusted RLs were also properly adjusted by the validator



Eden Environmental, LLC

for dilution factors arising from the final canister pressure of each sample. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.

The peaks for methane and carbon monoxide overlapped in all calibration standards. This does present a problem of over-estimated methane results when this compound is detected.

Method 3C specifies agreement between paired responses must be $\leq 5\%$ difference (%D). Acceptable agreement was noted between positive paired responses in the quality control samples.

IX. System Performance

The analytical system did not resolve methane from carbon monoxide at the time of these analyses. The laboratory should ensure the low concentration standard can be used as the RL and resolve the issue with the overlap of peaks for methane and carbon monoxide.

X. Documentation

Chain of custody records were provided in the data package and included the samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact on the site samples upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

XI. Overall Assessment

Findings of the validation effort resulted in the correction of the unadjusted sample reporting limit to accurately reflect the concentration observed by the laboratory in the low concentration standard used to establish the IC. Unadjusted RLs were also properly adjusted by the validator for dilution factors arising from the final canister pressure of each sample. These corrections were made by the validator to the answer forms in this report. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.



This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methane data reported in SDG 200-37474.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16 Lose 04/12/17

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030

Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

1.42

Dilution: Analysis Date: Prep Date:

02/27/2017 1715 02/27/2017 1715 Analysis Batch: 200-114501

Prep Batch:

N/A

Instrument ID:

CH0001.i

2017-02-27 17;15;22 2 Lab File ID:

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL 2 mL

Injection Volume:

Analyte Methane

Result (% v/v) 0.057- 0.071 Qualifier

0.057 0.071

ere 04/12/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

en 04/12/17 INLET-2-16 Inlet - 2-16

Lab Sample ID:

200-37474-2

Client Matrix:

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method:

EPA 3C

Analysis Batch:

200-114501

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Lab File ID:

2017-02-27 18;20;27 2

Dilution:

1.37

Prep Batch:

N/A

Initial Weight/Volume: 2 mL

02/27/2017 1820

Final Weight/Volume: Injection Volume:

2 mL 2 mL

Analysis Date: Prep Date:

02/27/2017 1820

Result (% v/v)

Qualifier

RL

Analyte Methane

0.069

0.055 0.069

0.069

en 04/12/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLETE Inlet-P en 04/12/17

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033

Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Prep Method:

Summa Canister 1.27

Dilution:

Analysis Date: 02/27/2017 1925 Prep Date: 02/27/2017 1925 Analysis Batch:

200-114501 Prep Batch:

N/A

Instrument ID:

CH0001.i

Lab File ID:

2017-02-27 19;25;32 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL Injection Volume: 2 mL

Analyte

Result (% v/v)

Qualifier

Methane

0.064

0.0510.064

0.064

ese 04/12/17

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: Prep Method:

EPA 3C

Summa Canister

1.31

Dilution: Analysis Date: Prep Date:

02/27/2017 2030

02/27/2017 2030

Analysis Batch: 200-114501 Prep Batch:

N/A

Instrument ID:

CH0001.i

Lab File ID:

2017-02-27 20;30;33 2

Initial Weight/Volume: 2 mL Final Weight/Volume:

2 mL

Injection Volume:

2 mL

Analyte Methane Result (% v/v) 0.052 0.066 Qualifier

0.0520.066

RL

0.052 0.066

ere 04/12/17



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



April 12, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Validation Report for the SVE EPA 25C NMOC Air Monitoring

of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for NMOC in the air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37474.

Inlet-1-16 Inlet-2-16 Inlet-P Outlet-16 TB022117

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on April 10, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales April 12, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at cngrid@cden-env.com

Kindest regards,

Engrid Carpenter
Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37474 NMOC in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

April 12, 2017

13104/ESC/CEW 200-37474-EPA 25C



EXECUTIVE SUMMARY

Enclosed is the validation report for NMOC in the air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37474.

Inlet-1-16 Inlet-2-16 Inlet-P Outlet-16 TB022117

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on April 10, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 25C, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon." Each standard, quality control sample and all five site samples were measured in triplicate. Responses from all three analyses were averaged and the average was used to calculate all results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

All NMOC analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all the samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a flame ionization detector (FID) and a stationary phase column identified as "Carbo/Unibeads."

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was established on January 8, 2015. Concentrations of 6.0 parts per million carbon (ppm-C), 750 ppm-C, and 1800 ppm-C were used to establish the IC curve. Documentation of all IC standards was provided in the data package. The calibration factors (CFs) were correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (\leq 15%).

An ICV at 750 ppm-C was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set associated with opening and closing sequence CC standards. The concentration of each CC standard was 750 ppm-C and all %D values for calculated versus true value were acceptable (\leq 10%).

III. Blanks

A laboratory blank was analyzed in the run sequence associated with the samples in this data set. NMOC was not detected above the reporting limit (RL) in the laboratory blanks.

A trip blank (TB022117) was associated with the samples in this data set. NMOC was not detected above the RL in TB022117.



IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 25C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

A laboratory control sample (LCS) was analyzed in the analytical sequence containing the site samples. The LCS was spiked with NMOC at 750 ppm-C. The recovery (92%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet 2-16. Agreement between reported NMOC results (8 RPD) was acceptable.

VII. Compound Identification

Where detected, NMOC was correctly identified based on the presence of responses on the quantitation reports and peaks in the chromatograms within the retention time window established for this compound during the associated IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Target compound concentrations and sample-specific RLs were correctly calculated, accurately reported, and properly adjusted for dilution factors based on the final pressure in the canister. All positively reported results met Method 25C-specified agreement among the triplicate responses (≤% RSD).

The unadjusted RL for NMOC is equivalent to the low concentration standard used to establish the IC; therefore, this RL is supported by the data as presented. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.



IX. System Performance

The analytical system was working satisfactorily at the time of these analyses, based on the evaluation of the available raw data.

X. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

XI. Overall Assessment

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the NMOC data reported in SDG 200-37474.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET 4 46 Inlet - 1-16 ese 04/12/17

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: Prep Method:

EPA 25C

Summa Canister

Dilution: Analysis Date: Prep Date:

1.42

02/27/2017 1731 02/27/2017 1731 Analysis Batch: 200-114502

N/A Prep Batch:

Instrument ID:

CH0001.i

Lab File ID:

2017-02-27 17;31;34 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

2 mL

Injection Volume:

Analyte

Result (ppm-C)

Qualifier

RL 8.5 RL 8.5

NMOC as Carbon

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET 246 Inlet . 2-16 en 04/12/17

Lab Sample ID:

200-37474-2

Client Matrix:

Аіг

1.37

Date Sampled: 02/21/2017 1033

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister

Prep Batch:

200-114502 Analysis Batch:

N/A

Instrument ID: Lab File ID:

CH0001.i

2017-02-27 18;20;27 2

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL 2 mL Injection Volume:

Analysis Date: Prep Date:

Dilution:

02/27/2017 1820 02/27/2017 1820

Result (ppm-C)

Qualifier

RL

RL

Analyte NMOC as Carbon

130

8.2

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLETT Inlet - P ese officializ

Lab Sample ID:

200-37474-3

Client Matrix:

Аіг

Date Sampled: 02/21/2017 1033

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-114502

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-02-27 19;25;32 2

Dilution: 1.27

Analysis Date:

Prep Date:

02/27/2017 1925 02/27/2017 1925

Initial Weight/Volume: Final Weight/Volume:

2 mL 2 mL

Injection Volume:

2 mL

Analyte

Result (ppm-C)

Qualifier

RL 7.6 RL

NMOC as Carbon

120

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

ourlet -16 me 04/12/17

Lab Sample ID:

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister

Analysis Date: Prep Date:

1.31

02/27/2017 2030 02/27/2017 2030 Analysis Batch: 200-114502 Prep Batch:

N/A

Instrument ID:

Lab File ID:

CH0001.i

2017-02-27 20;30;33 2 2 mL

Initial Weight/Volume: Final Weight/Volume: Injection Volume:

2 mL 2 mL

Analyte

Dilution:

Qualifier Result (ppm-C)

RL

RL

NMOC as Carbon

27

7.9

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

TB022117

Lab Sample ID:

200-37474-5

Client Matrix:

Air

Date Sampled: 02/21/2017 0000

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method:

EPA 25C

Analysis Batch:

200-114502

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-02-27 21;35;33 2

Dilution:

1.0

02/27/2017 2135

Analysis Date: Prep Date:

02/27/2017 2135

Initial Weight/Volume: Final Weight/Volume:

2 mL 2 mL

Injection Volume:

2 mL

Analyte

Result (ppm-C)

Qualifier

RL

RL

NMOC as Carbon

6.0

6.0



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



April 12, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the NIOSH 2000 Air Monitoring for Methanol at the

Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for the methanol air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37474.

Inlet-1-16	Inlet-2-16	Inlet-P	Outlet-16	

This data package was received for validation on April 10, 2017. The analyses were performed by TestAmerica Phoenix and was identified as Job Number 550-78003.

Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.



Ms. Wanda Morales April 12, 2017 Page 2 of 2

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Charlie E. Westerman, Ph.D.

harli & Westernan

Vice President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Phoenix Arizona
TestAmerica Vermont Sample Delivery Group Number 200-37474
TestAmerica Phoenix Job Number 550-78003
Methanol in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

April 12, 2017

13104/CEW/ESC 200-37474-NIOSH 2000



EXECUTIVE SUMMARY

Enclosed is the validation report for the methanol air samples collected on February 21, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37474.

|--|

This data package was received for validation on April 10, 2017. The analyses were performed by TestAmerica Phoenix and was identified as Job Number 550-78003.

Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy for the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

These air samples were collected using NIOSH silica gel sorbent tubes on February 21, 2017, and were shipped directly to TestAmerica Phoenix. The job narrative stated the samples were received in good condition. A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." The job narrative stated, "the samples arrived in good condition."

A copy of the chain of custody record was also present in the data package and included all samples in this data set. NIOSH 2000 specifies sample stability as "at least 30 days at 5°C." All extractions and analyses were performed within 30 days. An acceptable cooler temperature of 0.2°C was noted on the chain of custody record.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified as "GC14." The GC was equipped with a flame ionization detector (FID) identified as "FID1 A" and a DB-1 column.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on February 27, 2017. NIOSH 2000 specifies that three standards are to be prepared in duplicate and analyzed at three levels as the IC. For this project, four calibration standards at 3.16 μ g, 31.6 μ g, 316 μ g, and 3160 μ g were used to establish the calibration curve. Documentation of all IC standards analyzed was provided in the data package. An acceptable coefficient of determination was obtained (1.000).

An initial calibration verification (ICV) standard is not required by NIOSH 2000. Data for an ICV analyzed immediately after the IC was provided. A percent drift (%D) value for the data provided was within the laboratory-specified 40% maximum acceptance limit.

B. Continuing Calibration (CC)

The use of CC standards is not a NIOSH 2000 requirement. All samples and the associated quality control samples were analyzed on February 27, 2017, containing bracketing CC standards. Acceptable %D values were observed for both CC standards (laboratory's 20% maximum acceptance limit).

III. Blanks

A laboratory blank was analyzed with the site samples. Methanol was not detected in the laboratory blank. A trip blank was not collected for methanol analysis.



IV. Surrogate Recovery

The use of a surrogate compound is not addressed in NIOSH 2000, and no surrogate compound was employed.

V. Spike Analyses

Recoveries for a laboratory control sample (LCS) and LCS duplicate (LCSD) each spiked at 7.91 µg were included in the analytical sequence containing the site samples. Recoveries (90% and 81%, respectively) and a relative percent difference (RPD) value (11 RPD) were within the laboratory-specified control limits (69-128% and ≤29 RPD).

VI. Co-located Samples

For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Inlet-P was collected as a co-located sample of Inlet-2-16. Agreement between positively paired results for methanol (2 RPD) was acceptable.

VII. Compound Identification

Where detected, methanol was correctly identified based on the presence of a peak within the retention time window on the single column used to established the IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Sample-specific RLs were correctly calculated and accurately reported. The RL is equivalent to the low concentration standard used to establish the IC and is therefore supported by the data as presented. Laboratory-reported results were reported as total µg/sample, mg/m3, and ppm. The ppm concentration unites employed on the answer forms are ppmv. NIOSH employs ppm units, where in other situation, ppmv units would be reported.

All analytical site sample results and associated quality control results were acquired on the sample instrument during the same run sequence.

The back and front sections of the 780 mg silica gel tubes were desorbed independently in the customary manner. The resultant extracts were analyzed independently employing sequentially duplicate injections. An explanation for performing the duplicate analyses was not provided. The results are summarized in the following table.



	Ana	lysis	Result	Result
Sample	Date	Time	μg/sample	Reported
Inlet-1-16 Back	02/27/17	12:56	<3.36	Yes
		13:08	<3.36	
Inlet-1-16 Front	02/27/17	15:05	<3.36	Yes
		15.17	<3.36	
Inlet-2-16 Back	02/27/17	13:31	<3.36	Yes
		13:43	<3.36	
Inlet-2-16 Front	02/27/17	15.29	<3.36	No
		15:40	75.7	Yes
Inlet-P Back	02/27/17	13:55	<3.36	Yes
		14:06	<3.36	
Inlet-P Front	02/27/17	15:52	<3.36	
		16:04	72.3	Yes
Outlet-16 Back	02/27/17	14:18	<3.36	Yes
		14:30	<3.36	
Outlet-16 Front	02/27/17	16:15	<3.36	
		16:27	16.2	Yes

Unfortunately, poor agreement resulted among the results of the duplicate injections of extracts for the front sections of three of the four field samples. The time interval between some of the associated duplicate injections was only eleven to twelve minutes. Repeated instrument instability would not be expected with such short time intervals. The validator was unable to determine any apparent reason for the poor reproducibility of reported results.

The nature and extent of the variation of duplicate injections of the same solvent extracts was sufficiently divergent and random to suggest that all values should be considered as estimated (UJ, J) and the direction of bias cannot be determined. The reported data are consistent with the presence of low amounts of methanol. Raw data and associated answer forms were provided for each of the individual analyses.

Evidently, the amounts on the "Client Sample Results" were intended to constitute the final answers; however, no explanation for any of the various laboratory actions were provided.



IX. System Performance

NIOSH 2000 states, "at high relative humidity or high methanol concentrations, use a larger tube: 15 cm long, 8-mm ID, with three sections of silica gel (700 mg, 150 mg, and 150 mg). Both high relative humidity and high methanol concentration are potentially present with this project. The sample preparation log in the data package documented the fact that 780 mg two-section silica gel tubes currently available were used for the present work.

X. Documentation

A copy of the chain of custody record was present and included all reported samples.

The following discrepancies were noted with the data package:

A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." It is not apparent if custody seals were employed.

The laboratory "received by" signature on the chain of custody record is illegible.

A copy of the FedEx airbill was not included in the data package to document the transfer of the samples from the field to the laboratory.

No explanation was provided for performing duplicate instrumental injections of the four site samples. Poor replication of the various injections of the solvent extracts for the front sections of three of the four site samples was not addressed in the Job Narrative. The data user is cautioned that for this data set, raw data and associated answer forms were provided for each of the individual extract analyses.

No explanation was provided for the observed divergent results for multiple injections for the four site samples. The laboratory reported the higher concentration observed for each sample. No explanation for the laboratory's selection of the data reported on the final answer forms was provided. The reporting of the higher concentration values would generally be considered the more conservative approach. The Job Narrative stated "No analytical quality issues were noted, other than those described in the Definitions/Glossary page." The Definition/Glossary page noted no analytical quality issues.

The analyses of the front and back sections of the silica gel samples tubes were performed on February 27, 2017. The analysis date for summed values was noted as February 28, 2017, and was corrected by the validator on the Laboratory Analytical Data Forms in Attachment A of this report.



A sample tube size of 780 mg was specified in the sample preparation section but 150 mg was indicated on the answer forms.

The TestAmerica Phoenix data package page numbers were overwritten (obliterated) when the TestAmerica Burling printed the hardcopy data package using their page numbers.

Data presentation issues do not affect the validity of the results, but they could be problematic if these data are reviewed by a regulatory agency or if they are used in litigation.

XI. Overall Assessment

Based on the finding of the validation effort, all sample results were qualified as estimated (J, UJ) due to the lack of reproducibility of multiple duplicate injections of some of the associated solvent extracts.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methanol data reported in SDG 200-37474.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client Sample Results TestAmerica Job ID: 550-78003-1 Client: TestAmerica Laboratories, Inc. SDG: 165440 Project/Site: Pfizer Barceloneta SVE Client Sample ID: Inlet-1-16 Lab Sample ID: 550-78003-1 Date Collected: 02/21/17 00:00 Matrix: Air 780 Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L Sample Container: IH - Silica Gel tube, 450 mg Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result Analyte ug/Sample mg/m3 ppm Qualifier ug/Sample Prepared Analyzed Dil Fac /<3.36 UJ \$1.60 UJ 02/27/17 08:41 02/27/17 12:56 Methanol \$2.10 LA 3.36 Method: 2000 Front - NIOSH 2000 (Modified) RL Result Result Result Analyte ug/Sample mg/m3 ppm Qualifier ug/Sample Prepared Analyzed Dil Fac \$2.10 UJ Methanol \$3.36 UT \$1.60 UJ 3.36 02/27/17 08:41 02/27/17 15:17 Method: 2000 Sum - NIOSH 2000 (Modified) RL Result Result Result ppm Qualifier ug/Sample Analyzed Dil Fac Analyte Prepared ug/Sample mg/m3 02/28/17 15:52 3.36 Methanol \$3.36 UJ \$2.10 WJ \$1.60UJ 27 Lab Sample ID: 550-78003-2 Client Sample ID: Inlet-2-16 Date Collected: 02/21/17 00:00 Matrix: Air Date Received: 02/22/17 09:30 780 Sample Air Volume: 1.6 L Sample Container: IH - Silica Gel tube, 150 mg Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result ug/Sample Dil Fac Analyte ug/Sample mq/m3 ppm Qualifier Prepared 02/27/17 08:41 02/27/17 13:43 Methanol \$2.10 UJ \$1.60 UJ F3.36 UJ Method: 2000 Front - NIOSH 2000 (Modified) RL Result Result Result Dil Fac Analyte ug/Sample mg/m3 ppm Qualifier ug/Sample Prepared Analyzed 75.7 J 36.1 3.36 02/27/17 08:41 02/27/17 15:40 Methanol 47.3 Method: 2000 Sum - NIOSH 2000 (Modified) RL Result Result Result ug/Sample ppm Qualifier Dil Fac Analyte mg/m3 ug/Sample Prepared Analyzed 02/28/17 15:52 Methanol 75.7 47.3 36.1 3.36 27 Lab Sample ID: 550-78003-3 Client Sample ID: Inlet-P Date Collected: 02/21/17 00:00 Matrix: Air 780 Date Received: 02/22/17 09:30 Sample Container: IH - Silica Gel tube, Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result Analyte ppm Qualifier ug/Sample ug/Sample mg/m3 Prepared Analyzed Dil Fac Methanol \$2.10 U.T 1.60 15 02/27/17 08:41 02/27/17 13:55

cew 04/11/17

02/27/17 08:41 02/27/17 16:04

Prepared

RL

3.36

ug/Sample

Analyzed

Dil Fac

Result

ppm Qualifier

34.5

Result

mg/m3

45.2 J

Method: 2000 Front - NIOSH 2000 (Modified)

Analyte

Methanol

Result

72.3 3

ug/Sample

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-78003-1

SDG: 165440

Client Sample ID: Inlet-P

Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30

Lab Sample ID: 550-78003-3

Matrix: Air 780

Methanol

Sample Air Volume: 1.6 L		b - 4 Ing		San	nple Contai	ner: IH - Sili	ca Gel tube,	150 mg
Method: 2000 Sum - NIOSH 2000	0 (Modified) Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	DII Fac
Methanol	72.3 J	45.2 🛈	34.5	5	3.36		02/26/17 15:52	1
Client Sample ID: Outlet-16						ab Sample	e ID: 550-78	3003-4
Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30								trix: Air 1-80
Sample Air Volume: 1.6 L				San	ple Contai	ner: IH - Silic	ca Gel tube,	150 mg
Method: 2000 Back - NIOSH 200	0 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	3.36 NJ	2.10 U	1.60	UJ	3.36	02/27/17 08:41	02/27/17 14:18	1
Method: 2000 Front - NIOSH 200	0 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	16.2 5	10.1	7.73	J	3.36	02/27/17 08:41	02/27/17 16:27	1
Method: 2000 Sum - NIOSH 2000	(Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac

16.2 5

10.1 J

7.73 丁

cew 04/11/17

02/28/17 15:52

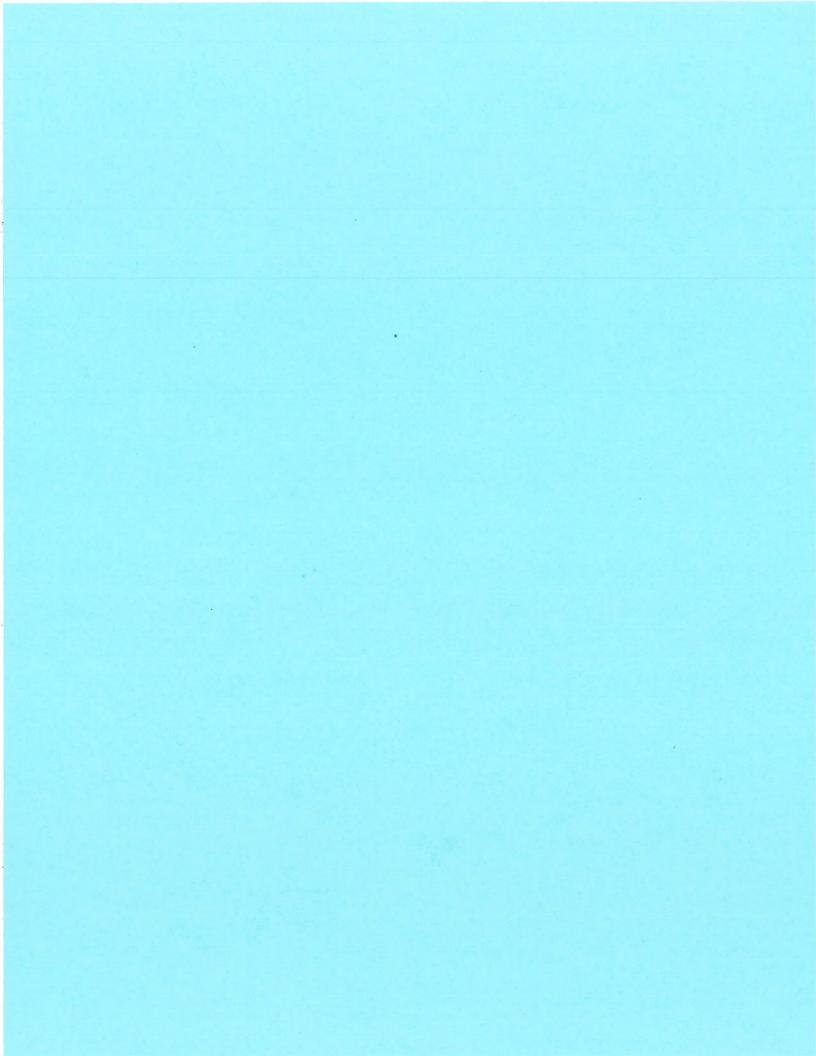
27



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.





May 1, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Data Validation Report for the SVE TO-15 Air Monitoring of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for selected volatile organic compounds in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q TB032817

The laboratory performed well, but some qualifications of sample results were necessary. See Section XIV. The data package was received for validation on April 28, 2017.

All "B" qualifiers applied by the laboratory to indicate contamination in an associated method blank were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the method detection limit (MDL) and the reporting limit (RL), were not removed by the validator unless they were superseded by a qualifier resulting from the validation effort.

All samples were analyzed for acetone, isopropyl alcohol, methylene chloride, n-hexane, chloroform, tetrahydrofuran, benzene, toluene, chlorobenzene, ethylbenzene, m,p-xylenes, and o-xylene in conformance with the specifications of USEPA Compendium Method TO-15. In addition, methyl iodide was included in a library search as a tentatively identified compound (TIC) because this compound was not included in any of the calibration standards. The validation effort was restricted to the reported results and supporting data for these compounds.



Ms. Wanda Morales May 1, 2017 Page 2 of 2

Results were also reported for total xylenes. The laboratory-reported concentrations for total xylenes were obtained by adding the concentrations for m,p-xylenes and o-xylene.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter
Engrid S. Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION - PFIZER BARCELONETA - SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group: 200-37991 Selected Volatile Organic Compounds in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

Date: May 1, 2017



INTRODUCTION

Enclosed is the validation report for selected volatile organic compounds in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

	and the same of the		- 4 -	FTD 000015
Inlet-1-17	Inlet=2-17	Outlet-17	Outlet-O	TB032817
	211140 313 117			

The laboratory performed well, but some qualifications of sample results were necessary. See Section XIV. The data package was received for validation on April 28, 2017.

All "B" qualifiers applied by the laboratory to indicate contamination in an associated method blank were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the method detection limit (MDL) and the reporting limit (RL), were not removed by the validator unless they were superseded by a qualifier resulting from the validation effort.

All samples were analyzed for acetone, isopropyl alcohol, methylene chloride, n-hexane, chloroform, tetrahydrofuran, benzene, toluene, chlorobenzene, ethylbenzene, m,p-xylenes, and o-xylene in conformance with the specifications of USEPA Compendium Method TO-15. In addition, methyl iodide was included in a library search as a tentatively identified compound (TIC) because this compound was not included in any of the calibration standards. The validation effort was restricted to the reported results and supporting data for these compounds.

Results were also reported for total xylenes. The laboratory-reported concentrations for total xylenes were obtained by adding the concentrations for m,p-xylenes and o-xylene.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

All TO-15 analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. GC/MS Instrument Performance Checks

Results were reported for two bromofluorobenzene (BFB) instrument performance checks. Requirements for both instrument performance checks were met.

III. Calibration

These samples were analyzed on a single gas chromatography/mass spectrometry (GC/MS) system identified as "CHW." Manual integrations were performed on the peak area for benzene in the 0.2 parts per billion volume to volume (ppb v/v) initial calibration standard. Documentation of this integration was included in the data package and confirming it was were properly performed and correctly incorporated into the associated quantitation report. No evidence was presented in the data package to indicate that any other manual integrations were performed on any of the project-specified target compounds or on any of the internal standards in any of the calibration standards.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

IC was established on February 18, 2017. An ICV was analyzed following the IC. EPA Region II-specified acceptance criteria were met for all standards.

B. Continuing Verification (CV)

Documentation of a single CV standard associated with the reported samples was present in the data package. All EPA Region II-specified acceptance criteria were met for this standard.

IV. Blanks

A laboratory blank was analyzed in the analytical sequence containing the site samples. Isopropyl alcohol (0.173 ppb v/v) was detected at an estimated concentration below the reporting limit in the laboratory blank.



Based on contamination in the associated laboratory blank, the result for isopropyl alcohol in Inlet -2-17 was qualified as less than the sample-specific reporting limit (U). Results for isopropyl alcohol in the remaining samples were either not detected or were greater than the action level for qualification based on blank contamination and no further action was required. No other project-specified target analytes required qualification based on laboratory contamination.

A trip blank (TB032817) was submitted with the samples in this data set. No project-specified target compounds were detected in TB032817.

V. Surrogate Recoveries

The use of a surrogate compound is not addressed in Method TO-15. A surrogate compound was not employed in the analyses of these samples.

VI. Laboratory Check Standard (Audit Accuracy Standard)

A 10 ppbv laboratory check standard (identified as LCS) was analyzed in the analytical sequence containing the reported samples. The LCS was spiked with all project-specified target analytes. All recoveries of the target analytes were within the laboratory-established analyte-specific quality control limits as included on the summary form.

VII. Laboratory Replicate Analyses

A laboratory replicate analysis was not reported in this data package.

VIII. Field Duplicates

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The validation guidance document does not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported concentrations greater than the RL and \pm RL for concentrations below the RL in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Outlet-Q was collected as a co-located sample of Outlet-17. Acceptable reproducibility between positively paired results was achieved for acetone, isopropyl alcohol, methylene chloride, benzene, and toluene. The remaining project-specified target analytes were not detected in either of these samples; therefore, no further quantitative evaluation of precision could be made from these data.



IX. Internal Standard Performance

The validator confirmed that the areas and retention times of all three internal standards were within the method-specified acceptance limits for the reported site and quality control analyses.

X. Target Compound Identification

When detected, the target analyte was correctly identified with acceptable supporting mass spectral data present in the data package.

XI. Compound Quantitation and Reporting Limits (RLs)

Unadjusted RLs were equal to the low concentration standard used to establish the IC for the project-specified target compounds and are supported by the reported data. All sample results were correctly calculated and accurately reported, including adjustments for dilutions where necessary.

XII. Tentatively Identified Compounds (TICs)

Since methyl iodide was not included in any of the calibration standards, a library search was performed for this compound. Methyl iodide was not detected in any of the samples in this SDG. The Form I TlC represents not detected for methyl iodide only.

XIII. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

The Laboratory Analytical Data Forms also include a column identified as MDL. Unadjusted MDLs for the target compounds are not supported by the data as received. Therefore, it is recommended that the RLs rather than the MDLs be used as the lowest supported limit of detection.



XIV. Overall Assessment

Based on the findings of the validation effort, the sample results were qualified as follows:

• Based on contamination in the associated laboratory blank, the result for isopropyl alcohol in Inlet-2-17 was qualified as less than the sample-specific reporting limit (U).

All "B" qualifiers appropriately applied by the laboratory to indicate a result associated with laboratory contamination were removed by the validator.

The "J" qualifiers applied by the laboratory to indicate estimated concentrations between the MDL and the RL were not removed by the validator unless they were superseded by a qualification resulting from the validation effort.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the TO-15 data reported in SDG 200-37991.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLETMAT Inlet-1-17 use Osloili7

Lab Sample ID:

200-37991-1

Client Matrix:

Air

Date Sampled: 03/28/2017 1256 Date Received: 03/29/2017 1035

Client Matrix:	Air				Date Ret	:elved. 03/29/2017	1000
novicina somethic rest	TO	-15 Volatile Organic C	ompounds	in Ambi	ent Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 3010 04/14/2017 1544 04/14/2017 1544	Analysis Batch: Prep Batch:	200-11582 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_08.d 44 mL 200 mL 200 mL	
Analyte		Result (pp	ob v/v)	Qualifie	er MDL	RL	
Acetone	week	15000		U	3900	15000	
Isopropyl alcohol		15000		U	390	15000	
Methylene Chlorid	de	1500		U	200	1500	
n-Hexane		600		U	140	600	
Chloroform		600		U	75	600	
Tetrahydrofuran		42000			3600	15000	
Benzene		1100			84	600	
Toluene		9700			110	600	
Chlorobenzene		600		U	75	600	
Ethylbenzene		3600			100	600	
m,p-Xylene		18000			230	1500	
Xylene, o-		2500			120	600	
Xylene (total)		21000			120	2100	
Analyte		Result (u	g/m3)	Qualifie	er MDL	RL	
Acetone	Annual control of the second project of the second of the	36000	and the second second	Ù	9300	36000	
isopropyl alcohol		37000		U	960	37000	
Methylene Chloric	de	5200		U	710	5200	
n-Hexane		2100		U	490	2100	
Chloroform		2900		U	370	2900	
Tetrahydrofuran		120000			11000	44000	
Benzene		3500			270	1900	
Toluene		37000			400	2300	
Chlorobenzene		2800		U	350	2800	
Ethylbenzene		16000			440	2600	
m,p-Xylene		77000			1000	6500	
Xylene, o-		11000			520	2600	
Xylene (total)		89000			520	9100	

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17 Inlet-1-17 use 05/01/17

Lab Sample ID: Client Matrix:

200-37991-1 Air

Date Sampled: 03/28/2017 1256

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Analysis Date:

N/A

Lab File ID:

24735_08.d

Dilution:

Prep Date:

Cas Number

3010

Prep Batch:

04/14/2017 1544 04/14/2017 1544

Initial Weight/Volume: 44 mL

RT

Final Weight/Volume: 200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET 247 Inlet - 2-17 ese 05/01/17

Lab Sample ID:

200-37991-2

Air

Client Matrix:

Date Sampled: 03/28/2017 1300

Date Received: 03/29/2017 1035

TO-15	Volatile	Organic	Compounds	in Ambient	Air

	10	-15 Volatile Organic C	ompoun	as in Am	pient /	Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 339 04/14/2017 1633 04/14/2017 1633	Analysis Batch: Prep Batch:	200-1158 N/A	820	Lab I Initia Final	ument ID: File ID: I Weight/Volume: Weight/Volume: tion Volume:	CHW.i 24735_09.d 36 mL 200 mL 200 mL	
Analyte		Result (p	pb v/v)	Qualif	ier	MDL.	RL	
Acetone		1700		U		440	1700	
Isopropyl alcohol		-73 17	O	-J-B-	ч	44	1700	
Methylene Chlorid	le	58		J		23	170	
n-Hexane		68		U		16	68	
Chloroform		68		U		8.5	68	
Tetrahydrofuran		8100				410	1700	
Benzene		190				9.5	68	
Toluene		1700				12	68	
Chlorobenzene		68		U		8.5	68	
Ethylbenzene		610				12	68	
m,p-Xylene		2900				26	170	
Xylene, o-		400				14	68	
Xylene (total)		3300				14	240	
Analyte		Result (u	g/m3)	Qualif	ier	MDL	RL	
Acetone		4000		U		1000	4000	
Isopropyl alcohol		180- 4	200	4B 1	4	110	4200	
Methylene Chloric	ie	200		J		80	590	
n-Hexane		240		U		55	240	
Chloroform		330		U		41	330	
Tetrahydrofuran		24000				1200	5000	
Benzene		590				30	220	
Toluene		6500				45	260	
Chlorobenzene		310		U		39	310	
Ethylbenzene		2700				50	290	
m,p-Xylene		12000				110	740	
Xylene, o-		1700				59	290	
Xylene (total)		14000				59	1000	

ese 05/01/17

Sdg Number: 200-37991-1

Client: Ertec

Job Number: 200-37991-1

Client Sample ID:

Inlet-2-17 ese osloulis

Lab Sample ID:

200-37991-2

Client Matrix:

Air

Date Sampled: 03/28/2017 1300

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: Prep Method:

TO-15

Summa Canister

Dilution:

339

Analysis Date: Prep Date:

04/14/2017 1633 04/14/2017 1633 Analysis Batch:

Prep Batch:

200-115820 N/A

Instrument ID: Lab File ID:

CHW.i 24735_09.d

Initial Weight/Volume: 36 mL Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively identified Compound

None

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLETQ Outlet-q ene 05/01/17

Lab Sample ID:

200-37991-4

Client Matrix:

Air

Date Sampled: 03/28/2017 1308 Date Received: 03/29/2017 1035

Client Matrix:	Air				Date Rec	cerved: 03/29/2017 1
A CONTRACTOR OF THE PARTY OF TH	ТО	-15 Volatile Organic (Compound	ds in Ambi	ent Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 04/14/2017 1823 04/14/2017 1823	Analysis Batch: Prep Batch:	200-1158 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_11.d 264 mL 200 mL 200 mL
Analyte		Result (p	pb v/v)	Qualifie	r MDL	RL
Acetone		5.1			1.3	5.0
sopropyl alcohol		7.8		8	0.13	5.0
Methylene Chlorid	le	0.50		U	0.068	0.50
-Hexane		0.20		U	0.046	0.20
Chloroform		0.20		U	0.025	0.20
etrahydrofuran		5.0		U	1.2	5.0
enzene		0.093		J	0.028	0.20
oluene		0.41			0.035	0.20
Chlorobenzene		0.20		U	0.025	0.20
thylbenzene		0.20		U	0.034	0.20
n,p-Xylene		0.50		U	0.077	0.50
(ylene, o-		0.20		U	0.040	0.20
(ylene (total)		0.70		U	0.040	0.70
Analyte		Result (u	g/m3)	Qualifie	r MDL	RL
Acetone		12	and the second second		3.1	12
sopropyl alcohol		19		B	0.32	12
Methylene Chloric	de	1.7		U	0.24	1.7
-Hexane		0.70		U	0.16	0.70
Chloroform		0.98		U	0.12	0.98
Tetrahydrofuran		15		U	3.5	15
Benzene		0.30		J	0.089	0.64
Toluene		1.5			0.13	0.75
Chlorobenzene		0.92		U	0.12	0.92
Ethylbenzene		0.87		U	0.15	0.87
n,p-Xylene		2.2		U	0.33	2.2
Xylene, o-		0.87		U	0.17	0.87
1,1011010		3.0		U	0.17	3.0

ne 05/01/17

Client: Ertec

Outlet · 9 ere osloil 17 **OUTLET-Q**

Lab Sample ID: Client Matrix:

Client Sample ID:

200-37991-4

Air

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Summa Canister

Prep Method: Dilution:

Analysis Date: Prep Date:

Cas Number

04/14/2017 1823 04/14/2017 1823

Analyte

Analysis Batch: 200-115820 Prep Batch:

N/A

Instrument ID:

CHW.i Lab File ID:

24735_11.d

Initial Weight/Volume: 264 mL Final Weight/Volume: 200 mL

Injection Volume:

None

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

Client: Ertec

0.17

3.0

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-17

outlet-17 are osloil17

Lab Sample ID: Client Matrix:

200-37991-3

Air

Date Sampled: 03/28/2017 1308 Date Received: 03/29/2017 1035

	то	-15 Volatile Organic	Compounds in An	nbient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 04/14/2017 1728 04/14/2017 1728	Analysis Batch: Prep Batch:	200-115820 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	
Analyte		Result (p	pb v/v) Qual	lifier MDL	RL
Acetone Isopropyl alcohol Methylene Chloric n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	de	11 8.1 0.11 0.20 0.20 5.0 0.36 0.20 0.20 0.20 0.50 0.20 0.70	ממממ ממחח	1.3 0.13 0.068 0.046 0.025 1.2 0.028 0.035 0.025 0.034 0.077 0.040 0.040	5.0 5.0 0.50 0.20 0.20 5.0 0.20 0.20 0.20 0.20 0.20 0.50 0.20
Analyte		Result (u	ıg/m3) Qua		RL
Acetone Isopropyl alcohol Methylene Chloric n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene		26 20 0.37 0.70 0.98 15 1.1 0.76 0.92 0.87	7000	3.1 0.32 0.24 0.16 0.12 3.5 0.089 0.13 0.12 0.15 0.33	12 12 1.7 0.70 0.98 15 0.64 0.75 0.92 0.87 2.2
Xylene, o-		0.87	U	0.17	3.0

ese 05/01/17

3.0

Xylene (total)

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

Outlet- 47 me oslar 17 OUTLET 47

Lab Sample ID:

200-37991-3

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Prep Batch:

Lab File ID:

Dilution:

N/A

Initial Weight/Volume:

24735_10.d 272 mL

Analysis Date:

Tentatively Identified Compounds

04/14/2017 1728

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Prep Date:

04/14/2017 1728

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Date Sampled: 03/28/2017 0000

Date Received: 03/29/2017 1035

TO-	15	Vola	atile	Organic	Compounds	in	Ambient Air
-----	----	------	-------	---------	-----------	----	--------------------

Analysis Method: TO-15

Summa Canister

1.0

Dilution: Analysis Date:

Prep Method:

04/14/2017 1916

Analysis Batch: 200-115820 Prep Batch:

N/A

Instrument ID:

CHW.i

24735_12.d Lab File ID: Initial Weight/Volume: 200 mL

Final Weight/Volume:

200 mL

Alialysis Date.	04/14/2017 1310		1		
Prep Date: 04/14/2017 1916			Injec	tion Volume:	200 mL
Analyte		Result (ppb v/v)	Qualifier	MDL	RL
Acetone	The street was a series of the	5.0	U	1.3	5.0
sopropyl alcohol		5.0	U	0.13	5.0
Methylene Chloric	te .	0.50	U	0.068	0.50
n-Hexane		0.20	U	0.046	0.20
Chloroform		0.20	U	0.025	0.20
Fetrahydrofuran		5.0	U	1.2	5.0
Benzene		0.20	U	0.028	0.20
Toluene		0.20	U	0.035	0.20
Chlorobenzene		0.20	U	0.025	0.20
Ethylbenzene		0.20	U	0.034	0.20
n,p-Xylene		0.50	U	0.077	0.50
Kylene, o-		0.20	U	0.040	0.20
Xylene (total)		0.70	υ	0.040	0.70
Analyte		Result (ug/m3)	Qualifier	MDL	RL
Acetone	the company of the gift of the grant of the company that the company of the compa	12	U	3.1	12
Isopropyl alcohol		12	U	0.32	12
Methylene Chlori		1.7	U	0.24	1.7
n-Hexane	ac	0.70	U	0.16	0.70
Chloroform		0.98	U	0.12	0.98
		15	U	3.5	15
Tetrahydrofuran Benzene		0.64	Ū	0.089	0.64
Toluene		0.75	ŭ	0.13	0.75
Chlorobenzene		0.92	Ū	0.12	0.92
		0.87	ū	0.15	0.87
Ethylbenzene		2.2	Ū	0.33	2.2
m,p-Xylene		0.87	Ū	0.17	0.87
Xylene, o-					

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Air

Date Sampled: 03/28/2017 0000

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:

TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method:

Summa Canister

Lab File ID:

24735_12.d

Dilution: Analysis Date: 1.0

Prep Batch:

N/A

Initial Weight/Volume: 200 mL

04/14/2017 1916

Final Weight/Volume:

200 mL

Prep Date:

04/14/2017 1916

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



May 21, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the SVE EPA 3C Methane Air Monitoring

of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for methane in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on April 28, 2017.

All samples were analyzed for methane only in conformance with the specifications of USEPA Method 3C. The validation effort was restricted to the reported results and supporting data for this compound.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales May 1, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter

Enguid Carponter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37991 Methane in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

May 1, 2017

13104/ESC/CEW 200-37991-EPA 3C



EXECUTIVE SUMMARY

Enclosed is the validation report for methane in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q

The laboratory performed well, but some corrections of sample results were necessary. See Section XI. The data package was received for validation on April 28, 2017.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 3C, "Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources." Each standard and sample was analyzed in duplicate. Responses from both analyses were averaged and the average was used to calculate all results as required by the analytical method.

The laboratory modified the analytical method as follows:

- The target analyte list was limited to methane; therefore, the validation effort was restricted to the supporting data for this analyte.
- The initial calibration was established using five concentration levels while a minimum of three concentrations are required by Method 3C. Concentrations of 0.040 percent volume to volume (% v/v), 0.40% v/v, 2.0% v/v, 4.0% v/v, and 99% v/v were used to establish the calibration range for methane.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

These air samples were collected in Summa® Canisters on March 28, 2017. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition with custody seals intact. Copies of the chain of custody records were also present in the data package and included all samples in this data set. No physical preservation requirements are specified for Summa® canisters. Therefore, all requirements for holding times and sample integrity were met. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a thermal conductivity detector (TCD) and a column identified as "CTR-1."

Peaks for methane and carbon monoxide overlap in all calibration standards. Under the analytical conditions used, methane eluted at approximately 7.9 minutes, which was prior to carbon monoxide at 8.6 minutes. The methane peak area was determined by dropping a perpendicular line to the baseline at the onset of the carbon monoxide peak. This served to under-estimate the methane peak area and resulted in a decreased methane calibration factor and an over-estimated methane sample concentration. Methane was not detected in any of the site samples and no action by the validator was necessary.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on August 17, 2015. Documentation of all IC standards was provided in the data package. The calibration factor (CF) was correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (<20%).

An ICV was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set were bracketed by CC standards; therefore, an acceptable analytical sequence was performed. The concentration of each CC standard was 4.0% v/v. Percent difference (%D) values for calculated versus true value of both CC standards were acceptable (<20%).



III. Blanks

A laboratory blank was analyzed with the samples in this data set. Methane was not detected in the laboratory blank.

IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 3C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

The laboratory control sample (LCS) was spiked with methane at 4.0% v/v, and the recovery of methane (98%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Outlet-Q was collected as a co-located sample of Outlet-17. Methane was not detected in either of these samples; therefore, no quantitative evaluation of precision could be made from these data.

VII. Compound Identification

Methane was correctly identified in the LCS based on the presence of a response on the quantitation report and a peak in the chromatogram within the retention time window specified for this compound during the associated IC.



VIII. Compound Quantitation and Reporting Limit (RL)

The true value of the low concentration standard used to establish the IC was 0.040% v/v. However, the averaged concentration of reported results for this standard is 0.050% v/v. The RL for these samples was corrected by the validator to reflect an unadjusted concentration of 0.050% v/v on the answer forms in this report. Unadjusted RLs were also properly adjusted by the validator for dilution factors arising from the final canister pressure of each sample. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.

The peaks for methane and carbon monoxide overlapped in all calibration standards. This does present a problem of over-estimated methane results when this compound is detected.

Method 3C specifies agreement between paired responses must be $\leq 5\%$ difference (%D). Acceptable agreement was noted between positive paired responses in the quality control samples.

IX. System Performance

The analytical system did not resolve methane from carbon monoxide at the time of these analyses. The laboratory should ensure the low concentration standard can be used as the RL and resolve the issue with the overlap of peaks for methane and carbon monoxide.

X. Documentation

Chain of custody records were provided in the data package and included the samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact on the site samples upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.



XI. Overall Assessment

Findings of the validation effort resulted in the correction of the unadjusted sample reporting limit to accurately reflect the concentration observed by the laboratory in the low concentration standard used to establish the IC. Unadjusted RLs were also properly adjusted by the validator for dilution factors arising from the final canister pressure of each sample. These corrections were made by the validator to the answer forms in this report. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methane data reported in SDG 200-37991.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

INLET-1-17 Inlet-1-17 un osloi/17

Job Number: 200-37991-1 Sdg Number: 200-37991-1

Client Sample ID: Lab Sample ID:

Date Sampled: 03/28/2017 1256

Client Matrix:

Air

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method:

EPA 3C

200-37991-1

Analysis Batch:

200-115658

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

Lab File ID:

200-3791-a-1b.d-avg

1.41

Analysis Date:

04/05/2017 2107

N/A

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Analyte

Prep Date:

04/05/2017 2107

Result (% v/v)

Qualifier

RL

RL

Methane

0.050 0.070

0.050 0.070

0.050 0.070

ese 05/01/17

Client: Ertec

Inlet - 2-17 ese 05/01/17

Sdg Number: 200-37991-1

Job Number: 200-37991-1

Client Sample ID:

INLET-2-17

Date Sampled: 03/28/2017 1300

Lab Sample ID: Client Matrix:

200-37991-2

Air

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Analysis Batch: 200-115658

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

Lab File ID:

200-3791-a-2b.d-avg

Dilution:

1.3

N/A

Initial Weight/Volume: 2 mL

Analysis Date:

04/05/2017 2212

Injection Volume:

Final Weight/Volume: 2 mL 2 mL

Prep Date:

04/05/2017 2212

Result (% v/v)

Qualifier

RL

RL

Analyte Methane

0.052 0.06 S

0.052 0.065

0.062 0.065

ese 05/01/17

Client: Ertec

outlet-9 use osloilit OUTLET-Q

Lab Sample ID:

Client Sample ID:

Client Matrix:

200-37991-4

Air

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method:

EPA 3C Prep Method: Summa Canister

Dilution:

Prep Date:

Analysis Date:

04/06/2017 0024

1.32

04/06/2017 0024

Analysis Batch: Prep Batch:

N/A

200-115658

Instrument ID:

CH0001.i 200-3791-a-4b.d-avg Lab File ID:

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL 2 mL Injection Volume:

Analyte Methane

Result (% v/v) 0.053 0.066 Qualifier

0.050 D.066

0.053 0.066

ere 08/91/17

Client: Ertec

outlet-17 en osloil 17

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID: Lab Sample ID:

Client Matrix:

OUTLET-17 200-37991-3

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method:

EPA 3C

Air

Summa Canister

Prep Method: Dilution:

1.36

Analysis Date: Prep Date:

04/05/2017 2317 04/05/2017 2317 Analysis Batch: Prep Batch:

200-115658

N/A

Instrument iD:

CH0001.i

Lab File ID:

200-3791--a-3b.d-avg

Initial Weight/Volume: 2 mL Final Weight/Volume:

2 mL

Injection Volume:

2 mL

Analyte Methane Result (% v/v) 0.054 0.068 Qualifier

0.054 0.068 0.054 0.069

ere 05/01/17



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



May 1, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE:

Validation Report for the SVE EPA 25C NMOC Air Monitoring of the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for NMOC in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q TB032817

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on April 28, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).



Ms. Wanda Morales May 1, 2017 Page 2 of 2

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards,

Engrid Carpenter Engrid Carpenter

President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Burlington Vermont Sample Delivery Group Number 200-37991 NMOC in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

May 1, 2017

13104/ESC/CEW 200-37991-EPA 25C



EXECUTIVE SUMMARY

Enclosed is the validation report for NMOC in the air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted to TestAmerica in Burlington, Vermont and were assigned to Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q TB032817

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results. The data package was received for validation on April 28, 2017.

All samples were analyzed for NMOC in conformance with the specifications of USEPA Method 25C. Each standard, quality control sample, and all five site samples were measured in triplicate and the average of the three runs was used to calculate the final results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



INTRODUCTION

Analyses were performed using EPA Method 25C, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon." Each standard, quality control sample and all five site samples were measured in triplicate. Responses from all three analyses were averaged and the average was used to calculate all results as required by the analytical method.

Data validation was performed in conformance with the specifications of the EPA Region II Standard Operating Procedure (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.



I. Holding Times, Preservation, and Sample Integrity

All NMOC analyses were performed within holding time. A copy of the Laboratory Login Sample Receipt Checklist noted that all site samples were received in good condition and custody seals were intact. Copies of the chain of custody records were also present in the data package and included all the samples in this data set. No physical preservation requirements are specified for Summa® canisters.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified in the data package as "CH0001." The GC was equipped with a flame ionization detector (FID) and a stationary phase column identified as "Carbo/Unibeads."

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was established on January 8, 2015. Concentrations of 6.0 parts per million carbon (ppm-C), 750 ppm-C, and 1800 ppm-C were used to establish the IC curve. Documentation of all IC standards was provided in the data package. The calibration factors (CFs) were correctly calculated and accurately reported. The percent relative standard deviation (%RSD) for the calibration curve was acceptable (\leq 15%).

An ICV at 750 ppm-C was analyzed after the IC. The percent difference (%D) value for calculated versus true value was acceptable (\leq 30%).

B. Continuing Calibration (CC)

The samples in this data set associated with opening and closing sequence CC standards. The concentration of each CC standard was 750 ppm-C and all %D values for calculated versus true value were acceptable ($\leq 10\%$).

III. Blanks

A laboratory blank was analyzed in the run sequence associated with the samples in this data set. NMOC was not detected above the reporting limit (RL) in the laboratory blanks.

A trip blank (TB032817) was associated with the samples in this data set. NMOC was not detected above the RL in TB032817.



IV. Surrogate Recovery

The use of a surrogate compound is not addressed in Method 25C. No surrogate compound was employed with the analyses of these samples.

V. Spike Analyses

A laboratory control sample (LCS) was analyzed in the analytical sequence containing the site samples. The LCS was spiked with NMOC at 750 ppm-C. The recovery (97%) was correctly calculated, accurately reported, and within the method-specified acceptance limits (70-130%).

VI. Field Duplicate

Collection of true field duplicates is not feasible for air samples; therefore, a better description of these quality control samples would be co-located samples. The analytical method and the validation guidance document do not provide an acceptance criterion for RPDs between reported concentrations in "field duplicate" samples. For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Outlet-Q was collected as a co-located sample of Outlet-17. Agreement between reported NMOC results (16 RPD) was acceptable.

VII. Compound Identification

Where detected, NMOC was correctly identified based on the presence of responses on the quantitation reports and peaks in the chromatograms within the retention time window established for this compound during the associated IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Target compound concentrations and sample-specific RLs were correctly calculated, accurately reported, and properly adjusted for dilution factors based on the final pressure in the canister. All positively reported results met Method 25C-specified agreement among the triplicate responses (≤5% RSD).

The unadjusted RL for NMOC is equivalent to the low concentration standard used to establish the IC; therefore, this RL is supported by the data as presented. The laboratory does not measure the moisture content of the canisters; therefore, no adjustment for moisture content was made for the reported sample results.



IX. System Performance

The analytical system was working satisfactorily at the time of these analyses, based on the evaluation of the available raw data.

X. Documentation

Chain of custody records were provided in the data package and included all samples in this data set. The following observations were noted:

All laboratory "received by" signatures are illegible.

The laboratory-generated Login Sample Receipt Checklist indicated custody seals were used and were intact upon laboratory receipt.

A copy of the FedEx airbill was included in the data package to document the transfer of the samples from the field to the laboratory.

The laboratory sample identifications were not in the same format of those used on the chain of custody records. The validator used the identifications as presented on the chain of custody records throughout this report.

XI. Overall Assessment

Based on the findings of the validation effort, all sample results were determined to be valid as reported. The validator did not add any qualifiers to the laboratory-reported results.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the NMOC data reported in SDG 200-37991.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17 Inld -1-17

Lab Sample ID:

200-37991-1

ese 05/01/17

Date Sampled: 03/28/2017 1256 Date Received: 03/29/2017 1035

Client Matrix:

Air

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-115659

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

04/05/2017 2107

Prep Batch:

N/A

Lab File ID:

200-3791-a-1b.d-avg

Dilution:

1.41

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

RL

8.5

Analysis Date: Prep Date:

04/05/2017 2107

Qualifier

Injection Volume:

2 mL

Analyte

Result (ppm-C)

RL 8.5

NMOC as Carbon

450

Client: Ertec

Job Number: 200-37991-1

Client Sample ID:

Inlet-2-17 ese 05/01/17 INLET-2-17Sdg Number: 200-37991-1

Lab Sample ID:

200-37991-2

Date Sampled: 03/28/2017 1300

Client Matrix:

Air

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch: 200-115659

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

Lab File ID:

200-3791--a-2b.d-avg

Dilution:

N/A

Initial Weight/Volume: 2 mL

Injection Volume:

Analysis Date:

04/05/2017 2212

Final Weight/Volume: 2 mL

2 mL

Prep Date:

04/05/2017 2212

Result (ppm-C)

Qualifier

RL

Analyte NMOC as Carbon

95

7.8

RL 7.8

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-IT

Outlet-17 me 08/01/17

Lab Sample ID:

200-37991-3

Date Sampled: 03/28/2017 1308

Client Matrix:

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch: 200-115659

Instrument ID:

CH0001.

Prep Method:

Summa Canister

200-3791-a-3b.d-avg

Dilution:

1.32

Prep Batch:

NIA

Lab File ID:

Analysis Date: Prep Date:

04/05/2017 2317

04/05/2017 2317

initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL Injection Volume:

2 mL

Analyte

Result (ppm-C)

Qualifier

RL 7.9 RL

NMOC as Carbon

27

7.9

Client: Ertec

Job Number: 200-37991-1

Client Sample ID:

outlet - q en osloili7

Sdg Number: 200-37991-1

Lab Sample ID: Client Matrix:

OUTLET Q 200-37991-4

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch: 200-115659

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

Dilution:

1.32

04/06/2017 0024 04/06/2017 0024

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

200-3791--a-4b.d-avg

Analysis Date: Prep Date:

Qualifier

Injection Volume:

2 mL

Analyte

Result (ppm-C)

RL 7.9 RL 7.9

NMOC as Carbon

23

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Air

Date Sampled: 03/28/2017 0000

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-115659

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

200-3791-a-5b.d-avg

Dilution:

04/06/2017 0132

Analysis Date: Prep Date:

04/06/2017 0132

Final Weight/Volume: 2 mL

Initial Weight/Volume: 2 mL

Injection Volume: 2 mL

Analyte

Result (ppm-C)

Qualifier

RL

RL

NMOC as Carbon

6.0

6.0

6.0



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.



May 2, 2017

Ms. Wanda Morales ERTEC Amur St. A - #5 Reparto Landrau Rio Piedras, PR 00921

RE: Validation Report for the NIOSH 2000 Air Monitoring for Methanol at the Pfizer Barceloneta Site

Dear Wanda,

Enclosed is the validation report for the methanol air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q

The data package received April 28, 2017, for validation did not contain raw data. A data package containing raw data was received on May 2, 2017. The analyses were performed by TestAmerica Phoenix and was identified as Job Number 550-79967.

Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.



Ms. Wanda Morales May 2, 2017 Page 2 of 2

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

Anomalies detected during the validation effort (if any) are included in the appropriate section of the attached report. The Laboratory Analytical Data Forms with all qualifiers resulting from the validation effort (if any were necessary) are included in Attachment A. The EPA Region II qualifiers and their definitions are included in Attachment B.

If you have any questions regarding this report, please give me a call at 225-355-0163 or contact me by e-mail at engrid@eden-env.com

Kindest regards, Charlie & Weste

Charlie E. Westerman, Ph.D.

Vice President



ANALYTICAL DATA VALIDATION

ERTEC JOB DESCRIPTION – PFIZER BARCELONETA – SVE ERTEC JOB NUMBER: 17-5475

ORGANIC ANALYSIS DATA

Prepared by: TestAmerica Laboratory, Phoenix Arizona TestAmerica Vermont Sample Delivery Group Number 200-37991 TestAmerica Phoenix Job Number 550-79967 Methanol in Air Samples

VALIDATION REPORT

Prepared by: Eden Environmental, LLC Eden Project Number 13104

May 2, 2017

13104/CEW/ESC 200-37991-NIOSH 2000



EXECUTIVE SUMMARY

Enclosed is the validation report for the methanol air samples collected on March 28, 2017, from the Pfizer Barceloneta Site. The following samples were submitted directly to TestAmerica in Phoenix Arizona, and were assigned to TestAmerica Vermont Sample Delivery Group (SDG) 200-37991.

Inlet-1-17 Inlet-2-17 Outlet-17 Outlet-Q

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Based on the finding of the validation effort, all sample results were determined qualified as estimated (J, UJ).

Analyses were performed using NIOSH 2000, Issue 3, January 1998. Method modifications were not explicitly stated and a copy of the laboratory standard operating procedure (SOP) was not provided. Obvious deviations from the method identified in the validation effort are described in the applicable section of this report.

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INTRODUCTION

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Each sample was collected on a 780 mg silica gel tube. The sample volume for each air sample was documented as 1.6 liters. The front and back sections of each sorbent tube was extracted independently with 2 ml of 5% isopropanol, 95% deionized water, and were analyzed independently.

No validation guidelines are available for NIOSH 2000 and data validation was performed in conformance with the specifications of the analytical method. The validation approach was similar to that specified in the EPA Region II SOP, (Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15," SOP HW-31 Revision 6, June, 2014). When necessary, professional judgment was applied and appropriately noted in the applicable section of the attached report. The validation effort for these data has the label Stage 4 Validation Manual (S4VM).

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I. Holding Times, Preservation, and Sample Integrity

These air samples were collected using NIOSH silica gel sorbent tubes on March 28, 2017, and were shipped directly to TestAmerica Phoenix. The job narrative stated the samples were received in good condition. A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." The job narrative stated, "the samples arrived in good condition."

A copy of the chain of custody record was also present in the data package and included all samples in this data set. NIOSH 2000 specifies sample stability as "at least 30 days at 5°C." All extractions and analyses were performed within 30 days. An acceptable cooler temperature of 3.1°C was noted on the chain of custody record.

II. Calibration and Instrument Performance

The samples in this data set were analyzed on a single gas chromatograph (GC) instrument identified as "GC14." The GC was equipped with a flame ionization detector (FID) identified as "FID1 A" and a DB-1 column.

A. Initial Calibration (IC) and Initial Calibration Verification (ICV)

An IC was performed on April 3, 2017. NIOSH 2000 specifies that three standards are to be prepared in duplicate and analyzed at three levels as the IC. For this project, four calibration standards at $3.16~\mu g$, $31.6~\mu g$, $31.6~\mu g$, and $3160~\mu g$ were used to establish the calibration curve. Documentation of all IC standards analyzed was provided in the data package. An acceptable coefficient of determination was obtained (1.000).

An initial calibration verification (ICV) standard is not required by NIOSH 2000. An ICV standard was analyzed immediately following the IC and the percent drift (%D) value for the data provided was within the laboratory-specified 40% maximum acceptance limit.

B. Continuing Calibration (CC)

The use of CC standards is not a NIOSH 2000 requirement. All samples and the associated quality control samples were analyzed between four bracketing CC standards at the customary concentration of 3160 µg. Acceptable %D values were observed for all four of these standards (laboratory's 20% maximum acceptance limit).

An additional 3.16 μg ICV standard was also included in the run sequence associated with these samples. The laboratory's 40% maximum acceptance limit was applied to the lower level standard and was found to be acceptable



III. Blanks

A laboratory blank was analyzed with the site samples. Methanol was not detected in the laboratory blank. A trip blank was not collected for methanol analysis.

IV. Surrogate Recovery

The use of a surrogate compound is not addressed in NIOSH 2000, and no surrogate compound was employed.

V. Spike Analyses

Recoveries for a laboratory control sample (LCS) and LCS duplicate (LCSD) each spiked at 7.91 μg were included in the analytical sequence containing the site samples. Recoveries (99% and 78%, respectively) and a relative percent difference (RPD) value (24 RPD) were within the laboratory-specified control limits (69-128% and ≤29 RPD).

VI. Co-located Samples

For this validation effort, a maximum acceptance limit of 100 RPD was used to define acceptable agreement between reported results in the co-located samples. Results with RPD values greater than 100 RPD should be used with caution as the concentration and source of these compounds in the reported samples is uncertain.

Outlet-Q was collected as a co-located sample of Outlet-17. Acceptable agreement (3 RPD) was observed between methanol concentrations.

VII. Compound Identification

Where detected, methanol was correctly identified based on the presence of a peak within the retention time window on the single column used to established the IC.

VIII. Compound Quantitation and Reporting Limit (RL)

Sample-specific RLs were correctly calculated and accurately reported. The RL is equivalent to the low concentration standard used to establish the IC and is therefore supported by the data as presented. Laboratory-reported results were reported as total μ g/sample, mg/m³, and ppm. The ppm concentration unites employed on the answer forms are ppmv. NIOSH employs ppm units, where in other situation, ppmv units would be reported.



All analytical site sample results and associated quality control results were acquired on the same instrument during the same run sequence.

The back and front sections of the 780 mg silica gel tubes were desorbed independently in the customary manner. The resultant extracts were analyzed independently employing sequentially duplicate injections. An explanation for performing the duplicate analyses was not provided. The results are summarized in the following table.

	Anal	ysis	Result	Result Reported
Sample	Date	Time	μg/sample	
Inlet-1-17 Back	04/03/17	16:49	<3.36	
	04/04/17	11:11	<3.36	Yes
	04/04/17	13:55	<3.36	
Inlet-1-17 Front	04/03/17	18:35	47.5	Yes
	04/03/17	18:47	<3.36	
	04/04/17	14:30	46.2	
Inlet-2-17 Back	04/03/17	17:00	<3.36	Yes
	04/03/17	17:12	<3.36	
Inlet-2-17 Front	04/03/17	18:52	57.0	Yes
**************************************	04/03/7	19:10	<3.36	
	04/04/17	15:42	54.0	
Oulet-17 Back	04/04/17	11:23	<3.36	Yes
	04/04/17	14:06	<3.36	
Outlet-17	04/03/17	19:22	9.43	Yes
Front	04/03/17	19:33	<3.36	
	04/04/17	14:53	6.73	
Outlet-Q Back	04/04/17	11:35	<3.36	Yes
	04/04/17	14:18	<3.36	
Outlet-Q Front	04/03/17	19;45	9.12	Yes
*	04/03/17	19:57	<3.36	
	04/04/17	15:05	7.31	

Unfortunately, poor agreement resulted among the results of the duplicate injections of extracts for the front sections of all three field samples and the back section of one field sample. The time interval between some of the associated duplicate injections was only eleven to twelve minutes. Repeated instrument instability would not be expected with such short time intervals. The validator was unable to determine any apparent reason for the poor reproducibility of reported results.



The nature and extent of the variation of duplicate injections of the same solvent extracts was sufficiently divergent and random to suggest that all values should be considered as estimated (UJ, J) and the direction of bias cannot be determined. The reported data are consistent with the presence of low amounts of methanol. Raw data and associated answer forms were provided for each of the individual analyses.

Evidently, the amounts on the "Client Sample Results" were intended to constitute the final answers; however, no explanation for any of the various laboratory actions were provided.

IX. System Performance

NIOSH 2000 states, "at high relative humidity or high methanol concentrations, use a larger tube: 15 cm long, 8-mm ID, with three sections of silica gel (700 mg, 150 mg, and 150 mg). Both high relative humidity and high methanol concentration are potentially present with this project. The sample preparation log in the data package documented the fact that 780 mg two-section silica gel tubes currently available were used for the present work.

X. Documentation

A copy of the chain of custody record was present and included all reported samples.

The following discrepancies were noted with the data package:

A copy of the Laboratory Login Sample Receipt Checklist noted, "The cooler's custody seal, if present, is intact." It is not apparent if custody seals were employed.

Documentation of sample receipt at the laboratory was not provided on the chain of custody record in terms of a signature and the date and time of receipt. The Job Narrative stated that the samples were received on March 29, 1017 at 9:30 am.

A copy of the FedEx airbill was not included in the data package to document the transfer of the samples from the field to the laboratory.

No explanation was provided for performing replicate instrumental injections of the four site samples. Poor replication of the various injections of the solvent extracts for the front sections of three of the four site samples was not addressed in the Job Narrative. The data user is cautioned that for this data set, raw data and associated answer forms were provided for each of the individual extract analyses.



No explanation was provided for the observed divergent results for multiple injections for the four site samples. The laboratory reported the highest concentration observed for each sample. No explanation for the laboratory's selection of the data reported on the final answer forms was provided. The reporting of the higher concentration values would generally be considered the more conservative approach. The Job Narrative stated, "No analytical quality issues were noted, other than those described in the Definitions/Glossary page." The Definition/Glossary page noted no analytical quality issues.

The analyses of the front and back sections of the silica gel samples tubes were performed on April 3 and 4, 2017. The analysis date for summed values was noted as April 5, 2017. The validator corrected the summed values on the Laboratory Analytical Data Forms in Attachment A of this report to agree with the reported raw data.

A sample tube size of 780 mg was specified in the sample preparation section but 150 mg was indicated on the answer forms.

Data presentation issues do not affect the validity of the results, but they could be problematic if these data are reviewed by a regulatory agency or if they are used in litigation.

XI. Overall Assessment

Based on the finding of the validation effort, all sample results were qualified as estimated (J, UJ) due to the lack of reproducibility of multiple duplicate injections of some of the associated solvent extracts.

This validation effort is based on the data as provided by the laboratory. Software manipulation cannot be routinely detected during validation and is outside the scope of this review.

This validation report should be added to the data package for all future distributions of the methanol data reported in SDG 200-37991.



ATTACHMENT A LABORATORY ANALYTICAL DATA FORMS

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloeta SVE

TestAmerica Job ID: 550-79967-1

Lab Sample ID: 550-79967-1 Client Sample ID: INLET-1-17 Inlet -1-17 Matrix: Air Date Collected: 03/28/17 00:00 780 Date Received: 03/29/17 09:30 Sample Container: IH - Silica Gel tube, 160 mg Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) Result RL Result Result ug/Sample mg/m3 ppm Qualifier ug/Sample Prepared Analyzed Dil Fac Analyte 04/03/17 13:58 04/04/17 11:11 3.36 Methanol 13.36 UJ 12.10 WJ \$1.60 UJ Method: 2000 Front - NIOSH 2000 (Modified) RI. Result Result Result ug/Sample Prepared Analyzed Dil Fac ug/Sample mg/m3 ppm Qualifier Analyte 3.36 04/03/17 13:58 04/03/17 18:35 29.7 5 22.6 3 47.5 T Methanol Method: 2000 Sum - NIOSH 2000 (Modified) Result RL Result Result Analyzed Dil Fac mg/m3 ppm Qualifier ug/Sample Prepared ug/Sample Analyte 04/08/17 19:56 47.5 J 22.6 J 3,36 29.7ブ Methanol 03 and 04 Lab Sample ID: 550-79967-2 Client Sample ID: INLET-2-17 Tulet - 2-17 Matrix: Air Date Collected: 03/28/17 00:00 780 Date Received: 03/29/17 09:30 Sample Container: IH - Silica Gel tube, 150 mg Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) Result Result Result RL ug/Sample Prepared Analyzed Dil Fac ug/Sample mg/m3 ppm Qualifier Analyte 04/03/17 13:58 04/03/17 17:00 \$3.36 UJ \$2.10 UJ 3.36 \$1.60 U J Methanol Method: 2000 Front - NIOSH 2000 (Modified) Result RL Result Result ppm Qualifier Prepared Analyzed Dil Fac ug/Sample ug/Sample mg/m3 Analyte 04/03/17 18:58 3.36 04/03/17 13:58 57.0 J 35.6 J 27.2 3 Methanol Method: 2000 Sum - NIOSH 2000 (Modified) RL Result Result Result ug/Sample ppm Qualifier ug/Sample Prepared Analyzed Dil Fac mg/m3 Analyte 57.0 J 04/98/17 19:56 27.2 J 3.36 35.6.T Methanol 03 and 04 Lab Sample ID: 550-79967-3 Client Sample ID: QUTLET-17 Outlet - 17 Matrix: Air Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30 7-80 Sample Container: IH - Silica Gel tube, 160 mg Sample Air Volume: 1.6 L Method: 2000 Back - NIOSH 2000 (Modified) RL Result Result Result ppm Qualifier ug/Sample Prepared Analyzed Dil Fac mg/m3 Analyte ug/Sample \$2.10 WJ 3.36 04/03/17 13:58 04/04/17 11:23 \$1.60 UJ Methanol \$3.36 Method: 2000 Front - NIOSH 2000 (Modified) RL Result Result Result Prepared Analyzed Dil Fac Analyte ug/Sample mg/m3 ppm Qualifier ug/Sample 04/03/17 13:58 04/03/17 19:22 3.36 Methanol 9.43 J 5,89J 4.50 cens 05/02/17

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site; Pfizer Barceloeta SVE

TestAmerica Job ID: 550-79967-1

Client Sample ID: OUTLET-17

Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30

Lab Sample ID: 550-79967-3

Matrix: Air

780

Sample Air Volume: 1.6 L

Sample Container: IH - Silica Gel tube, 450 mg

Method: 2000 Sum - NIOSH 2000	(Modified) Result	Result		Result		RL			
Analyte	ug/Sample	mg/m3		ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	9,43 J	5.89	5	4.50	5	3,36	200 Str. Str. Str. Str. Str. Str. Str. Str.	04/03/17 19:56	1
Client Sample ID: OUTLET-O	Outle	-Q	441			L	ab Sampl	e ID: 550-79	967-4

Date Collected: 03/28/17 00:00

Matrix: Air 780

Date Received: 03/29/17 09:30 Sample Air Volume: 1.6 L

Sample Container: IH - Sílica Gel tube, 450 mg

odniple An volume. 1.0 L				Call	pic odillar	1011 111 0111		
Method: 2000 Back - NIOSH	2000 (Modified) Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	\$3,36 UJ	\$2.10 UJ	1.60	W	3.36	04/03/17 13:58	04/04/17 11:35	4
Method: 2000 Front - NIOSH					-			
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	9.12 J	5.70 J	4,35	5	3,36	04/03/17 13:58	04/03/17 19:45	1
Method: 2000 Sum - NIOSH	2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	9.12 J	5.70 5	4.35	T	3.36		04/95/17 19:56	1
**	•			_			03 and 04	

cem 05/02/17



ATTACHMENT B

EPA REGION II QUALIFIERS AND THEIR DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity; but the result may be biased high.
- J- The result is an estimated quantity; but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was analyzed for but not detected. The reported quantitation limit may be inaccurate or imprecise.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

APPENDIX 4

PR CHEMIST CERTIFICATION RESULTS

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475



To Whom It May Concern:

I, Daliz M. Estades Santaliz, in my capacity as Puerto Rico Certified Chemist, hereby certify the attached Analytical Results from Project Pfizer Barceloneta and Laboratory ID Numbers:

200-37035-1 200-37035-2 200-37035-3 200-37035-4 200-37035-5 550-76133-1 550-76133-2 550-76133-3 550-76133-4

Daliz M. Estades
Santaliz
Lic. 4026
LICENCIA

Lcda. Daliz M. Estades Santaliz

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

360

340

840

340

1200

Analysis Method: TO-15 Prep Method: Summa Canister Dilution: 388 Analysis Date: 01/30/2017 2206 Prep Date: 01/30/2017 2206		200-113644 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHC.i 23705_16.D 200 mL 200 mL 200 mL
Analyte	Result (pp	b v/v) Qualifie	er MDL	RL
Acetone	700	J	500	1900
Isopropyl alcohol	110	Ĵ	50	1900
Methylene Chloride	190	Ŭ	26	190
n-Hexane	78	Ũ	18	78
Chloroform	36	Ĵ	9.7	78
Tetrahydrofuran	77000	Ē	470	1900
Benzene	1900		11	78
Toluene	12000		14	78
Chlorobenzene	78	U	9.7	78
Ethylbenzene	3600		13	78
m,p-Xylene	17000		30	190
Xylene, o-	2300		16	78
Xylene (total)	19000		16	270
Analyte	Result (ug/	/m3) Qualifie	er MDL	RL
Acetone	1700	J	1200	4600
Isopropyl alcohol	260	J	120	4800
Methylene Chloride	670	U	92	670
n-Hexane	270	U	63	270
Chloroform	170	J	47	380
Tetrahydrofuran	230000	E	1400	5700
Benzene	6100		35	250
Toluene	46000		51	290

360

16000

72000

10000

84000

U

45

57

67

67

130

Chlorobenzene

Ethylbenzene

m,p-Xylene

Xylene (total)

Xylene, o-

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Alr

Analysis Method: TO-15

Summa Canister

Analysis Batch:

200-113644

Instrument ID:

CHC.i

Prep Method: Dilution: Analysis Date:

Prep Date:

Cas Number

388

Prep Batch:

N/A

Lab File ID:

23705_16.D

01/30/2017 2206

01/30/2017 2206

Initial Weight/Volume:

200 mL

Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

Client Matrix:

Аіг

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

TO 45 Veletile	Ornania	Cd-	in Ambion	A
TO-15 Volatile	Urganic	Compounds	in Ambien	I AIL

TO-15 Volatile Organic Compounds in Ambient Air							
Analysis Method: Prep Method: Dilution:	TO-15 Summa Canister 3880	Analysis Batch: Prep Batch:	200-113644 N/A	Instrum Lab File Initial W		CHC.i 23705_17.D 20 mL	
Analysis Date: Prep Date:	01/30/2017 2259 01/30/2017 2259	Run Type:	DL.		eight/Volume: n Volume:	200 mL 200 mL	
Analyte		Result (p	pb v/v) (Qualifier	MDL	RL	
Acetone		19000		J	5000	19000	
Isopropyl alcohol		19000	ί	j	500	19000	
Methylene Chlorid	e	1900	t	J	260	1900	
n-Hexane		780	ι	J	180	780	
Chloroform		780	ι	J	97	780	
Tetrahydrofuran		70000	[)	4700	19000	
Benzene		1800	[)	110	780	
Toluene		11000)	140	780	
Chlorobenzene		780	Į	J	97	780	
Ethylbenzene		3200	[)	130	780	
m,p-Xylene		13000	[כ	300	1900	
Xylene, o-		2000	[)	160	780	
Xylene (total)		15000	r)	160	2700	
Analyte		Result (u	g/m3) (Qualifier	MDL	RL	
Acetone		46000	Ţ	J	12000	46000	
Isopropyl alcohol		48000	l	J	1200	48000	
Methylene Chlorid	e	6700	l	J	920	6700	
n-Hexane		2700	Į	J	630	2700	
Chloroform		3800	ι	J	470	3800	
Tetrahydrofuran		210000	[14000	57000	
Benzene		5600			350	2500	
Toluene		40000			510	2900	
Chlorobenzene		3600	. (450	3600	
Ethylbenzene		14000	[570	3400	
m,p-Xylene		59000			1300	8400	
Xylene, o-		8800	[670	3400	
Xylene (total)		65000	[670 SCICIADO	12000	

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

01/30/2017 2259

01/30/2017 2259

Client Matrix:

Air

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:

TO-15

Analysis Batch: 200-113644

Instrument ID:

CHC.i

Prep Method:

Prep Date:

Summa Canister

Prep Batch:

N/A

Lab File ID:

23705_17.D

Dilution: Analysis Date: 3880

Run Type:

DL

Initial Weight/Volume:

None

20 mL

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059

Date Received: 01/19/2017 1015

	T	O-15 Volatile Organi	c Compoun	ds in Amb	pient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 787 01/28/2017 0100 01/28/2017 0100	Analysis Batch Prep Batch:	n: 200-113 N/A	625	Instrument ID; Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 23692_15.d 16 mL 200 mL 200 mL
Analyte		Result	(ppb v/v)	Qualifie	er MDL	RL
Acetone		3900	(ppb v/v)		1000	
Isopropyl alcohol		190		J	100	3900
Methylene Chlorid	0	390		U		3900
n-Hexane	E	160		U	54 36	390
Chloroform		160		U	20	160
Tetrahydrofuran		13000		U		160
Benzene		360			940	3900
Toluene					22	160
Chlorobenzene		2200 160		U	28	160
Ethylbenzene		690		U	20 27	160
m,p-Xylene		3200			61	160
Xylene, o-		450			31	390
Xylene (total)		3700			31	160 550
Aylene (total)		3700			31	550
Analyte		Result	(ug/m3)	Qualifie	er MDL	RL
Acetone		9300		U	2400	9300
Isopropyl alcohol		460		J	250	9700
Methylene Chloride	е	1400		U	190	1400
n-Hexane		550		U	130	550
Chloroform		770		U	96	770
Tetrahydrofuran		38000			2800	12000
Benzene		1100			70	500
Toluene		8300			100	590
Chlorobenzene		720		U	91	720
Ethylbenzene		3000			120	680
m,p-Xylene		14000			260	1700
Xylene, o-		2000			140 GOCIA	680
Xylene (total)		16000		1	Daliz A FARD	2400 ss) C

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:

TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution:

Prep Date:

Cas Number

Analysis Date:

Summa Canister

Prep Batch:

Lab File ID:

787 01/28/2017 0100

N/A

Initial Weight/Volume:

23692_15.d

Final Weight/Volume:

16 mL

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

01/28/2017 0100

Analyte

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37035-3

Client Matrix:

Аiг

Date Sampled: 01/17/2017 1059

Date Received: 01/19/2017 1015

Client Matrix.	All			Date Re	ceived: 01/19/2017 1018
		TO-15 Volatile Organic	Compounds in An	nbient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 900 01/28/2017 0239 01/28/2017 0239	Analysis Batch: Prep Batch:	200-113625 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 23692_17.d 15 mL 200 mL 200 mL
Analyte Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)		Result (p 4500 220 450 180 180 14000 380 2400 180 730 3400 480 3900	pb v/v) Quali U J U U U	fier MDL 1200 120 61 41 23 1100 25 32 23 31 69 36 36	RL 4500 4500 450 180 180 4500 180 180 180 180 450 180 630
Analyte Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)		Result (us 11000 530 1600 630 880 43000 1200 8900 830 3200 15000 2100 17000	g/m3) Qualif U J U U U	MDL 2800 290 210 150 110 3200 81 120 100 130 300 160	RL 11000 11000 1600 630 880 13000 580 680 830 780 2000 780

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37035-3

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution:

Prep Date:

Cas Number

Summa Canister 900

Prep Batch:

N/A

Lab File ID:

23692_17.d

Analysis Date:

01/28/2017 0239

Initial Weight/Volume: Final Weight/Volume:

15 mL

01/28/2017 0239

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37035-4

Client Matrix:

Air

Date Sampled: 01/17/2017 1103

Date Received: 01/19/2017 1015

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	то	-15 Volatile Organic (Compoun	ds in Amb	ient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 5.0 01/28/2017 0149 01/28/2017 0149	Analysis Batch: Prep Batch:	200-1136 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	
Analyte		Result (p	pb v/v)	Qualifie	er MDL	RL
Acetone		11		J	6.5	25
Isopropyl alcohol		25		U	0.65	25
Methylene Chlorid	e	90			0.34	2.5
n-Hexane		1.3			0.23	1.0
Chloroform		1.0		U	0.13	1.0
Tetrahydrofuran		25		U	6.0	25
Benzene		0.21		J	0.14	1.0
Toluene		1.1			0.18	1.0
Chlorobenzene		1.0		U	0.13	1.0
Ethylbenzene		1.0		U	0.17	1.0
n,p-Xylene		2.5		U	0.39	2.5
Xylene, o-		1.0		U	0.20	1.0
Xylene (total)		3.5		U	0.20	3.5
Analyte		Result (u	g/m3)	Qualifie		RL
Acetone		26		J	15	59
sopropyl alcohol		61		U	1.6	61
Methylene Chloride	Đ	310			1.2	8.7
n-Hexane		4.7			0.81	3.5
Chloroform		4.9		U	0.61	4.9
Tetrahydrofuran		74		U	18	74
Benzene		0.68		J	0.45	3.2
Foluene		4.1			0.66	3.8
Chlorobenzene		4.6		U	0.58	4.6
Ethylbenzene		4.3		U	0.74	4.3
n,p-Xylene		11		U	1 GE ASOCIA	11
(ylene, o-		4.3		U	0.87	4.3
Kylene (total)		15		U	Official Councils	15 00.810 00.810

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37035-4

01/28/2017 0149

01/28/2017 0149

Client Matrix:

Air

Date Sampled: 01/17/2017 1103 Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

Lab File ID:

23692 16.d

Analysis Date: Prep Date:

5.0

N/A

Initial Weight/Volume:

40 mL

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

Client Matrix:

Air

Date Sampled: 01/17/2017 0000 Date Received: 01/19/2017 1015

TO-15 Volatile	Organic	Compounde	in A	mbiant	Aim
10-15 Volatile	Organic	Compounds	III P	ımbient	AII.

	10-15	volatile Organic (compound	s in Amb	ient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 01/28/2017 0332 01/28/2017 0332	Analysis Batch: Prep Batch:	200-11362 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 23692_18.d 200 mL 200 mL 200 mL
Analyte		Result (p	nh v/v)	Qualifie	er MDL	RL
Acetone		5.0	DD 474)	U	1.3	5.0
Isopropyl alcohol		0.15		J	0.13	5.0
Methylene Chloride	e	0.50		Ü	0.068	0.50
n-Hexane		0.20		Ü	0.006	0.30
Chloroform		0.20		Ŭ	0.025	0.20
Tetrahydrofuran		5.0		Ü	1.2	5.0
Benzene		0.20		Ŭ	0.028	0.20
Toluene		0.058		Ĵ	0.035	0.20
Chlorobenzene		0.20		Ŭ	0.025	0.20
Ethylbenzene		0.091		Ĵ	0.034	0.20
m,p-Xylene		0.10		J	0.077	0.50
Xylene, o-		0.20		U	0.040	0.20
Xylene (total)		0.10		J	0.040	0.70
Analyte		Result (ug	ı/m3)	Qualifie	r MDL	RL
Acetone		12		U	3.1	12
Isopropyl alcohol		0.36		J	0.32	12
Methylene Chloride	•	1.7		U	0.24	1.7
n-Hexane		0.70		U	0.16	0.70
Chloroform		0.98		U	0.12	0.98
Tetrahydrofuran		15		U	3.5	15
Benzene		0.64		U	0.089	0.64
Toluene		0.22		J	0.13	0.75
Chlorobenzene		0.92		U	0.12	0.92
Ethylbenzene		0.40		J	0.15. ASOCIA	0.87
m,p-Xylene		0.45		J	0.33	2.2
Xylene, o-		0.87		U	(0.17	0.87
Xylene (total)		0.43		J	6.17	3.6 edes)

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

01/28/2017 0332

Client Matrix:

Air

Date Sampled: 01/17/2017 0000

Date Received: 01/19/2017 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

Prep Date:

Summa Canister 1.0

Prep Batch:

Lab File ID:

01/28/2017 0332

N/A

Initial Weight/Volume:

23692_18.d

Final Weight/Volume:

200 mL 200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister 1.34

Dilution: Analysis Date:

01/23/2017 2023

Prep Date:

01/23/2017 2023

Analysis Batch: Prep Batch:

200-113628

N/A

Instrument ID:

CH0001.i

Lab File ID: Initial Weight/Volume:

2017-01-23 20;23;06 2 2 mL

Final Weight/Volume: Injection Volume:

2 mL

2 mL

Analyte

NMOC as Carbon

Result (ppm-C) 630

Qualifier

RL 8.0

RL 8.0



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059

Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Summa Canister

Analysis Batch:

200-113628

Instrument ID:

Prep Method:

1.29

01/23/2017 2111

Analysis Date: Prep Date:

01/23/2017 2111

Prep Batch:

N/A

Lab File ID:

CH0001.i

Initial Weight/Volume: 2 mL

2017-01-23 21;11;30 2

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Dilution:

NMOC as Carbon

Result (ppm-C)

Qualifier

RL 7.7

Lic. 4026

MICO LICE

RL

160

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37035-3

Client Matrix:

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-113628

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

Dilution:

1.33

Initial Weight/Volume: 2 mL

2017-01-23 22;16;05 2

Analysis Date:

01/23/2017 2216

Final Weight/Volume: Injection Volume:

2 mL 2 mL

Prep Date:

01/23/2017 2216

Qualifier

RL

RL

Analyte NMOC as Carbon

Result (ppm-C) 130

8.0



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37035-4

Client Matrix:

Date Sampled: 01/17/2017 1103 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister 1.34

Dilution: Analysis Date:

01/23/2017 2320

Prep Date:

01/23/2017 2320

Analysis Batch: Prep Batch:

200-113628

N/A

Instrument ID:

Lab File ID:

CH0001.i

2017-01-23 23;20;34 2

Initial Weight/Volume: 2 mL Final Weight/Volume:

2 mL

Injection Volume:

2 mL

Analyte

NMOC as Carbon

Result (ppm-C)

Qualifier

RL

RL

45

8.0



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

TB-011717

Lab Sample ID:

200-37035-5

Client Matrix:

Air

Date Sampled: 01/17/2017 0000 Date Received: 01/19/2017 1015

EPA 25C Nonmethane Organic Compounds (NMOC)

N/A

Analysis Method: EPA 25C Prep Method:

Analysis Date:

1.0

Summa Canister

01/24/2017 0026

01/24/2017 0026

Analysis Batch: 200-113628 Prep Batch:

Instrument ID:

CH0001.i

Lab File ID:

2017-01-24 00;26;41 2 Initial Weight/Volume: 2 mL

Final Weight/Volume:

Injection Volume:

2 mL 2 mL

Analyte

Dilution:

Prep Date:

NMOC as Carbon

Result (ppm-C) 6.0

Qualifier U

RL 6.0 RL 6.0



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37035-1

Client Matrix:

Air

Date Sampled: 01/17/2017 1055

Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Summa Canister

Prep Method: Dilution:

1.34

Analysis Date: Prep Date:

01/23/2017 2007 01/23/2017 2007

Analysis Batch: Prep Batch:

N/A

200-113629

Instrument ID:

CH0001.i

Lab File ID: Initial Weight/Volume: 2 mL

2017-01-23 20;07;01 2

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Methane

Result (% v/v) 0.054

Qualifier

RL

RL

0.054



Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37035-2

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Prep Method:

Summa Canister 1.29

Dilution: Analysis Date:

Prep Date:

01/23/2017 2111 01/23/2017 2111

Analysis Batch: Prep Batch:

200-113629

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-01-23 21;11;30 2

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Methane

Result (% v/v) 0.052

Qualifier

RL 0.052 RL 0.052

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37035-3

Client Matrix:

Air

Date Sampled: 01/17/2017 1059 Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Prep Method:

1.33

Dilution:

Analysis Date: Prep Date:

Summa Canister

01/23/2017 2216 01/23/2017 2216 Analysis Batch: Prep Batch:

200-113629

N/A

Instrument ID:

Lab File ID:

CH0001.i

Initial Weight/Volume: 2 mL

2017-01-23 22;16;05 2

Final Weight/Volume: Injection Volume:

2 mL 2 mL

Analyte

Methane

Result (% v/v) 0.053

Qualifier U

RL 0.053 RL 0.053

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37035-4

Client Matrix:

Air

Date Sampled: 01/17/2017 1103 Date Received: 01/19/2017 1015

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Prep Method:

Summa Canister 1.34

Dilution:

Analysis Date: Prep Date:

01/23/2017 2320 01/23/2017 2320 Analysis Batch:

Prep Batch:

200-113629

N/A

Instrument ID:

Lab File ID:

CH0001.i

2017-01-23 23;20;34 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Methane

Result (% v/v)

0.054

Qualifier U

RL 0.054 RL 0.054

Lic. au26

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Air - GC/MS VOA					
Analysis Batch:200-113	625				
LCS 200-113625/4	Lab Control Sample	Т	Air	TO-15	
MB 200-113625/6	Method Blank	Т	Air	TO-15	
200-37035-2	INLET-2-16	T	Air	TO-15	
200-37035-3	INLET-P	Т	Air	TO-15	
200-37035-4	OUTLET-16	T	Air	TO-15	
200-37035-5	TB-011717	Т	Air	TO-15	
Analysis Batch:200-1136	628				
LCS 200-113628/2	Lab Control Sample	T	Air	EPA 25C	
MB 200-113628/3	Method Blank	Т	Air	EPA 25C	
200-37035-1	INLET-1-16	T	Air	EPA 25C	
200-37035-2	INLET-2-16	Т	Air	EPA 25C	
200-37035-3	INLET-P	Ť	Air	EPA 25C	
200-37035-4	OUTLET-16	T	Air	EPA 25C	
200-37035-5	TB-011717	T	Air	EPA 25C	GOCIADO
Analysis Batch:200-1136	629			150	1330
LCS 200-113629/2	Lab Control Sample	Т	Air	EPA 3C	15/
MB 200-113629/3	Method Blank	Ť	Air	EPA 3C	aliaMI Estadas (C)
200-37035-1	INLET-1-16	Ť	Air	EPA 3C	Manual P
200-37035-2	INLET-2-16	Ť	Air	EPA 3C	WAU26 /8/
200-37035-3	INLET-P	Ť	Air	EPA 3C	
200-37035-4	OUTLET-16	Ť	Air	EPA 3C	A THE NOTE OF
Analysis Batch:200-1136	544			3	(01.0E)
LCS 200-113644/3	Lab Control Sample	Т	Air	TO-15	* Charles
MB 200-113644/4	Method Blank	Ť	Air	TO-15	
200-37035-1	INLET-1-16	Ť	Air	TO-15	
200-37035-1DL	INLET-1-16	Ť	Air	TO-15	

Report Basis T = Total

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank - Batch: 200-113625

1.0

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:
Client Matrix:
Dilution:

MB 200-113625/6 Air

Analysis Batch: Prep Batch:

200-113625 N/A

Instrument ID: Lab File ID: Initial Weight/Volume:

CHW.i 23692_06.d 200 mL

Analysis Date: Prep Date:

01/27/2017 1725 01/27/2017 1725 Leach Batch: Units:

ppb v/v

N/A

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Leach Date:

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	5.0	Ü	0.13	5.0
Methylene Chloride	0.50	ŭ	0.068	0.50
n-Hexane	0.20	Ü	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	U	0.028	0.20
Toluene	0.20	U	0.035	0.20
Chlorobenzene	0.20	U	0.025	0.20
Ethylbenzene	0.20	U	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	U	0.040	0.20
Xylene (total)	0.70	U	0.040	0.70-
				1,500

Method Blank - Batch: 200-113625

Method: TQ-15

Preparation: Summa Caniste

Lab Sample ID: Client Matrix:

Analysis Date:

Dilution:

MB 200-113625/6 Air

1.0

01/27/2017 1725 01/27/2017 1725 Prep Batch: Leach Batch: Units:

Analysis Batch:

200-113625 N/A N/A ug/m3

Instrument ID: Lab File ID: Initial Weight/Volume:

CHW 23692 06.d

Final Weight/Volume: Injection Volume:

200 mL 200 mL 200 mL

Prep Date: Leach Date: N/A

Analyte	Result	Qual	MDL	RL
Acetone	12	Ü	3.1	12
Isopropyl alcohol	12	Ü	0.32	12
Methylene Chloride	1.7	Ü	0.24	1.7
л-Hexane	0.70	Ū	0.16	0.70
Chloroform	0.98	Ü	0.12	0.78
Tetrahydrofuran	15	ŭ	3.5	15
Benzene	0.64	ŭ	0.089	0.64
Toluene	0.75	Ü	0.13	0.75
Chlorobenzene	0.92	ŭ	0.12	0.73
Ethylbenzene	0.87	ü	0.15	0.87
m,p-Xylene	2.2	ŭ	0.13	2.2
Xylene, o-	0.87	ŭ	0.17	
Xylene (total)	3.0	Ü	0.17	0.87 3.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank TICs- Batch: 200-113625

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppl

Qual

None

Lab Control Sample - Batch: 200-113625

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

LCS 200-113625/4

Analysis Batch:

200-113625

Instrument ID:

CHW.i

Client Matrix: Dilution:

Air 1.0 Prep Batch: Leach Batch: N/A N/A

Lab File ID: Initial Weight/Volume: 23692_04.d

Analysis Date: Prep Date:

01/27/2017 1513 01/27/2017 1513

Units:

ppb v/v

Final Weight/Volume:

200 mL 200 mL

Leach Date:

N/A

Injection Volume:

200 mL

Qual

Analyte	Spike Amount	Result	% Rec.	Limit
Acetone	10.0	11.5	115	64 - 136
isopropyl alcohol	10.0	10.2	102	55 - 124
Methylene Chloride	10.0	9.53	95	62 - 122
n-Hexane	10.0	10.8	108	71 - 131
Chloroform	10.0	10.4	104	69 - 129
Tetrahydrofuran	10.0	9.87	99	61 - 136
Benzene	10.0	10.1	101	67 - 127
Toluene	10.0	10.6	107	67 - 127
Chlorobenzene	10.0	10.7	107	68 - 128
Ethylbenzene	10.0	10.6	106	68 - 128
m,p-Xylene	20.0	21.8	109	68 - 128
Xylene, o-	10.0	10.9	109	67 - 127
				, , , , , ,

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank - Batch: 200-113644

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

MB 200-113644/4 Air

Analysis Batch: Prep Batch:

200-113644 N/A

Instrument ID: Lab File ID:

CHC.i 23705_04.D

Dilution: Analysis Date: Prep Date:

1.0 01/30/2017 1128 01/30/2017 1128 Leach Batch: Units:

N/A ppb v/v

Initial Weight/Volume: Final Weight/Volume:

200 mL 200 mL

Leach Date:

N/A

Injection Volume: 200 mL

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
isopropyi alcohol	5.0	U	0.13	5.0
Methylene Chloride	0.50	U	0.068	0.50
n-Hexane	0.20	Ü	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	Ü	1.2	5.0
Benzene	0.20	Ū	0.028	0.20
Toluene	0.20	Ü	0.035	0.20
Chlorobenzene	0.20	Ū	0.025	0.20
Ethylbenzene	0.20	Ū	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	ū	0.040	0.20
Xylene (total)	0.70	ŭ	0.040	0.70

Method Blank - Batch: 200-113644

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

Air 1.0

N/A

MB 200-113644/4

Analysis Batch: Prep Batch: Leach Batch:

200-113644 N/A N/A

Instrument ID: Lab File ID: Initial Weight/Volume:

CHC.i 23705 04.D 200 mL

Analysis Date: Prep Date: Leach Date:

Dilution:

01/30/2017 1128 01/30/2017 1128

Units:

ug/m3

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Analyte	Result	Qual	MDL	RL
Acetone	12	U	3.1	12
Isopropyl alcohol	12	U	0.32	12
Methylene Chloride	1.7	Ü	0.24	1.7
n-Hexane	0.70	U	0.16	0.70
Chloroform	0.98	Ü	0.12	0.98
Tetrahydrofuran	15	Ü	3.5	15
Benzene	0.64	ŭ	0.089	0.64
Toluene	0.75	Ü	0.13	0.75
Chlorobenzene	0.92	Ü	0.12	0.73
Ethylbenzene	0.87	ĬĬ	0.15	0.92
m,p-Xylene	2.2	ŭ	0.13	
Xylene, o-	0.87	Ü		2.2
Xylene (total)	3.0	Ü	0.17	0.87
	5.0	U	0.17	3.0

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank TICs- Batch: 200-113644

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppl

Qual

None

Lab Control Sample - Batch: 200-113644

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

Air

LCS 200-113644/3

Analysis Batch:

200-113644

Instrument ID:

CHC.i

Client Matrix: Dilution:

1.0

Prep Batch: Leach Batch: N/A N/A Lab File ID: Initial Weight/Volume:

23705_03.D 200 mL

Analysis Date: Prep Date:

01/30/2017 1035 01/30/2017 1035 Units:

ppb v/v

Final Weight/Volume:

200 mL

Leach Date:

N/A

Injection Volume:

200 mL

Qual

Analyte	Spike Amount	Result	% Rec.	Limit
Acetone	10.0	8.41	84	64 - 136
Isopropyl alcohol	10.0	8.47	85	55 - 124
Methylene Chloride	10.0	9.32	93	62 - 122
n-Hexane	10.0	10.1	101	71 - 131
Chloroform	10.0	9.25	92	69 - 129
Tetrahydrofuran	10.0	10.3	103	61 - 136
Benzene	10.0	9.63	96	67 - 127
Toluene	10.0	9.99	100	67 - 127
Chlorobenzene	10.0	9.78	98	68 - 128
Ethylbenzene	10.0	9.86	99	68 - 128
m,p-Xylene	20.0	19.6	98	68 - 128
Xylene, o-	10.0	9.56	96	67 - 127

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank - Batch: 200-113628

Method: EPA 25C

Preparation: Summa Canister

Lab Sample ID:

MB 200-113628/3

Analysis Batch:

200-113628 Instrument ID:

CH0001.i

Client Matrix:

Prep Batch:

N/A

Lab File ID:

Dilution: Analysis Date: 1.0

Leach Batch: Units:

N/A

Initial Weight/Volume: 2 mL

2017-01-23 12;45;17 mt

Prep Date:

01/23/2017 1245 01/23/2017 1245 ppm-C

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Leach Date:

Analyte

N/A

Qual

RL

RL

NMOC as Carbon

Result 6.0

U

6.0

6.0

Lab Control Sample - Batch: 200-113628

Method: EPA 25C

Preparation: Summa Canister

Lab Sample ID:

LCS 200-113628/2

Analysis Batch:

200-113628

Instrument ID:

CH0001.i

Client Matrix: Dilution:

Аіг 1.0 Prep Batch: Leach Batch: N/A N/A

Lab File ID:

2017-01-23 11;56;47 25

Analysis Date:

01/23/2017 1156

Units:

ppm-C

Initial Weight/Volume: 2 mL Final Weight/Volume: Injection Volume:

2 mL 2 mL

Prep Date: Leach Date:

Analyte

01/23/2017 1156 N/A

Spike Amount

Result

% Rec.

Limit

Qual

NMOC as Carbon

750

723

96

70 - 130

Client: Ertec

Job Number: 200-37035-1

Sdg Number: 200-37035-1

Method Blank - Batch: 200-113629

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID:

MB 200-113629/3

Analysis Batch:

200-113629

Instrument ID:

CH0001.i

Client Matrix:

Аіг

Prep Batch:

N/A

Lab File ID:

Dilution: Analysis Date:

1.0 01/23/2017 1245 Leach Batch:

Units:

N/A % v/v Initial Weight/Volume:

2017-01-23 12;45;17 mt 2 mL

Prep Date:

01/23/2017 1245

Final Weight/Volume: 2 mL

Leach Date:

N/A

Injection Volume:

2 mL

Analyte

Result

Qual

RL

RL

Methane

0.040

U

0.040

0.040

Lab Control Sample - Batch: 200-113629

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID:

LCS 200-113629/2

Analysis Batch:

200-113629

Instrument ID:

CH0001.i

Client Matrix: Dilution:

Air 1.0 Prep Batch: Leach Batch: N/A

Lab File ID:

2017-01-23 10;31;38 3c

Analysis Date:

01/23/2017 1031 01/23/2017 1031

Units:

N/A % v/v Initial Weight/Volume:

2 mL

Final Weight/Volume: Injection Volume:

2 mL 2 mL

Prep Date: Leach Date:

N/A

Spike Amount

Result

% Rec.

Limit

Qual

Analyte Methane

4.00

3.97

99

70 - 130

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-76133-1

SDG: 16-5440

Client Sample ID: Inlet-1-16 Date Collected: 01/17/17 00:00 Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

Lab Sample ID: 550-76133-1

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000	Back -	NIOSH	2000	(Modified)
--------------	--------	-------	------	------------

	Result	Result	Result		RL			
Analyte	ug/\$ample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	01/24/17 11:24	01/24/17 14:48	1
Method: 2000 Front - N	IIOSH 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	112	70.1	53.5		3.36	01/24/17 11:24	01/24/17 16:46	1
Method: 2000 Sum - NI	OSH 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	112	70.1	53.5		3.36		01/25/17 13:15	1

Client Sample ID: Inlet-2-16 Date Collected: 01/17/17 00:00

Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

ug/Sample

3.36

Matrix: Air

Lab Sample ID: 550-76133-2

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - NIOSH 2000 (Modified)

Analyte	Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	01/24/17 11:24	01/24/17.15:12	1
Method: 2000 Front -	NIOSH 2000 (Modified)						OCIADO	
	Result	Result	Result		RL	/ AS	COLUMBO	
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	63.9	39.9	30.5		3.36	01/24/17/11:24 Dal	01/24/17 17:10	1
Method: 2000 Sum - I	NIOSH 2000 (Modified)					AT Da	Aliz	181
	Result	Result	Result		DI	100/	Vic 4026	01

ppm Qualifier

30.5

mg/m3

Populé

39.9

Client Sample ID: Inlet-P

Analyte

Methanol

Date Collected: 01/17/17 00:00 Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

Lab Sample ID: 550-76133-3

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - NIOSH 2000 (Modified) Regult

ug/Sample

63.9

	1109dit	Result	I/e2nif		KL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	01/24/17 11:24	01/24/17 15:35	1
Method: 2000 Front	- NIOSH 2000 (Modified)							
	Result	Result	Resuit		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	68.4	42.8	32.6		3.36	01/24/17 11:24	01/24/17 17:33	

TestAmerica Phoenix

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-76133-1

SDG: 16-5440

Client Sample ID: Inlet-P Date Collected: 01/17/17 00:00

Lab Sample ID: 550-76133-3

Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

Client Sample ID: Outlet-16

Date Collected: 01/17/17 00:00 Date Received: 01/19/17 09:30 Sample Air Volume: 1.6 L

Analyte Methanol Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Sum - NIOSH 2000 (Modified)

Result	Result	Result		RL			
ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
68.4	42.8	32.6	11-1-11-11	3.36		01/25/17 13:15	1

Lab Sample ID: 550-76133-4

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - NIOSH 2000 (Modified)

	Result	Result	Result	RL			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60	3.36	01/24/17 11:24	01/24/17 15:59	1

Method: 2000 Front - NIOSH 2000 (Modified)

	Result	Result	Result	RL			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	38.1	23.8	18.2	3.36	01/24/17 11:24	01/24/17 17:57	1

Method: 2000 Sum - NIOSH 2000 (Modified)

	TOSUIL	result	Nesuit		KL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	38.1	23.8	18.2		3.36		01/25/17 13:15	1





QC Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-76133-1

SDG: 16-5440

Method: 2000 Back - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-108561/1-A

Matrix: Air

Analysis Batch: 108563

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 108561

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Methanol <3.36 3.36 01/24/17 11:24 01/24/17 13:37 ug/Sample

Method: 2000 Front - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-108562/1-A

Matrix: Air

Analysis Batch: 108563

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 108562

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Methanol <3.36 3.36 ug/Sample 01/24/17 11:24 01/24/17 13:49

Lab Sample ID: LCS 550-108562/10-A

Matrix: Air

Analysis Batch: 108563

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 108562

%Rec.

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Methanol 7.91 6.300 ug/Sample 80 69-128

Lab Sample ID: LCSD 550-108562/11-A

Matrix: Air

Analysis Batch: 108563

Spike LCSD LCSD Analyte Added Result Qualifier Unit Methanol 7.91 6.589 ug/Sample

MB MB

Client Sample ID: Lab Control Sample Dup

%Rec CLimits

83

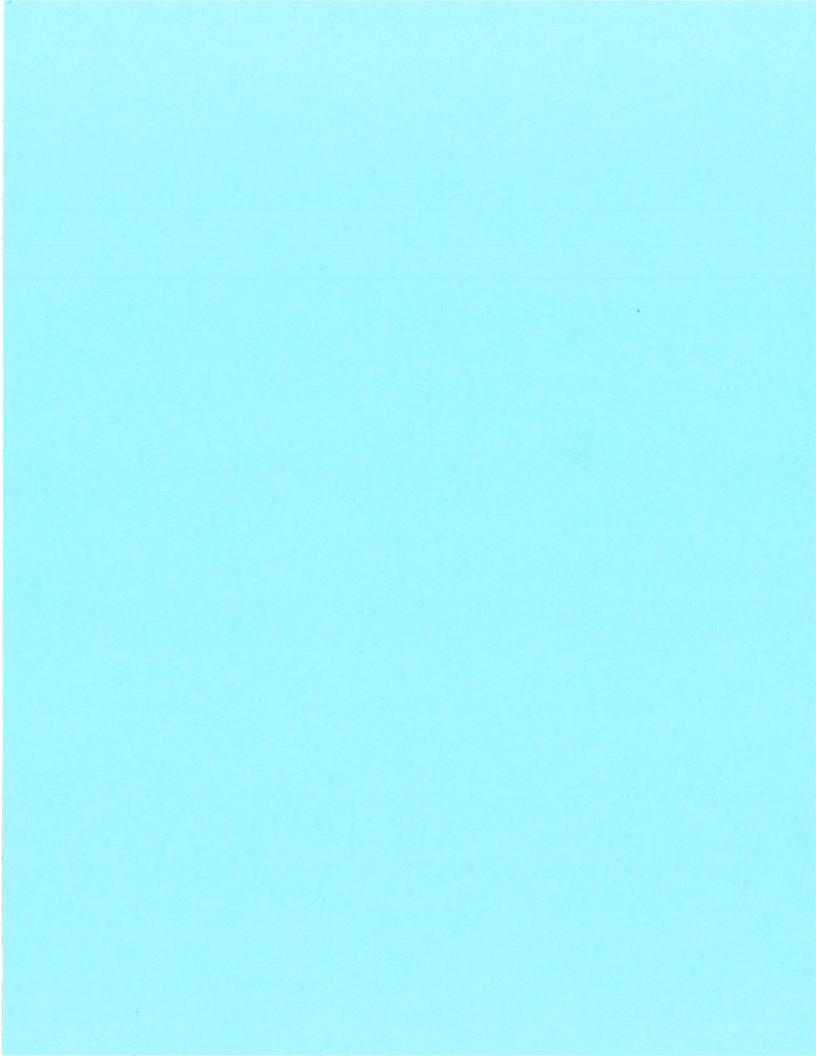
Prep Type: Total/NA

Prep Batch: 108562

%Rec. **RPD**

Limit 29

69-128



To Whom It May Concern:

I, Daliz M. Estades Santaliz, in my capacity as Puerto Rico Certified Chemist, hereby certify the attached Analytical Results from Project Pfizer Barceloneta and Laboratory ID Numbers:

200-37474-1 200-37474-2 200-37474-3 200-37474-4 200-37474-5

Lcda. Daliz M. Estades Santaliz

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

Client: Ertec

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

	TO-	15 Volatile Organic (Compounds	in Ambi	ent Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 300 03/09/2017 2041 03/09/2017 2041	Analysis Batch: Prep Batch:	200-114780 N/A) 	instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24260_10.d 176 mL 200 mL 200 mL
		Result (p	nb v/v)	Qualifie	r MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o-	de	640 160 150 60 34 60000 1400 11000 60 3400 16000 2300 18000		Ω Ω Ω Ω 1 B	390 39 20 14 7.5 360 8.4 11 7.5 10 23 12	1500 1500 150 60 60 1500 60 60 60 60 150 60 210
Xylene (total)		- "		Qualifie	er MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlori n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)		Result (I 1500 390 520 210 170 180000 4400 40000 280 15000 68000 10000 79000		J JB U J E	930 96 71 49 37 1100 27 40 35 44 100 52 52 52	3600 3700 520 210 290 4400 190 230 280 260 650 260 910

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: Prep Method:

TO-15

Summa Canister

300

Dilution: Analysis Date:

Prep Date:

Cas Number

03/09/2017 2041 03/09/2017 2041

Prep Batch:

Analysis Batch:

200-114780 N/A

Instrument ID: Lab File ID:

CHW.i

Initial Weight/Volume:

24260_10.d 176 mL

Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Job Number: 200-37474-1 Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

Client: Ertec

200-37474-1

Client Matrix

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

Client Matrix:	Air					
	ТО	-15 Volatile Organic (Compounds	in Ambient	Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 2640 03/10/2017 1554 03/10/2017 1554	Analysis Batch: Prep Batch: Run Type:	200-114827 N/A DL	Lab Initi Fina	rument ID: File ID: al Weight/Volume: al Weight/Volume: ction Volume:	CHW.i 24282_06.d 20 mL 200 mL 200 mL
		Result (p	(v/v da	Qualifier	MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	e	13000 340 1300 530 530 60000 1400 10000 530 3100 15000 2000 17000		U D D D D D D D D D D D D D D D D D D D	3400 340 180 120 66 3200 74 92 66 90 200 110	13000 13000 1300 530 530 13000 530 530 530 530 1300 530 1800
		Result (ug/m3)	Qualifier	MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlorie n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	de	31000 840 4600 1900 2600 180000 4400 38000 2400 13000 63000 8800 74000		O B D D D D D D D D D D D D D D D D D D	8200 840 620 430 320 9300 240 350 300 390 880 460	31000 32000 4600 1900 2600 39000 1700 2000 2400 2300 5700 2300 8000

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds In Ambient Air

Analysis Method: TO-15

Prep Method: Dilution:

Summa Canister

2640

Analysis Date: Prep Date:

Cas Number

03/10/2017 1554

03/10/2017 1554

Analysis Batch: Prep Batch:

Run Type:

200-114827

N/A

DŁ

Instrument ID: Lab File ID:

CHW.i 24282_06.d

Initial Weight/Volume: 20 mL Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37474-2

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

Client Watrix.	All					
		TO-15 Volatile Organic (Compounds in			
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 467 03/09/2017 2221 03/09/2017 2221	Analysis Batch: Prep Batch:	200-114780 N/A	Lab I Initia Final	ument ID: File ID: I Weight/Volume: Weight/Volume: tion Volume:	CHW.i 24260_12.d 29 mL 200 mL 200 mL
		Result (p	inh v/v) (Qualifier	MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	le	2300 120 230 93 93 15000 290 2200 93 740 3500 460 4000		J J J B U U U	610 61 32 21 12 560 13 16 12 16 36 19	2300 2300 230 93 93 2300 93 93 93 93 230 93 330
Analyta		Result (ug/m3)	Qualifier	MDL	RL
Analyte Acetone Isopropyl alcohol Methylene Chlorin n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	de	5500 290 810 330 460 44000 920 8300 430 3200 15000 2000 17000		O JB	1400 150 110 76 57 1700 42 62 54 69 160 81	5500 5700 810 330 460 6900 300 350 430 410 1000 410 1400

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37474-2

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15 Prep Method:

Summa Canister

467

Analysis Date: Prep Date:

Cas Number

Dilution:

03/09/2017 2221 03/09/2017 2221 Analysis Batch: Prep Batch:

200-114780 N/A

Instrument ID: Lab File ID:

CHW.i 24260_12.d

Initial Weight/Volume: 29 mL Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Job Number: 200-37474-1 Sdg Number: 200-37474-1

Client Sample ID:

INLET-P

Lab Sample ID:

Client: Ertec

200-37474-3

Client Matrix:

Аіг

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

390

1400

78

TO-15 Volatile	Organic	Compounds	in	Ambient Air	
TOTA VOISIUM	Uluanic	COLLIDORITOR			

Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 449 03/10/2017 1643 03/10/2017 1643	Analysis Batch: Prep Batch:	200-114827 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24282_07.d 28 mL 200 mL 200 mL	
Analyte Acetone Isopropyl alcohol Methylene Chloric n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	le	Result (p 2200 120 220 90 90 14000 290 2200 90 720 3400 470 3900	pb v/v) Qua U J B U U U	580 58 31 21 11 540 13 16 11 15 35 18	RL 2200 2200 220 90 90 90 90 90 90 90 220 90 310	
Analyte Acetone Isopropyl alcohol Methylene Chlori n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene		Result (5300 300 780 320 440 40000 930 8300 410 3100 15000	ug/m3) Qu U J E U U U	MDL 1400 3 140 110 73 55 1600 40 59 52 66 150	RL 5300 5500 780 320 440 6600 290 340 410 390 970	

2000

17000

m,p-Xylene Xylene, o-

Xylene (total)

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15 Prep Method:

Summa Canister

449

Dilution: Analysis Date:

Prep Date:

Cas Number

03/10/2017 1643

03/10/2017 1643

200-114827 Analysis Batch:

Prep Batch:

N/A

Instrument ID:

Lab File ID:

CHW.i 24282_07.d

Initial Weight/Volume: Final Weight/Volume:

28 mL 200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37474-4

Client Matrix:

Аіг

Date Sampled: 02/21/2017 1038 Date Received: 02/22/2017 0935

	то	-15 Volatile Organic (Compounds in	Ambient .	Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 29.2 03/10/2017 1733 03/10/2017 1733	Analysis Batch: Prep Batch:	200-114827 N/A	Lab Initia Fina	ument ID: File ID: Il Weight/Volume: I Weight/Volume: ction Volume:	CHW.i 24282_08.d 32 mL 200 mL 200 mL
Analyte		Result (p	pb v/v) Q	ualifier	MDL	RL
Acetone		71	J		38	150
sopropyl alcohol		14	J	В	3.8	150
Methylene Chlorid	le.	27			2.0	15
n-Hexane		5.8	U		1.3	5.8
Chloroform		5.8	U	l	0.73	5.8
Cetrahydrofuran		680			35	150
Benzene		5.8	U	i	0.82	5.8
		2.5	j		1.0	5.8
Toluene		5.8	ŭ		0.73	5.8
Chlorobenzene		5.8	ű		0.99	5.8
Ethylbenzene		5.6 15	Ü		2.2	15
n,p-Xylene		5.8	Ü		1.2	5.8
Kylene, o-			Ü		1.2	20
(total)		20	U	•		
Analyte		Result (u	3	Qualifier	MDL	RL 350
Acetone		170	J		90	360
sopropyl alcohol		33	J	В	9.3	
Methylene Chlorid	de	95			6.9	51
n-Hexane		21	U		4.7	21
Chloroform		29	L	J	3.6	29
Tetrahydrofuran		2000			100	430
Benzene		19	L		2.6	19
Toluene		9.3	J		3.9	22
Chlorobenzene		27	l		3.4	27
Ethylbenzene		25	L		4.3	25
n,p-Xylene		63	L		9.8	63
Xylene, o-		25	l		5.1	25
Xylene (total)		89	Į.	1 /68	5.1	89
(CC 128	D)	

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

Client: Ertec

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

N/A

Analysis Method: TO-15 Prep Method:

Summa Canister

29.2

Dilution: Analysis Date: Prep Date:

Cas Number

03/10/2017 1733

03/10/2017 1733

Number TIC's Found: 0

Analysis Batch:

Prep Batch:

Analyte Tentatively Identified Compound

Instrument ID: 200-114827

Lab File ID:

CHW.i 24282_08.d 32 mL

Initial Weight/Volume: Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

RT

Est. Result (ppb v/v)

Qualifier

None



Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client: Ertec Client Sample ID:

TB022117

Lab Sample ID:

200-37474-5

Client Matrix:

Air

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

Se Spire de La Lavience	TO-	15 Volatile Organic	Compounds	in Ambier	nt Air	
Analysis Method; Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 03/04/2017 0924 03/04/2017 0924	Analysis Batch: Prep Batch:	200-11459: N/A	5 Ins La Ini Fi	strument ID: ab File ID: itial Weight/Volume: nal Weight/Volume: jection Volume:	CHB.i 24174-24.D 200 mL 200 mL 200 mL
		Result (p	opb v/v)	Qualifier	MDL	RL
Analyte		5.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	U	1.3	5.0
Acetone		5.0		Ü	0.13	5.0
Isopropyl alcohol		0.50		U	0.068	0.50
Methylene Chloride	В	0.20		Ū	0.046	0.20
n-Hexane		0.20		Ü	0.025	0.20
Chloroform		5.0		Ŭ	1.2	5.0
Tetrahydrofuran				U	0.028	0.20
Benzene		0.20		Ü	0.035	0.20
Toluene		0.20		U	0.025	0.20
Chlorobenzene		0.20		U	0.034	0.20
Ethylbenzene		0.20		U	0.077	0.50
m.p-Xylene		0.50		Ü	0.040	0.20
Xylene, o-		0.20		Ü	0.040	0.70
Xylene (total)		0.70		U	0.040	
Analyte		Result (ug/m3)	Qualifier	MDL	RL.
The second secon		12		Ū	3.1	12
Acetone		12		υ	0.32	12
Isopropyl alcohol	do.	1.7		U	0.24	1.7
Methylene Chloric	ie .	0.70		U	0.16	0.70
n-Hexane		0.98		U	0.12	0.98
Chloroform		15		U	3.5	15
Tetrahydrofuran		0.64		U	0.089	0.64
Benzene		0.75		U	0.13	0.75
Toluene		0.92		U	0.12	0.92
Chlorobenzene		0.87		U	0.15	0.87
Ethylbenzene		2.2		U	0.33	2.2
m,p-Xylene		0.87		Ū	0.17	0.87
Xylene, o-		3.0		ŭ	0.17	3.0
Xylene (total)		Ş.U		Ü	· ·	
					SPIE ASOGIADO	20/
					Company Control	Pur

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

TB022117

Lab Sample ID:

Client: Ertec

200-37474-5

Client Matrix:

Air

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

TO-15 Volatile Organic Compounds in Ambient Air

N/A

Analysis Method: TO-15 Prep Method:

Summa Canister

1.0

Dilution:

Analysis Date: 03/04/2017 0924

Tentatively Identified Compounds

Prep Date:

03/04/2017 0924

Analysis Batch:

Prep Batch:

Cas Number

Analyte

Tentatively Identified Compound

Instrument ID: 200-114595

Lab File ID:

CHB.i 24174-24.D

Initial Weight/Volume:

200 mL

Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister

1.42

Dilution: Analysis Date:

02/27/2017 1731

200-114502 Analysis Batch: Prep Batch:

N/A

Instrument ID:

CH0001.I

Lab File ID:

2017-02-27 17;31;34 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2

mL

Injection Volume:

2 mL

Prep Date:

02/27/2017 1731

Result (ppm-C)

Qualifier

RL 8.5 RL 8.5

Analyte NMOC as Carbon

490

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

Client: Ertec

INLET-2-16

Lab Sample ID:

200-37474-2

Client Matrix:

Air

1.37

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Analysis Date:

Prep Date:

Summa Canister

02/27/2017 1820

02/27/2017 1820

200-114502 Analysis Batch:

N/A

Instrument ID:

CH0001.i

Prep Batch:

Lab File ID:

2017-02-27 18;20;27 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Dilution:

NMOC as Carbon

Result (ppm-C) 130

Qualifier

RL 8.2 RL 8.2

Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

1.27

Analysis Batch:

200-114502

Instrument ID:

CH0001.i

Prep Method: Dilution:

Analysis Date:

Summa Canister

Prep Batch:

N/A

Lab File ID:

2017-02-27 19;25;32 2

Initial Weight/Volume: 2 mL

Final Weight/Volume: Injection Volume:

2 mL 2 mL

Prep Date:

02/27/2017 1925 02/27/2017 1925

Result (ppm-C)

Qualifier

RL.

RL

Analyte

NMOC as Carbon

120

7.6

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

OUTLET-16

Lab Sample ID:

Client: Ertec

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038

Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

200-114502 Analysis Batch:

N/A

Instrument ID:

CH0001.i

Prep Method:

Summa Canister

02/27/2017 2030

Prep Batch:

Lab File ID:

2017-02-27 20;30;33 2

Dilution: 02/27/2017 2030 Analysis Date:

1.31

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Prep Date: Analyte

NMOC as Carbon

Result (ppm-C) 27

Qualifier

RL 7.9 RL 7.9

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

Client: Ertec

TB022117

Lab Sample ID:

200-37474-5

Client Matrix:

Air

1.0

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C Prep Method:

Summa Canister

Analysis Batch: Prep Batch:

200-114502

N/A

Instrument ID:

CH0001.i

Lab File ID: Initial Weight/Volume: 2 mL

2017-02-27 21;35;33 2

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analysis Date: Prep Date:

Dilution:

02/27/2017 2135 02/27/2017 2135

Qualifier

RL.

RL

Analyte

NMOC as Carbon

Result (ppm-C) 6.0

6.0

6.0

Job Number: 200-37474-1

Sdg Number: 200-37474-1

TB022117 Client Sample ID:

200-37474-5 Lab Sample ID:

Client Matrix:

Client: Ertec

Air

Date Sampled: 02/21/2017 0000 Date Received: 02/22/2017 0935

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Summa Canister Prep Method:

1.0

Dilution: 02/27/2017 2135 Analysis Date:

Prep Date:

02/27/2017 2135

200-114502 Analysis Batch:

N/A Prep Batch:

Instrument ID:

CH0001.i

Lab File ID:

2017-02-27 21;35;33 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte NMOC as Carbon Result (ppm-C) 6.0

Qualifier

RL 6.0 RL 6.0



Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-1-16

Lab Sample ID:

200-37474-1

Client Matrix:

Air

Date Sampled: 02/21/2017 1030 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

Dilution:

1.42

Analysis Date: Prep Date:

02/27/2017 1715

02/27/2017 1715

Analysis Batch: 200-114501

Prep Batch:

N/A

Instrument ID:

Lab File ID:

CH0001.i

2017-02-27 17;15;22 2

Initial Weight/Volume: 2 ml_ Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte Methane Result (% v/v) 0.057

Qualifier

RL 0.057



Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-2-16

Lab Sample ID:

200-37474-2

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

1.37

Analysis Date: Prep Date:

02/27/2017 1820

02/27/2017 1820

Analysis Batch:

Prep Batch:

200-114501

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-02-27 18;20;27 2

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Analyte Methane

Dilution:

Result (% v/v) 0.055

Qualifier

RL 0.055



Client: Ertec

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client Sample ID:

INLET-P

Lab Sample ID:

200-37474-3

Client Matrix:

Air

Date Sampled: 02/21/2017 1033 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Summa Canister

Prep Method: Dilution:

1.27

Analysis Date: Prep Date:

02/27/2017 1925

02/27/2017 1925

Analysis Batch: Prep Batch:

200-114501

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-02-27 19;25;32 2

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte Methane

Result (% v/v) 0.051

Qualifier Ü

RL 0.051



Job Number: 200-37474-1

Sdg Number: 200-37474-1

Client: Ertec Client Sample ID:

OUTLET-16

Lab Sample ID:

200-37474-4

Client Matrix:

Air

Date Sampled: 02/21/2017 1038 Date Received: 02/22/2017 0935

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Summa Canister

Prep Method: Dilution:

1.31

Analysis Date: Prep Date:

02/27/2017 2030

02/27/2017 2030

Analysis Batch:

Prep Batch:

200-114501

N/A

Instrument ID:

Lab File ID:

CH0001.i 2017-02-27 20;30;33 2

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte Methane Result (% v/v) 0.052

Qualifier

RL 0.052



Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

QC Association Summary

	Olland Campia ID	Report Basis	Client Matrix	Method	Prep Batch
Lab Sample ID	Client Sample ID				
Air - GC VOA					
Analysis Batch:200-	114501	т	Air	EPA 3C	
LCS 200-114501/2	Lab Control Sample	Ť	Air	EPA 3C	
MB 200-114501/3	Method Blank	τ̈́	Air	EPA 3C	
200-37474-1	INLET-1-16		Air	EPA 3C	
200-37474-2	INLET-2-16	Ţ	Air	EPA 3C	
200-37474-3	INLET-P	Ţ		EPA 3C	
200-37474-4	OUTLET-16	Т	Air	LIAGO	
Analysis Batch:200	-114502	_	A.S.	EPA 25C	
LCS 200-114502/2	Lab Control Sample	Ţ	Air	EPA 25C	
MB 200-114502/3	Method Blank	Ţ	Air	EPA 25C	
200-37474-1	INLET-1-16	T	Air		
200-37474-2	INLET-2-16	Т	Air	EPA 25C	
200-37474-3	INLET-P	Т	Air	EPA 25C	
	OUTLET-16	T	Air	EPA 25C	
200-37474-4 200-37474-5	TB022117	Т	Air	EPA 25C	
Analysis Batch:200)-114595	97		TO-15	
LCS 200-114595/3	Lab Control Sample	T	Air	TO-15	
MB 200-114595/4	Method Blank	Т	Air	TO-15	
200-37474-5	TB022117	Ţ	Air	10-15	
Analysis Batch:200	D-114780		A in	TQ-15	
LCS 200-114780/3	Lab Control Sample	Ţ	Air	TO-15	
MB 200-114780/4	Method Blank	<u>T</u>	Air	TO-15	
200-37474-1	INLET-1-16	<u>T</u>	Air	TO-15	
200-37474-2	INLET-2-16	Т	Air	10-10	
Analysis Batch:20	0-114827	-	Air	TO-15	
LCS 200-114827/3	Lab Control Sample	<u>T</u>	Air	TO-15	
MB 200-114827/4	Method Blank	Ţ	Air		
200-37474-1DL	INLET-1-16	Т	Air	TO-15	
200-37474-101	INLET-P	Т	Air	TO-15	
200-37474-4	OUTLET-16	T	Air	TO-15	
			. 60	NSOCI400	
			1.0	10	

Report Basis T = Total



Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method Blank - Batch: 200-114595

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

Dilution:

MB 200-114595/4 Air

1.0

Analysis Batch: Prep Batch: Leach Batch:

200-114595 N/A

Instrument ID: Lab File ID: Initial Weight/Volume:

CHB.i 24174-04.D 200 mL

Analysis Date: Prep Date:

03/03/2017 1455 03/03/2017 1455 Units:

N/A ppb v/v

Final Weight/Volume: Injection Volume:

200 mL 200 mL

N/A Leach Date:

Analyte	Result	Qual	MDL	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	5.0 5.0 0.50 0.20 0.20 5.0 0.20 0.20 0.20 0.50 0.20 0.70	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.3 0.13 0.068 0.046 0.025 1.2 0.028 0.035 0.025 0.034 0.077 0.040 0.040	5.0 5.0 0.50 0.20 0.20 5.0 0.20 0.20 0.2

Method Blank - Batch: 200-114595

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

MB 200-114595/4 Air

Analysis Batch: Prep Batch:

200-114595

Instrument ID: Lab File ID:

CHB.i 24174-04.D

Dilution: Analysis Date: 1.0 03/03/2017 1455 Leach Batch: Units:

N/A N/A ug/m3

Initial Weight/Volume: 200 mL Final Weight/Volume:

200 mL

Prep Date: Leach Date: 03/03/2017 1455 N/A

Injection Volume:

200 mL

Analyte	Result	Qual	MDL.	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	12 12 1.7 0.70 0.98 15 0.64 0.75 0.92 0.87 2.2 0.87 3.0		3.1 0.32 0.24 0.16 0.12 3.5 0.089 0.13 0.12 0.15 0.33 0.17 0.17	12 12 1.7 0.70 0.98 15 0.64 0.75 0.92 0.87 2.2 0.87 3.0
		8 0.00 SA	NALAL TOMOGO	

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Method Blank TICs- Batch: 200-114595

Cas Number

Client: Ertec

Analyte

Tentatively Identified Compound

RT

Est. Result (ppl

Qual

None

Lab Control Sample - Batch: 200-114595

Lab Sample ID:

LCS 200-114595/3 Air

1.0 03/03/2017 1402 03/03/2017 1402

Analysis Date: Prep Date:

Client Matrix:

Dilution:

Analyte

Xylene, o-

N/A

Analysis Batch:

Prep Batch: Leach Batch: Units:

N/A N/A ppb v/v

200-114595

Method: TO-15

Preparation: Summa Canister

Instrument ID:

CHB.i 24174-03.D

Lab File ID: Initial Weight/Volume: Final Weight/Volume:

200 mL 200 mL

Injection Volume:

200 mL

Leach Date:

Spike Amount	Result	% Rec.	Limit	Qual
10.0	11.5	115	64 - 136	
10.0	12.0	120	55 - 124	

Acetone Isopropyl alcohol 10.0 62 - 122 113 11.3 10.0 Methylene Chloride 71 - 131 124 12.4 10.0 n-Hexane 69 - 129 122 12.2 10.0 Chloroform 129 61 - 13612.9 10.0 Tetrahydrofuran 67 - 127 117 11.7 10.0 Benzene 67 - 127 118 11.8 10.0 Toluene 68 - 128 119 11.9 10.0 Chlorobenzene 68 - 128 120 12.0 10.0 Ethylbenzene 68 - 128120 24.1 20.0 m,p-Xylene 67-127 119 11.9 10.0

Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method Blank - Batch: 200-114780

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix: Dilution:

MB 200-114780/4 Air 1.0

Analysis Batch: Prep Batch: Leach Batch: Units: 03/09/2017 1527

200-114780 N/A N/A ppb v/v

Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:

CHW.i 24260_04.d 200 mL 200 mL 200 mL

Analysis Date: Prep Date:

03/09/2017 1527

Leach Date: N/A

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	0.198	J	0.13	5.0
Methylene Chloride	0.0807	J	0.068	0.50
	0.20	U	0.046	0.20
n-Hexane	0.20	Ū	0.025	0.20
Chloroform	5.0	ŭ	1.2	5.0
Tetrahydrofuran	0.20	ŭ	0.028	0.20
Benzene	0.20	ŭ	0.035	0.20
Toluene		Ü	0.025	0.20
Chlorobenzene	0.20		0.034	0.20
Ethylbenzene	0.20	U	0.034	0.50
m,p-Xylene	0.50	U		0.30
Xylene, o-	0.20	U	0.040	_
Xylene (total)	0.70	U	0.040	0.70

Method Blank - Batch: 200-114780

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix: Dilution:

Analysis Date:

Prep Date: Leach Date: MB 200-114780/4 Air 1.0

N/A

03/09/2017 1527 03/09/2017 1527 Analysis Batch: Prep Batch: Leach Batch: Units:

200-114780 N/A N/A ug/m3

Instrument ID: CHW.i Lab File ID: 24260_04.d Initial Weight/Volume: 200 mL 200 mL Final Weight/Volume: Injection Volume: 200 mL

Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method Blank TICs- Batch: 200-114780

Cas Number

Analyte

106-93-4

Ethylene Dibromide

RT

Est. Result (ppl

Qual

19.01

0.0273

Preparation: Summa Canister

J

Lab Control Sample - Batch: 200-114780

Lab Sample ID:

LCS 200-114780/3

1.0 03/09/2017 1434 03/09/2017 1434

Prep Date: Leach Date:

Client Matrix:

Analysis Date:

Dilution:

N/A

Analysis Batch:

Prep Batch: Leach Batch: Units:

200-114780 N/A N/A ppb v/v

Instrument ID:

Lab File ID:

Method: TO-15

24260_03.d 200 mL

CHW.i

Initial Weight/Volume: 200 mL Final Weight/Volume: Injection Volume:

200 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	10.4	104	64 - 136	
Isopropyl alcohol	10.0	9.28	93	55 - 124	
	10.0	10.1	101	62 - 122	
Methylene Chloride	10.0	10.7	108	71 - 131	
n-Hexane	10.0	10.6	106	69 - 129	
Chloroform	10.0	10.6	106	61 - 136	
Tetrahydrofuran	10.0	9.87	99	67 - 127	
Benzene		10.3	103	67 - 127	
Toluene	10.0	10.3	104	68 - 128	
Chlorobenzene	10.0		103	68 - 128	
Ethylbenzene	10.0	10.3		68 - 128	
m,p-Xylene	20.0	21.0	105	67 - 127	
Xylene, o-	10.0	10.3	103	6900MOD	

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method: TO-15

Preparation: Summa Canister

MB 200-114827/4 Lab Sample ID: Client Matrix: Аіг 1.0 Dilution: 03/10/2017 1410 Analysis Date:

03/10/2017 1410 Prep Date:

Leach Date: N/A

Client: Ertec

200-114827 Analysis Batch: N/A Prep Batch: N/A Leach Batch: ppb v/v Units:

CHW.i Instrument ID: 24282_04.d Lab File ID: 200 mL Initial Weight/Volume: Final Weight/Volume: 200 mL 200 mL Injection Volume:

Analyte	Result	Qual	MDL	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	5.0 0.208 0.50 0.20 0.20 5.0 0.20 0.20 0.0254 0.20 0.50 0.20	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.3 0.13 0.068 0.046 0.025 1.2 0.028 0.035 0.025 0.034 0.077 0.040	5.0 5.0 0.50 0.20 0.20 5.0 0.20 0.20 0.2

Method Blank - Batch: 200-114827

MB 200-114827/4 Lab Sample ID: Client Matrix: Air 1.0 Dilution: 03/10/2017 1410 Analysis Date: 03/10/2017 1410 Prep Date: N/A Leach Date:

200-114827 Analysis Batch: N/A Prep Batch: N/A Leach Batch:

ug/m3 Units:

Preparation: Summa Canister CHW.i Instrument ID:

Method: TO-15

24282 04.d Lab File ID: Initial Weight/Volume: 200 mL 200 mL Final Weight/Volume: 200 mL Injection Volume:

Analyte	Result	Qual	MDL	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	12 0.512 1.7 0.70 0.98 15 0.64 0.75 0.117 0.87 2.2 0.87 3.0		3.1 0.32 0.24 0.16 0.12 3.5 0.089 0.13 0.12 0.15 0.33	12 12 1.7 0.70 0.98 15 0.64 0.75 0.92 0.87 2.2 0.87 3.0

Page 37 of 65

Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method Blank TICs- Batch: 200-114827

Cas Number 75-15-0

Lab Sample ID:

Client Matrix:

Analysis Date:

Dilution:

Analyte Carbon disulfide RT 9.43

Qual Est. Result (ppl

0.0400

Preparation: Summa Canister

J

Lab Control Sample - Batch: 200-114827

Air

LCS 200-114827/3

1.0 03/10/2017 1317 03/10/2017 1317

Prep Date: N/A Leach Date:

Analysis Batch: Prep Batch:

Leach Batch: Units:

200-114827 N/A

N/A ppb v/v instrument ID:

Method: TO-15

Lab File ID: Initial Weight/Volume:

24282_03.d 200 mL 200 mL

CHW.i

Final Weight/Volume: Injection Volume:

200 mL

Qual

Analyte	Spike Amount	Result	% Rec.	
Acetone	10.0	10.4	104	
Isopropyl alcohol	10.0	9.04	90	
Methylene Chloride	10.0	10.1	101	
n-Hexane	10.0	10.9	109	
Chloroform	10.0	10.8	108	
Tetrahydrofuran	10.0	10.8	108	
Benzene	10.0	10.2	102	
Toluene	10.0	10.7	107	
Chlorobenzene	10.0	10.9	109	
Ethylbenzene	10.0	10.8	108	
•	20.0	21.8	109	and a
m,p-Xylene Xylene, o-	10.0	10.8	108	

Job Number: 200-37474-1

Sdg Number: 200-37474-1

Method: EPA 25C

Preparation: Summa Canister

Lab Sample ID:

Analysis Date:

Prep Date: Leach Date:

Client: Ertec

MB 200-114502/3 Аìг

Analysis Batch: Prep Batch: Leach Batch:

200-114502 N/A

Instrument ID: Lab File ID:

CH0001.i

Client Matrix: Dilution:

1.0

Method Blank - Batch: 200-114502

02/27/2017 1207 02/27/2017 1207 Units:

N/A ppm-C Initial Weight/Volume:

2017-02-27 12;07;40 mt 2 mL

Final Weight/Volume:

2 mL

Injection Volume:

2 mL

Analyte

N/A

Result

Qual

RL

RL

NMOC as Carbon

6.0

U

6.0

6.0

Lab Control Sample - Batch: 200-114502

Lab Sample ID:

LCS 200-114502/2

Client Matrix: Dilution:

Air 1.0

Analysis Date: 02/27/2017 1119 02/27/2017 1119

Prep Date: Leach Date:

N/A

Analysis Batch:

Prep Batch:

N/A Leach Batch: Units:

N/A ppm-C

200-114502

Method: EPA 25C Preparation: Summa Canister

Instrument ID:

CH0001.i

Lab File ID:

2017-02-27 11;19;57 25

Initial Weight/Volume: 2 mL Final Weight/Volume: Injection Volume:

2 mL 2 mL

Analyte

Spike Amount

Result

% Rec.

Limit

Qual

NMOC as Carbon

750

690

92

70 - 130

Client: Ertec

Job Number: 200-37474-1 Sdg Number: 200-37474-1

Method Blank - Batch: 200-114501

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID:

MB 200-114501/3 Air

Analysis Batch:

200-114501 N/A

Instrument ID: Lab File ID:

CH0001.i

Client Matrix: Dilution:

1.0

Prep Batch: Leach Batch:

N/A

2017-02-27 12;07;40 mt

Analysis Date:

02/27/2017 1207 Prep Date: 02/27/2017 1207 Units:

% v/v

Initial Weight/Volume: Final Weight/Volume:

2 mL 2 mL

Leach Date:

Injection Volume:

2 mL

Analyte

N/A

Result

Qual

RL.

RL.

Methane

0.040

U

0.040

0.040

Lab Control Sample - Batch: 200-114501

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID:

Air

LCS 200-114501/2

Analysis Batch: Prep Batch:

200-114501

N/A

Instrument ID:

CH0001.i

Client Matrix: Dilution:

1.0

Leach Batch: Units:

N/A

Lab File ID: Initial Weight/Volume: 2 mL

2017-02-27 09;56;29 3c

Analysis Date: Prep Date:

Leach Date:

02/27/2017 0956

02/27/2017 0956

N/A

% v/v

Final Weight/Volume: 2 mL

2 mL

Injection Volume:

Analyte

Spike Amount

Result

% Rec.

Limit

Qual

Methane

4.00

4.01

100

70 - 130

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-78003-1

SDG: 165440

Client Sample ID: Inlet-1-16 Date Collected: 02/21/17 00:00

Lab Sample ID: 550-78003-1

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L

Method: 2000 Back - NIOSI	Result	Result	Result		RL	Desperad	Analyzed	Dil Fac
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared		Diritio
Methanol	<3.36	<2.10	<1.60	Action in the control of	3.36	02/27/17 08:41	02/27/17 12:56	1
Method: 2000 Front - NIOS	H 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	02/27/17 08:41	02/27/17 15:17	1
Method: 2000 Sum - NIOSH	1 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36		02/28/17 15:52	1

Client Sample ID: Inlet-2-16

Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L

Lab Sample ID: 550-78003-2 Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - N Analyte	Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	02/27/17 08:41	02/27/17 13:43	1
Method: 2000 Front - N	NOSH 2000 (Modified) Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	75.7	47.3	36.1		3.36	02/27/17 08:41	02/27/17 15:40	
Method: 2000 Sum - Ni	OSH 2000 (Modified) Result ug/Sample	Result mg/m3	Result ppm		RL ug/Sample	Prepared	Analyzed	Dil Fa
Methanol	75.7	47.3	36.1		3.36		02/28/17 15:52	

Client Sample ID: Inlet-P

Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L

Lab Sample ID: 550-78003-3

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back -	NIOSH 2000 (Modified) Result ug/Sample	Result mg/m3	Result ppm	Qualifier ug/Samp	e Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60	3.3	6 02/27/17 08:41	02/27/17 13:55	1
Method: 2000 Front -	NIOSH 2000 (Modified) Result	Result	Result	COOK	K.		
Analyte	ug/Sample	mg/m3	ppm	Qualifier ug/Samp	1111	Analyzed	Dil Fac
Methanol	72.3	45.2	34.5	3.3	6 02/27/17 08:41	02/27/17 16:04	1

TestAmerica Phoenix

2/28/2017

Pegge 48 of 185

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-78003-1

SDG: 165440

Client Sample ID: Inlet-P

Lab Sample ID: 550-78003-3

Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Sum - NIOSH 200	0 (Modified) Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	72.3	45.2	34.5		3.36		02/28/17 15:52	- 1

Client Sample ID: Outlet-16

Lab Sample ID: 550-78003-4 Matrix: Air

Date Collected: 02/21/17 00:00 Date Received: 02/22/17 09:30 Sample Air Volume: 1.6 L

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - NIOSH Analyte	Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	02/27/17 08:41	02/27/17 14:18	1
Method: 2000 Front - NIOSH	1 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	16.2	10.1	7.73		3.36	02/27/17 08:41	02/27/17 16:27	1
Method: 2000 Sum - NIOSH	2000 (Modified)							
	Result	Result	Result		RL			
				Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Analyte	ug/Sample	mg/m3	ppm	Qualifier	agroumpio	· · · · · · · · ·	02/28/17 15:52	



QC Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloneta SVE

TestAmerica Job ID: 550-78003-1

SDG: 165440

Method: 2000 Back - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-111113/1-A

Matrix: Air

Analysis Batch: 111119

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 111113

MB MB Prepared Analyzed Dil Fac Unit RL Analyte Result Qualifier 02/27/17 08:41 02/27/17 11:20 3.36 ug/Sample Methanol <3.36

Method: 2000 Front - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-111114/1-A

Matrix: Air

Analysis Batch: 111119

MB MB

Dil Fac **Analyzed** Unit Prepared Analyte Result Qualifier 02/27/17 08:41 02/27/17 11:45 3.36 ug/Sample <3.36 Methanol

LCSD LCSD

6.428

Result Qualifier

Unit

ug/Samplé

Lab Sample ID: LCS 550-111114/10-A

Matrix: Air

Analysis Batch: 111119

LCS LCS Spike Added Result Qualifier Unit Analyte 7.91 7.156 ug/Sample Methanol

Lab Sample ID: LCSD 550-111114/11-A

Matrix: Air

Analysis Batch: 111119

Spike Added Analyte 7.91 Methanol

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 111114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 111114

%Rec.

Limits %Rec 69 - 128 90

Client Sample ID: Lab Control Sample Dup

D- %Rec

-81

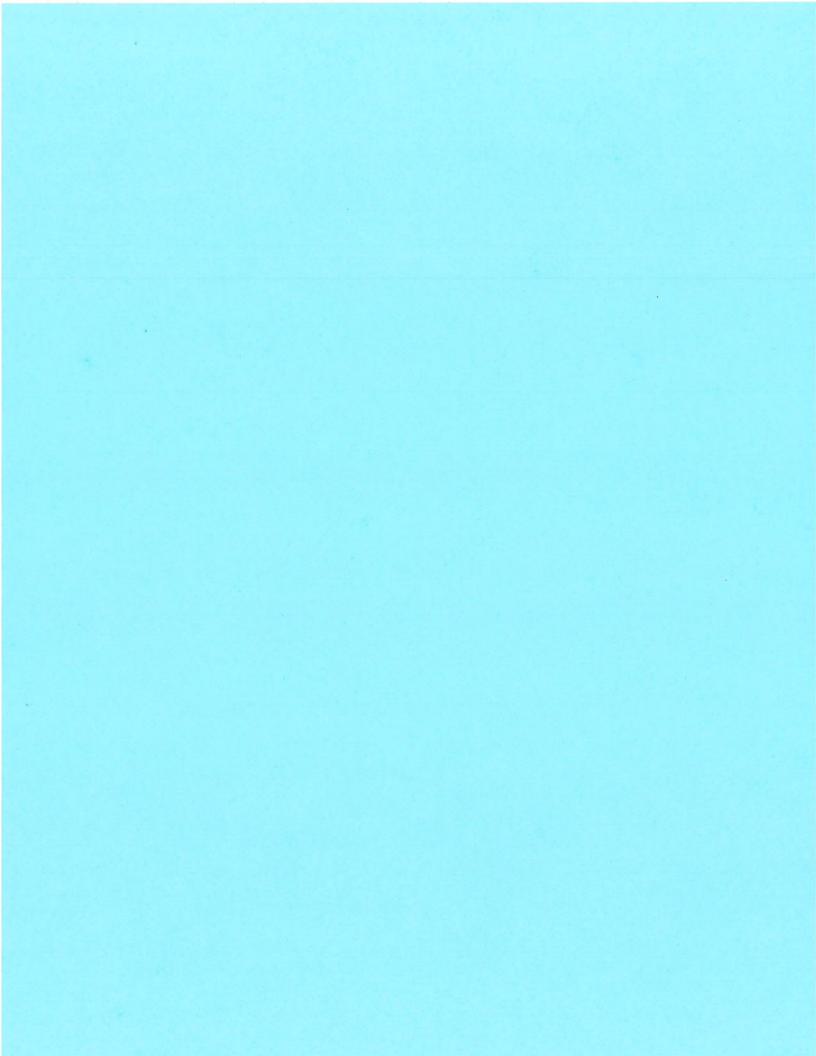
PSOCIAL

Prep Type: Total/NA

Prep Batch: 111114

%Rec. RPD RPD Limit Limits

69-128 29 11



To Whom It May Concern:

I, Daliz M. Estades Santaliz, in my capacity as Puerto Rico Certified Chemist, hereby certify the attached Analytical Results from Project Pfizer, Barceloneta and Laboratory ID Numbers:

200-37991-1 200-37991-2 200-37991-4 200-37991-5 550-79967-1 550-79967-2 550-79967-3 550-79967-4

Lcda. Delizer Stades Santaliz

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17

Lab Sample ID:

200-37991-1

Client Matrix:

Air

Date Sampled: 03/28/2017 1256

Date Received: 03/29/2017 1035

Analysis Method: TO-15 Prep Method: Dilution:

Summa Canister

Analysis Batch:

200-115820

Instrument ID:

CHW.i

3010

Prep Batch:

N/A

Lab File ID:

24735_08.d

04/14/2017 1544

Initial Weight/Volume: 44 mL

200 mL

Analysis Date: Prep Date:	04/14/2017 1544 04/14/2017 1544		Fina	I Weight/Volume: ction Volume:	
Analyte		Result (ppb v/v)	Qualifier	MDL	RL
Acetone		15000	U	3900	15000
Isopropyl alcohol		15000	U	390	15000
Methylene Chlori	de	1500	U	200	1500
n-Hexane		600	U	140	600
Chloroform		600	U	75	600
Tetrahydrofuran		42000		3600	15000
Benzene		1100		84	600
Toluene		9700		110	600
Chlorobenzene		600	U	75	600
Ethylbenzene		3600		100	600
m,p-Xylene		18000		230	1500
Xylene, o-		2500		120	600
Xylene (total)		21000		120	2100
Analyte		Result (ug/m3)	Qualifier	MDL	RL
Acetone		36000	U	9300	36000
Isopropyl alcohol		37000	U	960	37000
Methylene Chlor	de	5200	U	710	5200
n-Hexane		2100	U	490	2100
Chloroform		2900	U	370	2900
Tetrahydrofuran		120000		11000	44000
Benzene		3500		270	1900
Toluene		37000		400	2300
Chlorobenzene		2800	U	350	2800
Ethylbenzene		16000		440	2600
m,p-Xylene		77000		1000	6500
Xylene, o-		11000		520	2600
Xylene (total)		89000		520	9100
			4.		



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17

Lab Sample ID:

200-37991-1

04/14/2017 1544

04/14/2017 1544

Client Matrix:

Air

Date Sampled: 03/28/2017 1256

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

Prep Date:

Cas Number

Summa Canister 3010

Analyte

Prep Batch:

N/A

Lab File ID:

24735_08.d

Initial Weight/Volume: Final Weight/Volume:

44 mL

Injection Volume:

None

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-2-17

Lab Sample ID:

200-37991-2

Client Matrix:

Air

Date Sampled: 03/28/2017 1300 Date Received: 03/29/2017 1035

TO 15 Volatile Organic Compounds in Ambient Air

	T	O-15 Volatile Organic (Compounds	in Ambier	nt Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 339 04/14/2017 1633 04/14/2017 1633	Analysis Batch: Prep Batch:	200-115820 N/A	La Ini Fir	strument ID: ab File ID: itial Weight/Volume: nal Weight/Volume: ection Volume:	CHW.i 24735_09.d 36 mL 200 mL 200 mL	
Analyte		Result (p	pb v/v)	Qualifier	MDL	RL	
Acetone		1700	p=,	U	440	1700	
Isopropyl alcohol		73		JB	44	1700	
Methylene Chlorid	a	58		J	23	1700	
n-Hexane	G	68		Ü	16	68	
Chloroform		68		U	8.5	68	
Tetrahydrofuran		8100		J	410	1700	
Benzene		190			9.5	68	
Toluene		1700			12	68	
Chlorobenzene		68		U	8.5	68	
Ethylbenzene		610		Ü	12	68	
m,p-Xylene		2900			26	170	
Xylene, o-		400			14	68	
Xylene (total)		3300			14	240	
Analyte		Result (u	g/m3)	Qualifier	MDL	RL	
Acetone		4000		U	1000	4000	
Isopropyl alcohol		180		JB	110	4200	
Methylene Chloride	e	200		J	80	590	
n-Hexane		240		U	55	240	
Chloroform		330		U	41	330	
Tetrahydrofuran		24000			1200	5000	
Benzene		590			30	220	
Toluene		6500			45	260	
Chlorobenzene		310		U	39	310	
Ethylbenzene		2700			50	290	
m,p-Xylene		12000			110	740	
Xylene, o-		1700			59	290	
Xylene (total)		14000			59	1000	
					and the same of th		

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-2-17

Lab Sample ID:

200-37991-2

04/14/2017 1633

04/14/2017 1633

Client Matrix:

Air

Date Sampled: 03/28/2017 1300

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

Prep Date:

Summa Canister 339

Prep Batch:

N/A

Lab File ID:

24735_09.d

Initial Weight/Volume: Final Weight/Volume:

36 mL

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

04/27/2017

None



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-17

Lab Sample ID:

200-37991-3

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

	TO	-15 Volatile Organic Co	ompounds in Aml	bient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 04/14/2017 1728 04/14/2017 1728	•	200-115820 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_10.d 272 mL 200 mL 200 mL
Analyte		Result (ppt	v/v) Qualifi	er MDL	RL
Acetone		11		1.3	5.0
Isopropyl alcohol		8.1	В	0.13	5.0
Methylene Chlorid	le	0.11	J	0.068	0.50
n-Hexane		0.20	U	0.046	0.20
Chloroform		0.20	U	0.025	0.20
Tetrahydrofuran		5.0	U	1.2	5.0
Benzene		0.36		0.028	0.20
Toluene		0.20		0.035	0.20
Chlorobenzene		0.20	U	0.025	0.20
Ethylbenzene		0.20	U	0.034	0.20
m,p-Xylene		0.50	U	0.077	0.50
Xylene, o-		0.20	U	0.040	0.20
Xylene (total)		0.70	U	0.040	0.70
Analyte		Result (ug/i	m3) Qualific	er MDL	RL
Acetone		26		3.1	12
Isopropyl alcohol		20	В	0.32	12
Methylene Chlorid	e	0.37	J	0.24	1.7
n-Hexane		0.70	U	0.16	0.70
Chloroform		0.98	U	0.12	0.98
Tetrahydrofuran		15	U	3.5	15
Benzene		1.1		0.089	0.64
Toluene		0.76		0.13	0.75
Chlorobenzene		0.92	U	0.12	0.92
Ethylbenzene		0.87	U	0.15	0.87
m,p-Xylene		2.2	U	0.33	2.2
Xylene, o-		0.87	U	0.17	0.87
Xylene (total)		3.0	U "	0.170140	3.0

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-17

Lab Sample ID:

200-37991-3

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch: 200-115820

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

Prep Date:

Cas Number

Summa Canister 1.0

Analyte

04/14/2017 1728

04/14/2017 1728

Prep Batch:

N/A

Lab File ID:

24735_10.d

Initial Weight/Volume: Final Weight/Volume:

272 mL

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-Q

Lab Sample ID:

200-37991-4

Client Matrix:

Аiг

Date Sampled: 03/28/2017 1308 Date Received: 03/29/2017 1035

	TO	-15 Volatile Organic	Compounds in A	mbient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 04/14/2017 1823 04/14/2017 1823	Analysis Batch: Prep Batch:	200-115820 N/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_11.d 264 mL 200 mL 200 mL
Analyte		Result (p	pb v/v) Qua	alifier MDL	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	e	5.1 7.8 0.50 0.20 0.20 5.0 0.093 0.41 0.20 0.20 0.50 0.20	B 0 0 0 0	1.3 0.13 0.068 0.046 0.025 1.2 0.028 0.035 0.025 0.034 0.077 0.040 0.040	5.0 5.0 0.50 0.20 0.20 5.0 0.20 0.20 0.20 0.20 0.50 0.20 0.70
Analyte		Result (u	g/m3) Qua	lifier MDL	RL
Acetone Isopropyl alcohol Methylene Chloride n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	e	12 19 1.7 0.70 0.98 15 0.30 1.5 0.92 0.87 2.2 0.87 3.0	B U U U U U U U U U U U U U U U U U U U	3.1 0.32 0.24 0.16 0.12 3.5 0.089 0.13 0.12 0.15 0.33 0.17	12 12 1.7 0.70 0.98 15 0.64 0.75 0.92 0.87 2.2 0.87 3.0

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-Q

Lab Sample ID:

200-37991-4

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method: Dilution:

Summa Canister

04/14/2017 1823

04/14/2017 1823

Prep Batch:

Lab File ID:

24735_11.d

Analysis Date: Prep Date:

1.0

N/A

Initial Weight/Volume:

264 mL

Final Weight/Volume: Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Air

Date Sampled: 03/28/2017 0000 Date Received: 03/29/2017 1035

	ТО	-15 Volatile Organic (Compoun	ds in Amb	ient Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.0 04/14/2017 1916 04/14/2017 1916	Analysis Batch: Prep Batch:	200-115 N/A		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_12.d 200 mL 200 mL 200 mL	
Analyte		Result (p	pb v/v)	Qualifie	er MDL	RL	
Acetone		5.0		U	1.3	5.0	
Isopropyl alcohol		5.0		U	0.13	5.0	
Methylene Chlorid	le	0.50		U	0.068	0.50	
n-Hexane		0.20		U	0.046	0.20	
Chloroform		0.20		U	0.025	0.20	
Tetrahydrofuran		5.0		U	1.2	5.0	
Benzene		0.20		U	0.028	0.20	
Toluene		0.20		U	0.035	0.20	
Chlorobenzene		0.20		U	0.025	0.20	
Ethylbenzene		0.20		υ	0.034	0.20	
m,p-Xylene		0.50		U	0.077	0.50	
Xylene, o-		0.20		U	0.040	0.20	
Xylene (total)		0.70		U	0.040	0.70	
Analyte		Result (u	g/m3)	Qualifie	r MDL	RL	
Acetone		12		Ū	3.1	12	
Isopropyl alcohol		12		U	0.32	12	
Methylene Chlorid	e	1.7		U	0.24	1.7	
n-Hexane		0.70		U	0.16	0.70	
Chloroform		0.98		U	0.12	0.98	
Tetrahydrofuran		15		U	3.5	15	
Benzene		0.64		บ	0.089	0.64	
Toluene		0.75		U	0.13	0.75	
Chlorobenzene		0.92		U	0.12	0.92	
Ethylbenzene		0.87		U	0.15	0.87	
m,p-Xylene		2.2		U	0.33	2.2	
Videos -		0.07		1.1	0.47	~ ~ ~	

0.87

3.0



U

U

0.17

0.17

0.87

3.0

m,p-Xylene Xylene, o-

Xylene (total)

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Air

Date Sampled: 03/28/2017 0000

Date Received: 03/29/2017 1035

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Summa Canister

04/14/2017 1916

04/14/2017 1916

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Prep Method: Dilution: Analysis Date:

1.0

Prep Batch:

N/A

Lab File ID:

24735_12.d

Initial Weight/Volume: Final Weight/Volume:

200 mL

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Prep Date:

Analyte

Tentatively Identified Compound

RT

Est. Result (ppb v/v)

Qualifier

None



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17

Lab Sample ID:

200-37991-1

Client Matrix:

Air

Date Sampled: 03/28/2017 1256

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-115659

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister

04/05/2017 2107

Prep Batch:

Lab File ID:

200-3791-a-1b.d-avg

Analysis Date:

1.41 04/05/2017 2107

N/A

Initial Weight/Volume:

2 mL

Final Weight/Volume: 2 mL Injection Volume:

2 ml.

Prep Date:

NMOC as Carbon

Result (ppm-C)

Qualifier

RL 8.5 RL

Analyte

450

8.5



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-2-17

Lab Sample ID:

200-37991-2

04/05/2017 2212

Client Matrix:

Air

Date Sampled: 03/28/2017 1300

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-115659

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

Lab File ID:

Analysis Date:

Prep Date:

1.3 04/05/2017 2212

N/A

Initial Weight/Volume: 2 mL

200-3791--a-2b.d-avg

Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

NMOC as Carbon

Result (ppm-C) 95

Qualifier

RL 7.8 RL 7.8



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-17

Lab Sample ID:

200-37991-3

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch: 200-115659

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister 1.32

Prep Batch:

N/A

Lab File ID:

200-3791--a-3b.d-avg

04/05/2017 2317

Initial Weight/Volume: 2 mL Final Weight/Volume: 2

mL 2 mL

Analysis Date: Prep Date:

04/05/2017 2317

Result (ppm-C)

Qualifier

RL

Injection Volume:

RL

Analyte

NMOC as Carbon

27

7.9

7.9



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-Q

Lab Sample ID:

200-37991-4

04/06/2017 0024

Client Matrix:

Air

Date Sampled: 03/28/2017 1308

Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

Analysis Method: EPA 25C

Analysis Batch:

200-115659

Instrument ID:

CH0001.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

Lab File ID:

200-3791-a-4b.d-avg

Analysis Date:

Prep Date:

1.32 04/06/2017 0024

N/A

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Result (ppm-C)

Qualifier

RL

RL

Analyte

NMOC as Carbon

23

7.9

7.9



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

TB032817

Lab Sample ID:

200-37991-5

Client Matrix:

Air

Date Sampled: 03/28/2017 0000 Date Received: 03/29/2017 1035

EPA 25C Nonmethane Organic Compounds (NMOC)

N/A

Analysis Method: EPA 25C Prep Method:

Analysis Date:

Prep Date:

1.0

Summa Canister

04/06/2017 0132

04/06/2017 0132

Analysis Batch: Prep Batch:

200-115659

Instrument ID:

CH0001.i

Lab File ID:

200-3791-a-5b.d-avg

Initial Weight/Volume: 2 mL Final Weight/Volume:

2

Injection Volume:

mL 2 mL

Analyte

Dilution:

NMOC as Carbon

Result (ppm-C) 6.0

Qualifier

RL 6.0

RL 6.0



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-1-17

Lab Sample ID:

200-37991-1

Client Matrix:

Air

Date Sampled: 03/28/2017 1256

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Summa Canister

1.41

Dilution: Analysis Date:

Prep Date:

04/05/2017 2107 04/05/2017 2107

Analysis Batch: Prep Batch:

200-115658

N/A

Instrument ID:

Lab File ID:

CH0001.i

200-3791-a-1b.d-avg

Initial Weight/Volume: 2 mL Final Weight/Volume: 2 mL

Injection Volume:

2 mL

Analyte

Methane

Result (% v/v) 0.056

Qualifier

RL 0.056

RL 0.056

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

INLET-2-17

Lab Sample ID:

200-37991-2

Client Matrix:

Air

Date Sampled: 03/28/2017 1300

Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C Prep Method:

Analysis Date:

Prep Date:

1.3

Summa Canister

Analysis Batch: Prep Batch:

200-115658 N/A

Instrument ID:

CH0001.i

Lab File ID:

200-3791--a-2b.d-avg

Initial Weight/Volume: Final Weight/Volume:

2 mL 2

Injection Volume:

mL 2 mL

Analyte Methane

Dilution:

04/05/2017 2212 04/05/2017 2212

> Result (% v/v) 0.052

Qualifier

RL 0.052 RL 0.052

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-17

Lab Sample ID:

200-37991-3

Client Matrix:

Air

Date Sampled: 03/28/2017 1308 Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: EPA 3C

Summa Canister

Prep Method: Dilution:

1.36

Analysis Date: Prep Date:

04/05/2017 2317 04/05/2017 2317

Analysis Batch: Prep Batch:

N/A

200-115658 Instrument ID:

Lab File ID:

CH0001.i

Initial Weight/Volume: 2 mL

200-3791--a-3b.d-avg

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Analyte

Methane

Result (% v/v) 0.054

Qualifier U

RL 0.054 RL 0.054

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Client Sample ID:

OUTLET-Q

Lab Sample ID:

200-37991-4

Client Matrix:

Air

Date Sampled: 03/28/2017 1308 Date Received: 03/29/2017 1035

EPA 3C Fixed Gases from Stationary Sources

Analysis Method: . EPA 3C

Summa Canister

Prep Method: Dilution:

1.32

Analysis Date: Prep Date:

04/06/2017 0024

04/06/2017 0024

Analysis Batch: Prep Batch:

200-115658

N/A

Instrument ID:

Lab File ID:

CH0001.i

200-3791--a-4b.d-avg Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL Injection Volume:

2 mL

Result (% v/v)

Qualifier

RL

RL

Analyte Methane

0.053

0.053

0.053



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis		80-46-1	
-	Cheft Sample ID	Dasis	Client Matrix	Method	Prep Batch
Air - GC VOA					
Analysis Batch:200-1					
LCS 200-115658/2	Lab Control Sample	T	Air	EPA 3C	
MB 200-115658/3	Method Blank	T	Air	EPA 3C	
200-37991-1	INLET-1-17	T	Air	EPA 3C	
200-37991-2	INLET-2-17	T	Air	EPA 3C	
200-37991-3	OUTLET-17	Т	Air	EPA 3C	
200-37991-4	OUTLET-Q	Т	Air	EPA 3C	
Analysis Batch:200-1	15659				
LCS 200-115659/2	Lab Control Sample	T	Air	EPA 25C	
MB 200-115659/3	Method Blank	Ť	Air	EPA 25C	
200-37991-1	INLET-1-17	Ť	Air	EPA 25C	
200-37991-2	INLET-2-17	Ť	Αίτ	EPA 25C	
200-37991-3	OUTLET-17	Ť	Air	EPA 25C	
200-37991-4	OUTLET-Q	Ť	Air	EPA 25C	
200-37991-5	TB032817	Ť	Air	EPA 25C	
Analysis Batch:200-1	15820				
CS 200-115820/6	Lab Control Sample	т	Air	TO-15	
/IB 200-115820/7	Method Blank	Ť	Air	TO-15	
200-37991-1	INLET-1-17	T	Air	TO-15	
200-37991-2	INLET-2-17	Ť	Air	TO-15	
200-37991-3	OUTLET-17	Ť	Air	TO-15	
200-37991-4	OUTLET-Q	Ť	Air	TO-15	
200-37991-5	TB032817	Ť	Air		
		·	" / Colo.	TO-15	
			1 137	1	3.
Report Basis			18/	1 /3	· ·
T = Total			: /E/ Da/2	0.11	
			3 1/13	Nestacian 1	1.1
			1.1	Paliz 1-	7
			13/ W	726 /2	į.
			118	الروية الأصمية	

Client: Ertec

Job Number: 200-37991-1 Sdg Number: 200-37991-1

Method Blank - Batch: 200-115820

Method: TO-15

Preparation: Summa Canister

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	0.173	J	0.13	5.0
Methylene Chloride	0.50	Ū	0.068	0.50
n-Hexane	0.20	U	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	Ú	0.028	0.20
Toluene	0.20	U	0.035	0.20
Chlorobenzene	0.20	U	0.025	0.20
Ethylbenzene	0.20	U	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	U	0.040	0.20
Xylene (total)	0.70	U	0.040	0.70

Method Blank - Batch: 200-115820

Method: TO-15
Preparation: Summa Canister

Lab Sample ID: Client Matrix: Dilution: Analysis Date: Prep Date: Leach Date:	MB 200-115820/7 Air 1.0 04/14/2017 1454 04/14/2017 1454 N/A	Analysis Batch: Prep Batch: Leach Batch: Units:	200-115820 N/A N/A ug/m3	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	CHW.i 24735_07.d 200 mL 200 mL 200 mL
--	--	--	-----------------------------------	---	---

Analyte	Result	Qual	MDL	RL
Acetone	12	U	3.1	12
Isopropyl alcohol	0.426	J	0.32	12
Methylene Chloride	1.7	U ·	0.24	1.7
n-Hexane	0.70	U	0.16	0.70
Chloroform	0.98	M. M. C. C. L.	0.12	0.98
Tetrahydrofuran	15	(I)	3:5	15
Benzene	0.64	() I	0.089	0.64
Toluene	0.75	15 hono a	0.13	0.75
Chlorobenzene	0.92	Lu ildi	0.12	0.73
Ethylbenzene	0.87		0.15	0.87
m,p-Xylene	2.2	The House	0.33	2.2
Xylene, o-	0.87	100	0.33	
Xylene (total)	3.0	O CO LICE	0.17	0.87 3.0

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Method Blank TICs- Batch: 200-115820

Cas Number

Analyte

RT

Est. Result (ppl

Qual

Tentatively Identified Compound

None

Lab Control Sample - Batch: 200-115820

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

LCS 200-115820/6

Analysis Batch:

200-115820

Instrument ID:

CHW.i

Client Matrix: Dilution:

Аіг 1.0 Prep Batch: Leach Batch:

Units:

N/A N/A Lab File ID: Initial Weight/Volume: 200 mL

24735 06.d

Analysis Date: Prep Date:

04/14/2017 1401 04/14/2017 1401

ppb v/v

Final Weight/Volume:

200 mL

N/A

Injection Volume:

200 mL

Leach Date:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	8.03	80	64 - 136	
Isopropyl alcohol	10.0	6.69	67	55 - 124	
Methylene Chloride	10.0	7.37	74	62 - 122	
n-Hexane	10.0	8.04	80	71 - 131	
Chloroform	10.0	9.19	92	69 - 129	
Tetrahydrofuran	10.0	7.16	72	61 - 136	
Benzene	10.0	8.23	82	67 - 127	
Toluene	10.0	9.20	92	67 - 127	
Chlorobenzene	10.0	9.61	96	68 - 128	
Ethylbenzene	10.0	9.30	93	68 - 128	
m,p-Xylene	20.0	19.5	97	68 - 128	
Xylene, o-	10.0	9.59	96	67 - 127	



Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Method Blank - Batch: 200-115659

Method: EPA 25C

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

MB 200-115659/3

Air

1.0

Dilution: Analysis Date:

Prep Date: Leach Date: 04/05/2017 1737

04/05/2017 1737

Analysis Batch: Prep Batch:

Leach Batch:

Units:

N/A N/A ppm-C

200-115659

Instrument ID:

Lab File ID:

CH0001.i

mb201704015a.d-avg

Initial Weight/Volume: Final Weight/Volume:

2 mL 2 mL

Injection Volume:

2 mL

CH0001.i

2 mL

2 mL

2 mL

Analyte

Result

Qual

Instrument ID:

Lab File ID:

Method: EPA 25C

Initial Weight/Volume:

Final Weight/Volume:

Injection Volume:

RL

RL

NMOC as Carbon

6.0

200-115659

N/A

N/A

ppm-C

u

6.0

Preparation: Summa Canister

6.0

Lab Control Sample - Batch: 200-115659

LCS 200-115659/2

1.0

Dilution: Analysis Date: Prep Date:

Lab Sample ID:

Client Matrix:

Leach Date:

Analyte

04/05/2017 1648

N/A

Air

04/05/2017 1648

Spike Amount

Analysis Batch:

Prep Batch:

Units:

Leach Batch:

Result

% Rec. 97

Limit

25clcs201704015a.d-av-

NMOC as Carbon

750

725

Qual

70 - 130

Client: Ertec

Job Number: 200-37991-1

Sdg Number: 200-37991-1

Method Blank - Batch: 200-115658

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

Air

MB 200-115658/3 Analysis Batch: Prep Batch:

200-115658

Instrument ID: Lab File ID:

CH0001.i

Dilution:

1.0

Leach Batch:

N/A N/A

mb201704015a.d-avg

Analysis Date: Prep Date:

Leach Date:

04/05/2017 1737 04/05/2017 1737

Units:

% V/V

Initial Weight/Volume: Final Weight/Volume:

2 mL

Injection Volume:

2 mL

2 mL

Analyte

N/A

Result

Qual

RL

RL

Methane

0.040

U

0.040

0.040

Lab Control Sample - Batch: 200-115658

Method: EPA 3C

Preparation: Summa Canister

Lab Sample ID:

LCS 200-115658/2

04/05/2017 1523

04/05/2017 1523

Analysis Batch: Prep Batch:

200-115658

N/A

Instrument ID:

CH0001.i

Client Matrix: Dilution:

Air 1.0

Leach Batch: Units:

N/A % v/v Lab File ID: Initial Weight/Volume:

3clcs20170405a.d-avg

Final Weight/Volume:

2 mL 2 mL

Injection Volume:

2 mL

Prep Date: Leach Date:

Analysis Date:

N/A

Spike Amount

Result

% Rec.

Limit

Qual

Analyte Methane

4.00

3.90

98

70 - 130



Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloeta SVE

TestAmerica Job ID: 550-79967-1

Client Sample ID: INLET-1-17

Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30 Sample Air Volume: 1.6 L Lab Sample ID: 550-79967-1

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method:	2000	Back -	NIOSH	2000	(Modified)	į
---------	------	--------	-------	------	------------	---

Analyte	Result ug/Sample	Result mg/m3	Result ppm	Qualifier	RL ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	04/03/17 13:58		1
Method: 2000 Front	- NIOSH 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	47.5	29.7	22.6		3.36	04/03/17 13:58	04/03/17 18:35	1
Method: 2000 Sum -	NIOSH 2000 (Modified)							
	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	47.5	29.7	22.6		3.36		04/05/17 19:56	

Client Sample ID: INLET-2-17

Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30

Sample Air Volume: 1.6 L

Lab Sample ID: 550-79967-2

ab Sample ID: 550-79967-3

Container: IH - Silica Gel tube, 150 mg

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Back - NIOSH 2000 (Modified)

	Result	Result	Result	RL			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60	3.36	04/03/17 13:58	04/03/17 17:00	1

Method: 2000 Front - NIOSH 2000 (Modified)

	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	57.0	35.6	27.2		3.36	04/03/17 13:58	04/03/17 18:58	1

Method: 2000 Sum - NIOSH 2000 (Modified)

	Result	Result	Result /	RL.			
Analyte	ug/Sample	mg/m3	ppm Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	57.0	35.6	27/.2	3.36		04/05/17 19:56	1

Client Sample ID: OUTLET-17

Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30

Sample Air Volume: 1.6 L

Method: 2000 Back - NIOSH 2000 (Modified)		٠.,	
Result	Result	Result	RL

Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60	2012	3.36	04/03/17 13:58	04/04/17 11:23	1

Method: 2000 Front - NIOSH 2000 (Modified)

	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	9.43	5.89	4.50		3.36	04/03/17 13:58	04/03/17 19:22	1

TestAmerica Phoenix

Client Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloeta SVE

Client Sample ID: OUTLET-17

Date Collected: 03/28/17 00:00 Date Received: 03/29/17 09:30 Sample Air Volume: 1.6 L

Client Sample ID: OUTLET-Q

Date Collected: 03/28/17 00:00

Date Received: 03/29/17 09:30 Sample Air Volume: 1.6 L

TestAmerica Job ID: 550-79967-1

Lab Sample ID: 550-79967-3

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Method: 2000 Sum - NIOSH 2000 (Modified)

	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	9.43	5.89	4.50		3.36		04/05/17 19:56	1

Lab Sample ID: 550-79967-4

Matrix: Air

Sample Container: IH - Silica Gel tube, 150 mg

Prepared

Method: 2000 Back - NIOSH 2000 (Modified)

	Result	Result	Result		RL			
Analyte	ug/Sample	mg/m3	ppm	Qualifier	ug/Sample	Prepared	Analyzed	Dil Fac
Methanol	<3.36	<2.10	<1.60		3.36	04/03/17 13:58	04/04/17 11:35	1
Mathad: 2000 Front NICS	1 2000 (Mand:6:-4)							

Method: 2000 Front - NIOSH 2000 (Modified) Result Result Result RL Analyte ug/Sample mg/m3 ppm Qualifier ug/Sample Prepared Analyzed Dil Fac Methanol 9.12 5.70 4.35 3.36 04/03/17 13:58 04/03/17 19:45

 Method: 2000 Sum - NIOSH 2000 (Modified)

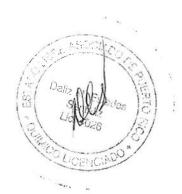
 Result
 Result
 Result
 RL

 Analyte
 ug/Sample
 mg/m3
 ppm
 Qualifier
 ug/Sample

 Methanol
 9.12
 5.70
 4.35
 3.36

 Aпаlyzed
 Dil Fac

 04/05/17 19:56
 1



QC Sample Results

Client: TestAmerica Laboratories, Inc. Project/Site: Pfizer Barceloeta SVE

TestAmerica Job ID: 550-79967-1

Client Sample ID: Method Blank

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Method: 2000 Back - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-113879/1-A

Matrix: Air

Analysis Batch: 113881

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 113880

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 113879

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Methanol <3.36 3.36 ug/Sample 04/03/17 13:58 04/03/17 15:38

Method: 2000 Front - NIOSH 2000 (Modified)

Lab Sample ID: MB 550-113880/1-A

Matrix: Air

Analysis Batch: 113946

MB MB

Analyte Result Qualifier RL Unit Prepared **Analyzed** Dil Fac Methanol <3.36 3.36 04/03/17 13:58 04/04/17 10:13 ug/Sample

Lab Sample ID: LCS 550-113880/10-A

Matrix: Air

Analysis Batch: 113881

Prep Batch: 113880 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Methanol 7.91 7.866 ug/Sample 69 - 128 99

Lab Sample ID: LCSD 550-113880/11-A

Matrix: Air

Analysis Batch: 113946

Prep Batch: 113880 Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Methanol 7.91 6.161 ug/Sample 78 69-128 24 29



APPENDIX 5

SVE INDIVIDUAL EXTRACTION WELL TESTING TECHNICAL LETTER – APRIL 18, 2017

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475





April 18, 2017

Mr. William G. Gierke Senior Manager, ERT Pfizer Global Engineering – Pfizer, Inc. 100 Route 206 North M/S 610 Peapack, NJ 07977

Re: Pfizer Barceloneta SVE Individual Extraction Well Testing, Pfizer Pharmaceuticals, LLC, Barceloneta, Puerto Rico

Dear Mr. Gierke,

Updated concentration testing of individual soil vapor extraction (SVE) wells located at Pfizer Barceloneta Site was performed by ERTEC, PSC during January and February 2017 as requested by Pfizer Pharmaceuticals, LLC. The objective of the testing was to determine target compound concentrations (e.g. benzene) at each extraction well to help evaluate system performance and if modifications to system operations are appropriate to increase mass removal.

Individual wells monitoring and testing activities were performed on January and February 2017. This technical letter provides a description of field monitoring and sampling activities, summary of data collected and analytical results.

BACKGROUND

SVE activities began on August 20, 2015 with extraction procedures from seven (7) wells identified as: AB-10, AB-10B, AB-19, AB-21, AB-23, B-1 and B-4. SVE cumulative operational time was approximately 5000 hours from August 2015 to February 2017. **Figure 1** presents the location of extraction wells.

Field operational parameters and validated analytical results were summarized in progress reports submitted to EPA for the following periods:

- Progress Report No. 1 August to December 2015
- Progress Report No. 2 January to March 2016
- Progress Report No. 3 April to June 2016
- Progress Report No. 4 July to October 2016
- Progress Report No. 5 November to December 2016

Currently, the SVE system is operating with seven extraction wells.



Pfizer Barceloneta SVE Baseline Testing of Individual Extraction Wells Pfizer Pharmaceuticals, LLC Barceloneta Operations April 18, 2017

FIELD ACTIVITIES

Screening of individual extraction wells was performed during extraction procedures from seven (7) wells on January 27, 2017 using a photoionization detector (PID). Based on the results obtained on this date, Pfizer requested individual testing activities at each well, including collection of soil gas sample from each well. Monitoring and sampling activities were performed on February 14 thru 17, 2017.

Monitoring Activities – January 2017

Field parameters obtained during January 27, 2017 included well vacuum (from gauge installed at each well sampling port), flow rate and temperature readings with portable anemometer, and Organic Vapor Analyzer (OVA) readings with a portable OVA equipped with a photoionization detector (PID) equipped with a 10.6 eV lamp. Field readings were obtained during system operation from seven (7) wells. PID instrument was calibrated prior to collection of field parameters.

OVA readings were obtained from individual Tedlar bags collected at each sampling port by means of a SKC pump and vacuum chamber. Extraction well monitoring data is included in **Attachment A**.

Monitoring Activities - February 2017

Testing activities began on February 14, 2017 and concluded on February 17, 2017 as per the following schedule:

- February 14, 2017 Extraction well B-1
- February 15, 2017 Extraction wells AB-10B and B-4
- February 16, 2017 Extraction wells AB-23 and AB-21
- February 17, 2017 Extraction wells AB-10 and AB-19

Field monitoring parameters were obtained at the beginning, 1-hour and 2-hours period during individual operation of each extraction well. Other wells were closed during testing period.

The following field monitoring data was obtained during each testing period:

- Vacuum/pressure readings at extraction well, INLET-1, INLET-2, air filter, and OUTLET.
- Flow rate readings at extraction well, INLET-1, INLET-2 and OUTLET.
- Temperature readings at extraction well, INLET-1, INLET-2, carbon entrance and OUTLET.



Pfizer Barceloneta SVE Baseline Testing of Individual Extraction Wells Pfizer Pharmaceuticals, LLC Barceloneta Operations April 18, 2017

 OVA, Lower Explosive Limit (LEL), oxygen (O₂), carbon monoxide (CO), and hydrogen sulfide (H₂S) readings at extraction well, INLET-1, INLET-2 and OUTLET.

Vacuum readings were obtained from gauge installed at well sampling port. Flow rate and temperature readings were obtained with a portable anemometer. OVA readings were obtained with a portable OVA-PID and LEL, O₂, CO and H₂S readings with an explosimeter from individual Tedlar bags collected at each sampling port by means of a SKC pump and vacuum chamber. PID and explosimeter instruments were calibrated daily prior to collection of field parameters.

Ambient readings of temperature, barometric pressure and humidity were obtained with a portable anemometer. Summary of monitoring and sampling data during testing of each extraction well is included in **Attachment B**.

Sampling Activities – February 2017

A grab sample for laboratory analysis of selected VOCs by EPA Method TO-15 was obtained from well sampling port after 2-hours testing period. Vapor sample was collected in one Summa canister provided by the laboratory. Upon completion of sample collection activity, the SVE system operation continues with extraction procedures from seven (7) extraction wells.

Samples were identified as per each well ID: B-1, B-4, AB-10, AB-10B, AB-19, AB-21 and AB-23. Samples were stored and sealed in cardboard boxes for shipment via FedEx to Test America Laboratories in Burlington, Vermont. Samples collected on February 14 and 15, 2017 were secured until shipment on February 16, 2017. Samples collected on February 16, 2017 were secured until shipment on February 17, 2017.

Proper chain of custody documentation accompanied the samples to the laboratory. Copy of chain of custody documentation is included in **Attachment C**.

ANALYTICAL RESULTS

Vapor samples were analyzed for project selected VOCs:

- Acetone
- Isopropyl alcohol
- Methylene chloride
- Hexane
- Chloroform
- Tetrahydrofuran
- Benzene



Pfizer Barceloneta SVE Baseline Testing of Individual Extraction Wells Pfizer Pharmaceuticals, LLC Barceloneta Operations April 18, 2017

- Toluene
- Chlorobenzene
- Ethylbenzene
- m,p-Xylene
- o-Xylene
- Total Xylene
- Methyl iodide (as a tentatively identified compound)

Analytical results are summarized in **Attachment D**. Detected compounds were included in **Figure 1** for reference.

No validation or PR Chemist certification was required for this baseline sampling activity. Copy of laboratory report is included in **Attachment E**.

Based on sampling results (i.e. low-level concentrations in wells AB-10, AB-19, AB-21 and AB-23, it is recommended that SVE operations be focused on the following wells with the highest benzene concentrations: B-1, B-4 and AB-10B to maximize vacuum and mass removal.

If you need additional information, please contact us at your convenience.

Cordially,

Wanda I. Morales Project Manager

Enclosures:

Figure

Attachment A to E

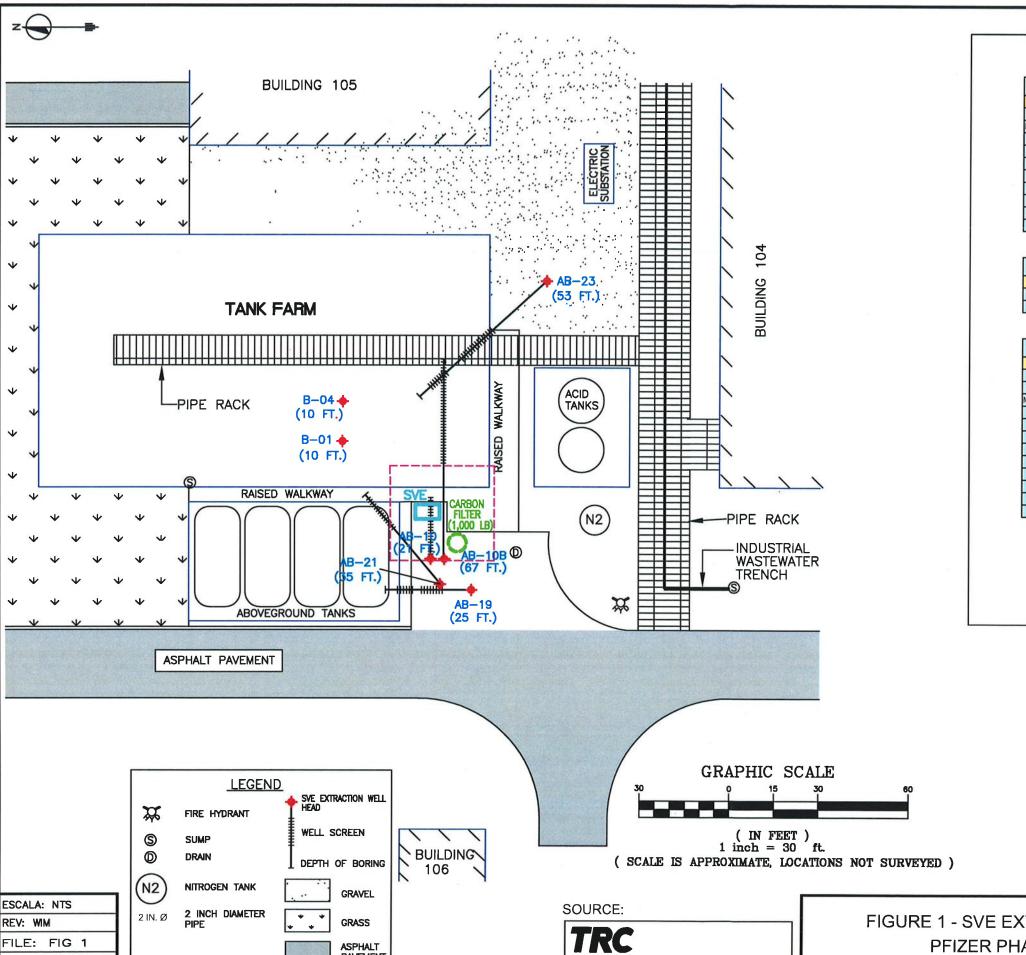
FIGURE

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475



DWG. BY: EGN

JOB: E175475



TRC Environmental Corporation

ASPHALT PAVEMENT

AB-10				
VOCs	(ppbv)			
ACETONE	9.1J			
METHYLENE CHLORIDE	4.9			
CHLOROFORM	54			
TETRAHYDROFURAN	9.4J			
BENZENE	1.4			
TOLUENE	0.67			
ETHYLBENZENE	0.19J			
m,p-XYLENE	1.6			
o-XYLENE	0.47			
TOTAL XYLENE	2.1			

AB-	10B		Г
VOCs	(ppbv)		
TETRAHYDROFURAN	1500000		T
BENZENE	42000	100	

AB-19				
VOCs	(ppbv)			
ACETONE	20			
ISOPROPYL ALCOHOL	23			
METHYLENE CHLORIDE	11			
n-HEXANE	0.23J			
CHLOROFORM	50			
TETRAHYDROFURAN	2.5J			
BENZENE	0.26J			
TOLUENE	4.3			
ETHYLBENZENE	0.26J			
m,p-XYLENE	1.5			
o-XYLENE	0.37			
TOTAL XYLENE	1.9			

AB-21				
VOCs	(ppbv)			
ACETONE	110			
ISOPROPYL ALCOHOL	6.1J			
METHYLENE CHLORIDE	25			
TETRAHYDROFURAN	120E			
BENZENE	2.4			
TOLUENE	15			
ETHYLBENZENE	2.8			
m,p-XYLENE	13			
o-XYLENE	2.5			
TOTAL XYLENE	16			

AB-23				
VOCs	(ppbv)			
TETRAHYDROFURAN	59000			

B-1					
VOCs	(ppbv)				
TETRAHYDROFURAN	1300000				
BENZENE	19000				
TOLUENE	590000				
ETHYLBENZENE	170000				
m,p-XYLENE	1000000				
o-XYLENE	190000				
TOTAL XYLENE	1200000				

B-4					
VOCs	(ppbv)				
TETRAHYDROFURAN	170000				
BENZENE	3700				
TOLUENE	39000				
ETHYLBENZENE	15000				
m,p-XYLENE	69000				
TOTAL XYLENE	79000				

LEGEND:

PARTS PER BILLION PER VOLUME

RESULT EXCEEDED CALIBRATION RANGE.

RESULT IS LESS THAN THE RL, BUT GREATER THAN OR EQUAL TO THE MDL AND THE CONCENTRATION IS AN APPROCIMATE VALUE

FIGURE 1 - SVE EXTRACTION WELL LOCATIONS PFIZER PHARMACEUTICALS LLC. BARCELONETA, PUERTO RICO



EXTRACTION WELLS MONITORING DATA – JANUARY 2017

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475



EXTRACTION WELLS MONITORING DATA - JANUARY 27, 2017 SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID	Reading	Well V	Well Vacuum Flow Rate		Tempe	OVA	
weiliD	Time	(in Hg)	(in H₂O)	(ft/min)	(°F)	(°C)	(ppm)
AB-10	1232	2.5	34.0	767	86.7	30.4	1.1
AB-10B	1243	2.5	34.0	724	90.5	32.5	237
AB-21	1253	2.5	34.0	646	92.8	33.8	16.3
AB-19	1304	2.0	27.2	700	91.7	33.2	1.1
AB-23	1314	3.0	40.8	657	88.9	31.6	19.4
B-1	1325	3.0	40.8	602	87.9	31.1	905
B-4	1334	2.5	34.0	699	85.4	29.7	154

Notes:

 $\begin{array}{ll} \text{in Hg} & \text{Inches of Mercury} \\ \text{in H}_2\text{O} & \text{Inches of water} \\ \text{ft/min} & \text{Feet per minute} \end{array}$

°F Degrees Farenheit °C Degrees Celsius

OVA Organic vapor analyzer

ppm Parts per million

EXTRACTION WELLS MONITORING AND SAMPLING DATA – FEBRUARY 2017

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475



EXTRACTION WELL B-1 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID: B-1 Date: 2/14/2017

71417

Humidity 8 2 2 **Barometric** Pressure (in Ha) 29.68 29.68 Temperature 113.5 117.4 (E) Weather Data Reading Time 1310 1030

(mdd) ٥ 820 414 575 40.6 35.2 40.3 ပ္ပ **Temperature** 104.5 105.1 95.4 (P) Flow Rate (ft/min) 519 537 678 (in H₂O) 54.5 54.5 47.6 Well Vacuum **Extraction Well B-1 Monitoring Data** (in Hg) 4.0 3.5 4.0 Reading Time 1215 1115 1315 **Test Period** Initial 2-hr 1-h-

(mdd)

(mdd)

(%)

핔

800

17.9

17.9

18.0

SVE System Monitoring Data
SVE Air Filter-1 Air Filter-2 Carbon Entrance
Test Period Reading Pressure Vacuum Vacuum Temperature

44.4 46.7 46.7 (၃ Temperature 116 (F) 112 Vacuum (in Hg) 4.0 4.0 4.0 Vacuum (in Hg) 2.5 2.0 Pressure (in H₂O) 90.0 Time 1215 1115 1315 **Test Period** Initial 1-hr 2-hr

INLET-1 Monitoring Data

(mdd) 0 (mdd) ၀ 00 17.9 17.9 § 0 LEL (%) 00 (mdd) OVA 438 473 33.3 42.2 41.1 ပ္စ Temperature (PE) 106 108 Flow Rate (ft/min) 570 490 703 (in H,O) 27.2 20.4 27.2 Vacuum (in Hg) 2.0 2.0 1.5 Reading Time 1115 1215 1315 **Test Period** Initial 수 2-hr

INLET-2 Monitoring Data

INCEL - FINDING IN DATA	HIOTHING PACE										
Toot Doring	Reading	Pressure	sure	Flow Rate	Temperature	ature	OVA	LEL	02	8	H ₂ S
nollear Leal	Time	(in Hg)	(in Hg) (in H ₂ O)	(ft/min)	(°F)	(၁ _၄)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1115	9.0	8.0	4636	114	45.6	15.7	0	20.2	0	0
1-hr	1215	9.0	8.0	4736	117	47.2	6.3	0	20.0	0	0
2-hr	1315	9.0	8.0	4719	118	47.8	6.5	0	20.0	0	0

Page 1 of 2 D770697 a E175475

EXTRACTION WELL B-1 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID: Date:

B-1 2/14/2017

OUTLET Monitoring Data

	2										
Test Derind	Reading	Pressure	sure	Flow Rate	Temperat	ature	OVA	LEL	o	8	H ₂ S
noise Leilon	Time	(in Hg)	(in Hg) (in H_2O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1115	0.0	0.0	2693	96	35.6	6.0	0	20.1	0	0
1-hr	1215	0.0	0.0	2765	97	36.1	1.0	0	20.0	0	0
2-hr	1315	0.0	0.0	2747	98	36.7	0.8	0	20.0	0	0

Extraction Well B-1 Sample Collection Data

Sampling Date	ling e	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Sampling Point Vacuum	g Point ium	Barometric Pressure
		;		(°F)	(°F)	(in Hg)	(in Hg) (in H ₂ O)	(in Hg)
14/2017	017	Grab	1329	104.1	119.1	3.5	47.6	29.68

Notes:

۲	Degrees Farenheit	ft/min	Feet per minute	E	Lower explosive limit
in Hg	Inches of Mercury	ပွ	Degrees Celsius	°	Oxygen
%	Percentage	OVA	Organic vapor analyzer	00	Carbon monoxide
in H ₂ O	Inches of water	bpm	Parts per million	H ₂ S	Hydrogen sulfide

ATTACHMENT B

SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 **EXTRACTION WELL AB-10B MONITORING AND SAMPLING DATA** PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

AB-10B 2/15/2017 Date:

Weather Data

Reading	Temperature	Pressure	Humidity
Time	(°F)	(in Hg)	(%)
1000	112.1	29.77	20

Extraction Well AB-10B Monitoring Data	Vell AB-10B	Monitoring	Data			
Toet Doring	Reading	Well V	Well Vacuum	Flow Rate	Temperature	rature
POLICE LEGIS	Time	(in Hg)	(in H_2O)	(ft/min)	(°F)	(၁၀)
Initial	1050	4.0	54.5	717	87.8	31.0
1-hr	1150	4.0	54.5	575	97.6	36.4
2-hr	1250	3.5	47.6	610	98.7	37.

(mdd)

(mdd)

% %

8

(mdd) OVA

149 174 191

31.0 36.4

37.1

000

000

13.8 11.1

SVE System Monitoring Data	Monitoring	Data				
	0000	SVE	Air Filter-1	Air Filter-2	Carbon Entrance	intrance
Test Period	Time	Pressure	Vacuum	Vacuum	Temperature	rature
	ש = =	(in H ₂ O)	(in Hg)	(in Hg)	(°F)	(၁ွ)
Initial	1050	90.0	2.0	5.0	116	46.7
1-hr	1150	90.0	2.0	4.0	114	45.6
2-hr	1250	90.0	2.0	4.0	114	45.6

INLET-1 Moi	INLET-1 Monitoring Data										
Tost Boring	Reading	Vacuum	nnm	Flow Rate	Temperature	rature	OVA	LEL	02	တ	H ₂ S
nous real	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(bbm)	(mdd)
Initial	1050	3.0	40.8	729	86	36.7	102	0	16.1	0	0
1-hr	1150	2.0	27.2	544	106	41.1	189	0	11.2	0	0
2-hr	1250	2.0	27.2	526	106	41.1	179	0	12.4	0	0
INLET-2 Mou	INLET-2 Monitoring Data										
Tost Dariod	Reading	Pres	Pressure	Flow Rate	Temperature	rature	OVA	ΤEΓ	o O	8	H ₂ S
noile l'est	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1050	9.0	8.0	4752	118	47.8	3.2	0	20.9	0	0
1-hr	1150	9.0	8.0	4675	115	46.1	2.8	0	20.9	0	0
2-hr	1250	9.0	8.0	4719	114	45.6	5.1	0	20.9	0	0

SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 **EXTRACTION WELL AB-10B MONITORING AND SAMPLING DATA** PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

AB-10B Well ID:

2/15/2017 Date:

OUTLET Mo	OUTLET Monitoring Data	æ									
Tost Doring	Reading	Pressure	sure	Flow Rate	Temperature	rature	OVA	LEL	o	8	H ₂ S
nollear	Time	(in Hg) (in H_2O)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1050	0.0	0.0	2646	26	36.1	1.8	0	20.9	0	0
1-hr	1150	0.0	0.0	2782	26	36.1	2.1	0	20.9	0	0
2-hr	1250	0.0	0.0	2747	97	36.1	3.0	0	20.9	0	0

Cata	מ	
Collection		
Cample		
AP-4AP		
Wol		
Tytroction		

Point Barometric m Pressure	(in H ₂ O) (in Hg)	47.6 29.77
Sampling Point Vacuum	(in Hg)	3.5
Ambient Temperature	(°F)	114.4
Sampling Point Temperature	(^o F)	98.7
Time		1310
Sample Type		Grab
Sampling Date		2/15/2017
Sample ID		AB-10B

Notes:					
₽,	Degrees Farenheit	ff/min	Feet per minute	ΕF	Lower explosive limit
in Hg	Inches of Mercury	ပွ	Degrees Celsius	02	Oxygen
%	Percentage	OVA	Organic vapor analyzer	8	Carbon monoxide
in H ₂ O	Inches of water	mdd	Parts per million	H ₂ S	Hydrogen sulfide

ATTACHMENT B

EXTRACTION WELL B-4 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

B-4 2/15/2017 Date:

Weather Data

Humidity (%)	20
Barometric Pressure (in Hg)	29.77
Temperature (°F)	115.7
Reading Time	1340

Extraction Well B.4 Monitoring Data

Test Period Reading Well Vacuum Flow Rate Temperature OVA LEL O ₂ Initial Time (in Hg) (in H ₂ O) (ft/min) (°F) (°C) (ppm) (%) (%) Initial 1340 3.0 40.8 692 102.5 39.2 117 0 20.4 1-hr 1440 2.5 34.0 572 95.8 35.4 128 0 20.9 2-hr 1540 3.0 40.8 646 93.8 34.3 120 0 20.9	Extraction Well B-4 IV		DINIONNY DATA							
Time (in Hg) (in H ₂ O) (ft/min) (°F) (°C) (ppm) (%) 1340 3.0 40.8 692 102.5 39.2 117 0 1440 2.5 34.0 572 95.8 35.4 128 0 1540 3.0 40.8 646 93.8 34.3 120 0	Test Derind	Reading	Well V	acuum	Flow Rate	Temper	ature	OVA	LEL	02
1340 3.0 40.8 692 102.5 39.2 117 0 1440 2.5 34.0 572 95.8 35.4 128 0 1540 3.0 40.8 646 93.8 34.3 120 0	ופפרו פווסמ	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	- (%)
1440 2.5 34.0 572 95.8 35.4 128 0 1540 3.0 40.8 646 93.8 34.3 120 0	Initial	1340	3.0	40.8	692	102.5	39.2	117	0	20.4
1540 3.0 40.8 646 93.8 34.3 120 0	1-hr	1440	2.5	34.0	572	95.8	35.4	128	0	20.9
	2-hr	1540	3.0	40.8	646	93.8	34.3	120	0	20.9

H₂S (ppm)

CO (ppm)

SVE System Monitoring Data

	Dooding	SVE	Air Filter-1	AIr Filter-2	Carbon Entranc	entrance
est Period	Time	Pressure	Vacuum	Vacuum	Temperature	rature
	<u> </u>	(in H ₂ O)	(in Hg)	(in Hg)	(°F)	(၁ွ)
Initial	1340	0.08	2.0	4.0	116	46.7
1-hr	1440	0.08	2.0	4.0	116	46.7
2-hr	1540	0.08	2.0	4.0	116	46.7

INLET-1 Monitoring Data

Test Deriod	Reading	Vacuum	mnm	Flow Rate	Temperature	rature	OVA	핔	o ₂	8	H ₂ S
2012	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1340	1.5	20.4	202	106	41.1	124	0	20.9	0	0
1-hr	1440	1.5	20.4	745	104	40.0	135	0	20.9	0	0
2-hr	1540	1.5	20.4	683	104	40.0	152	0	20.3	0	0
	Reading Cara		Pressure	Flow Rate	Temperature	ature	OVA	E	o,	8	H,S
lest Period	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1340	9.0	8.0	4663	117	47.2	10.2	0	20.9	0	0
1-hr	1440	9.0	8.0	4632	117	47.2	10.5	0	20.9	0	0
2-hr	1540	9.0	8.0	4628	116	46.7	10.7	0	20.9	0	0

Page 1 of 2 D770697a E175475

EXTRACTION WELL B-4 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

84 Well ID:

2/15/2017 Date:

OUTLET Monitoring Data	nitoring Data	4									
Test Deriod	Reading	Pressure	sure	Flow Rate	Temperature	ature	OVA	TET	02	8	H ₂ S
ופארו פווסר	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၃)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1340	0.0	0.0	2554	86	36.7	4.4	0	20.9	0	0
1-hr	1440	0.0	0.0	2672	86	36.7	1.2	0	20.9	0	0
2-hr	1540	0.0	0.0	2562	98	36.7	1.1	0	20.9	0	0

Extraction Well B-4 Sample Collection Data

Sample ID	Sampling Date	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Sampling Point Vacuum	ig Point	Barometric Pressure
				(^o F)	(°F)	(in Hg)	(in Hg) (in H ₂ O)	(in Hg)
B-4	2/15/2017	Grab	1556	93.8	102.0	3.0	40.8	29.71

Notes:					
ት	Degrees Farenheit	ft/min	Feet per minute	핔	Lower explosive limit
in Hg	Inches of Mercury	ပ္	Degrees Celsius	05	Oxygen
%	Percentage	OVA	Organic vapor analyzer	8	Carbon monoxide
in H ₂ O	Inches of water	mdd	Parts per million	H ₂ S	Hydrogen sulfide

EXTRACTION WELL AB-23 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

AB-23 2/16/2017 Date:

Weather Data

Humidity (%)	20
Barometric Pressure (in Hg)	29.80
Temperature (°F)	111.4
Reading Time	1010

Toot Dorigon	Reading	Well Vacuum	ıcıum	Flow Rate	Temperature	ature	OVA	LEL	02	00	H ₂ S
nollar real	Time	(in Hg) (in H ₂ O	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1012	2.5	34.0	625	94.5	34.7	15.8	0	16.0	0	0
1-hr	1112	3.5	47.6	642	95.8	35.4	15.6	0	15.5	0	0
2-hr	1212	4.0	54.5	726	97.2	36.2	14.6	0	15.6	0	0

SVE System Monitoring Data

	Dooding	SVE	Air Filter-1	Air Filter-2	Carbon Entranc	intrance
Test Period	Time	Pressure	Vacuum	Vacuum	Temperature	rature
		(in H ₂ O)	(in Hg)	(in Hg)	(°F)	(၁ွ)
Initial	1012	90.0	2.0	4.0	112	44.4
1-hr	1112	90.0	2.0	4.0	115	46.1
2-hr	1212	90.0	2.0	4.0	116	46.7

INLET-1 Monitoring Data

Toet Dorion	Reading	Vac	Vacuum	Flow Rate	Temperature	rature	OVA	LEL	02	8	H ₂ S
lest relion	Time	(in Hg)	(in H_2O)	(ff/min)	(°F)	(၁)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1012	2.0	27.2	683	88	31.1	14.5	0	16.3	0	0
1-hr	1112	2.0	27.2	629	100	37.8	15.1	0	15.6	0	0
2-hr	1212	2.0	27.2	621	102	38.9	14.2	0	15.8	0	0
INCE I-2 INO	INCE 1-2 WOMITOFING Data		Pressure	Flow Rate	Temperature	ature	OVA		ဝ်	8	H,S
lest Period	Time	(in Hg)	(in H ₂ O)	(fVmin)	(F)	(၁)	(mdd)	(%)	· (%)	(mdd)	(mdd)
Initial	1012	9.0	8.0	4660	112	44.4	1.7	0	20.9	0	0
1-hr	1112	9.0	8.0	4682	115	46.1	6.0	0	20.9	0	0
2-hr	1212	90	0 80	4667	117	47.2	7.	C	20.9	C	c

Page 1 of 2 D770697a E175475

EXTRACTION WELL AB-23 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

AB-23 2/16/2017 Date: **OUTLET Monitoring Data**

OILLI MO	COLECT MOUNTAINING Data										
ost Doring	Reading	Pressure	sure	Flow Rate	Temperat	ature	OVA	LEL	O ₂	8	H ₂ S
231 1 51100	Time	(in Hg)	(in Hg) (in H_2O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1012	0.0	0.0	2773	96	35.6	0.7	0	20.9	0	0
1-hr	1112	0.0	0.0	2751	26	36.1	0.8	0	20.9	0	0
2-hr	1212	0.0	0.0	2505	86	36.7	0.7	0	20.9	0	0

Extraction Well AB-23 Sample Collection Data

Sample ID	Sampling	Sample	Time	Sampling Point	Ambient Temperature	Sampling Point Vacuum	g Point Ium	Barometric Pressure
		246		(°F)	(⁹ F)	(in Hg)	(in H ₂ O)	(in Hg) (in H_2O) (in Hg)
AB-23	2/16/2017	Grab	1221	97.5	114.8	4.0	54.5	29.80

Notes:					
ዙ	Degrees Farenheit	ft/min	Feet per minute		Lower explosive limit
in Hg	Inches of Mercury	ပွ	Degrees Celsius	O ²	Oxygen
%	Percentage	OVA	Organic vapor analyzer		Carbon monoxide
in H ₂ O	Inches of water	mdd	Parts per million		Hydrogen sulfide

0

20.9

0

1.0

45.6

114

4663

8.0

9.0

1430

2-hr

ATTACHMENT B

SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 **EXTRACTION WELL AB-21 MONITORING AND SAMPLING DATA** PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

AB-21 2/16/2017 Date:

Weather Data

Humidity %) 20 Barometric Pressure (in Hg) 29.80 Temperature 114.4 (°F) Reading Time 1225

MACIA AD 24 MAC

Took Doi:	Reading	Well Vacuum	acuum	Flow Rate	Temperature	rature	OVA	LEL	02
noise Leilon	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)
Initial	1230	4.0	54.5	702	98.4	36.9	2.6	0	19.8
1-hr	1330	3.5	47.6	674	94.5	34.7	6.0	0	20.9
2-hr	1430	3.0	40.8	672	89.5	31.9	0.7	0	20.9

(mdd)

(mdd)

SVE System Monitoring Data

Test Period Neading Pressure Time (in H ₂ O) Initial 1230 0.06 1-hr 1330 0.06				
1230	mnn	Vacuum	Temperature	atnre
1230	(in Hg)	(in Hg)	(°F)	(၁ွ)
1330	2.0	4.0	117	47.2
200	2.0	4.0	116	46.7
1430	2.0	4.0	112	44.4

INLET-1 Monitoring Data

Toet Doring	Reading	Vaci	Vacuum	Flow Rate	Temperature	rature	OVA	LEL	02	8	H ₂ S
noi ear	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1230	2.0	27.2	596	106	41.1	2.4	0	19.9	0	0
1-hr	1330	2.0	27.2	629	104	40.0	1.3	0	20.9	0	0
2-hr	1430	1.5	20.4	928	66	37.2	1.0	0	20.9	0	0
INLET-2 Mor	NLET-2 Monitoring Data										
Toet Dorion	Reading	Pres	Pressure	Flow Rate	Temperature	rature	OVA	LEL	02	8	H ₂ S
lest renod	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1230	9.0	8.0	4462	117	47.2	1.6	0	20.9	0	0
1-hr	1330	9.0	8.0	4601	117	47.2	1.5	0	20.9	0	0

EXTRACTION WELL AB-21 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID: AB-21

Date: 2/16/2017

OUTLET Mo	OUTLET Monitoring Data	EST.									
Test Derind	Reading	Pressure	sure	Flow Rate	Temperature	rature	OVA	LEL	02	8	H ₂ S
2012	Time	(in Hg) (in H_2O	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1230	0.0	0.0	2592	66	37.2	1.0	0	20.9	0	0
1-hr	1330	0.0	0.0	2636	100	37.8	1.3	0	20.9	0	0
2-hr	1430	0.0	0.0	2561	100	37.8	1.5	0	20.9	0	0

Extraction Well AB-21 Sample Collection Data

	Sampling Date	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Sampling Point Vacuum	g Point uum	Barometric Pressure
				(°F)	(°F)	(in Hg)	(in Hg) (in H ₂ O)	(in Hg)
'''	2/16/2017	Grab	1500	89.8	102.7	3.0	40.8	29.71

Lower explosive limit Carbon monoxide Hydrogen sulfide Oxygen O_2 CO CO H₂S LEL Organic vapor analyzer Degrees Celsius Parts per million Feet per minute ff/min OVA mdd Degrees Farenheit Inches of Mercury Inches of water Percentage in H₂O Notes: in Hg

EXTRACTION WELL AB-10 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID:

AB-10 2/17/2017 Date:

Weather Data

		5	
Urimidity	(%)	(0/)	20
Barometric	Pressure	(in Hg)	29.77
Tomporature	10/	(L)	111.7
Dooding	Timo	2	942

Well AB-10 Monitoring Data			
Well AB-10 Monitoring Da	,	7	-
Well AB-10 Monit	1	משושט.	9 6
Well AB			
	1	S D D D D	

	0										
Toet Dorigo	Reading	Well V	Well Vacuum	Flow Rate	Temperature	ature	OVA	H H	o O	00	H_2S
001011601	Time	(in Hg) (in H_2C	(in H_2O)	(ff/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	945	3.0	40.8	980	96.3	35.7	1.1	0	20.9	0	0
1-hr	1045	3.0	40.8	982	97.1	36.2	1.0	0	19.3	0	0
2-hr	1145	3.0	40.8	904	9.96	35.9	1.4	0	19.6	0	0

SVE System Monitoring Data

	Donding	SVE	Air Filter-1	Air Filter-2	Carbon Entrance	intrance
Fest Period	Time	Pressure	Vacuum	Vacuum	Tempe	Temperature
		(in H ₂ O)	(in Hg)	(in Hg)	(°F)	(၁)
Initial	945	0.08	2.0	4.0	116	46.7
1-hr	1045	0.10	2.0	4.0	117	47.2
2-hr	1145	0.10	2.0	4.0	117	47.2

INLET-1 Monitoring Data

Toet Doring	Reading	Vac	Vacuum	Flow Rate	Temper	rature	OVA	핕	o O	၀	H ₂ S
noi ear Leilon	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(°F) (°C)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	945	2.0	27.2	571	06	32.2	0.1	0	19.0	0	0
1-hr	1045	2.0	27.2	554	96	35.6	1.1	0	18.8	0	0
2-hr	1145	2.0	27.2	545	86	36.7	6.0	0	18.7	0	0
INLET-2 Moi	INLET-2 Monitoring Data										
Toct Doring	Reading	Pres	Pressure	Flow Rate	Temperature	rature	OVA	LEL	O ₂	8	H ₂ S
1631 61100	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ _၀)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	945	9.0	8.0	4636	116	46.7	0.2	0	20.9	0	0
1-hr	1045	9.0	8.0	4704	118	47.8	1.1	0	20.9	0	0
2-hr	1115	9	α	4792	ά,	A7 A	00	c	000	c	c

EXTRACTION WELL AB-10 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID: AB-10

Date: 2/17/2017

OUTLET Monitoring Data

COLECT MOUNTAINING DATE	miching Dan	3			The second secon						
Toet Doring	Reading	Pressure	sure	Flow Rate	Temperature	ature	OVA	LEL	O	8	H ₂ S
noile a real	Time	(in Hg)	(in Hg) (in H_2O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	945	0.0	0.0	2659	96	35.6	0.3	0	20.9	0	0
1-hr	1045	0.0	0.0	2644	86	36.7	6.0	0	20.9	0	0
2-hr	1145	0.0	0.0	2532	86	36.7	0.4	0	20.9	0	0

Extraction Well AB-10 Sample Collection Data

Sample ID	Sampling Date	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Sampling Point Vacuum		Barometric Pressure	
				(°F)	(°F)	(in Hg) (in H_2O)	(in H ₂ O)	(in Hg)	
	2/17/2017	Grab	1201	2.96	113.4	3.0	40.8	29.80	

Notes:					
_ا لم	Degrees Farenheit	ff/min	Feet per minute	핔	Lower explosive limit
in Hg	Inches of Mercury	ပ	Degrees Celsius	O ₂	Oxygen
%	Percentage	OVA	Organic vapor analyzer	00	Carbon monoxide
in H ₂ O	Inches of water	mdd	Parts per million	H_2S	Hydrogen sulfide

EXTRACTION WELL AB-19 MONITORING AND SAMPLING DATA SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Well ID: AB-19

Date: 2/17/2017

Weather Data

Reading Temperature Barometric Humidity

Time (°F) (in Hg) (%)

1218 114.3 29.80 20

Extraction Well AB-19 Monitoring Data

Test Period Reading Well Vacur Time (in Hg) (i	18/all 1/aa.							
Time 1220	well vacu	/acnum	Flow Rate	Temperature	ture	OVA	LEL	O ₂
1220	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ _၀)	(mdd)	(%)	(%)
	3.0	40.8	798	0.66	37.2	5.1	0	20.0
1-hr 1320 3.0	3.0	40.8	720	8.76	36.6	1.0	0	20.0
2-hr 1420 2.8	2.5	34.0	738	97.0	36.1	2.4	0	20.0

(mdd)

CO (bbm)

000

SVE System Monitoring Data

	10000	SVE	Air Filter-1	Air Filter-2	Carbon Entrance	intrance
Test Period	Time	Pressure	Vacuum	Vacuum	Tempe	Temperature
	<u>D</u>	(in H ₂ O)	(in Hg)	(in Hg)	(°F)	(၁ွ)
Initial	1220	90:0	2.0	4.0	117	47.2
1-hr	1320	90.0	2.0	4.0	118	47.8
2-hr	1420	90.0	2.0	4.5	118	47.8

INLET-1 Monitoring Data

	,										
Toet Doriod	Reading	Vac	Vacuum	Flow Rate	Temperature	ature	OVA	LEL	02	00	H ₂ S
polle i real	Time	(in Hg)	(in H ₂ O)	(ft/min)	(°F)	(၁ွ)	(mdd)	(%)	(%)	(mdd)	(mdd)
Initial	1220	2.0	27.2	890	100	37.8	2.0	0	19.4	0	0
1-hr	1320	2.0	27.2	226	101	38.3	9.1	0	19.4	0	0
2-hr	1420	2.0	27.2	988	104	40.0	0.4	0	19.5	0	0
	Reading		Pressure	Flow Rate	Temperature	ature	OVA AVO		ဝ်	8	H,S
Test Period	Time	(in Hg)	(in H ₂ O)	(ft/min)	(F)	(၁)	(mdd)	(%)	4 (%)	(mdd)	(mdd)
Initial	1220	9.0	8.0	4688	118	47.8	1.8	0	20.1	0	0
1-hr	1320	9.0	8.0	4570	118	47.8	4.0	0	20.9	0	0
2-hr	1420	9.0	8.0	4752	119	48.3	9.0	0	20.9	0	0

Page 1 of 2 D770697a E175475

SVE INDIVIDUAL EXTRACTION WELL BASELINE TESTING - FEBRUARY 2017 **EXTRACTION WELL AB-19 MONITORING AND SAMPLING DATA** PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

AB-19 Well ID:

2/17/2017 Date: OUT! ET Monitoring Data

Pressure Flow Rate	Temperature	OVA	ם	o ^z	8	H ₂ S
(in Hg) (in H_2O) (ft/min)	(°F) (°C)	(mdd)	(%)	(%)	(mdd)	(mdd)
0.0 2636		8.0	0	20.4	0	0
0.0 2757		0.5	0	20.9	0	0
0.0 2557		0.4	0	20.4	0	0
0.0	2757 2557	2757 100 37.8 2557 100 37.8	100 37.8 100 37.8	100 37.8 100 37.8	100 37.8 100 37.8	100 37.8 0.5 0 100 37.8 0.4 0

Extraction Well AB-19 Sample Collection Data

Sample ID	Sampling Date	Sample Type	Time	Sampling Point Temperature	Ambient Temperature	Sampling Poin Vacuum	g Point .um	Barometric Pressure
				(°F)	(°F)	(in Hg)	in Hg) (in H ₂ O)	(in Hg)
AB-19	2/17/2017	Grab	1436	97.4	115.9	2.5	34.0	29.71

Lower explosive limit Carbon monoxide Hydrogen sulfide CO CO H Organic vapor analyzer Degrees Celsius Parts per million Feet per minute f/min OVA ppm ပွ Degrees Farenheit Inches of Mercury Inches of water Percentage in H₂O Notes: in Hg ¥

ATTACHMENT C

CHAIN OF CUSTODY DOCUMENTATION

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475



30 Community Drive

phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403

Canister Samples Chain of Custody Record & TO-115 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples.

Office (Please specify in notes section) COCS lelium Prefill for High Methane (LF Gas) collected on of 1414 & secene with delivery Soil Gas TiA InsidmAl Yoobni of Other (Please specify in notes section) ASTM D-1946 EPA 25C EPA 3C 81-OT-11 FEGLN 31-OT Can Cert ID とってある Flow Controller Can Size Readout (L) (ml/mln) 1030 Roberts De Jestés/ Josue GC/MS Analyst Signature (TO-15) 502 Can ID 200-37412 Chain of Custody Flow Reg. ID Date/Time: Date/Time: 17 Date/Time: Pressure ("Hg) (Lab) Incoming Canister FEDEX Outgoing Canister Pressure "'Hg) (Lab) Sampled By: Project Manager: Walled Nord les Carrier. Canisters Received by: Interior (F) (Slop) Special Instructions/QC Requirements & Comments: SQUM7 | P UDQ 5 Address: Anuc 5 + 45 Pot. Landray | E-mail: w Noral BroBerto propy Minimum Minimum 104 (F) (Start) Received by: Phone: (84) 792-8902 Temperature (Fahrenhelt) Site Contact: Wanda Morales Pressure (Inches of Hg) In Fleid ("Hg) (Slop) Project Name: つんっとん Race Bace Doce Than alysis Turnaround Time Time Time In Field In Start (24 Stop (24 ("Hg) (hr clock) (Start) (Maximum Maximum on 02 16/12; 02/16/17 @ 1000 Standard (Specify) セチリ 29.68 Rush (Specify) の251十1750 01 Ambient Amblent 40 Date/Time: City/State/Zip **L**(*) PrQd_d_s_P\Qqq Phone: (787) Pq z ~ 8002 FAX: (787) 783 ~ 5 E5 C Start Stop Start Stop Lab Use Only 下のもカメ Site: Barrelougta PR Canisters Shipped by: Client Contact Information Sample Identification Company: ER TEP Samples Relinquished by: Relinquished by: 12 # Od

30 Community Drive

Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

TestAmerica Analytical Testing Corp, assumes no liability with respect to the collection and shipment of these samples.

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

2-660-1919	les	12		1.100				1 cocs	Cs	
Company: OK OK LO	7	Sampled By: Kober-to Ve	26245/	JOSAG MATHEORICA CO	20.00	Fill Analysis	S	. F. Mat	X	el Xen II
Address: Amur 5+ A5 Pete Curchtly E-mail: Unword le Signe Heror. City/State/Zip RPO PP Curch S. P. 200721 Site Contact Jour du Llera le Phone: (707) 797-69022 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA Contact Dou Dou 120 (12) FAX: (707) 183-555 TA CONTACT DOU TO THE POOR TO THE	E-mail: www.dls.De.Hecor. Com Site Contact: Vay of Morale. TA Contact: Dow Dawle & Porale. Analysis Turnaround Time Standard (Specify)					gi-	(noitoas salon ni Viloac	11A JU	or High Methane (LF Gas)	
Sample ntification Date(s)	Canister Pressure Interior In Field Temp. ("Hg) (F) (Stop) (Start)	Interfor Outgoing Canister Temp. Canister Pressure (F) (F) Pressure ("Hg) (Stop) ("Hg) (Lab) (Lab)	Flow Reg. ID Can ID	Flow Controller Can Size Readout (L) (ml/min) Ca	Can Cert ID O-15	EPA 26 NJDEP LL-TO	ASTM D-1946 Other (Please sp	Indoor Ambie Soil Gas Landfill Gas		
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E CO			200	\a_{0}^{2}						
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								-		T
Start (14.4.	Temperature (Fahrenheit) Maximum Minimum	7	GC/MS Analyst Signature (TO-15)	e (TO-15)						Ι
	Pressure (Inches of Hg) Maximum Minimum	4-								T
Stop	<i>*</i>			3						
special Instructions/ac Requirements & Comments: Sample was collected at Fedex on 02 (16/17. 1992)	lit. After	collected ou		os (15/17 & secure until delpreny	eneu	tetel	de 10	Pord		T
Roberto Pe Testos Obtertime: Datertime: Pestos Pest	(OOO Canisters Received by:	Received by: D	Date/Time: (16 // 2 02 (16 // 2 Date/Time:	0) (8)	000		_			7
Relinquished by: Date/Time:	Recfived by:	The W	Date/Time:	0201		200				
Lab Use Only Shipper Name To Copened by 11	- Opéned by Tre-	Condition								

30 Community Drive

Suite 11 South Burlington, VT 05403 phone 802-660-1990 fax 803

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

phone 802-560-1990 fax 802-660-1919	ייי בייי אייי אייי אייי אייי אייי אייי	
.0	Wanda M	Г
Company: TRIEC, NO	02 Sampled By: Roberto De Jesús/Insue Maldoucedo Manaysis min	1
Address: Aulux St. AS Roto Confage-mail: Wword P. SQCMP City/State/Zip R. O Predray, P. 2002 Site Contact: Wayd Mord Phone: (787) 797-8902 TA Contact: 000 00 000 000 000 000 000 000 000 00	LF Gas)	ction)
Project Name: P.K. Ozor Bar Color Site: Bar Celoveta, P.R. PO#	S city in notes se	es selon ni Viji
Sample Identification	Cantister Cantister Cantis	other (Please spe
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	Temperature (Fahrenhelt) Ambient Maximum Minimum	T
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Relinquished by: Date	Date/Time:	
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30 Community Drive

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

South Burlington, VT 05403

phone 802-660-1990 fax 802-660-1919

Other (Please specify in notes section) Helium Prefill for High Methane (LF Gas) COCs Soil Gas ndoor IAmbient Air ö Ofher (Please specify in notes section) 9461-G MTSA EPA 25C EPA 3C willested ou or light and secure water NJDEP LL-TO-15 al-OT 02010 Can Cert ID J. Mekouado Flow Controller Can Size Readout (ml/mln) Date/Time: 02 114/14 (0) GC/MS Analyst Signature (TO-15) 1010 2982 Date/T/198/117 Can 1D Flow Reg. ID Tesus Incoming Canister Pressure (Fg) Service Condition Canisters Received by: Foll Ex Outgoing Canister Pressure ("Hg) (Lab) Sampled By: Wanda Norder Carrier. Interior Temp. (F) (Stop) Address: Anur St AS Rote Landaul E-mail: Wowales @ Ortel proling Received by: Minimum Minimum Interior (F) (Start) Received by: TA Contact: 304 2000 POKP Temperature (Fahrenhelt) Phone: (787) 192-8902 Site Contact: Wanda Mora 165 Pressure (Inches of Hg) Pressure In Fleid Canister ("Hg) (Stop) Project Name: 7-40 Zer Bar (12) Out to Analysis Turnaround Time Special Instructions/ac Requirements & Comments: Sample Ship MONT (2) FECTEX ON 02 | Maximum Махитит Canister Pressure in Field Time In Field Start (24 Stop (24 ("Hg) hr clock) (Start) 02/(12/1/2 @ 1700 Standard (Specify) 11611 Project Manager: ω Rush (Specify) 29.80 4 021614 122 Ambient Amblent 32 Date/Time: City/State/Zip RGO P? Cdr.(X. S. P. Peniz Phone: (187), 792 - 6902 Date/Time Sample Date(s) Start Start Stop ShipperName Company: ERTEL, PSC Canisters Shipped by: Site: Barreloueta Client Contact Information Sample Identification N Relinquished by: 48-

TestAmerica Burlington
30 Community Drive
Sulte 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples.

of cocs	TO-15 Helium Prefill for High Methane (LF Gas) A3TM D-1946 A5TM D-1946 Other (Please specify in notes section) A111 Gas Con Gas A212 Gas A214 Gas A215 Gas A216 Gas A217 Gas A217 Gas A218 Gas A218 Gas	××××					ere woto(500	
	The Product Proof Site Contact: Wands Mora Property Proof Site Contact: Wands Mora Proof Site Sample Site (Specify) Rush (Specify)	10-21 0216141500 898 3486 6	a.v	4 0 6		Start (02.7 Maximum Minimum GC/MS Analyst Signature (TO-15)	(15) 17 . Bys ou of 16/14 and	をあい。	Laby Bookony, vir. 12-11 Shippephanet 1 Openeduly.

30 Community Drive Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp, assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information Project Manage 1 Jound Mored los	,	Γ
Topout Malagae: Carrier: TOPO	of GOCs	-
A JOS (3) Phone: (181) 190,000 Sampled By: P. De 2010 5/11. 2010 100	1	変数
E-mail: UMOrd PS (@Perts Not)	Street Control of Matrix	
Site Contact: Wall day Alord	(SBS)	
PAGE TA Contact: DOM POLLD POL	137)	(uo
Project Name: Plane: Pl	aut	itoea
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	t,	n ni
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Ambient Maximum Minimum		
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Pressure (Inches of Hg)	0	7
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Comments: Comments:		T
200-37422 Chain of Custody		
Canisters Received by:		
05/11年間1200		1
by: / O / Date/Time:		
Relinquished by: Date/Time: 2/18/17 1810		
ean use Chiya and Shipper Name Opened By		

30 Community Drive

phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Officer (Please specify in notes section) COCs Hellum Prefill for High Methane (LF Gas) ese linbns. ndoor /Ambient Air ಕ Ofher (Please specify in notes section) ASTM D-1946 EPA 25C EPA 3C NJDEP LL-TO-15 TO-15 1700 Can Cert ID F. Maldonado Can Size Readout DIDI GC/MS Analyst Signature (TO-15) 0 3286 Can ID Date/Time: 07 / Date/Time:) 992-8902 Sampled By: R. 70 Jesus, Flow Reg. ID Date/Time: Incoming Canister Pressure ("Hg) (Lab) Canisters Received by: Fod Pressure ("Hg) (Lab) Oulgoing Canister Project Manager Walde Morales Carrier: nterior E-mail: towardles @erteepr. tow Minimum 17.6 (Start) Received by: Recoived by: Site Contact: Wanda Mora les TA Contact: DOK Pause & KP Temperature (Fahrenhelt) Pressure (Inches of Hg) Pressure In Field Sanister ("Hg) (Stop) roject Name: PCP24 Box 00/000 Analysis Turnaround Time Maximum Maximum Pressure In Field Canister Start (24 Stop (24 ("Hg) hr clock) hr clock) (Start) Standard (Specify) Phone: (784) Rush (Specify) Special Instructions/QC Requirements & Comments: Ambient Ambient 05/14/14/70 Date/Time: City/State/Zip Fiedras, PR 0007 Date/Time: Sample Date(s) Start Start Stop eab Use Only. Stop Address 54. AS Pato Landrau Roberto De Jest 5 Company: ERTEC 1 Sample Identification Client Contact Information Site: Bar alokota, Samples Relinquished by: Relinquished by: 48-Phone:

ATTACHMENT D

TABULATED ANALYTICAL RESULTS

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475



ATTACHMENT D

EXTRACTION WELLS TESTING ANALYTICAL RESULTS SVE INDIVIDUAL WELLS BASELINE TESTING - FEBRUARY 2017 PFIZER PHARMACEUTICALS LLC BARCELONETA, PUERTO RICO

Sample ID:	B-1	AB-10B	B-4	AB-23	AB-21	AB-10	AB-19
Date:	2/14/2017	2/15/2017	2/15/2017	2/16/2017	2/16/2017	2/17/2017	2/17/2017
VOCs (EPA Method TO-15)	(ppbv)						
Acetone	260000U	280000U	39000U	8400U	110	9.1J	20
Isopropyl alcohol	260000U	280000U	39000U	8400U	6.1J	10U	23
Methylene chloride	26000U	28000U	3900U	840U	25	4.9	11
n-Hexane	10000U	11000U	1600U	340U	0.60U	0.40U	0.23J
Chloroform	10000U	11000U	1600U	340U	0.60U	54	50
Tetrahydrofuran	1300000	1500000	170000	59000	120E	9.4J	2.5J
Benzene	19000	42000	3700	340U	2.4	1.4	0.26J
Toluene	590000	11000U	39000	340U	15	0.67	4.3
Chlorobenzene	10000U	11000U	1600U	340U	0.60U	0.40U	0.30U
Ethylbenzene	170000	11000U	15000	340U	2.8	0.19J	0.26J
m,p-Xylene	1000000	28000U	69000	840U	13	1.6	1.5
o-Xylene	190000	11000U	10000	340U	2.5	0.47	0.37
Xylene (total)	1200000	39000U	79000	1200U	16	2.1	1.9
Methyl iodide	ND						

Notes:

ppbv Parts per billion per volume.

U Indicates the analyte was analyzed for but not detected.

E Result exceeded calibration range.

J Result is less than the Reporting Limit (RL), but greater than or equal to the Method Detection Limit (MDL) and the

concentration is an approximate value.

ATTACHMENT E

LABORATORY ANALYTICAL REPORT

PFIZER BARCELONETA SVE BASELINE TESTING
OF INDIVIDUAL EXTRACTION WELLS
PFIZER PHARMACEUTICALS, LLC
BARCELONETA, PUERTO RICO
E175475





ANALYTICAL REPORT

Job Number: 200-37412-1

SDG Number: 200-37412-1

Job Description: Pfizer Barceloneta SVE Wells

For:
Ertec
Amur St. A-#5
Reparto Landrau
Rio Piedras, PR 00921

Attention: Mrs. Wanda I Morales

Designee for

Don C Dawicki, Manager of Project Management 30 Community Drive, South Burlington, VT, 05403 (802)660-1990

> don.dawicki@testamericainc.com 03/09/2017

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

Approved for release. Kathryn A Kelly Project Manager I 3/9/2017 2:23 PM

CASE NARRATIVE

Client: Ertec

Project: Pfizer Barceloneta SVE Wells

Report Number: 200-37412-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 02/17/2017 and 02/18/2017; the samples arrived in good condition.

VOLATILE ORGANIC COMPOUNDS

Samples B-1, AB-10, AB-10B, AB-23, B-4, AB-19 and AB-21 were analyzed for Volatile Organic Compounds in accordance with EPA Method TO-15. The samples were analyzed on 03/04/2017 and 03/06/2017.

The laboratory control sample (LCS) for analytical batch 200-114285 recovered outside control limits for Acetone. The analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Samples AB-10[2X], B-1[51400X], AB-23[1680X], AB-10B[56200X], AB-19[1.5X], B-4[7870X] and AB-21[2.99X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Methyl lodide was evaluated as a TIC in this sample set and was not detected.

The concentration of Tetrahydrofuran in sample AB-21 marginally exceeded the calibration range of the instrument.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method	
200-37412-1	B-1						
Tetrahydrofuran	.	1300000		260000	ppb v/v	TO-15	
Tetrahydrofuran		3900000		760000	ug/m3	TO-15	
Benzene		19000		10000	ppb v/v	TO-15	
Benzene		62000		33000	ug/m3	TO-15	
Toluene		590000		10000	ppb v/v	TO-15	
Toluene		2200000		39000	ug/m3	TO-15	
Ethylbenzene		170000		10000	ppb v/v	TO-15	
Ethylbenzene		740000		45000	ug/m3	TO-15	
m,p-Xylene		1000000		26000	ppb v/v	TO-15	
m,p-Xylene		4400000		110000	ug/m3	TO-15	
Xylene, o-		190000		10000	ppb v/v	TO-15	
Xylene, o-		820000		45000	ug/m3	TO-15	
Xylene (total)		1200000		36000	ppb v/v	TO-15	
Xylene (total)		5200000		160000	ug/m3	TO-15	
200-37412-2	AB-10B						
Tetrahydrofuran		1500000		280000	ppb v/v	TO-15	
Tetrahydrofuran		4300000		830000	ug/m3	TO-15	
Benzene		42000		11000	ppb v/v	TO-15	
Benzene		130000		36000	ug/m3	TO-15	
200-37412-3	B-4						
Tetrahydrofuran		170000		39000	ppb v/v	TO-15	
Tetrahydrofuran		490000		120000	ug/m3	TO-15	
Benzene		3700		1600	ppb v/v	TO-15	
Benzene		12000		5000	ug/m3	TO-15	
Toluene		39000		1600	ppb v/v	TO-15	
Toluene		150000		5900	ug/m3	TO-15	
Ethylbenzene		15000		1600	ppb v/v	TO-15	
Ethylbenzene		65000		6800	ug/m3	TO-15	
m,p-Xylene		69000		3900	ppb v/v	TO-15	
m,p-Xylene		300000		17000	ug/m3	TO-15	
Xylene, o-		10000		1600	ppb v/v	TO-15	
Xylene, o-		45000		6800	ug/m3	TO-15	
Xylene (total)		79000		5500	ppb v/v	TO-15	
Xylene (total)		340000		24000	ug/m3	TO-15	

Client: Ertec

Job Number: 200-37412-1 Sdg Number: 200-37412-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method	
200-37422-1	AB-10						
Acetone		9.1	J	10	ppb v/v	TO-15	
Acetone		22	J	24	ug/m3	TO-15	
Methylene Chloride		4.9		1.0	ppb v/v	TO-15	
Methylene Chloride		17		3.5	ug/m3	TO-15	
Chloroform		54		0.40	ppb v/v	TO-15	
Chloroform		260		2.0	ug/m3	TO-15	
Tetrahydrofuran		9.4	J	10	ppb v/v	TO-15	
Tetrahydrofuran		28	J	29	ug/m3	TO-15	
Benzene		1.4		0.40	ppb v/v	TO-15	
Benzene		4.6		1.3	ug/m3	TO-15	
Toluene		0.67		0.40	ppb v/v	TO-15	
Toluene		2.5		1.5	ug/m3	TO-15	
Ethylbenzene		0.19	J	0.40	ppb v/v	TO-15	
Ethylbenzene		0.82	J	1.7	ug/m3	TO-15	
m,p-Xylene		1.6		1.0	ppb v/v	TO-15	
m,p-Xylene		6.7		4.3	ug/m3	TO-15	
Xylene, o-		0.47		0.40	ppb v/v	TO-15	
Xylene, o-		2.1		1.7	ug/m3	TO-15	
Xylene (total)		2.1		1.4	ppb v/v	TO-15	
Xylene (total)		9.0		6.1	ug/m3	TO-15	
200-37422-2	AB-23						
Tetrahydrofuran		59000		8400	ppb v/v	TO-15	
Tetrahydrofuran		170000		25000	ug/m3	TO-15	

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-37422-3	AB-19					
Acetone		20		7.5	ppb v/v	TO-15
Acetone		49		18	ug/m3	TO-15
Isopropyl alcohol		23		7.5	ppb v/v	TO-15
isopropyl alcohol		56		18	ug/m3	TO-15
Methylene Chloride		11		0.75	ppb v/v	TO-15
Methylene Chloride		39		2.6	ug/m3	TO-15
n-Hexane		0.23	J	0.30	ppb v/v	TO-15
n-Hexane		0.79	J	1.1	ug/m3	TO-15
Chloroform		50		0.30	ppb v/v	TO-15
Chloroform		240		1.5	ug/m3	TO-15
Tetrahydrofuran		2.5	J	7.5	ppb v/v	TO-15
Tetrahydrofuran		7.3	J	22	ug/m3	TO-15
Benzene		0.26	J	0.30	ppb v/v	TO-15
Benzene		0.82	J	0.96	ug/m3	TO-15
Toluene		4.3		0.30	ppb v/v	TO-15
Toluene		16		1.1	ug/m3	TO-15
Ethylbenzene		0.26	J	0.30	ppb v/v	TO-15
Ethylbenzene		1.1	J	1.3	ug/m3	TO-15
m,p-Xylene		1.5		0.75	ppb v/v	TO-15
m,p-Xylene		6.4		3.3	ug/m3	TO-15
Xylene, o-		0.37		0.30	ppb v/v	TO-15
Xylene, o-		1.6		1.3	ug/m3	TO-15
Xylene (total)		1.9		1.1	ppb v/v	TO-15
Xylene (total)		8.1		4.6	ug/m3	TO-15

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-37422-4	AB-21					
Acetone		110		15	ppb v/v	TO-15
Acetone		260		36	ug/m3	TO-15
Isopropyl alcohol		6.1	J	15	ppb v/v	TO-15
Isopropyl alcohol		15	J	37	ug/m3	TO-15
Methylene Chloride		25		1.5	ppb v/v	TO-15
Methylene Chloride		86		5.2	ug/m3	TO-15
Tetrahydrofuran		120	E	15	ppb v/v	TO-15
Tetrahydrofuran		350	E	44	ug/m3	TO-15
Benzene		2.4		0.60	ppb v/v	TO-15
Benzene		7.6		1.9	ug/m3	TO-15
Toluene		15		0.60	ppb v/v	TO-15
Toluene		56		2.3	ug/m3	TO-15
Ethylbenzene		2.8		0.60	ppb v/v	TO-15
Ethylbenzene		12		2.6	ug/m3	TO-15
m,p-Xylene		13		1.5	ppb v/v	TO-15
m,p-Xylene		58		6.5	ug/m3	TO-15
Xylene, o-		2.5		0.60	ppb v/v	TO-15
Xylene, o-		11		2.6	ug/m3	TO-15
Xylene (total)		16		2.1	ppb v/v	TO-15
Xylene (total)		67		9.1	ug/m3	TO-15

METHOD SUMMARY

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Description	Lab Location	Method	Preparation Method
Matrix: Air			
Volatile Organic Compounds in Ambient Air	TAL BUR	EPA TO-15	
Collection via Summa Canister	TAL BUR		Summa Canister

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

EPA = US Environmental Protection Agency

METHOD/ANALYST SUMMARY

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Method	Analyst	Analyst ID
EPA TO-15	Desjardins, William R	WRD
EPA TO-15	Mahesee, Puncharat 1	P1M

SAMPLE SUMMARY

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-37412-1	B-1	Air	02/14/2017 1329	02/17/2017 1030
200-37412-2	AB-10B	Air	02/15/2017 1310	02/17/2017 1030
200-37412-3	B-4	Air	02/15/2017 1556	02/17/2017 1030
200-37422-1	AB-10	Air	02/17/2017 1201	02/18/2017 1010
200-37422-2	AB-23	Air	02/16/2017 1221	02/18/2017 1010
200-37422-3	AB-19	Air	02/17/2017 1436	02/18/2017 1010
200-37422-4	AB-21	Air	02/16/2017 1500	02/18/2017 1010

SAMPLE RESULTS

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

B-1

Lab Sample ID:

200-37412-1

Client Matrix:

Air

Date Sampled: 02/14/2017 1329 Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch: 200-114595

Instrument ID:

CHB.i

Prep Method:

Summa Canister

N/A

Lab File ID:

24174-26.D

Dilution:

Prep Batch:

Initial Weight/Volume: 40 mL

Analysis Date:

51400

Final Weight/Volume:

200 mL

Prep Date:

03/04/2017 1149 03/04/2017 1149

Injection Volume:

200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL	
Acetone	260000	U	67000	260000	
Isopropyl alcohol	260000	U	6700	260000	
Methylene Chloride	26000	U	3500	26000	
n-Hexane	10000	U	2400	10000	
Chloroform	10000	U	1300	10000	
Tetrahydrofuran	1300000		62000	260000	
Benzene	19000		1400	10000	
Toluene	590000		1800	10000	
Chlorobenzene	10000	U	1300	10000	
Ethylbenzene	170000		1700	10000	
m,p-Xylene	1000000		4000	26000	
Xylene, o-	190000		2100	10000	
Xylene (total)	1200000		2100	36000	
Analyte	Result (ug/m3)	Qualifier	MDL	RL	
Acetone	610000	U	160000	610000	
		4.4	40000	000000	

Analyte	Result (ug/m3)	Qualifier	MDL	RL
Acetone	610000	U	160000	610000
Isopropyl alcohol	630000	U	16000	630000
Methylene Chloride	89000	U	12000	89000
n-Hexane	36000	U	8300	36000
Chloroform	50000	U	6300	50000
Tetrahydrofuran	3900000		180000	760000
Benzene	62000		4600	33000
Toluene	2200000		6800	39000
Chlorobenzene	47000	U	5900	47000
Ethylbenzene	740000		7600	45000
m,p-Xylene	4400000		17000	110000
Xylene, o-	820000		8900	45000
Xylene (total)	5200000		8900	160000

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

B-1

Lab Sample ID:

200-37412-1

Client Matrix:

Air

Date Sampled: 02/14/2017 1329

Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method: Dilution:

Prep Date:

Summa Canister

Prep Batch:

N/A

Lab File ID:

24174-26.D

Analysis Date: 03/04/2017 1149

Tentatively Identified Compounds

51400

Initial Weight/Volume: 40 mL

Final Weight/Volume: 200 mL Injection Volume:

200 mL

03/04/2017 1149

Number TIC's Found: 0

Cas Number

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-10B

Lab Sample ID:

200-37412-2

Client Matrix:

Air

Date Sampled: 02/15/2017 1310 Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air 200-114630 Instrument ID: CHB.i Analysis Batch: Analysis Method: TO-15 24189-07.D Prep Batch: N/A Lab File ID: Prep Method: Summa Canister Initial Weight/Volume: 28 mL Dilution: 56200 Final Weight/Volume: 200 mL Analysis Date: 03/06/2017 1632 200 mL Injection Volume: Prep Date: 03/06/2017 1632 Analyte Result (ppb v/v) Qualifier MDL RL 280000 Acetone 280000 U 73000 280000 U 7300 280000 Isopropyl alcohol U 3800 28000 28000 Methylene Chloride U 2600 11000 11000 n-Hexane U 1400 11000 11000 Chloroform 1500000 67000 280000 Tetrahydrofuran 11000 42000 1600 Benzene U 2000 11000 11000 Toluene 1400 11000 11000 U Chlorobenzene 11000 U 1900 11000 Ethylbenzene 28000 U 4300 28000 m,p-Xylene 11000 U 2200 11000 Xylene, o-39000 U 2200 39000 Xylene (total) Qualifier MDL RL Analyte Result (ug/m3) 670000 U 170000 670000 Acetone 690000 U 18000 690000 Isopropyl alcohol 98000 U 13000 98000 Methylene Chloride 40000 40000 U 9100 n-Hexane 55000 55000 U 6900 Chloroform 4300000 200000 830000 Tetrahydrofuran 130000 5000 36000 Benzene U 42000 7400 42000 Toluene U 6500 52000 52000 Chlorobenzene U 8300 49000 49000 Ethylbenzene U 19000 120000 120000 m,p-Xylene

49000

170000

U

U

9800

9800

49000

170000

Xylene, o-

Xylene (total)

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-10B

Lab Sample ID:

200-37412-2

Client Matrix:

Air

Date Sampled: 02/15/2017 1310

Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114630

Instrument ID:

CHB.i

Prep Method: Dilution:

Summa Canister 56200

Prep Batch:

N/A

Lab File ID:

24189-07.D

Tentatively Identified Compounds

03/06/2017 1632

Initial Weight/Volume: 28 mL Final Weight/Volume:

Analysis Date: Prep Date:

03/06/2017 1632

Injection Volume:

200 mL 200 mL

Number TIC's Found: 0

Cas Number

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

B-4

Lab Sample ID:

200-37412-3

Client Matrix:

Air

Date Sampled: 02/15/2017 1556 Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air						
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 7870 03/06/2017 1724 03/06/2017 1724	Analysis Batch: Prep Batch:	200-114630 N/A	Instrument ID: Lab File ID: Initial Weight/Volume Final Weight/Volume: Injection Volume:		
Analyte		Result (p	pb v/v) Qu	ualifier MDL	RL	
Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	e	39000 39000 3900 1600 1600 170000 3700 39000 1600 15000 69000 10000 79000	U U U U	10000 1000 540 360 200 9400 220 280 200 270 610 310	39000 39000 3900 1600 1600 1600 1600 1600 3900 1600 5500	
Analyte		Result (u	g/m3) Qu	ualifier MDL	RL	
Acetone Isopropyl alcohol Methylene Chlorid n-Hexane Chloroform Tetrahydrofuran Benzene Toluene Chlorobenzene Ethylbenzene m,p-Xylene Xylene, o- Xylene (total)	e	93000 97000 14000 5500 7700 490000 12000 150000 7200 65000 300000 45000 340000	υ υ υ	24000 2500 1900 1300 960 28000 700 1000 910 1200 2600 1400	93000 97000 14000 5500 7700 120000 5000 5900 7200 6800 17000 6800 24000	

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

B-4

Lab Sample ID:

200-37412-3

Client Matrix:

Air

Date Sampled: 02/15/2017 1556

Date Received: 02/17/2017 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114630

Instrument ID:

CHB.i

Prep Method:

Prep Date:

Summa Canister

Prep Batch:

N/A

Lab File ID:

Dilution: Analysis Date: 7870

Initial Weight/Volume: 51 mL

24189-08.D

Final Weight/Volume: 200 mL

03/06/2017 1724 03/06/2017 1724

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-10

Lab Sample ID:

200-37422-1

Client Matrix:

Air

Date Sampled: 02/17/2017 1201 Date Received: 02/18/2017 1010

Cheffit Matrix.	All			Date Ne	SCEIVEG. 02/10/2017 101
	TO	-15 Volatile Organic Co	mpounds in A	mbient Air	
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 2.0 03/04/2017 1056 03/04/2017 1056		00-114595 I/A	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume: Injection Volume:	
Analyte		Result (ppb	v/v) Qua	lifier MDL	RL
Acetone		9.1	J	2.6	10
Isopropyl alcohol		10	U	0.26	10
Methylene Chlorid	le	4.9		0.14	1.0
n-Hexane		0.40	U	0.092	0.40
Chloroform		54		0.050	0.40
Tetrahydrofuran		9.4	J	2.4	10
Benzene		1.4		0.056	0.40
Toluene		0.67		0.070	0.40
Chlorobenzene		0.40	U	0.050	0.40
Ethylbenzene		0.19	J	0.068	0.40
m,p-Xylene		1.6		0.15	1.0
Xylene, o-		0.47		0.080	0.40
Xylene (total)		2.1		0.080	1.4
Analyte		Result (ug/r	n3) Qua		RL
Acetone		22	J	6.2	24
Isopropyl alcohol		25	U	0.64	25
Methylene Chlorid	le	17		0.47	3.5
n-Hexane		1.4	U	0.32	1.4
Chloroform		260		0.24	2.0
Tetrahydrofuran		28	J	7.1	29
Benzene		4.6		0.18	1.3
Toluene		2.5		0.26	1.5
Chlorobenzene		1.8	U	0.23	1.8
Ethylbenzene		0.82	J	0.30	1.7
m,p-Xylene		6.7		0.67	4.3
Xylene, o-		2.1		0.35	1.7
Xylene (total)		9.0		0.35	6.1
. ,					

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-10

Lab Sample ID:

200-37422-1

Client Matrix:

Air

Date Sampled: 02/17/2017 1201

Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method: Dilution:

Summa Canister

Prep Batch:

N/A

Lab File ID:

24174-25.D

2.0

03/04/2017 1056

Final Weight/Volume:

Initial Weight/Volume: 100 mL

Analysis Date: Prep Date:

03/04/2017 1056

Injection Volume:

200 mL 200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-23

Lab Sample ID:

200-37422-2

Client Matrix:

Benzene

Toluene

Chlorobenzene

Ethylbenzene

Xylene (total)

m,p-Xylene

Xylene, o-

Air

Date Sampled: 02/16/2017 1221 Date Received: 02/18/2017 1010

1100

1300

1500

1500

3600

1500

5100

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Batch: 200-114595 Instrument ID: CHB.i Analysis Method: TO-15 Summa Canister Prep Batch: N/A Lab File ID: 24174-21.D Prep Method: Initial Weight/Volume: 26 mL Dilution: 1680 200 mL Final Weight/Volume: Analysis Date: 03/04/2017 0646 Injection Volume: 200 mL Prep Date: 03/04/2017 0646 Qualifier Analyte Result (ppb v/v) MDL RL Acetone 8400 2200 8400 8400 220 8400 Isopropyl alcohol U 840 U 840 Methylene Chloride 110 340 340 U 77 n-Hexane 42 340 340 U Chloroform 59000 2000 8400 Tetrahydrofuran 340 340 U 47 Benzene 340 340 U 59 Toluene 340 340 U 42 Chlorobenzene 340 340 U 57 Ethylbenzene 840 U 130 840 m,p-Xylene 340 U 67 340 Xylene, o-Xylene (total) 1200 U 67 1200 Qualifier RL Analyte Result (ug/m3) MDL 5200 20000 Acetone 20000 21000 U 540 21000 Isopropyl alcohol Methylene Chloride 2900 U 400 2900 1200 1200 n-Hexane U 270 Chloroform U 210 1600 1600 170000 5900 25000 Tetrahydrofuran

1100

1300

1500

1500

3600

1500

5100

U

U

U

U

U

U

U

150

220

190

250

560

290

290

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-23

Lab Sample ID:

200-37422-2

Client Matrix:

Air

Date Sampled: 02/16/2017 1221

Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method: Dilution:

Prep Date:

Analysis Date:

Summa Canister 1680

Prep Batch:

N/A

Lab File ID:

24174-21.D

Initial Weight/Volume: 26 mL

Injection Volume:

Final Weight/Volume: 200 mL 200 mL

03/04/2017 0646 **Tentatively Identified Compounds**

03/04/2017 0646

Number TIC's Found: 0

Cas Number

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-19

Lab Sample ID:

200-37422-3

Client Matrix:

Xylene (total)

Air

Date Sampled: 02/17/2017 1436 Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

	10	-15 Volatile Organic	Compound	S IN AMDI	ent Air		
Analysis Method: Prep Method: Dilution: Analysis Date: Prep Date:	TO-15 Summa Canister 1.5 03/04/2017 0738 03/04/2017 0738	Analysis Batch: Prep Batch:	200-11459 N/A	i I F	nstrument ID: Lab File ID: nitial Weight/Volume: Final Weight/Volume: njection Volume:	CHB.i 24174-22.D 133 mL 200 mL 200 mL	
Analyte		Result (p	pb v/v)	Qualifier		RL	
Acetone		20			2.0	7.5	
sopropyl alcohol		23			0.20	7.5	
Methylene Chlorid	e	11			0.10	0.75	
n-Hexane		0.23		J	0.069	0.30	
Chloroform		50			0.038	0.30	
Tetrahydrofuran		2.5		J	1.8	7.5	
Benzene		0.26		J	0.042	0.30	
Toluene		4.3			0.053	0.30	
Chlorobenzene		0.30		U	0.038	0.30	
Ethylbenzene		0.26		J	0.051	0.30	
n,p-Xylene		1.5			0.12	0.75	
Kylene, o-		0.37			0.060	0.30	
Kylene (total)		1.9			0.060	1.1	
Analyte		Result (u	ıg/m3)	Qualifier	mDL	RL	
Acetone		49			4.6	18	
sopropyl alcohol		56			0.48	18	
Methylene Chlorid	le	39			0.35	2.6	
n-Hexane		0.79		J	0.24	1.1	
Chloroform		240			0.18	1.5	
Tetrahydrofuran		7.3		J	5.3	22	
Benzene		0.82		J	0.13	0.96	
Toluene		16			0.20	1.1	
Chlorobenzene		1.4		U	0.17	1.4	
Ethylbenzene		1.1		J	0.22	1.3	
n,p-Xylene		6.4			0.50	3.3	
(ylene, o-		1.6			0.26	1.3	
4 1 4 1 15		0.4			0.00	4.0	

8.1

0.26

4.6

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-19

Lab Sample ID:

200-37422-3

03/04/2017 0738

03/04/2017 0738

Client Matrix:

Air

Date Sampled: 02/17/2017 1436

Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Date:

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method: Dilution:

Prep Date:

Summa Canister 1.5

Prep Batch:

N/A

Lab File ID:

24174-22.D

Initial Weight/Volume: 133 mL Final Weight/Volume:

200 mL

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-21

Lab Sample ID:

200-37422-4

Client Matrix:

Air

Date Sampled: 02/16/2017 1500 Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Batch: 200-114595 Instrument ID: Analysis Method: TO-15 CHB.i Prep Method: Summa Canister Prep Batch: N/A Lab File ID: 24174-23.D Dilution: 2.99 Initial Weight/Volume: 67 mL Final Weight/Volume: 200 mL Analysis Date: 03/04/2017 0831 Prep Date: 03/04/2017 0831 Injection Volume: 200 mL Analyte Result (ppb v/v) Qualifier MDL RL Acetone 110 3.9 15 J 0.39 15 Isopropyl alcohol 6.1 25 0.20 1.5 Methylene Chloride 0.60 U 0.14 0.60 n-Hexane U 0.075 0.60 Chloroform 0.60 Tetrahydrofuran 120 Ε 3.6 15 0.084 0.60 Benzene 2.4 0.60 15 0.10 Toluene U 0.075 0.60 Chlorobenzene 0.60 2.8 0.10 0.60 Ethylbenzene 13 0.23 1.5 m,p-Xylene 2.5 0.12 0.60 Xylene, o-Xylene (total) 16 0.12 2.1 Result (ug/m3) Qualifier MDL RL Analyte 260 9.2 36 Acetone Isopropyl alcohol 15 J 0.96 37 Methylene Chloride 86 0.71 5.2 U n-Hexane 2.1 0.48 2.1 Chloroform 2.9 U 0.36 2.9 Tetrahydrofuran 350 Ε 11 44 7.6 Benzene 0.27 1.9 56 0.39 2.3 Toluene 2.8 U 0.34 2.8 Chlorobenzene 0.44 2.6 Ethylbenzene 12

58

11

67

1.0

0.52

0.52

6.5

2.6

9.1

m,p-Xylene

Xylene (total)

Xylene, o-

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Client Sample ID:

AB-21

Lab Sample ID:

200-37422-4

Client Matrix:

Air

Date Sampled: 02/16/2017 1500

Date Received: 02/18/2017 1010

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Prep Method:

Summa Canister

Prep Batch:

N/A

Lab File ID:

24174-23.D

Dilution: Analysis Date:

2.99

Initial Weight/Volume: 67 mL

03/04/2017 0831

Final Weight/Volume:

200 mL

Prep Date:

03/04/2017 0831

Injection Volume:

200 mL

Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ppb v/v)

Qualifier

Tentatively Identified Compound

None

DATA REPORTING QUALIFIERS

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Lab Section	Qualifier	Description
Air - GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

QUALITY CONTROL RESULTS

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

QC Association Summary

Basis	Client Matrix	Method	Dron Botch
		Motirou	Prep Batch
Т	Air	TO-15	
T	Air	TO-15	
Т	Air	TO-15	
Т	Air	TO-15	
	T T T T T T	T Air	T Air TO-15

Report Basis T = Total

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Method Blank - Batch: 200-114595

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: MB 200-114595/4 Client Matrix: Air Dilution: 1.0 Analysis Date: 03/03/2017 1455 03/03/2017 1455 Prep Date:

200-114595 Analysis Batch: Prep Batch: N/A Leach Batch: N/A

ppb v/v

Units:

Instrument ID: Lab File ID: Initial Weight/Volume: 200 mL Final Weight/Volume: Injection Volume:

CHB.i 24174-04.D 200 mL 200 mL

Leach Date: N/A

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	5.0	U	0.13	5.0
Methylene Chloride	0.50	U	0.068	0.50
n-Hexane	0.20	U	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	U	0.028	0.20
Toluene	0.20	U	0.035	0.20
Chlorobenzene	0.20	U	0.025	0.20
Ethylbenzene	0.20	U	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	U	0.040	0.20
Xylene (total)	0.70	U	0.040	0.70

Method Blank - Batch: 200-114595

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: MB 200-114595/4 Client Matrix: Air Dilution: 1.0 Analysis Date: 03/03/2017 1455 03/03/2017 1455 Prep Date: Leach Date: N/A

Analysis Batch: 200-114595 Prep Batch: N/A Leach Batch: N/A Units: ug/m3

Instrument ID: CHB.i Lab File ID: 24174-04.D Initial Weight/Volume: 200 mL Final Weight/Volume: 200 mL Injection Volume: 200 mL

Analyte	Result	Qual	MDL	RL	
Acetone	12	U	3.1	12	
Isopropyl alcohol	12	U	0.32	12	
Methylene Chloride	1.7	U	0.24	1.7	
n-Hexane	0.70	U	0.16	0.70	
Chloroform	0.98	U	0.12	0.98	
Tetrahydrofuran	15	U	3.5	15	
Benzene	0.64	U	0.089	0.64	
Toluene	0.75	U	0.13	0.75	
Chlorobenzene	0.92	U	0.12	0.92	
Ethylbenzene	0.87	U	0.15	0.87	
m,p-Xylene	2.2	U	0.33	2.2	
Xylene, o-	0.87	U	0.17	0.87	
Xylene (total)	3.0	U	0.17	3.0	

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Method Blank TICs- Batch: 200-114595

Cas Number

Analyte

RT

Est. Result (ppl

Qual

Tentatively Identified Compound

None

Lab Control Sample - Batch: 200-114595

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

LCS 200-114595/3

Analysis Batch:

200-114595

Instrument ID:

CHB.i

Client Matrix:

Air

Prep Batch:

N/A

Lab File ID:

24174-03.D

Dilution: Analysis Date: 1.0

Leach Batch:

N/A

Initial Weight/Volume: 200 mL Final Weight/Volume: 200 mL

Prep Date:

03/03/2017 1402 03/03/2017 1402 Units:

ppb v/v

Injection Volume:

200 mL

Leach Date:

N/A

Analita	Collet America	Decult	0/ Dee	Limit	Ougl
Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	11.5	115	64 - 136	
Isopropyl alcohol	10.0	12.0	120	55 - 124	
Methylene Chloride	10.0	11.3	113	62 - 122	
n-Hexane	10.0	12.4	124	71 - 131	
Chloroform	10.0	12.2	122	69 - 129	
Tetrahydrofuran	10.0	12.9	129	61 - 136	
Benzene	10.0	11.7	117	67 - 127	
Toluene	10.0	11.8	118	67 - 127	
Chlorobenzene	10.0	11.9	119	68 - 128	
Ethylbenzene	10.0	12.0	120	68 - 128	
m,p-Xylene	20.0	24.1	120	68 - 128	
Xylene, o-	10.0	11.9	119	67 - 127	

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Method Blank - Batch: 200-114630

Method: TO-15

Preparation: Summa Canister

Lab Sample ID: Client Matrix:

MB 200-114630/4 Air

Analysis Batch: Prep Batch:

200-114630 N/A

Instrument ID: Lab File ID:

CHB.i 24189-04.D

Dilution: Analysis Date: 1.0 03/06/2017 1209

Leach Batch: Units:

N/A ppb v/v Initial Weight/Volume: Final Weight/Volume:

200 mL 200 mL

Prep Date: Leach Date: 03/06/2017 1209 N/A

Injection Volume:

200 mL

Analyte	Result	Qual	MDL	RL
Acetone	5.0	U	1.3	5.0
Isopropyl alcohol	5.0	U	0.13	5.0
Methylene Chloride	0.50	U	0.068	0.50
n-Hexane	0.20	U	0.046	0.20
Chloroform	0.20	U	0.025	0.20
Tetrahydrofuran	5.0	U	1.2	5.0
Benzene	0.20	U	0.028	0.20
Toluene	0.20	U	0.035	0.20
Chlorobenzene	0.20	U	0.025	0.20
Ethylbenzene	0.20	U	0.034	0.20
m,p-Xylene	0.50	U	0.077	0.50
Xylene, o-	0.20	U	0.040	0.20
Xylene (total)	0.70	U	0.040	0.70

Method Blank - Batch: 200-114630

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

Analysis Date:

Prep Date:

Leach Date:

Client Matrix: Dilution:

MB 200-114630/4 Air 1.0

03/06/2017 1209

03/06/2017 1209 N/A

Analysis Batch: 200-114630 Prep Batch: N/A Leach Batch:

N/A Units: ug/m3 Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:

Injection Volume:

CHB.i 24189-04.D 200 mL 200 mL 200 mL

Analyte	Result	Qual	MDL	RL	
Acetone	12	U	3.1	12	
Isopropyl alcohol	12	U	0.32	12	
Methylene Chloride	1.7	U	0.24	1.7	
n-Hexane	0.70	U	0.16	0.70	
Chloroform	0.98	U	0.12	0.98	
Tetrahydrofuran	15	U	3.5	15	
Benzene	0.64	U	0.089	0.64	
Toluene	0.75	U	0.13	0.75	
Chlorobenzene	0.92	U	0.12	0.92	
Ethylbenzene	0.87	U	0.15	0.87	
m,p-Xylene	2.2	U	0.33	2.2	
Xylene, o-	0.87	Ū	0.17	0.87	
Xylene (total)	3.0	Ū	0.17	3.0	

Client: Ertec

Job Number: 200-37412-1

Sdg Number: 200-37412-1

Method Blank TICs- Batch: 200-114630

Cas Number

Analyte

RT

Est. Result (ppl Qual

Tentatively Identified Compound

None

Lab Control Sample - Batch: 200-114630

Method: TO-15

Preparation: Summa Canister

Lab Sample ID:

LCS 200-114630/3

Analysis Batch:

200-114630

Instrument ID:

CHB.i

Client Matrix: Dilution:

Air 1.0 Prep Batch:

N/A N/A

Lab File ID:

24189-03.D

Analysis Date:

03/06/2017 1117 03/06/2017 1117

Leach Batch: Units:

Initial Weight/Volume: 200 mL Final Weight/Volume: ppb v/v

200 mL

Prep Date:

Injection Volume:

200 mL

Leach	Date:

N/A

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	9.02	90	64 - 136	
Isopropyl alcohol	10.0	8.85	88	55 - 124	
Methylene Chloride	10.0	8.81	88	62 - 122	
n-Hexane	10.0	9.84	98	71 - 131	
Chloroform	10.0	9.74	97	69 - 129	
Tetrahydrofuran	10.0	9.81	98	61 - 136	
Benzene	10.0	9.28	93	67 - 127	
Toluene	10.0	9.80	98	67 - 127	
Chlorobenzene	10.0	9.90	99	68 - 128	
Ethylbenzene	10.0	9.73	97	68 - 128	
m,p-Xylene	20.0	19.8	99	68 - 128	
Xylene, o-	10.0	9.83	98	67 - 127	

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Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

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Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

FestAmerica Analytical Testing Gorp. assumes no fiability with respect to the collection and shipment of these samples.

Offier (Please specify in notes section) COCS Helium Prefill for High Methane (LF Gas) collected on or 14/17 & secure with delivery Matrix Landfill Gas ndoor (Ambient Air Ofher (Please specify in notes section) 8461-G MTSA A Analysis EPA 25C EPA 3C NJDEP LL-TO-15 21-OT Can Cert ID Roberto De Perlis/ Tosue Negro'n a 1000 Can Size Readout (ml/min) 1030 GC/MS Analyst Signature (TO-15) 502 Can ID 200-37412 Chain of Custody Flow Reg. ID Date/Time: Date/Time: Incoming Canister Pressure FEDEX ("Hg) (Lab) Pressure "'Hg) (Lab) Outgoing Canister Sampled By: Project Manager: Waylda Mora les Carrier Canisters Received by: Interior (Stop) Temp. 8227 Address: Auren 7445 Pote Laurd augh E-mail: who not len Oertee mone Minimum Minimum 10401 (F) (Start) Received by: Temperature (Fahrenheit) Phone: (847) 797-8902 Site Contact: Wanda Morale S TA Contact: Port Daw Par Pressure (Inches of Hg) CanIster ("Hg) Special Instructions/QC Requirements & Comments: SAMJ | PProject Name: 子名をと Bar et buck Analysis Turnaround Time Maximum Maximum Pressure in Fleid Carister 1000 | Time | Time | In Fleid | Start (24 | Stop (24 ("Hg) | In clock) | In clock) (Start) | Start) | Start FELEX ON 02 15/14. Standard (Specify) も、も 29.68 Rush (Specify) Date/Time: 17 (2) 的141733 0 Ambient Ambient Date/Time; Sample Date(s) Start Start Stop Stop City/State/Zip 4.0 P.04-01 P. Phone: (781) 292 - 8007 FAX: (787) 783 - 555 Company: ER TEL PSA Coberto 10 xes Us Client Contact Information Sample Identification site: Ramedougte amples Relinquished by: Relinquished by: TA

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Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

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Ofher (Please specify in notes section) Helium Prefill for High Methane (LF Gas) COCs Matrix andfill Gas 02/15/14 & secure until delpreny Soil Gas ndoor /Ambient Air Ofher (Please specify in notes section) 9761-G MT2A Roberto De Jesus/Josus Maldouado EPA 25C D£ ∀4∃ NUDEP LL-TO-15 21-OT Can Cert ID Flow Controller Readout (ml/mln) GC/MS Analyst Signature (TO-15) Can Size Į, 5043 Can ID Flow Reg. ID Special Instructions/QC Requirements & Comments: Saurple was collected ou FEDEX Incoming Canister Pressure ("Hg) (Lab) Pressure ("Hg) (Lab) Outgoing Canister Sampled By: Project Manager: Wanda Mora les Carrier. Interior (F) (Stop) 98.7 Minimum E-mail: www.alex@entecon.com Interior (F) (Start) Phone: (181) 792 -890 7 Site Contact Value da Nora le TA Contact: Dou Da 12/08 & P Temperature (Fahrenheit) Pressure (Inches of Hg) Pressure Canister In Fleid (LHg) roject Name: PH zen Bur Ce Out to Analysis Turnaround Time Maximum Pressure in Fjeld Maximum Canister ("Hg) (Start) Standard (Specify) Stop (24 (Rush (Specify) 7 29.72 17. 02/19 Time Start (24 hr clock) 0215171310 Ambient Ambient Address: Amur 5+ A5 ppts. Candrall Sample Date(s) Start City/State/Zip Rto Pf Cohrd 3, P L 009 ZI Phone: 027) 797 - 9903 FAX: (797) 78 3 - 5555 Start Stop Stop Site: Bardalougta, PR Company: ERTE(, PSC Sample Identification Client Contact Information 48-10

1000

B

411911

Date/Time: /

Canisters Received by:

000)

D\$11.201.70

Canisters Shipped by:
Roberto 70 TO SUS

Samples Relinquished by:

Relinquished by:

FedEX on 02 (16/14: 14)

at

Received by:

Date/TIme:

1020

C

Date/Time:

TO SUL

Received by:

Date/Time:

Stripper Name:

ab Use Only

30 Community Drive Suite 11 South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

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Emer Fedix Acet. No. below. with Sender Acet No. below. with the Sender Acet. With Received At 1 Reg. Sup 2 0n-Call Stop 3 0mp Bex 1 FedEx Intl. Priority 6 PedEx Intl. First 8098 658b 2 Fedex Pak Your Internal Billing Reference 4 Express Package Service Bill transportation charges to: Declared Val. Chrg. Audit Emp. # Box Required Signature 6 Special Handling This is not authorization; Recipient's Signature: Sender Acct. No. in Section 1 will be billed. 6 TedEx Envelope 5 Packaging Signature: 7 Payment Credit Card Exp. Date 98.00 co Mracking 00/ Phone (802)-660-1990 8.00 E ... Total Value yor Customs Specify Currency) 792-8902 Value for Customs Postal Code OSYOS P R ZIP Postal Code DD721 Burlington For EU Only. Tick hare if goods are not in free circulation and provide C.I. Country of Manufacture Fee 氧汉。International Air Waybill Parter Phone 787 State Province No EEI nequired, value \$2,500 or last per Sch. 8 Number, Total Declared Value no Eense required (NLR), not subject to TAR. Sender's FedEx Account Number 1,064-8931-9 LANDRAU State Province If other than NLR, enter Uce Address AMOUR A-5 REPARTO Community South Barlington samples (canisters Tot America Dawicki lani Recipient's Tax ID Number for Customs Purposes e.g. 657/8FCV47/N/EN/ABN, or as locally required. Commodity Description CIV RIO PIEDRAS Company ERTEC-PSC Saite No EEI required, anter exemption number. 252 Shipment Information Yes - Enter AES proof of filling citation: 30 pra Has EEI been filed in AES? For U.S. Export Only: Check One SI Total Packages Shipper's Lord and Count/SLAC To Recipient's Name 3 Address Country Address 1 From

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phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403

TestAmerica Analytical Testing Corp. assumes no llability with respect to the collection and shipment of these samples. Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

Ofher (Please specify in notes section) COCs Heilum Prefill for High Methane (LF Gas) TiA JusidmA\ Toobn ŏ Of her (Please specify in notes section) ASTM D-1946 EPA 25C SE VAE NJDEP LL-TO-15 31-OT Can Cerl ID 200-37422 Chain of Custody J. Maldouado Flow Controller Can Size Readout (nl/min) Date/Time: 07 (12/12 (d) GC/MS Analyst Signature (TO-15) 子545% Can ID Sampled By: 2.16 Jesus Flow Reg. ID Date/Time: Incoming Canister Pressure **FEREN** (Lab) Canisters Received by: Fod EX Outgoing Canlster "Hg) (Lab) Pressure Project Manage, Wanda Morales Carrier. Interior Minimum 46.4 E-mail: Www.d/es@ertespr. Og. Site Contact: Way do Moralles TA Contact: Dol Palls 10 K 10 (F) (Start) Received by: Phone: (181) 792-690 3-Temperature (Fahrenheit) Pressure (Inches of Hg) Pressure in Field Canister roject Name: P4子の RakeのJokの中 Analysis Turnaround Time MaxImum Maximum Pressure in Field Canister Start (24 Stop (24 ("Hg) hr clock) hr clock) (Start) Standard (Specify) Rush (Specify) 29.80 @ Special Instructions/QC Requirements & Comments: Ambient Ambient 1071414170 Date/Time: Date/Time: City/State/Zip Roling PR 009 Z Sample Date(s) rab Use Only - 1 Shipper name Start Start Stop Stop address St. ASPATO, Laudrace insters Shipped by: Site: Bar Colougha, 78 Client Contact Information Sample Identification Company: EXTEC , PSC amples Relinquished by: 48110 Relinquished by: PO#

phone 802-660-1990 fax 802-660-1919 South Burlington, VT 05403 30 Community Drive

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

Other (Please specify in notes section) Hellum Prefill for High Methane (LF Gas) COCS Soil Gas ndoor (Ambient Air of Other (Please specify in notes section) 8481-0 MT2A EPA 25C EPA 3C and secent untel NJDEP LL-TO-15 SI-OT 02/10 Can Cert ID J. Mokerado Flow
Controller
Can Size Readout
(L) (ml/min) 1010 GC/MS Analyst Signature (TO-15) Date/Time: 02 /12 2982 Date/1769/17 whether on 02/16/17 Can 1D TESUS Flow Reg. ID Pressure Canister ("Hg) (Lab) Sampled By: R. R. Canisters Received by: Fed E Outgoing Canister Pressure "Hg) (Lab) Project Manager: Wanda Morales Carrier: Interior (F) (Stop) Тетр. Address: Anur St AS Rote Landaule-mail: Wood 630 Crtel pally Received by: 84.5 Minimum Interior Тетр. (F) (Start) Received by: TA Contact: PON DQUOPOKP Phone: (787) 192-8902 Site Contact: Wanta Mora 105 Temperature (Fahrenhelt) Pressure (Inches of Hg) Special Instructions/QC Requirements & Comments: Sample was ship work & FedEX on 02/112/ Pressure In Field ("Hg) (Stop) CanIster Project Name: p & Jer Bar Co lough Analysis Turnaround Time Maximum Thme Thme in Fleld I Stert (24 Stop (24 ("Hg) ("hr dock) hr clock) (Start) (Maximum Carilster Standard (Specify) alle alle 14.8 Rush (Specify) 29.80 Ambient 021614 122 Amblent Date/Time: Date/Time: Sample Date(s) Start Start Stop Stop ShipperName City/State/Zip Rep PeCdro SP Phone: (181) 792 - 5902 FAX: (181) 183 - 55 5 5 250 Canisters Shipped by: Site: Bampelougta Sample Identification Client Contact Information Company: GRTEC Samples Relinquished by: 2 Relinquished by: 48-PO#

30 Community Drive Suite 11

South Burlington, VT 05403 phone 802-660-1990 fax 802-660-1919

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

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30 Community Drive

South Burlington, VT 05403

phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record & TO-15 Field Test Data Sheet

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Ofher (Please specify in notes section) COCs Hellum Prefill for High Methane (LF Gas) eso Ilithns. Soil Gas riA InsidmAl 100bn of Ofher (Please specify in notes section) 9461-G MTSA EPA 25C collected on 02/16/14 and secure wote EPA 3C NJDEP LL-TO-15 SI-OT Can Cert ID J. Malborado 8 <u>e</u> Flow Controller Readout (ml/mln) 000 4 GC/MS Analyst Signature (TO-15) Can Size ((L) Date/Time: .02 (12) 3486 Date/Time; 18/17 Can ID R.72 Tesus Flow Reg. ID Date/Time: Incoming Canister Pressure (Lab) Canisters Received by: FedEX Pressure "Hg) (Lab) Outgoing Canister Sampled By: Project Manager: Wayda Nordles Carrier. Interior E-mail: Www. a (P.S. @ er-teopy: colu 898 Minimum Minimum TA Contact: DOM DOLOS OK/O Received by: Special Instructions/QC Requirements & Comments: Sample was Site Contact: Wayda Mord les Temperature (Fahrenhalt) Phone: 181) 797-8902 Pressure (Inches of Hg) Pressure In Field Stop) PHORE BOARDONOR Analysis Turnaround Time Maximum Pressure Frime in Fleid III Start (24 Stop (24 ("Hg) hr clock) hr clock) (Start) (Maximum Date/Time: 中(中) Canister Standard (Specify) Rush (Specify) 29.7 (02.5 0216141500 Ambient Ambient Date/Time; Sample Date(s) Address: 154. AS 10to, Landraux Start Start Stop Site: For-Colonata, 72 Roberto Magacian Client Contact Information Sample Identification Samples Relinquished by: Company: EXTEC Relinquished by: N roject Name: City/State/Zip) 48

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Login Sample Receipt Checklist

Client: Ertec

Job Number: 200-37412-1

SDG Number: 200-37412-1

Login Number: 37412

List Number: 1

Creator: Hayden, Anita L

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td>Lab does not accept radioactive samples.</td>	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	076608
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	R. de Jesus and J. Negrou/J. Maldouado
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Ertec

Job Number: 200-37412-1

SDG Number: 200-37412-1

List Source: TestAmerica Burlington

Login Number: 37422 List Number: 1

Creator: Hayden, Anita L

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td>Lab does not accept radioactive samples.</td>	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	076609, 076610
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	R. de Jesus, J Maldouado
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

APPENDIX 6

MASS REMOVAL/EMISSION RATE AND EQB CARBON EFFICIENCY FORMULAS

SVE SYSTEM PROGRESS REPORT NO. 6
JANUARY TO MARCH 2017
PFIZER PHARMACEUTICALS LLC
BARCELONETA, PUERTO RICO

ERTEC JOB NO. E175475



APPENDIX 6

MASS REMOVAL / EMISSION RATE FORMULA

 $R = Q \times C$

where:

R = removal rate (lbs/hr)

Q = air flow rate (ft³/min; ACFM)

C = compound concentration (mg/L)

As flow rate and compound concentration are the only two variables in this equation, it was simplified as follows:

 $R = ft^3/min \times mg/L \times 60 min/hr \times 28.32 L/ ft^3 \times 1lbs/453.6 \times 10^3$

 $R = (ft^3/min \times mg/L)/266.95$

Where:

R = removal rate in lbs/hr

ft³/min = air velocity measured prior to sample collection mg/L = detected concentration of each compound analyzed

266.95 = constant resulting from the reduction of conversion factors in the

equation

EQB CONSTRUCTION PERMIT CARBON EFFICIENCY CALCULATION FORMULA

Absolute Difference = Absolute Value [Inlet-1 Concentration – Outlet Concentration]

% Difference Absolute = [Absolute Difference / Inlet-1 Concentration] x 100

