

**FLUOROMONOMERS AND PPA  
MANUFACTURING PROCESSES  
EMISSIONS TEST REPORT  
TEST DATES: 26 FEBRUARY – 2 MARCH 2018**

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# **1. INTRODUCTION**

## **1.1 FACILITY AND BACKGROUND INFORMATION**

The Chemours Fayetteville Works (Chemours) is located in Bladen County, North Carolina, approximately ten miles south of the city of Fayetteville. Chemours operating areas on the site include the Fluoromonomers, IXM and Polymer Processing Aid (PPA) manufacturing areas, Wastewater Treatment, and Powerhouse.

Chemours contracted Weston Solutions, Inc. (WESTON) to perform HFPO Dimer Acid emission testing on two sources at the facility (Vinyl Ethers (VE) South Stack and the PPA Stack). Testing was performed on 26 February – 2 March 2018 and generally followed the “Emissions Test Protocol” reviewed and approved by the North Carolina Department of Environmental Quality (NCDEQ). This report provides the results from the emission test program.

## **1.2 TEST OBJECTIVES**

The specific objectives for this test program were as follows:

- Measure the emissions concentrations and mass emissions rates of HFPO Dimer Acid from the VE South stack and PPA stack which are located in the Fluoromonomers and PPA processes.
- Monitor and record process and emissions control data in conjunction with the test program.
- Provide representative emissions data.

## **1.3 TEST PROGRAM OVERVIEW**

During the emissions test program, the concentrations and mass emissions rates of HFPO Dimer Acid were measured on two sources (VE South and PPA Stacks).

Tables 1-1 and 1-2 provide a summary of the test locations and the parameters that were measured along with the sampling/analytical procedures that were followed.

Section 2 provides a summary of test results. A description of the processes is provided in Section 3. Section 4 provides a description of the test locations. The sampling and analytical procedures are provided in Section 5. Detailed test results and discussion are provided in Section 6.

Appendix C includes the summary reports for the laboratory analytical results. The full laboratory data packages are provided in electronic format and on CD with each hard copy.

**Table 1-1  
Sampling Plan for VE South Stack**

Sampling Point & Location	VE South Stack				
Number of Tests:	3				
Parameters To Be Tested:	HFPO Dimer Acid (HFPO-DA)	Volumetric Flow Rate and Gas Velocity	Carbon Dioxide	Oxygen	Water Content
Sampling or Monitoring Method	EPA M-0010	EPA M1, M2, M3A, and M4 in conjunction with M-0010 tests	EPA M3A		EPA M4 in conjunction with M-0010 tests
Sample Extraction/ Analysis Method(s):	LC/MS/MS	NA <sup>6</sup>	NA		NA
Sample Size	> 1m <sup>3</sup>	NA	NA	NA	NA
Total Number of Samples Collected <sup>1</sup>	3	3	3	3	3
Reagent Blanks (Solvents, Resins) <sup>1</sup>	1 set	0	0	0	0
Field Blank Trains <sup>1</sup>	1 per source	0	0	0	0
Proof Blanks <sup>1</sup>	1 per train	0	0	0	0
Trip Blanks <sup>1,2</sup>	1 set	0	0	0	
Lab Blanks	1 per fraction <sup>3</sup>	0	0	0	0
Laboratory or Batch Control Spike Samples (LCS)	1 per fraction <sup>3</sup>	0	0	0	0
Laboratory or Batch Control Spike Sample Duplicate (LCSD)	1 per fraction <sup>3</sup>	0	0	0	0
Media Blanks	1 set <sup>4</sup>	0	0	0	0
Isotope Dilution Internal Standard Spikes	Each sample	0	0	0	0
Total No. of Samples	7 <sup>5</sup>	3	3	3	3

Key:

<sup>1</sup> Sample collected in field.

<sup>2</sup> Trip blanks include one XAD-2 resin module and one methanol sample per sample shipment.

<sup>3</sup> Lab blank and LCS/LCSD includes one set per analytical fraction (front half, back half and condensate).

<sup>4</sup> One set of media blank archived at laboratory at media preparation.

<sup>5</sup> Actual number of samples collected in field.

<sup>6</sup> Not applicable.

**Table 1-2  
Sampling Plan for PPA Stack**

Sampling Point & Location	PPA Stack				
	Number of Tests:	4 (2 tests during Hydrolysis and 2 tests during Vaporization)			
Parameters To Be Tested:	HFPO Dimer Acid (HFPO-DA)	Volumetric Flow Rate and Gas Velocity	Carbon Dioxide	Oxygen	Water Content
Sampling or Monitoring Method	EPA M-0010	EPA M1, M2, M3A, and M4 in conjunction with M-0010 tests	EPA M3A		EPA M4 in conjunction with M-0010 tests
Sample Extraction/ Analysis Method(s):	LC/MS/MS	NA <sup>6</sup>	NA		NA
Sample Size	> 1m <sup>3</sup>	NA	NA	NA	NA
Total Number of Samples Collected <sup>1</sup>	4	4	4	4	4
Reagent Blanks (Solvents, Resins) <sup>1</sup>	1 set	0	0	0	0
Field Blank Trains <sup>1</sup>	1 per source	0	0	0	0
Proof Blanks <sup>1</sup>	1 per train	0	0	0	0
Trip Blanks <sup>1,2</sup>	1 set	0	0	0	
Lab Blanks	1 per fraction <sup>3</sup>	0	0	0	0
Laboratory or Batch Control Spike Samples (LCS)	1 per fraction <sup>3</sup>	0	0	0	0
Laboratory or Batch Control Spike Sample Duplicate (LCSD)	1 per fraction <sup>3</sup>	0	0	0	0
Media Blanks	1 set <sup>4</sup>	0	0	0	0
Isotope Dilution Internal Standard Spikes	Each sample	0	0	0	0
Total No. of Samples	8 <sup>5</sup>	4	4	4	4

Key:

<sup>1</sup> Sample collected in field.

<sup>2</sup> Trip blanks include one XAD-2 resin module and one methanol sample per sample shipment.

<sup>3</sup> Lab blank and LCS/LCSD includes one set per analytical fraction (front half, back half and condensate).

<sup>4</sup> One set of media blank archived at laboratory at media preparation.

<sup>5</sup> Actual number of samples collected in field.

<sup>6</sup> Not applicable.



## 2. SUMMARY OF TEST RESULTS

A total of four test runs were performed on the PPA stack, two tests during the Hydrolysis portion of the process and two tests during Vaporization. Three tests were performed on the VE South stack. It should be noted that the initial test on the VE South stack performed on 26 February 2018 failed the post-test leak check; however, the samples were recovered, analyzed and reported. For test run one on the VE South stack, the process went down for the last eight minutes. Sampling continued during this period. Table 2-1 provides a summary of the HFPO Dimer Acid emission test results. Detailed test results summaries are provided in Section 6.

It is important to note that emphasis is being placed on the characterization of the emissions based on the stack test results. Research conducted in developing the protocol for stack testing HFPO Dimer Acid Fluoride, HFPO Dimer Acid Ammonium Salt and HFPO Dimer Acid realized that the resulting testing, including collection of the air samples and extraction of the various fraction of the sampling train, would result in all three compounds being expressed as simply the HFPO Dimer Acid. However, it should be understood that the total HFPO Dimer Acid results provided on Table 2-1 and in this report include a percentage of each of the three compounds.

**Table 2-1**

**Summary of HFPO Dimer Acid Test Results**

Source	Run No.	Emission Rates	
		lb/hr	g/sec
PPA Stack	1 – Vaporization	2.79E-2	3.51E-3
	2 – Vaporization	1.87E-2	2.36E-3
	Average	2.33E-2	2.94E-3
	1 - Hydrolysis	1.31	1.65E-1
	2 - Hydrolysis	1.84	2.31E-1
	Average	1.58	1.98E-1
VE South Stack	1	3.94E-4	4.96E-5
	2	1.48E-3	1.87E-4
	Average <sup>1</sup>	9.37E-4	1.18E-4
	1 Aborted Test	1.32E-3	1.66E-4

1. Average of Run Nos. 1 and 2 only. Aborted test reported separately.

### **3. PROCESS DESCRIPTIONS**

The Fluoromonomers and PPA areas are included in the scope of this test program.

#### **3.1 POLYMER PROCESSING AID (PPA) AREA**

The PPA facility produces surfactants used to produce fluoropolymer products at other Chemours facilities, such as Teflon®, as well as sales to outside producers of fluoropolymers.

Process streams are vented to a caustic wet scrubber (ACD-A1) and vented to a process stack (AEP-A1). The process inside the building is under negative pressure and the building air is vented to the process stack (AEP-A1).

#### **3.2 FLUOROMONOMERS**

These facilities produce a family of fluorocarbon compounds used to produce Chemours products such as Teflon Polymers and Viton®, as well as sales to outside customers.

The VE South Waste Gas Scrubber is vented to a process stack (NEP-Hdr2). In addition, the following building air systems are vented to this stack:

- Permeators
- RV Catch Pots
- Tower HVAC
- Nitrogen Supply to Catch Tanks
- Catalyst Feed Tank Pot Charge Vent

### 3.3 PROCESS OPERATIONS AND PARAMETERS

Testing during the following operations provided “normal” conditions while running products and operations that were expected to result in the most conservative (i.e., highest) emissions for the target compound.

Source	Operation/Product	Batch or Continuous
PPA	AF Column Reboiler/Virgin Pressure Transfers/Virgin or Purified	Continuous once it starts taking off to feed tank (Wed – Fri) Batch (pressure transfers from one vessel to another – every 2 hours)
VE South	VES/PMVE/PEVE	Semi-continuous – Condensation is continuous, Two Agitated Bed Reactors are batch for 30-40 mins at end of each run, Refining (ether column) is batch

During the test program, the following parameters were monitored by Chemours and are included in Appendix A.

- PPA Process
  - Caustic Wet Scrubber (ACD-A1)
    - Caustic recirculation flow rate
    - Differential pressure across the packing
- Fluoromonomers Processes
  - VE South Waste Gas Scrubber
    - Caustic recirculation flow rate

## **4. DESCRIPTION OF TEST LOCATIONS**

### **4.1 PPA PROCESS STACK**

Two 4" ID test ports are in place on the 30" ID fiberglass stack. The ports are 12' (4.8 diameters) from the nearest downstream disturbance (waste gas scrubber demister duct) and 32' (12.8 diameters) from the nearest upstream disturbance (stack exit.)

Per EPA Method 1, a total of 24 traverse points (12 per axis) were used for M0010 isokinetic sampling. See Figure 4-1 for a schematic of the test port and traverse point locations.

Note: All measurements at the test location were confirmed prior to sampling.

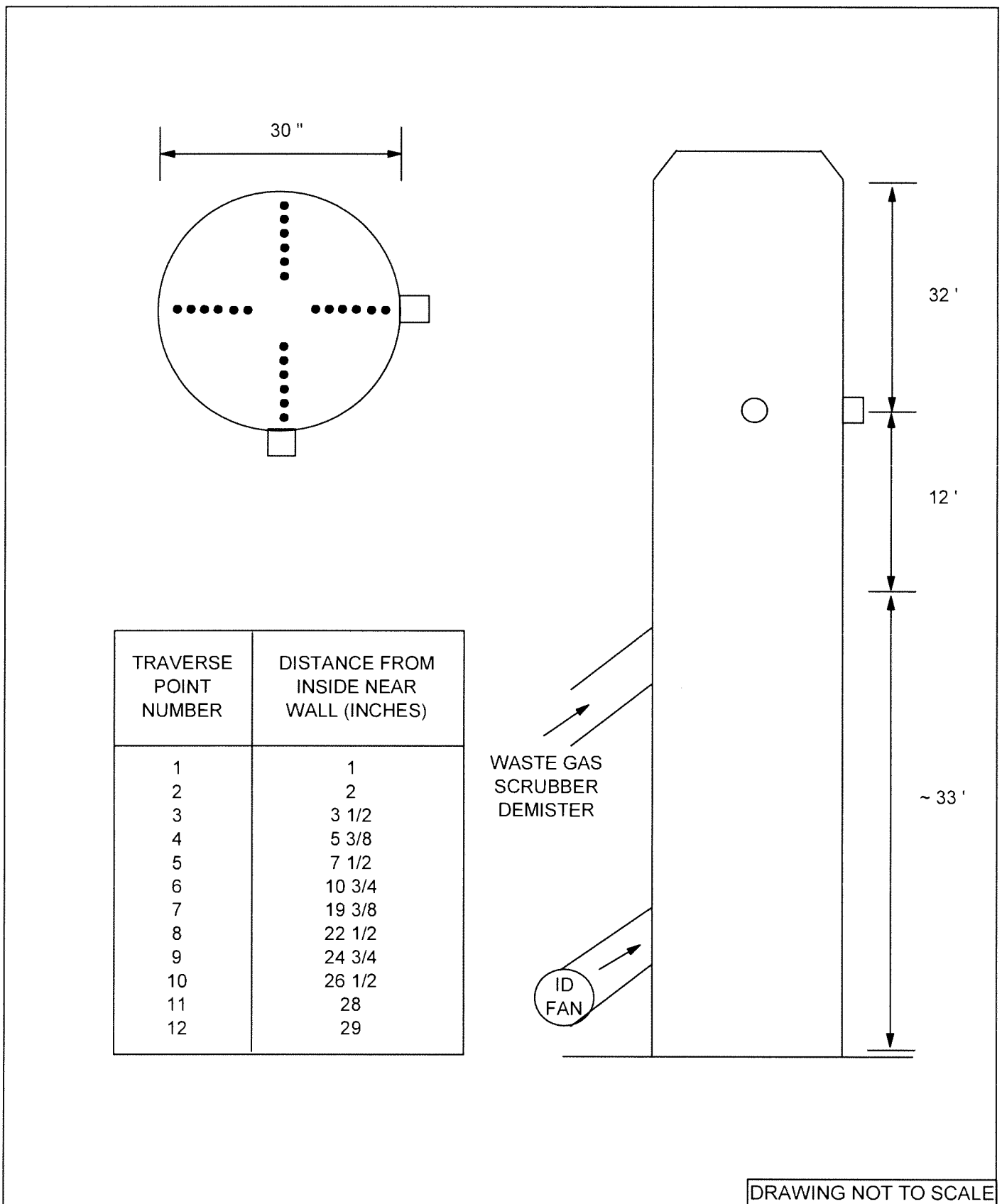
### **4.2 VE SOUTH SCRUBBER STACK**

Two 6" ID test ports are installed on the 42" ID steel stack. The ports are placed 150" (3.6 diameters) from the location where the waste gas scrubber vent enters the stack and 20' (5.7 diameters) from the stack exit.

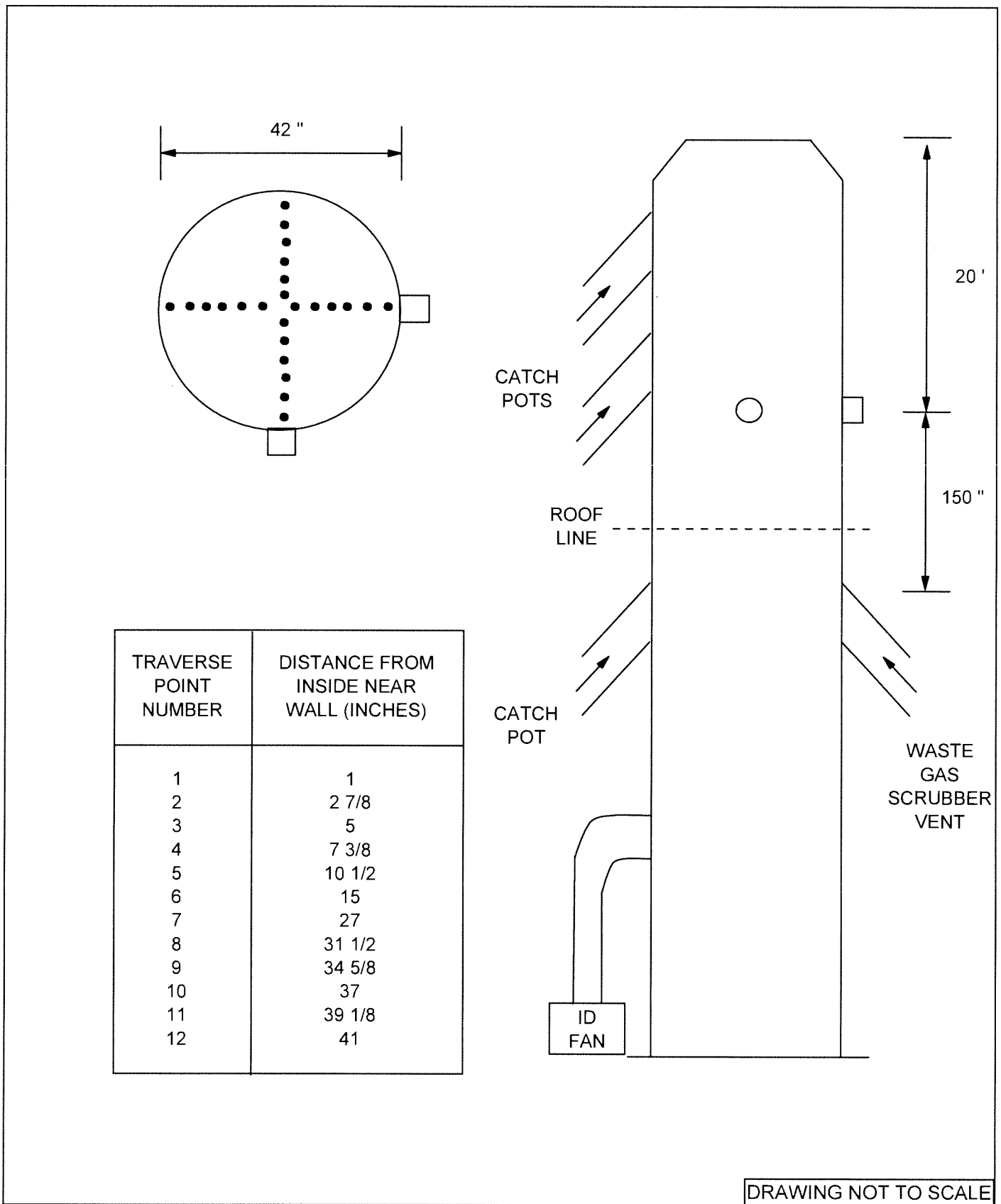
Per EPA Method 1, a total of 24 traverse points (12 per axis) were used for M0010 isokinetic sampling. It should be noted that near the port locations are a number of small ducts leading to the stack. These are catch pots which, under normal operation, do not discharge to the stack. They are used to vent process gas to the stack in the event of a process upset. For the purpose of test port location, and given the fact that there is no flow from these catch pots, they are not considered a flow contributor or a disturbance.

See Figure 4-2 for a schematic of the test port and traverse point locations.

Note: All measurements at the test location were confirmed prior to sampling.



**FIGURE 4-1  
PPA EXHAUST STACK TEST PORT  
AND TRAVERSE POINT LOCATION**



**FIGURE 4-2  
VE SOUTH SCRUBBER STACK TEST PORT  
AND TRAVERSE POINT LOCATION**

## **5. SAMPLING AND ANALYTICAL METHODS**

### **5.1 STACK GAS SAMPLING PROCEDURES**

The purpose of this section is to describe the stack gas emissions sampling trains and to provide details of the stack sampling and analytical procedures utilized during the emissions test program.

#### **5.1.1 Pre-Test Determinations**

Preliminary test data were obtained at each test location. Stack geometry measurements were measured and recorded, and traverse point distances verified. A preliminary velocity traverse was performed utilizing a calibrated "S" type pitot tube and an inclined manometer to determine velocity profiles. Flue gas temperatures were observed with a calibrated direct readout panel meter equipped with a chromel-alumel thermocouple. Preliminary water vapor content was estimated by wet bulb/dry bulb temperature measurements.

A check for the presence or absence of cyclonic flow was conducted at each test location. The cyclonic flow checks were negative ( $< 20^\circ$ ) verifying that both sources were acceptable for testing.

Preliminary test data was used for nozzle sizing and sampling rate determinations for isokinetic sampling procedures.

Calibration of probe nozzles, pitot tubes, metering systems, and temperature measurement devices was performed as specified in Section 5 of EPA Method 5 test procedures.

### **5.2 STACK PARAMETERS**

#### **5.2.1 EPA Method 0010**

The sampling train utilized to perform the HFPO Dimer Acid sampling was an EPA Method 0010 train (see Figure 5-1). The Method 0010 consisted of a borosilicate nozzle that attached directly to a heated borosilicate probe. In order to minimize possible thermal degradation of the HFPO Dimer Acid, the probe and particulate filter were heated above stack temperature to minimize water vapor condensation before the filter. The probe was connected directly to a heated borosilicate filter holder containing a solvent extracted glass fiber filter.

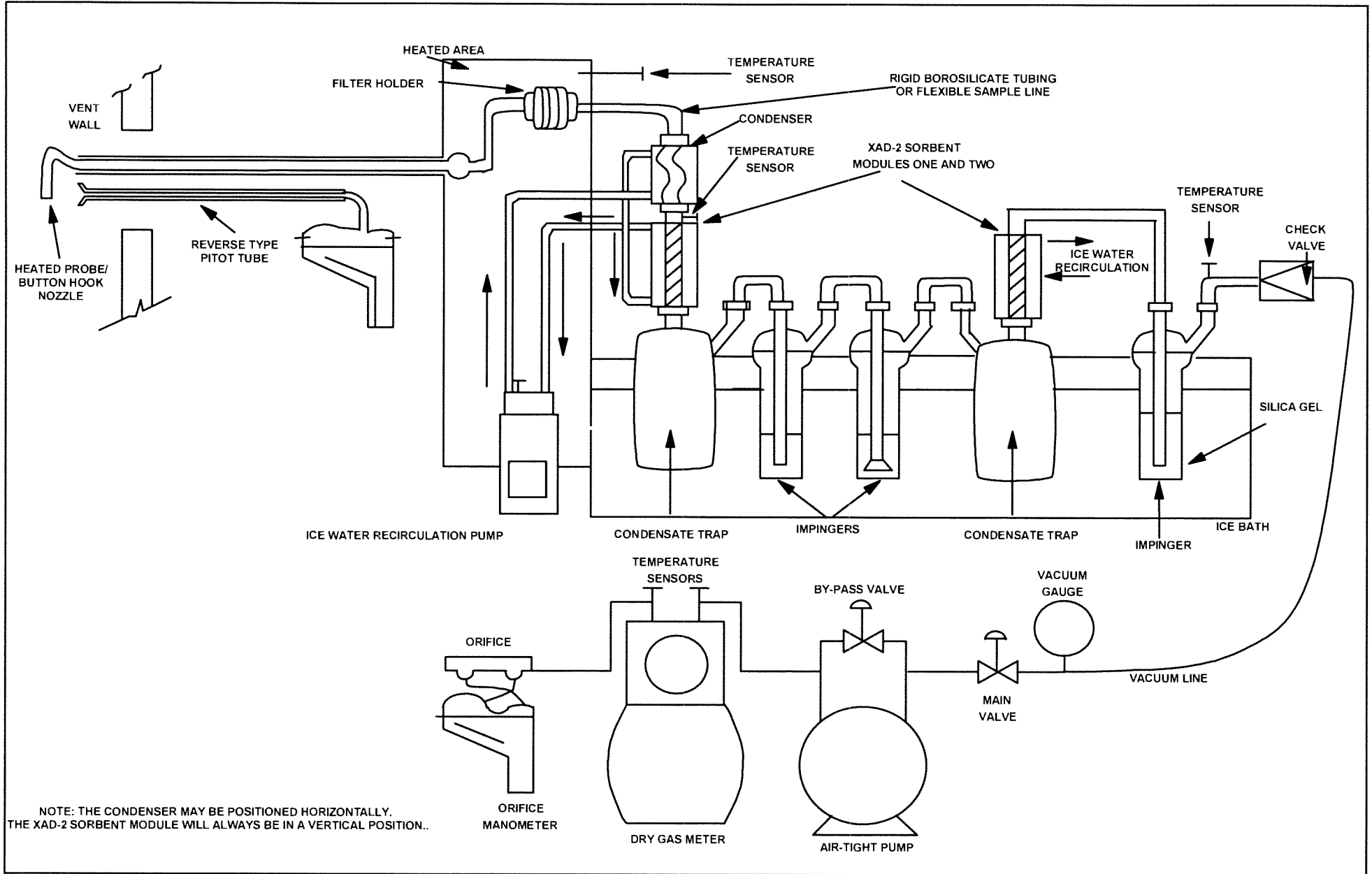


FIGURE 5-1  
EPA METHOD 0010 SAMPLING TRAIN



A section of borosilicate glass (or flexible polyethylene tubing) connected the filter holder exit to a Graham (spiral) type ice water-cooled condenser, an icewater-jacketed sorbent module containing approximately 40 grams of XAD-2 resin. The XAD-2 resin tube was equipped with an inlet temperature sensor. The XAD-2 resin trap was followed by a condensate knockout impinger and a series of two impingers that contained 100-ml of high purity distilled water. The train also included a second XAD-2 resin trap behind the impinger section to evaluate possible sampling train breakthrough. Each XAD-2 resin trap was connected to a 1-L condensate knockout trap. The final impinger contained 300 grams of dry pre-weighed silica gel. All impingers and the condensate traps were maintained in an ice bath. Ice water was continuously circulated in the condenser and both XAD-2 modules to maintain method required temperature. A control console with a leakless vacuum pump, a calibrated orifice, and dual inclined manometers was connected to the final impinger via an umbilical cord to complete the sample train.

HFPO Dimer Acid Fluoride (CAS No. 2062-98-8) that is present in the stack gas is expected to be captured in the sampling train along with HFPO Dimer Acid (CAS No. 13252-13-6). HFPO Dimer Acid Fluoride undergoes hydrolysis instantaneously in water in the sampling train and during the sample recovery step and will be converted to HFPO Dimer Acid such that the amount of HFPO Dimer Acid emissions represents a combination of both HFPO Dimer Acid Fluoride and HFPO Dimer Acid.

During sampling, gas stream velocities were measured by attaching a calibrated "S"-type pitot tube into the gas stream adjacent to the sampling nozzle. The velocity pressure differential was observed immediately after positioning the nozzle at each traverse point, and the sampling rate adjusted to maintain isokineticity  $\pm 10$ . Flue gas temperature was monitored at each point with a calibrated panel meter and thermocouple. Isokinetic test data was recorded at each traverse point during all test periods, as appropriate. Leak checks were performed on the sampling apparatus according to reference method instructions, prior to and following each run, component change (if required) or during midpoint port changes.

### **5.2.2 EPA Method 0010 Sample Recovery**

At the conclusion of each test, the sampling train was dismantled, the openings sealed, and the components transported to the field laboratory trailer for recovery.

A consistent procedure was employed for sample recovery:

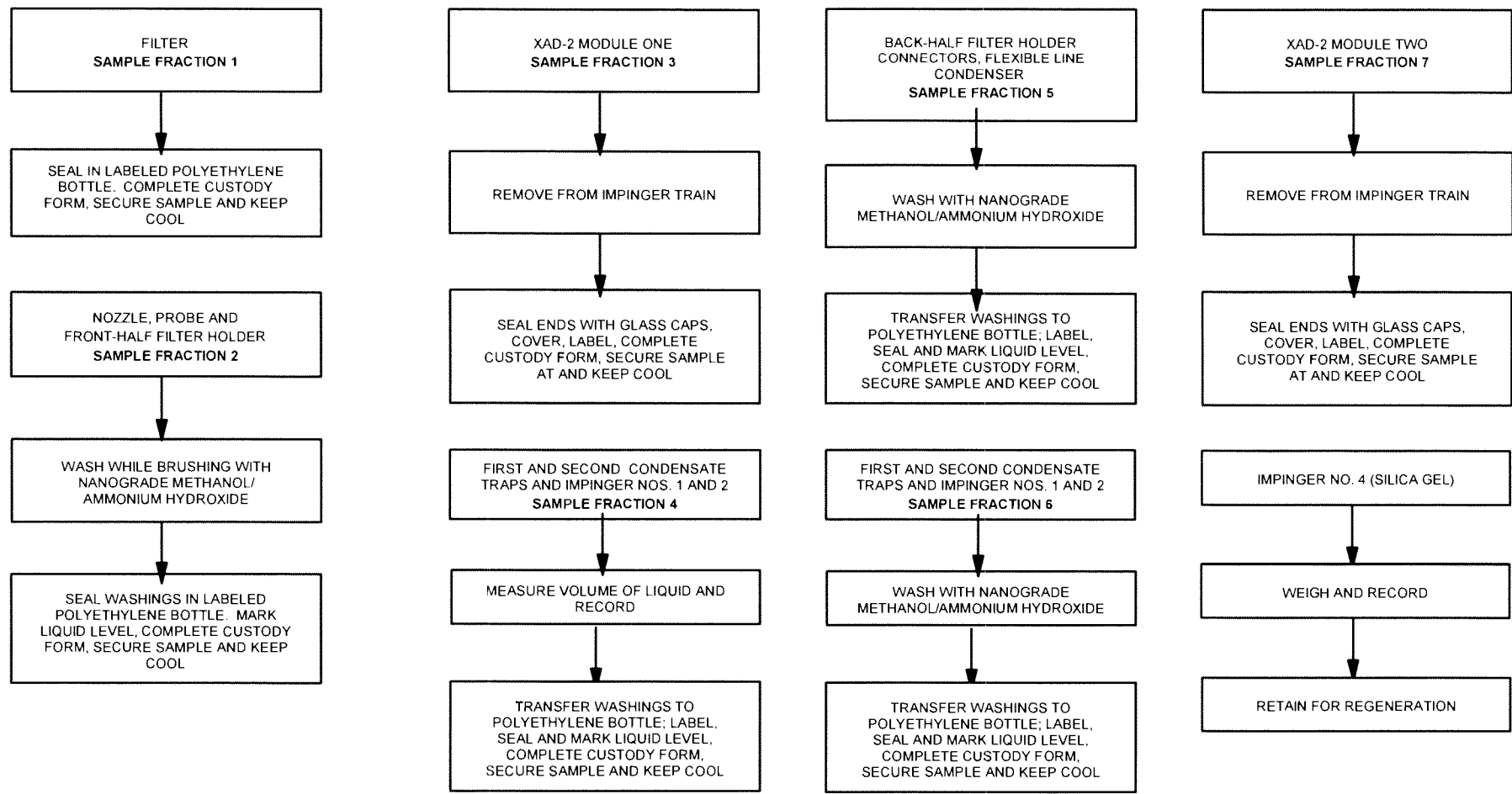
1. The two XAD-2 covered (to minimize light degradation) sorbent modules (1 and 2) were sealed and labeled.
2. The glass fiber filter(s) were removed from the holder with tweezers and placed in a polyethylene container along with any loose particulate and filter fragments.
3. The particulate adhering to the internal surfaces of the nozzle, probe and front half of the filter holder were rinsed with a solution of methanol and ammonium hydroxide into a polyethylene container while brushing a minimum of three times until no visible particulate remains. Particulate adhering to the brush was rinsed with methanol/ammonium hydroxide into the same container. The container was sealed.
4. The volume of liquid collected in the first condensate trap was measured, the value recorded, and the contents poured into a polyethylene container.
5. All train components between the filter exit and the first condensate trap were rinsed with methanol/ammonium hydroxide. The solvent rinse was placed in a separate polyethylene container and sealed.
6. The volume of liquid in the impingers one, two, and second condensate trap were measured, the values recorded, and sample was placed in the same container as step 4 above and sealed.
7. The two impingers, condensate trap, and connectors were rinsed with methanol/ammonium hydroxide. The solvent sample was placed in a separate polyethylene container and sealed.
8. The silica gel in the final impinger was weighed and the weight gain value recorded.
9. Site (reagent) blank samples of the methanol/ammonium hydroxide, XAD resin, filter and distilled water were retained for analysis.

Each container was labeled to clearly identify its contents. The height of the fluid level was marked on the container of each liquid sample to provide a reference point for a leakage check during transport. All samples were maintained cool.

During each test campaign, a M-0010 blank train was setup near the test location, leak checked and recovered along with the respective sample train. Following sample recovery, all samples were transported to the TestAmerica Inc. for sample extraction and analysis.

See Figure 5-2 for a schematic of the M-0010 sample recovery process.

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**FIGURE 5-2**  
**HFPO DIMER ACID SAMPLE RECOVERY PROCEDURES FOR METHOD 0010**

### 5.2.3 EPA Method 0010 – Sample Analysis

Method 0010 sampling trains resulted in four separate analytical fractions for HFPO Dimer Acid analysis according to SW-846 Method 3542:

- Front-Half Composite—comprised of the Particulate Filter, and the probe, nozzle, and front-half of the filter holder solvent rinses,
- Back-half Composite—comprised of the first XAD-2 resin material and the back-half of the filter holder with connecting glassware solvent rinses,
- Condensate Composite—comprised of the aqueous condensates and the contents of Impingers #1 and 2 with solvent rinses,
- Breakthrough XAD-2 Resin Tube—comprised of the resin tube behind the series of impingers.

The second XAD-2 resin material was analyzed separately to evaluate any possible sampling train HFPO-DA breakthrough.

The Front and Back-half composites and the second XAD-2 resin material were placed in polypropylene wide-mouth bottles and tumbled with methanol containing 5% NH<sub>4</sub>OH for 18 hours. Portions of the extracts were processed analytically for the HFPO dimer acid by Liquid Chromatography and dual mass spectroscopy (HPLC/MS/MS). The Condensate composite was concentrated onto a solid phase extraction (SPE) cartridge followed by desorption from the cartridge using methanol. Portions of those extracts were also processed analytically by HPLC/MS/MS.

Samples were spiked with isotope dilution internal standard (IDA) at the commencement of their preparation to provide accurate assessments of the analytical recoveries. Final data was corrected for IDA standard recoveries.

Test America developed detailed procedures for the sample extraction and analysis for HFPO Dimer Acid. These procedures were incorporated into the test protocol and are summarized in Appendix C.

### 5.3 GAS COMPOSITION

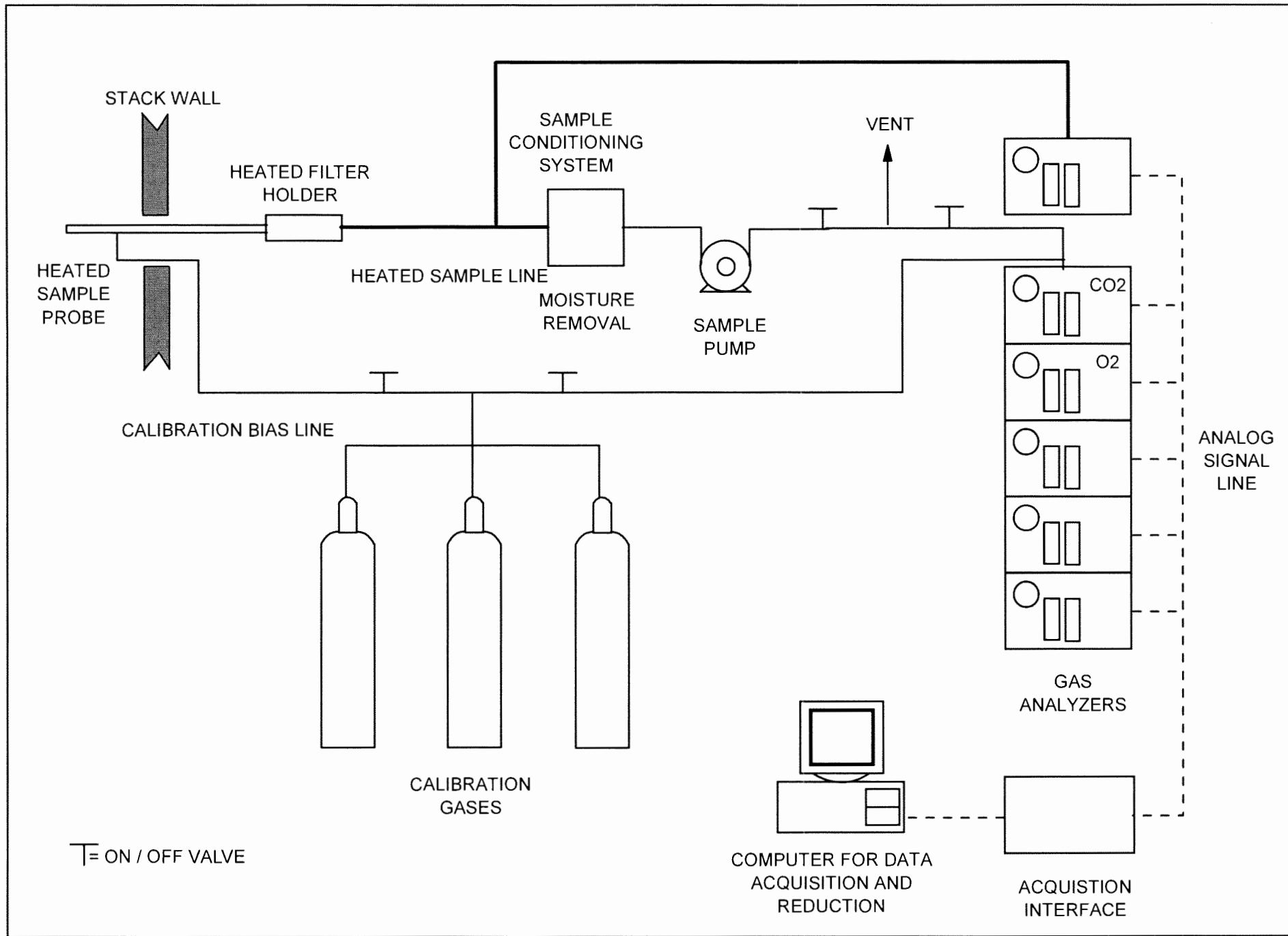
The WESTON mobile laboratory equipped with instrumental analyzers was used to measure carbon dioxide (CO<sub>2</sub>) and oxygen (O<sub>2</sub>) concentrations. A diagram of the WESTON sampling system is presented in Figure 5-3.

The sample was collected at the exhaust of the Method 0010 sampling system. The sample was drawn through the heated probe, filter and impingers which acted as a sample conditioner. At the end of the line, a tee permitted the introduction of calibration gas. The output from the sampling system was recorded electronically, and one-minute averages were recorded and displayed on a data logger.

Each analyzer was set up and calibrated internally by introduction of calibration gas standards directly to the analyzer from a calibration manifold. The calibration manifold is designed with an atmospheric vent to release excess calibration gas and maintains the calibration at ambient pressure. The direct calibration sequence consisted of alternate injections of zero and mid-range gases with appropriate adjustments until the desired responses were obtained. The high range standards were then introduced in sequence without further adjustment.

The sample line integrity was verified by performing a bias test before and after each test period. The sampling system bias test consisted of introducing the zero gas and one up range calibration standard in excess to the valve at the probe end when the system was sampling normally. The excess calibration gas flowed out through the probe to maintain ambient sampling system pressure. Calibration gas supply was regulated to maintain constant sampling rate and pressure. Instrument bias check response was compared to internal calibration responses to insure sample line integrity and to calculate a bias correction factor after each run using the ratio of the measured concentration of the bias gas certified by the calibration gas supplier.

The oxygen and carbon dioxide content of each stack gas was measured according to EPA Method 3A procedures which incorporate the latest updates of EPA Method 7E. A Servomex Model 4900 analyzer (or equivalent) was used to measure oxygen content. A Servomex Model 4900 analyzer (or equivalent) was used to measure carbon dioxide content of the stack gas. Both analyzers were calibrated with EPA Protocol gases prior to the start of the test program and performance was verified by sample bias checks before and after each test run.



**FIGURE 5-3  
WESTON SAMPLING SYSTEM**

## 6. DETAILED TEST RESULTS AND DISCUSSION

Preliminary testing and the associated analytical results required significant sample dilution to bring the HFPO Dimer Acid concentration within instrument calibration, therefore, sample times and sample volumes were reduced for the formal test program. This was approved by the North Carolina Department of Environmental Quality (NCDEQ).

Each test was a minimum of 96 minutes in duration. A total of three test runs were performed on the VE South stack and four tests (two per process condition) were performed on the PPA stack.

Tables 6-1, 6-2 and 6-3 provide detailed test data and test results for the PPA and VE South stack, respectively.

The Method 3A sampling on all sources indicated that the O<sub>2</sub> and CO<sub>2</sub> concentrations were at ambient air levels (20.9% O<sub>2</sub>, 0% CO<sub>2</sub>), therefore, 20.9% O<sub>2</sub> and 0% CO<sub>2</sub> values were used in all calculations.

For the four tests performed on the PPA stack, two were performed during the Vaporization portion of the process and two during Hydrolysis.

The initial test run one on the VE South stack failed the final leak test; however, the samples were recovered, analyzed and reported. For test run one on the VE South stack, the process went down with eight minutes left in the test. The test continued to its endpoint.

**TABLE 6-1**  
**CHEMOURS - FAYETTEVILLE, NC**  
**SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>Test Data</b>			
Process Mode	Vaporization		Vaporization
Run number	1	2	
Location	PPA	PPA	
Date	3/1/2018	3/1/2018	
Time period	1158-1353	1422-1618	
<b>SAMPLING DATA:</b>			
Sampling duration, min.	96.0	96.0	
Nozzle diameter, in.	0.189	0.189	
Cross sectional nozzle area, sq.ft.	0.000195	0.000195	
Barometric pressure, in. Hg	29.84	29.66	
Avg. orifice press. diff., in H <sub>2</sub> O	0.83	0.86	
Avg. dry gas meter temp., deg F	76.5	79.5	
Avg. abs. dry gas meter temp., deg. R	537	540	
Total liquid collected by train, ml	34.3	17.4	
Std. vol. of H <sub>2</sub> O vapor coll., cu.ft.	1.6	0.8	
Dry gas meter calibration factor	0.9916	0.9916	
Sample vol. at meter cond., dcf	46.050	47.520	
Sample vol. at std. cond., dscf <sup>(1)</sup>	44.893	45.791	
Percent of isokinetic sampling	102.3	101.1	
<b>GAS STREAM COMPOSITION DATA:</b>			
CO <sub>2</sub> , % by volume, dry basis	0.0	0.0	
O <sub>2</sub> , % by volume, dry basis	20.9	20.9	
N <sub>2</sub> , % by volume, dry basis	79.1	79.1	
Molecular wt. of dry gas, lb/lb mole	28.84	28.84	
H <sub>2</sub> O vapor in gas stream, prop. by vol.	0.035	0.018	
Mole fraction of dry gas	0.965	0.982	
Molecular wt. of wet gas, lb/lb mole	28.46	28.65	
<b>GAS STREAM VELOCITY AND VOLUMETRIC FLOW DATA:</b>			
Static pressure, in. H <sub>2</sub> O	-2.80	-2.80	
Absolute pressure, in. Hg	29.63	29.45	
Avg. temperature, deg. F	79	81	
Avg. absolute temperature, deg.R	539	541	
Pitot tube coefficient	0.84	0.84	
Total number of traverse points	24	24	
Avg. gas stream velocity, ft./sec.	41.8	42.8	
Stack/duct cross sectional area, sq.ft.	4.90	4.90	
Avg. gas stream volumetric flow, wacf/min.	12289	12587	
Avg. gas stream volumetric flow, dscf/min.	11499	11873	

<sup>(1)</sup> Standard conditions = 68 deg. F. (20 deg. C.) and 29.92 in Hg (760 mm Hg)



**TABLE 6-1(cont.)**  
**CHEMOURS - FAYETTEVILLE, NC**  
**SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>TEST DATA</b>		
Process Mode	Vaporization	Vaporization
Run number	1	2
Location	PPA	PPA
Date	3/1/2018	3/1/2018
Time period	1158-1353	1422-1618
<b>LABORATORY REPORT DATA, ug.</b>		
HFPO Dimer Acid	823.127	545.9
<b>EMISSION RESULTS, ug/dscm.</b>		
HFPO Dimer Acid	647.4	420.9
<b>EMISSION RESULTS, lb/dscf.</b>		
HFPO Dimer Acid	4.04E-08	2.63E-08
<b>EMISSION RESULTS, lb/hr.</b>		
HFPO Dimer Acid	2.79E-02	1.87E-02
<b>EMISSION RESULTS, g/sec.</b>		
HFPO Dimer Acid	3.51E-03	2.36E-03

**TABLE 6-2**  
**CHEMOURS - FAYETTEVILLE, NC**  
**SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>Test Data</b>			
	Hydrolysis		Hydrolysis
	1	2	
	PPA	PPA	
	3/1/2018	3/2/2018	
	0920-1114	0815-1011	
<b>SAMPLING DATA:</b>			
Sampling duration, min.	96.0	96.0	
Nozzle diameter, in.	0.189	0.189	
Cross sectional nozzle area, sq.ft.	0.000195	0.000195	
Barometric pressure, in. Hg	29.84	29.89	
Avg. orifice press. diff., in H <sub>2</sub> O	0.86	0.87	
Avg. dry gas meter temp., deg F	65.9	53.5	
Avg. abs. dry gas meter temp., deg. R	526	513	
Total liquid collected by train, ml	24.4	32.3	
Std. vol. of H <sub>2</sub> O vapor coll., cu.ft.	1.1	1.5	
Dry gas meter calibration factor	0.9916	0.9916	
Sample vol. at meter cond., def	46.050	45.605	
Sample vol. at std. cond., dscf <sup>(1)</sup>	45.801	46.537	
Percent of isokinetic sampling	101.1	101.4	
<b>GAS STREAM COMPOSITION DATA:</b>			
CO <sub>2</sub> , % by volume, dry basis	0.0	0.0	
O <sub>2</sub> , % by volume, dry basis	20.9	20.9	
N <sub>2</sub> , % by volume, dry basis	79.1	79.1	
Molecular wt. of dry gas, lb/lb mole	28.84	28.84	
H <sub>2</sub> O vapor in gas stream, prop. by vol.	0.024	0.032	
Mole fraction of dry gas	0.976	0.968	
Molecular wt. of wet gas, lb/lb mole	28.57	28.49	
<b>GAS STREAM VELOCITY AND VOLUMETRIC FLOW DATA:</b>			
Static pressure, in. H <sub>2</sub> O	-2.80	-2.80	
Absolute pressure, in. Hg	29.63	29.68	
Avg. temperature, deg. F	78	71	
Avg. absolute temperature, deg.R	538	531	
Pitot tube coefficient	0.84	0.84	
Total number of traverse points	24	24	
Avg. gas stream velocity, ft./sec.	42.6	42.8	
Stack/duct cross sectional area, sq.ft.	4.90	4.90	
Avg. gas stream volumetric flow, wacf/min.	12516	12593	
Avg. gas stream volumetric flow, dscf/min.	11872	12024	

<sup>(1)</sup> Standard conditions = 68 deg. F. (20 deg. C.) and 29.92 in Hg (760 mm Hg)

**TABLE 6-2(cont.)  
CHEMOURS - FAYETTEVILLE, NC  
SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>TEST DATA</b>		
Process Mode	Hydrolysis	Hydrolysis
Run number	1	2
Location	PPA	PPA
Date	3/1/2018	3/2/2018
Time period	0920-1114	0815-1011
<b>LABORATORY REPORT DATA, ug.</b>		
HFPO Dimer Acid	38316.118	53757.399
<b>EMISSION RESULTS, ug/dscm.</b>		
HFPO Dimer Acid	29537.4	40785.3
<b>EMISSION RESULTS, lb/dscf.</b>		
HFPO Dimer Acid	1.84E-06	2.55E-06
<b>EMISSION RESULTS, lb/hr.</b>		
HFPO Dimer Acid	1.31E+00	1.84E+00
<b>EMISSION RESULTS, g/sec.</b>		
HFPO Dimer Acid	1.65E-01	2.31E-01

**TABLE 6-3**  
**CHEMOURS - FAYETTEVILLE, NC**  
**SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>Test Data</b>			
Run number	1 <sup>(1)</sup>	2	1 Aborted Test <sup>(2)</sup>
Location	VE South	VE South	VE South
Date	2/27/2018	2/27/2018	2/26/2018
Time period	1018-1208	1446-1630	1552-1735
<b>SAMPLING DATA:</b>			
Sampling duration, min.	96.0	96.0	96.0
Nozzle diameter, in.	0.300	0.300	0.300
Cross sectional nozzle area, sq.ft.	0.000491	0.000491	0.000491
Barometric pressure, in. Hg	30.38	30.34	30.10
Avg. orifice press. diff., in H <sub>2</sub> O	1.81	1.64	1.76
Avg. dry gas meter temp., deg F	60.8	66.0	69.3
Avg. abs. dry gas meter temp., deg. R	521	526	529
Total liquid collected by train, ml	29.9	34.6	33.0
Std. vol. of H <sub>2</sub> O vapor coll., cu.ft.	1.4	1.6	1.6
Dry gas meter calibration factor	0.9934	0.9934	0.9934
Sample vol. at meter cond., dcf	70.630	67.794	68.938
Sample vol. at std. cond., dscf <sup>(3)</sup>	72.511	68.796	68.995
Percent of isokinetic sampling	103.7	105.3	103.0
<b>GAS STREAM COMPOSITION DATA:</b>			
CO <sub>2</sub> , % by volume, dry basis	0.0	0.0	0.0
O <sub>2</sub> , % by volume, dry basis	20.9	20.9	20.9
N <sub>2</sub> , % by volume, dry basis	79.1	79.1	79.1
Molecular wt. of dry gas, lb/lb mole	28.84	28.84	28.84
H <sub>2</sub> O vapor in gas stream, prop. by vol.	0.019	0.023	0.022
Mole fraction of dry gas	0.981	0.977	0.978
Molecular wt. of wet gas, lb/lb mole	28.63	28.58	28.60
<b>GAS STREAM VELOCITY AND VOLUMETRIC FLOW DATA:</b>			
Static pressure, in. H <sub>2</sub> O	-0.75	-0.75	-0.75
Absolute pressure, in. Hg	30.32	30.28	30.04
Avg. temperature, deg. F	62	66	71
Avg. absolute temperature, deg.R	522	526	531
Pitot tube coefficient	0.84	0.84	0.84
Total number of traverse points	24	24	12
Avg. gas stream velocity, ft./sec.	24.6	23.3	24.3
Stack/duct cross sectional area, sq.ft.	9.62	9.62	9.62
Avg. gas stream volumetric flow, wacf/min.	14207	13440	14006
Avg. gas stream volumetric flow, dscf/min.	14275	13339	13674

<sup>(1)</sup> Unit was down for approximately the last 8 minutes of the test

<sup>(2)</sup> Failed post test leak check

<sup>(3)</sup> Standard conditions = 68 deg. F. (20 deg. C.) and 29.92 in Hg (760 mm Hg)

**TABLE 6-3(cont.)  
CHEMOURS - FAYETTEVILLE, NC  
SUMMARY OF HFPO DIMER ACID TEST DATA AND TEST RESULTS**

<b>TEST DATA</b>			
Run number	1 <sup>(1)</sup>	2	1 Aborted Test <sup>(2)</sup>
Location	VE South	VE South	VE South
Date	2/27/2018	2/27/2018	2/26/2018
Time period	1018-1208	1446-1630	1552-1735
<b>LABORATORY REPORT DATA, ug.</b>			
HFPO Dimer Acid	15.1383	57.8013	50.1664
<b>EMISSION RESULTS, ug/dscm.</b>			
HFPO Dimer Acid	7.4	29.7	25.7
<b>EMISSION RESULTS, lb/dscf.</b>			
HFPO Dimer Acid	4.60E-10	1.85E-09	1.60E-09
<b>EMISSION RESULTS, lb/hr.</b>			
HFPO Dimer Acid	3.94E-04	1.48E-03	1.32E-03
<b>EMISSION RESULTS, g/sec.</b>			
HFPO Dimer Acid	4.96E-05	1.87E-04	1.66E-04

<sup>(1)</sup> Unit was down for approximately the last 8 minutes of the test

<sup>(2)</sup> Results are approximate due to failed post test leak check

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**APPENDIX A  
PROCESS OPERATIONS DATA**

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**APPENDIX B**  
**RAW AND REDUCED TEST DATA**

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# Sample and Velocity Traverse Point Data Sheet - Method 1

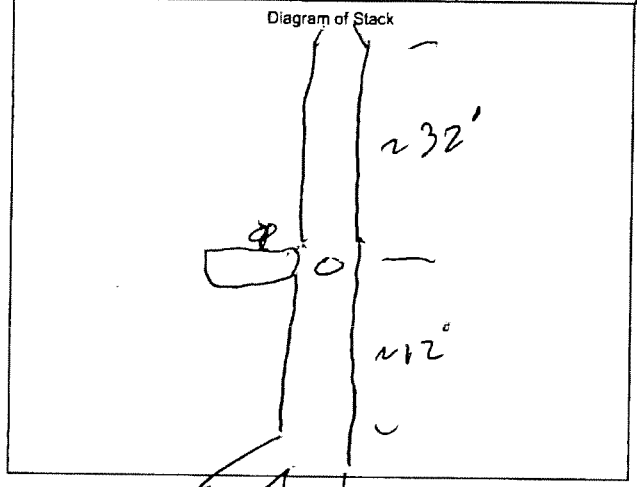
Client Chemours  
 Location/Plant Fayetteville NC  
 Source Ppt Stack

Operator PADA  
 Date 11/3/08  
 W.O. Number 12116

Duct Type  Circular  Rectangular Duct Indicate appropriate type  
 Traverse Type  Particulate Traverse  Velocity Traverse  CEM Traverse

Distance from far wall to outside of port (in.) = C	45
Port Depth (in.) = D	15
Depth of Duct, diameter (in.) = C-D	30
Area of Duct (ft <sup>2</sup> )	4.90
Total Traverse Points	24
Total Traverse Points per Port	12
Port Diameter (in.) —(Flange-Threaded-Hole)	4"
Monorail Length	—
<b>Rectangular Ducts Only</b>	
Width of Duct, rectangular duct only (in.)	—
Total Ports (rectangular duct only)	—
Equivalent Diameter = (2*L*W)/(L+W)	—

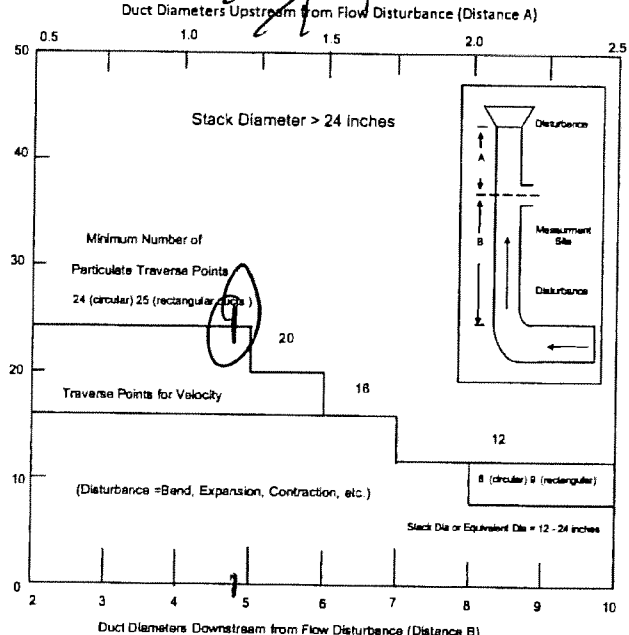
Flow Disturbances	
Upstream - A (ft)	132
Downstream - B (ft)	112
Upstream - A (duct diameters)	~12.8
Downstream - B (duct diameters)	~4.0



Traverse Point Locations			
Traverse Point	% of Duct	Distance from Inside Duct Wall (in)	Distance from Outside of Port (in)
1	2.1	6.3	16
2	6.7	20	17
3	11.9	35.5	18 1/2
4	17.7	51.3	20 3/8
5	25	71.5	22 1/2
6	35.6	107	25 3/4
7	44.4	143	34 3/8
8	52.3	181.5	37 1/2
9	60.2	247	39 3/4
10	67.9	265	46 1/2
11	75.8	280	43
12	87.9	284	44

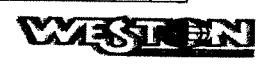
CEM 3 Point(Long Measurement Line) Stratification Point Locations		
1	0.167	
2	0.50	
3	0.833	

Note: If stack dia < 12 inch use EPA Method 1A (Sample port upstream of pitot port)  
 Note: If stack dia > 24" then adjust traverse point to 1 inch from wall  
 If stack dia < 24" then adjust traverse point to 0.5 inch from wall



Traverse Point Location Percent of Stack -Circular													
		Number of Traverse Points											
		1	2	3	4	5	6	7	8	9	10	11	12
T r a v e r s e P o i n t L o c a t i o n	1		14.6		6.7		4.4		3.2		2.6		2.1
	2		83.4		25		14.6		10.5		8.2		6.7
	3			75		29.6		19.4		14.6		11.8	
	4				93.3		70.4		32.3		22.6		17.7
	5					85.4		67.7		34.2		25	
	6						95.6		80.6		65.8		35.6
	7							89.5		77.4		64.4	
	8								96.8		85.4		75
	9									91.8		82.3	
	10										97.4		88.2
	11											93.3	
	12												97.9

Traverse Point Location Percent of Stack -Rectangular													
		Number of Traverse Points											
		1	2	3	4	5	6	7	8	9	10	11	12
T r a v e r s e P o i n t L o c a t i o n	1		25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
	2		75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
	3			83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
	4				87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
	5					90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
	6						91.7	78.6	68.8	61.1	55.0	50.0	45.8
	7							97.9	81.3	72.2	65.0	59.1	54.2
	8								93.8	83.3	75.0	68.2	62.5
	9									94.4	85.0	77.3	70.8
	10										95.0	86.4	79.2
	11											95.5	87.5
	12												95.8





# Determination of Stack Gas Velocity - Method 2

Client Chow Operator KS/MW Pitot Coeff (Cp) 0.84 -8  
 Location/Plant Fayetteville Date 1/08/2018 Stack Area, ft<sup>2</sup> (As) 4.90  
 Source PPA W.O. Number 184020202 Pitot Tube/Thermo ID P696

Run Number	Pre 1		
Time	1727-1740		
Barometric Press, in Hg (Pb)			
Static Press, in H <sub>2</sub> O (Pstatic)			
Source Moisture, % (BWS)			
O <sub>2</sub> , %			
CO <sub>2</sub> , %			

Cyclonic Flow Determination		Traverse Location		Leak Check good ? N		Leak Check good ? Y / N		Leak Check good ? Y / N	
Delta P at 0°	Angle yielding zero Delta P	Port	Point	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)
0.07	5	A	1	0.14	65				
0.07	5		2	0.14	65				
0.08	5		3	0.44	67				
0.08	5		4	0.49	68				
0.07	5		5	0.54	69				
0.08	5		6	0.70	70				
0.08	5		7	0.73	70				
0.10	5		8	0.76	70				
0.08	5		9	0.76	71				
0.09	5		10	0.76	71				
0.08	5		11	0.77	71				
0.08	5		12	0.72	71				
-	-	-	-	-	-				
0.00	0	B	1	0.17	67				
0.00	0		2	0.17	67				
0.00	0		3	0.17	67				
0.00	0		4	0.38	68				
0.00	0		5	0.51	68				
0.00	0		6	0.59	69				
0.00	0		7	0.73	69				
0.00	0		8	0.79	68				
0.00	0		9	0.78	70				
0.08	5		10	0.77	70				
0.07	5		11	0.77	70				
0.07	5		12	0.74	70				
Avg Angle		Avg Delta P & Temp		0.5633	69				
		avg √DeltaP		0.7273					
Average gas stream velocity, ft/sec.									
Vol. flow rate @ actual conditions, wacf/min									
Vol. flow rate at standard conditions, dscf/min									

$MWd = (0.32 * O_2) + (0.44 * CO_2) + (0.28 * (100 - (CO_2 + O_2)))$   
 $MWs = (MWd * (1 - (BWS/100))) + (18 * (BWS/100))$   
 $Tsa = Ts + 460$   
 $Ps = Pb + (Pstatic/13.6)$   
 $Vs = 85.49 * Cp * avg \sqrt{\Delta P} * \sqrt{Tsa / (Ps * MWs)}$   
 $Qs(act) = 60 * Vs * As$   
 $Qs(std) = 17.64 * (1 - (BWS/100)) * (Ps/Tsa) * Qs(act)$

where:  
 MWd = Dry molecular weight source gas, lb/lb-mole.  
 MWs = Wet molecular weight source gas, lb/lb-mole.  
 Tsa = Source Temperature, absolute(oR)  
 Ps = Absolute stack static pressure, inches Hg.  
 Vs = Average gas stream velocity, ft/sec.  
 Qs(act) = Volumetric flow rate of wet stack gas at actual, wacf/min  
 Qs(std) = Volumetric flow rate of dry stack gas at standard conditions, dscf/min



**CHEMOURS - FAYETTEVILLE, NC**  
**INPUTS FOR HFPO DIMER ACID CALCULATIONS**

**Test Data**

	1	2
Run number	PPA	PPA
Location	PPA	PPA
Date	3/1/2018	3/1/2018
Time period	1158-1353	1422-1618
Operator	MW	MW

**Inputs For Calcs.**

Sq. rt. delta P	0.72793	0.74444
Delta H	0.8317	0.8583
Stack temp. (deg.F)	79.3	81.1
Meter temp. (deg.F)	76.5	79.5
Sample volume (act.)	46.050	47.520
Barometric press. (in.Hg)	29.84	29.66
Volume H <sub>2</sub> O imp. (ml)	20.0	4.0
Weight change sil. gel (g)	14.3	13.4
% CO <sub>2</sub>	0.0	0.0
% O <sub>2</sub>	20.9	20.9
% N <sub>2</sub>	79.1	79.1
Area of stack (sq.ft.)	4.900	4.900
Sample time (min.)	96.0	96.0
Static pressure (in.H <sub>2</sub> O)	-2.80	-2.80
Nozzle dia. (in.)	0.189	0.189
Meter box cal.	0.9916	0.9916
Cp of pitot tube	0.84	0.84
Traverse points	24	24

RUN 1								
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.73	0.85	1.10	1.05	537.820	78	72
	2	0.73	0.85	1.10	1.05	561.000	78	72
	3	0.75	0.87	1.14	1.07	561.180	78	72
	4	0.73	0.85	1.10	1.05	584.050	78	72
	5	0.70	0.84	1.06	1.03		79	72
	6	0.68	0.82	1.03	1.01		79	72
D	1	0.58	0.76	0.88	0.94		79	74
	2	0.47	0.69	0.71	0.84		79	76
	3	0.39	0.62	0.59	0.77		79	77
	4	0.31	0.56	0.47	0.69		78	77
	5	0.28	0.53	0.43	0.66		78	77
	6	0.26	0.51	0.40	0.63		78	77
A	1	0.75	0.87	1.14	1.07		79	77
	2	0.75	0.87	1.14	1.07		79	77
	3	0.73	0.85	1.10	1.05		79	78
	4	0.73	0.85	1.10	1.05		80	78
	5	0.73	0.85	1.10	1.05		80	78
	6	0.70	0.84	1.06	1.03		80	79
B	1	0.60	0.77	0.91	0.95		80	79
	2	0.46	0.68	0.69	0.83		81	80
	3	0.36	0.60	0.54	0.73		81	80
	4	0.30	0.55	0.45	0.67		81	80
	5	0.24	0.49	0.36	0.60		81	80
	6	0.24	0.49	0.36	0.60		81	80
AVG		0.55000	0.72793	0.83167	0.89512	46.050	79.29	76.50

RUN 2								
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.73	0.85	1.10	1.05	584.271	80	78
	2	0.73	0.85	1.10	1.05	608.100	80	78
	3	0.75	0.87	1.14	1.07	608.199	80	78
	4	0.73	0.85	1.10	1.05	631.890	81	78
	5	0.70	0.84	1.06	1.03		81	78
	6	0.65	0.81	0.98	0.99		81	79
D	1	0.55	0.74	0.83	0.91		81	79
	2	0.55	0.74	0.83	0.91		82	79
	3	0.45	0.67	0.68	0.82		81	79
	4	0.39	0.62	0.59	0.77		82	81
	5	0.30	0.55	0.45	0.67		82	81
	6	0.26	0.51	0.39	0.62		82	81
A	1	0.75	0.87	1.14	1.07		81	80
	2	0.73	0.85	1.10	1.05		81	80
	3	0.73	0.85	1.10	1.05		81	80
	4	0.73	0.85	1.10	1.05		81	80
	5	0.69	0.83	1.04	1.02		81	80
	6	0.65	0.81	0.98	0.99		81	80
B	1	0.56	0.75	0.85	0.92		82	81
	2	0.55	0.74	0.83	0.91		82	81
	3	0.46	0.68	0.69	0.83		81	80
	4	0.40	0.63	0.61	0.78		81	80
	5	0.35	0.59	0.53	0.73		81	79
	6	0.25	0.50	0.38	0.62		81	79
AVG		0.56833	0.74444	0.85833	0.91487	47.520	81.1	79.5

# ISOKINETIC FIELD DATA SHEET

## EPA Method 0010 - Semi-Volatiles

Client: 15418.002.002.0001  
 Project ID: 15418.002.002.0001  
 Mode/Source ID: PPA  
 Samp. Loc. ID: STK  
 Run No. ID: 4  
 Test Method ID: M0010  
 Date ID: 26FEB2018  
 Source/Location: PPA Stack  
 Sample Date: 3/01/18  
 Baro. Press (in Hg): 29.84  
 Operator: MR. MANS VAPORIZATION

Stack Conditions: Assumed 1.5, Actual  
 Meter Box ID: 31  
 Meter Box Y: 0.9916  
 Meter Box Del H: P697  
 Probe ID / Length: P697  
 Probe Material: Boro  
 Pilot / Thermocouple ID: P697  
 Pilot / Coefficient: 0.84  
 Nozzle ID: W189  
 Nozzle Measurements: 0.189  
 Avg Nozzle Dia (in): 0.189  
 Area of Stack (ft²): 4.90  
 Sample Time: 4.96  
 Total Traverse Pts: 24

Leak Check @ (in Hg):  
 Pilot leak check good: yes / no  
 Pilot inspection good: yes / no  
 Method 3 System good: yes / no  
 Temp Check: 70  
 Meter Box Temp: 62  
 Reference Temp: 62  
 Pass/Fail (+/- 2°): Pass / Fail  
 Temp Change Response: Pass / no

K Factor: 1.52  
 Initial: 0.001  
 Mid-Point: 0.001  
 Final: 0.001  
 yes / no: yes / no  
 Pre-Test Set: 62  
 Post-Test Set: 70

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
13	4	11:06	0.73	1.10	537.820	78	72	101	100	63	3	58	23.18
2	8		0.73	1.10	540.00	78	72	101	100	60	3	57	
3	12		0.75	1.14	544.64	78	72	100	100	59	3	47	
4	16		0.73	1.10	546.90	78	72	100	99	59	3	47	
5	20		0.70	1.06	549.10	79	72	100	100	58	3	48	
6	24		0.69	1.03	551.26	79	74	100	101	57	3	49	
7	28		0.58	0.88	553.28	79	76	100	100	57	3	50	
8	32		0.47	0.71	555.04	79	77	101	99	59	3	52	
9	36		0.39	0.59	556.85	78	77	100	100	60	3	49	
10	40		0.31	0.47	558.26	78	77	100	99	60	3	50	
11	44		0.28	0.43	559.60	78	77	101	99	60	3	50	
12	48	12:46	0.26	0.40	561.00	78	77	100	99	61	3	51	
A 1	4	13:05	0.75	1.14	561.180	79	77	100	99	67	3	53	22.87
2	8		0.75	1.14	563.31	79	77	100	99	60	3	49	
3	12		0.73	1.10	565.60	79	78	101	101	56	3	49	
4	16		0.73	1.10	567.86	80	78	100	99	56	3	49	
5	20		0.73	1.10	570.11	80	78	100	99	56	3	48	
6	24		0.70	1.06	572.22	80	79	100	99	57	3	48	
7	28		0.60	0.91	574.43	80	79	100	99	57	3	48	
8	32		0.46	0.69	576.60	81	80	100	100	58	3	49	
9	36		0.30	0.54	578.33	81	80	100	99	58	3	49	
10	40		0.30	0.45	579.92	81	80	100	99	57	3	51	
11	44		0.24	0.36	581.54	81	80	100	99	57	3	51	
12	48	13:53	0.24	0.36	582.82	81	80	100	99	57	3	51	
					584.050	81	80	100	99	57	3	51	
					Total Volume	Avg Tm	Min/Max	Min/Max	Min/Max	Max	Max Vac	Min/Max	
					46.050	76.5	101	101	101	67	3	56	
					Avg Delta P	Avg Tm	Min/Max	Min/Max	Min/Max	Max	Max Vac	Min/Max	
					0.5500	79.3	101	101	101	67	3	56	
					Avg Sort Delta P	Avg Sort Del H	Comments: 100/101 94/101						
					0.72792	0.89512							



EPA Method 0010 from EPA SW-846

# ISOKINETIC FIELD DATA SHEET

## EPA Method 0010 - Semi-Volatiles

Page 1 of 1

Client: 15418.002.002.0001  
 W.O.#: 15418.002.002.0001  
 Project ID: PPA  
 Mode/Source ID: PPA  
 Samp. Loc. ID: STK  
 Run No. ID: 5  
 Test Method ID: M0010  
 Date ID: 26FEB2018  
 Source/Location: PPA Stack  
 Sample Date: 3/01/18  
 Baro. Press (in Hg): 29.66  
 Operator: VADIKESON

Stack Conditions:  
 Assumed: 1.5  
 Actual: 1.5  
 Meter Box ID: 31  
 Meter Box Y: 0.99/6  
 Meter Box Del H: P2.05/87  
 Probe ID / Length: P563  
 Probe Material: Boro  
 Pitot / Thermocouple ID: P563  
 Pitot Coefficient: 0.84  
 Nozzle ID: W184  
 Nozzle Measurements: 0.189 0.189  
 Avg Nozzle Dia (in): 0.189  
 Area of Stack (ft²): 4.90  
 Sample Time: 96  
 Total Traverse Pts: 27

Chemours: 15418.002.002.0001  
 Chemours: PPA  
 % Moisture: 0.1  
 Impinger Vol (ml): 20.2  
 Silica gel (g): 277  
 CO2, % by Vol: 278  
 O2, % by Vol: -2.8  
 Temperature (°F):  
 Meter Temp (°F):  
 Static Press (in H2O): -2.9  
 Ambient Temp (°F): 27.5  
 VAPOR PRESSURE

K Factor: 1.52

Initial: 0.001  
 Mid-Point: 0.001  
 Final: 0.001

Pre-Test Set: 75  
 Post-Test Set: 74

Temp Change Response: Pass/Fail (yes/no)

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
A	0	1423			584.271	80	78	101	100	78	3	59	23.83
1	4		0.73	1.10	587.10	80	78	101	101	78	3	59	
2	8		0.73	1.10	588.78	80	78	101	101	78	3	59	
3	12		0.75	1.14	591.10	80	78	101	101	78	3	59	
4	16		0.73	1.10	593.43	81	78	100	101	78	3	59	
5	20		0.70	1.06	595.67	81	78	100	100	78	3	59	
6	24		0.65	0.98	597.86	81	79	100	100	79	3	59	
7	28		0.55	0.83	599.76	81	79	100	100	79	3	59	
8	32		0.55	0.83	601.72	82	79	102	101	79	3	59	
9	36		0.45	0.68	603.71	81	79	100	100	79	3	59	
10	40		0.39	0.59	605.08	82	81	99	100	81	3	59	
11	44	1510	0.30	0.45	606.70	82	81	99	100	81	3	59	
12	48	1530	0.26	0.39	608.100	82	81	101	100	81	3	59	
B	4		0.75	1.14	608.199	81	80	101	100	80	3	48	223.69
1	8		0.73	1.10	610.27	81	80	100	100	80	3	47	
2	12		0.73	1.10	612.53	81	80	100	100	80	3	47	
3	16		0.73	1.10	614.80	81	80	99	99	80	3	48	
4	20		0.69	1.04	617.06	81	80	99	99	80	3	48	
5	24		0.65	0.98	619.28	81	80	99	97	80	3	48	
6	28		0.56	0.85	621.47	81	80	101	101	80	3	49	
7	32		0.55	0.83	623.71	82	81	99	100	81	3	50	
8	36		0.55	0.83	625.17	82	81	102	102	81	3	50	
9	40		0.46	0.69	627.20	81	80	100	100	80	3	48	
10	44		0.40	0.61	628.92	81	80	100	100	80	3	48	
11	48	1618	0.35	0.53	630.71	81	79	100	101	79	3	49	
12	52		0.25	0.38	631.89	81	79	99	98	79	3	49	
					Avg Delta P	Avg Ts	Avg Inlet	Min/Max	Min/Max	Max	Max Vac	Min/Max	
					0.56333	81.1	79.5	102	102	107	2	50	
					Avg Sqrt Delta P	Total Volume							
					0.74444	47.52							
					0.9178								



EPA Method 0010 from EPA SW-846

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# SAMPLE RECOVERY FIELD DATA

EPA Method 0010 - Semi-Volatiles

20  
+14.3  

---

34.3

Client Chemours W.O. # 15418.002.002.0001  
 Location/Plant Fayetteville, NC Source & Location PPA Stack

Run No. 4 *Vaporizer* Sample Date 3/1/10 Recovery Date 3/1/10  
 Sample I.D. Chemours - PPA - STK - 4 - M0010 - Analyst AMM Filter Number     

	Impinger							Imp.Total	8	Total
	1	2	3	4	5	6	7			
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	12	97	109	2					314.3	✓
Initial	0	100	100	0					300	✗
Gain	12	-3	9	2				20	14.3	8.7

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 5 *Vaporizer* Sample Date 3/1/10 Recovery Date 3/1/10  
 Sample I.D. Chemours - PPA - STK - 5 - M0010 - Analyst AMM Filter Number     

	Impinger							Imp.Total	8	Total
	1	2	3	4	5	6	7			
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	5	98	99	2					313.4	
Initial	0	100	100	0					300	
Gain	5	-2	-1	2				4	13.4	17.4

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 6 Sample Date      Recovery Date       
 Sample I.D. Chemours - PPA - STK - 6 - M0010 - Analyst      Filter Number     

	Impinger							Imp.Total	8	Total
	1	2	3	4	5	6	7			
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final										
Initial		100	100						300	
Gain										

Impinger Color      Labeled?   
 Silica Gel Condition      Sealed?

Check COC for Sample IDs of Media Blanks



**CHEMOURS - FAYETTEVILLE, NC  
INPUTS FOR HFPO DIMER ACID CALCULATIONS**

**Test Data**

	1	2
Run number	PPA	PPA
Location	PPA	PPA
Date	3-1-2018	3-2-2018
Time period	0920-1114	0815-1011
Operator	MW	MW

**Inputs For Calcs.**

Sq. rt. delta P	0.74394	0.75277
Delta H	0.8642	0.8692
Stack temp. (deg.F)	77.6	71.0
Meter temp. (deg.F)	65.9	53.5
Sample volume (act.)	46.050	45.605
Barometric press. (in.Hg)	29.84	29.89
Volume H <sub>2</sub> O imp. (ml)	11.0	15.0
Weight change sil. gel (g)	13.4	17.3
% CO <sub>2</sub>	0.0	0.0
% O <sub>2</sub>	20.9	20.9
% N <sub>2</sub>	79.1	79.1
Area of stack (sq.ft.)	4.900	4.900
Sample time (min.)	96.0	96.0
Static pressure (in.H <sub>2</sub> O)	-2.80	-2.80
Nozzle dia. (in.)	0.189	0.189
Meter box cal.	0.9916	0.9916
Cp of pitot tube	0.84	0.84
Traverse points	24	24



RUN 1								
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.75	0.87	1.14	1.07	490.009	77	62
	2	0.73	0.85	1.10	1.05	513.660	77	62
	3	0.75	0.87	1.14	1.07	514.000	77	62
	4	0.73	0.85	1.10	1.05	536.399	77	63
	5	0.75	0.87	1.14	1.07		77	63
	6	0.70	0.84	1.06	1.03		77	64
D	1	0.65	0.81	0.98	0.99		77	64
	2	0.55	0.74	0.83	0.91		79	64
	3	0.40	0.63	0.60	0.77		78	64
	4	0.35	0.59	0.53	0.73		79	64
	5	0.33	0.57	0.50	0.71		77	66
	6	0.30	0.55	0.46	0.68		76	66
A	1	0.73	0.85	1.10	1.05		77	66
	2	0.73	0.85	1.10	1.05		78	67
	3	0.72	0.85	1.09	1.04		78	67
	4	0.73	0.85	1.10	1.05		78	67
	5	0.72	0.85	1.09	1.04		78	67
	6	0.70	0.84	1.06	1.03		78	69
B	1	0.65	0.81	0.98	0.99		78	69
	2	0.55	0.74	0.83	0.91		78	69
	3	0.39	0.62	0.59	0.77		78	69
	4	0.30	0.55	0.46	0.68		78	69
	5	0.25	0.50	0.38	0.62		78	69
	6	0.25	0.50	0.38	0.62		78	70
AVG		0.57125	0.74394	0.86417	0.91515	46.050	77.63	65.92

RUN 2									23.18
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out	23.28
C	1	0.75	0.87	1.14	1.07	641.225	72	52	
	2	0.75	0.87	1.14	1.07	664.410	72	52	
	3	0.75	0.87	1.14	1.07	664.501	72	53	
	4	0.75	0.87	1.14	1.07	686.921	71	52	
	5	0.75	0.87	1.14	1.07		71	53	
	6	0.72	0.85	1.09	1.04		71	53	
D	1	0.63	0.79	0.95	0.97		72	53	
	2	0.55	0.74	0.83	0.91		73	54	
	3	0.45	0.67	0.68	0.82		72	54	
	4	0.40	0.63	0.60	0.77		72	54	
	5	0.32	0.57	0.48	0.69		72	54	
	6	0.25	0.50	0.38	0.62		71	54	
A	1	0.73	0.85	1.10	1.05		71	54	
	2	0.75	0.87	1.10	1.05		71	54	
	3	0.75	0.87	1.10	1.05		71	54	
	4	0.73	0.85	1.07	1.03		70	54	
	5	0.73	0.85	1.07	1.03		70	54	
	6	0.65	0.81	0.95	0.97		71	54	
B	1	0.65	0.81	0.95	0.97		71	54	
	2	0.56	0.75	0.82	0.91		71	54	
	3	0.44	0.66	0.64	0.80		71	54	
	4	0.38	0.62	0.55	0.74		70	53	
	5	0.30	0.55	0.44	0.66		69	53	
	6	0.25	0.50	0.36	0.60		68	53	
AVG		0.58292	0.75277	0.86917	0.91883	45.605	71.0	53.5	

# ISOKINETIC FIELD DATA SHEET

## EPA Method 0010 - Semi-Volatiles

Client: 15418.002.002.0001  
 Project ID: PPA  
 Mode/Source ID: STK  
 Samp. Loc. ID: M0010  
 Run No. ID: 26FEB2018  
 Test Method ID: PPA\_Stack  
 Date ID: 3/01/18  
 Source/Location: 29.47  
 Sample Date: 29.47  
 Baro. Press (in Hg):  
 Operator: *ASB/SSS Run 1 Hydrocarbons*

Stack Conditions  
 Assumed: 1.5  
 Actual:   
 Meter Box ID: 31  
 Meter Box Y: 0.9916  
 Meter Box Del H: 2.0589  
 Probe ID / Length: P563  
 Probe Material: Boro  
 Pilot / Thermocouple ID: P363  
 Pilot Coefficient: 0.34  
 Nozzle ID: G/89  
 Nozzle Measurements: 0.189, 0.189, 0.189  
 Avg Nozzle Dia (in): 0.189  
 Area of Stack (ft²): 4.89  
 Sample Time: 96  
 Total Traverse Pts: 24

Chemours  
 15418.002.002.0001  
 Chemours  
 PPA  
 STK  
 M0010  
 26FEB2018  
 PPA\_Stack  
 3/01/18  
 29.47  
 Ambient Temp (°F): 65  
*ASB/SSS Run 1 Hydrocarbons*

Meter Box ID: 31  
 Meter Box Y: 0.9916  
 Meter Box Del H: 2.0589  
 Probe ID / Length: P563  
 Probe Material: Boro  
 Pilot / Thermocouple ID: P363  
 Pilot Coefficient: 0.34  
 Nozzle ID: G/89  
 Nozzle Measurements: 0.189, 0.189, 0.189  
 Avg Nozzle Dia (in): 0.189  
 Area of Stack (ft²): 4.89  
 Sample Time: 96  
 Total Traverse Pts: 24

Stack Conditions  
 Assumed: 1.5  
 Actual:   
 Meter Box ID: 31  
 Meter Box Y: 0.9916  
 Meter Box Del H: 2.0589  
 Probe ID / Length: P563  
 Probe Material: Boro  
 Pilot / Thermocouple ID: P363  
 Pilot Coefficient: 0.34  
 Nozzle ID: G/89  
 Nozzle Measurements: 0.189, 0.189, 0.189  
 Avg Nozzle Dia (in): 0.189  
 Area of Stack (ft²): 4.89  
 Sample Time: 96  
 Total Traverse Pts: 24

TRAVERSE POINT	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGIM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
A	0	0920	0.75	1.14	492.009	77	62	101	101	57	3	42	2365
1	4		0.73	1.10	492.21	77	62	99	99	55	3	41	
2	8		0.75	1.14	496.96	77	63	99	99	54	3	40	
3	12		0.73	1.10	499.02	77	63	100	102	49	3	38	
4	16		0.75	1.14	501.72	77	64	99	100	49	3	39	
5	20		0.70	1.06	503.48	77	64	99	100	49	3	39	
6	24		0.65	0.98	505.48	77	64	100	100	49	3	40	
7	28		0.55	0.83	507.43	79	64	100	100	49	3	40	
8	32		0.40	0.60	509.16	78	64	101	101	49	3	40	
9	36		0.35	0.53	510.70	79	66	100	99	50	2	40	
10	40		0.33	0.50	512.31	77	66	100	99	50	2	40	
11	44		0.30	0.46	513.660	76	66	100	99	50	2	40	
12	48	1008			514.000								
B	1		0.73	1.10	516.11	77	66	100	99	57	3	40	22,39
2	4		0.72	1.09	520.59	78	67	100	100	54	3	41	
3	8		0.73	1.10	522.83	78	67	100	100	54	3	43	
4	12		0.72	1.09	524.96	78	67	100	101	54	3	43	
5	16		0.70	1.06	527.08	78	69	99	100	53	3	45	
6	20		0.65	0.98	529.13	78	69	100	101	54	3	45	
7	24		0.55	0.83	530.97	78	69	100	101	55	3	47	
8	28		0.39	0.59	532.77	78	69	102	101	55	3	47	
9	32		0.30	0.46	534.10	78	69	101	101	55	3	47	
10	36		0.25	0.42	535.21	78	69	100	100	55	3	48	
11	40		0.25	0.42	536.349	78	70	99	99	56	2	48	
12	44		0.25	0.42	536.349	78	70	99	99	56	2	48	
13	48	1114			Total Volume	Avg T <sub>ST</sub>	Avg T <sub>DB</sub>	Min/Max	Min/Max	Max	Max Vac	Min/Max	
			0.57125	0.86416	46.04	71.6	65.9	102	102	57	3	48	
			0.71394	0.91514	46.050								



EPA Method 0010 from EPA SW-846

201116 201116 201116

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# ISOKINETIC FIELD DATA SHEET

## EPA Method 0010 - Semi-Volatiles

Client	15418.002.002.0001
W.O.#	
Project ID	
Mode/Source ID	
Sample Loc. ID	
Run No. ID	
Test Method ID	M0010
Date ID	26FEB2018
Source/Location	PPA Stack
Sample Date	3/22/12
Baro. Press (in Hg)	29.89
Operator	AP MIT WINTERS

Meter Box ID	31
Meter Box Y	0.9916
Meter Box Del H	2.0587
Probe ID / Length	R363
Probe Material	Boro
Pilot / Thermocouple ID	R563
Pilot Coefficient	0.84
Nozzle ID	W189
Nozzle Measurements	0.129 0.189 0.189
Avg Nozzle Dia (in)	0.129
Area of Stack (ft²)	4.95
Sample Time	96
Total Traverse Pts	24

Stack Conditions	Assumed	Actual
% Moisture	1.5	
Impinger Vol (ml)		
Silica gel (g)		
CO2, % by Vol	0.1	
Temperature (°F)	20.2	
Meter Temp (°F)	27.7	
Static Press (in H2O)	2.50	-2.3
Ambient Temp (°F)	2.50	

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
A	0	0815			641.225								
1	4		0.75	1.14	643.56	72	52	104	100	50	3	75	23.27
2	8		0.75	1.14	645.63	72	52	99	98	49	3	74	
3	12		0.75	1.14	647.83	72	53	99	99	49	3	73	
4	16		0.75	1.14	650.01	71	52	99	99	47	3	74	
5	20		0.75	1.14	652.32	71	53	99	102	49	3	74	
6	24		0.72	1.09	654.46	71	53	102	103	50	3	73	
7	28		0.63	0.95	656.46	72	53	102	101	50	3	74	
8	32		0.55	0.83	658.36	73	54	101	100	50	3	74	
9	36		0.45	0.68	660.05	72	54	100	100	51	3	74	
10	40		0.40	0.60	662.60	72	54	100	100	51	3	74	
11	44		0.32	0.48	663.09	72	54	100	100	52	3	74	
12	48	0903	0.25	0.37	664.410	71	54	102	95	52	3	74	
1	4		0.73	1.10	664.501	71	54	102	98	50	3	74	K Factor
2	8		0.75	1.10	666.62	71	54	102	98	50	3	74	1.447
3	12		0.75	1.10	668.85	71	54	102	100	51	3	75	
4	16		0.73	1.07	673.10	70	54	100	94	49	3	73	22.30
5	20		0.73	1.07	675.15	70	54	100	94	48	3	73	
6	24		0.65	0.95	677.21	71	54	100	98	48	3	73	
7	28		0.65	0.95	679.21	71	54	98	98	48	3	74	
8	32		0.56	0.82	681.19	71	54	98	98	48	3	74	
9	36		0.44	0.64	682.83	71	54	98	98	49	3	74	
10	40		0.36	0.55	684.32	70	53	98	98	49	3	73	
11	44		0.30	0.44	685.64	69	53	102	102	49	3	73	
12	48	1011	0.25	0.36	686.921	68	53	102	102	49	3	73	
					Total Volume	Avg Tm	Min/Max	Min/Max	Min/Max	Max/Min	Max/Min	Min/Max	
					45.57	53.4	103	103	103	52.5	3	45	
					Avg Delta P	Avg Delta H							
					0.58297	0.918167							
					Avg Sqrt Delta P	Avg Sqrt Delta H							
					0.75217	0.918203							

Temp Change Response:  yes /  no

Pre-Test Set:  SD /  Pass /  Fail

Mid-Point:  0.001 /  0.001

Final:  5 /  5

Leak Check @ (in Hg):  yes /  no

Pilot leak check good:  yes /  no

Pilot inspection good:  yes /  no

Method 3 System good:  yes /  no

Temp Check:  SD /  Pass /  Fail

Meter Box Temp:  SD /  Pass /  Fail

Reference Temp:  SD /  Pass /  Fail

Temp Change Response:  yes /  no

Comments: 45.605, 3/4/12, 45/103



# SAMPLE RECOVERY FIELD DATA

EPA Method 0010 - Semi-Volatiles

Client Chemours W.O. # 15418.002.002.0001  
 Location/Plant Fayetteville, NC Source & Location PPA Stack

Run No. 1 *WQ analysis* Sample Date 3/11/08 Recovery Date 3/11/08  
 Sample I.D. Chemours - PPA - STK - 1 - M0010 - Analyst PMM Filter Number —

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	3	104	100	2					217.4	
Initial	0	100	100	0					300	
Gain	3	4	—	2				11	13.4	24.4

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 2 Sample Date 3/12/08 Recovery Date 3/12/08  
 Sample I.D. Chemours - PPA - STK - 2 - M0010 - Analyst PMM Filter Number 120

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	2	102	88	3					317.3	
Initial	0	100	100	0					300	
Gain	2	12	—2	3				15	17.3	32.3

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 3 Sample Date \_\_\_\_\_ Recovery Date \_\_\_\_\_  
 Sample I.D. Chemours - PPA - STK - 3 - M0010 - Analyst \_\_\_\_\_ Filter Number \_\_\_\_\_

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final										
Initial		100	100						300	
Gain										

Impinger Color \_\_\_\_\_ Labeled? \_\_\_\_\_  
 Silica Gel Condition \_\_\_\_\_ Sealed? \_\_\_\_\_

Check COC for Sample IDs of Media Blanks



# Sample and Velocity Traverse Point Data Sheet - Method 1

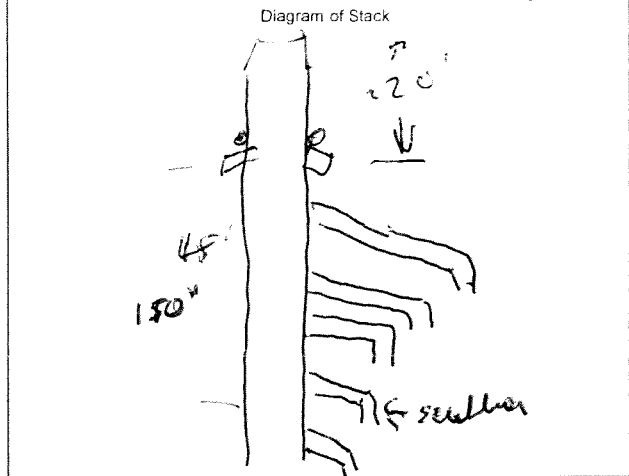
Client Chemours  
 Location/Plant Fayetteville, NC  
 Source VE South

Operator POW  
 Date 1/16/18  
 W.O. Number 1548 02.001.0001

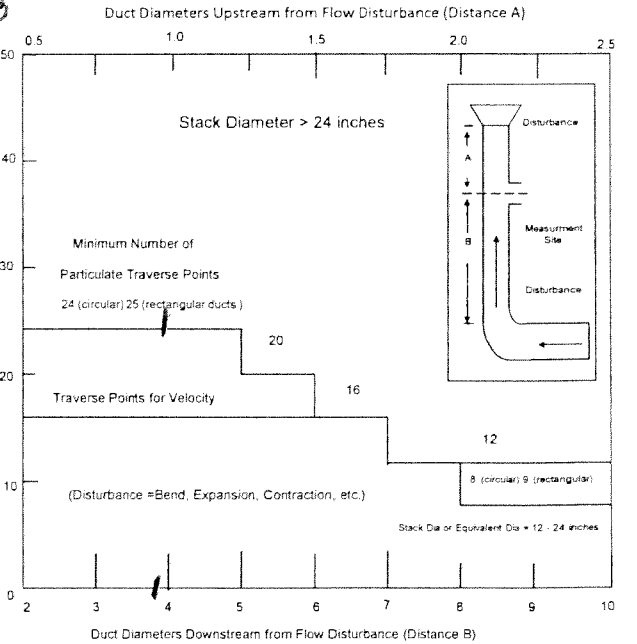
<b>Duct Type</b>	<input checked="" type="checkbox"/> Circular	<input type="checkbox"/> Rectangular Duct	Indicate appropriate type
<b>Traverse Type</b>	<input checked="" type="checkbox"/> Particulate Traverse	<input type="checkbox"/> Velocity Traverse	<input checked="" type="checkbox"/> CEM Traverse

Distance from far wall to outside of port (in.) = C	0/
Port Depth (in.) = D	49"
Depth of Duct, diameter (in.) = C-D	42
Area of Duct (ft <sup>2</sup> )	9.63
Total Traverse Points	24
Total Traverse Points per Port	12
Port Diameter (in.) ---(Flange-Threaded-Hole)	4"
Monorail Length	
<b>Rectangular Ducts Only</b>	
Width of Duct, rectangular duct only (in.)	
Total Ports (rectangular duct only)	
Equivalent Diameter = (2*L*W)/(L+W)	

Flow Disturbances	
Upstream - A (ft)	720'
Downstream - B (ft)	12.5'
Upstream - A (duct diameters)	75
Downstream - B (duct diameters)	~3.6



Traverse Point Locations			
Traverse Point	% of Duct	Distance from Inside Duct Wall (in)	Distance from Outside of Port (in)
1	2.1	0.88	19.9 20.0
2	6.7	2.81	21.0
3	11.8	4.96	23.9 3/8
4	17.7	7.4	26.1
5	25.0	10.5	29. 1/2
6	35.6	14.95	33. 3/4 3/8
7	64.4	27.0	46.0
8	75	31.5	50.5
9	82.3	34.57	53. 1/8
10	88.2	37.0	56.0
11	93.3	39.2	58. 1/8
12	97.9	41.1	60.0



Note: If stack dia < 12 inch use EPA Method 1A (Sample port upstream of pitot port)  
 Note: If stack dia > 24" then adjust traverse point to 1 inch from wall  
 If stack dia < 24" then adjust traverse point to 0.5 inch from wall

Traverse Point Location Percent of Stack -Circular													
		Number of Traverse Points											
		1	2	3	4	5	6	7	8	9	10	11	12
T r a v e r s e P o i n t	1		14.6		6.7		4.4		3.2		2.6		2.1
	2		85.4		25		14.6		10.5		8.2		6.7
	3			75		29.6		19.4		14.6		11.8	
	4				93.3		70.4		32.3		22.6		17.7
	5					85.4		67.7		34.2		25	
	6						95.6		80.6		65.8		35.6
	7							89.5		77.4		64.4	
	8								96.8		85.4		75
	9									91.8		82.3	
	10										97.4		88.2
	11											93.3	
	12												97.9

Traverse Point Location Percent of Stack -Rectangular														
		Number of Traverse Points												
		1	2	3	4	5	6	7	8	9	10	11	12	
T r a v e r s e P o i n t	1		25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2	
	2		75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5	
	3			85.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8	
	4				87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2	
	5					90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5	
	6							78.6	68.8	61.1	55.0	50.0	45.8	
	7								91.7	78.6	68.8	61.1	54.2	
	8									92.9	81.3	72.2	65.0	59.1
	9										93.8	83.3	75.0	68.2
	10											94.4	85.0	77.3
	11												95.5	87.5
	12													95.8



# Determination of Stack Gas Velocity - Method 2

Client Cherokee Operator ICS/MW Pitot Coeff (Cp) 89  
 Location/Plant Fayetteville, NC Date 1/10/18 Stack Area, ft<sup>2</sup> (As) 9.62  
 Source South VE W.O. Number 15463 002 002 002 Pitot Tube/Thermo ID P567

Run Number	1
Time	~1100
Barometric Press, in Hg (Pb)	29.44
Static Press, in H <sub>2</sub> O (Pstatic)	0.52
Source Moisture, % (BWS)	2
O <sub>2</sub> , %	20.9
CO <sub>2</sub> , %	0.1

Cyclonic Flow Determination		Traverse Location		Leak Check good ? Y/N		Leak Check good ? Y/N		Leak Check good ? Y/N	
Delta P at 0°	Angle yielding zero Delta P	Port	Point	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)
0		A	1	0.10	70				
0			2	0.10	70				
0			3	0.11	71				
0			4	0.13	71				
0			5	0.15	72				
0			6	0.16	72				
0			7	0.16	72				
0			8	0.18	73				
0			9	0.16	73				
0			10	0.15	73				
0			11	0.15	74				
0			12	0.15	75				
0		B	1	0.09	72				
0			2	0.10	72				
0			3	0.10	72				
0			4	0.13	73				
0			5	0.15	73				
0			6	0.15	73				
0			7	0.16	73				
0			8	0.16	74				
0			9	0.16	74				
0			10	0.16	74				
0			11	0.15	75				
0			12	0.15	75				
Avg Angle		Avg Delta P & Temp		0.14000	73.0				
		avg $\sqrt{\Delta P}$		0.37251					
		Average gas stream velocity, ft/sec.							
		Vol. flow rate @ actual conditions, wacfm/min							
		Vol. flow rate at standard conditions, dscfm/min							

$$MWd = (0.32 * O_2) + (0.44 * CO_2) + (0.28 * (100 - (CO_2 + O_2)))$$

$$MWs = (MWd * (1 - (BWS/100))) + (18 * (BWS/100))$$

$$Tsa = Ts + 460$$

$$Ps = Pb - (Pstatic/13.6)$$

$$Vs = 85.49 * Cp * \sqrt{\Delta P} * \sqrt{Tsa / (Ps * MWs)}$$

$$Qs(act) = 60 * Vs * As$$

$$Qs(std) = 17.64 * (1 - (BWS/100)) * (Ps/Tsa) * Qs(act)$$

where:

MWd = Dry molecular weight source gas, lb/lb-mole

MWs = Wet molecular weight source gas, lb/lb-mole

Tsa = Source Temperature, absolute (oR)

Ps = Absolute stack static pressure, inches Hg

Vs = Average gas stream velocity, ft/sec

Qs(act) = Volumetric flow rate of wet stack gas at actual, wacfm/min

Qs(std) = Volumetric flow rate of dry stack gas at standard conditions, dscfm/min



**CHEMOURS - FAYETTEVILLE, NC  
INPUTS FOR HFPO DIMER ACID CALCULATIONS**

**Test Data**

	1	2	1 Aborted Test
Run number			
Location	VE South	VE South	VE South
Date	2-27-2018	2-27-2018	2-26-2018
Time period	1018-1208	1446-1630	1552-1735
Operator	MW	MW	MW

**Inputs For Calcs.**

Sq. rt. delta P	0.44193	0.41607	0.42987
Delta H	1.8146	1.6367	1.7642
Stack temp. (deg.F)	62.2	65.8	70.9
Meter temp. (deg.F)	60.8	66.0	69.3
Sample volume (act.)	70.630	67.794	68.938
Barometric press. (in.Hg)	30.38	30.34	30.10
Volume H <sub>2</sub> O imp. (ml)	8.0	-6.0	3.0
Weight change sil. gel (g)	21.9	40.6	30.0
% CO <sub>2</sub>	0.0	0.0	0.0
% O <sub>2</sub>	20.9	20.9	20.9
% N <sub>2</sub>	79.1	79.1	79.1
Area of stack (sq.ft.)	9.620	9.620	9.620
Sample time (min.)	96.0	96.0	96.0
Static pressure (in.H <sub>2</sub> O)	-0.75	-0.75	-0.75
Nozzle dia. (in.)	0.300	0.300	0.300
Meter box cal.	0.9934	0.9934	0.9934
Cp of pitot tube	0.84	0.84	0.84
Traverse points	24	24	12



RUN 1								
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.18	0.42	1.60	1.26	331.275	61	61
	2	0.26	0.51	2.37	1.54	367.870	62	61
	3	0.26	0.51	2.37	1.54	368.020	62	62
	4	0.21	0.46	1.91	1.38	402.055	63	62
	5	0.22	0.47	2.00	1.41		63	62
	6	0.22	0.47	2.00	1.41		63	62
D	1	0.23	0.48	2.09	1.45		62	62
	2	0.20	0.45	1.86	1.36		62	61
	3	0.20	0.45	1.86	1.36		62	61
	4	0.20	0.45	1.86	1.36		62	61
	5	0.18	0.42	1.67	1.29		62	61
	6	0.18	0.42	1.67	1.29		62	61
A	1	0.18	0.42	1.67	1.29		62	61
	2	0.24	0.49	2.22	1.49		62	61
	3	0.24	0.49	2.22	1.49		62	61
	4	0.20	0.45	1.86	1.36		62	60
	5	0.21	0.46	1.93	1.39		62	60
	6	0.20	0.45	1.86	1.36		62	60
B	1	0.18	0.42	1.67	1.29		62	60
	2	0.18	0.42	1.67	1.29		62	60
	3	0.16	0.40	1.48	1.22		62	60
	4	0.15	0.39	1.39	1.18		63	60
	5	0.15	0.39	1.39	1.18		63	60
	6	0.10	0.32	0.93	0.96		63	60
AVG		0.19708	0.44193	1.81458	1.34119	70.630	62.21	60.83

RUN 2								
Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.16	0.40	1.48	1.22	402.356	66	64
	2	0.18	0.42	1.67	1.29	436.227	66	63
	3	0.18	0.42	1.67	1.29	436.337	66	65
	4	0.20	0.45	1.88	1.37	470.260	66	65
	5	0.20	0.45	1.88	1.37		66	65
	6	0.22	0.47	2.06	1.44		67	65
D	1	0.20	0.45	1.88	1.37		65	63
	2	0.18	0.42	1.69	1.30		65	64
	3	0.18	0.42	1.69	1.30		65	65
	4	0.16	0.40	1.50	1.22		65	65
	5	0.15	0.39	1.41	1.19		65	66
	6	0.10	0.32	0.94	0.97		65	66
A	1	0.18	0.42	1.69	1.30		67	67
	2	0.16	0.40	1.50	1.22		67	67
	3	0.18	0.42	1.69	1.30		67	67
	4	0.20	0.45	1.88	1.37		66	67
	5	0.20	0.45	1.88	1.37		66	67
	6	0.22	0.47	2.06	1.44		66	68
B	1	0.20	0.45	1.88	1.37		66	68
	2	0.18	0.42	1.69	1.30		66	68
	3	0.16	0.40	1.50	1.22		66	68
	4	0.15	0.39	1.41	1.19		65	68
	5	0.15	0.39	1.41	1.19		65	67
	6	0.10	0.32	0.94	0.97		65	66
AVG		0.17458	0.41607	1.63667	1.27392	67.794	65.8	66.0

**RUN 1 ABORT**

Port	Point	Delta P	Sqrt Dp	Delta H	Sqrt Dh	Volume	Stack	dgm Out
C	1	0.20	0.45	1.90	1.38	259.225	71	68
	2	0.21	0.46	2.00	1.41	293.585	71	69
	3	0.22	0.47	2.09	1.45	293.680	71	69
	4	0.22	0.47	2.09	1.45	328.258	71	69
	5	0.20	0.45	1.90	1.38		71	69
	6	0.22	0.47	2.09	1.45		71	69
D	7	0.20	0.45	1.90	1.38		71	70
	8	0.18	0.42	1.71	1.31		71	70
	9	0.18	0.42	1.71	1.31		71	70
	10	0.15	0.39	1.43	1.20		71	70
	11	0.14	0.37	1.35	1.16		71	70
	12	0.12	0.35	1.14	1.07		71	70
A	1	0.20	0.45	1.90	1.38		71	70
	2	0.20	0.45	1.90	1.38		71	70
	3	0.21	0.46	2.00	1.41		71	69
	4	0.21	0.46	2.00	1.41		71	69
	5	0.22	0.47	2.09	1.45		71	69
	6	0.22	0.47	2.09	1.45		71	69
	7	0.20	0.45	1.90	1.38		71	69
	8	0.18	0.42	1.71	1.31		71	69
	9	0.17	0.41	1.62	1.27		71	69
	10	0.16	0.40	1.53	1.24		70	69
	11	0.14	0.37	1.15	1.07		70	69
	12	0.12	0.35	1.14	1.07		70	69
AVG		0.18625	0.42987	1.76417	1.32249	68.938	70.9	69.2917

# ISOKINETIC FIELD DATA SHEET

Client: Chromas  
 W.O.#: CHROMAS  
 Project ID: SRK  
 Mode/Source ID: SOUTH VIE  
 Sump Loc. ID: 1  
 Run No. ID: M010  
 Test Method ID: 27100 2010  
 Date ID: SOUTH VIE SK  
 Source/Location: 2127113  
 Sample Date: 30.36  
 Baro. Press (in Hg): MR  
 Operator: MR

Stack Conditions  
 Assumed: 1  
 Actual: 0.1  
 Meter Box ID: 20.0  
 Meter Box Y: 35  
 Meter Box Del H: 0.175  
 Probe ID / Length: -0.75  
 Probe Material: SS  
 Pilot / Thermocouple ID: SS  
 Pilot Coefficient: SS  
 Nozzle ID: SS  
 Avg Nozzle Dia (in): SS  
 Area of Stack (ft²): SS  
 Sample Time: SS  
 Total Traverse Pts: SS

Meter Box ID: 0.9934  
 Meter Box Y: 0.9750  
 Meter Box Del H: 0.694  
 Probe ID / Length: 0.84  
 Probe Material: 0.84  
 Pilot / Thermocouple ID: 0.84  
 Pilot Coefficient: 0.84  
 Nozzle ID: 0.84  
 Avg Nozzle Dia (in): 0.84  
 Area of Stack (ft²): 0.84  
 Sample Time: 0.84  
 Total Traverse Pts: 0.84

Leak Checks  
 Sample Train (ft³): yes  
 Leak Check @ (in Hg): yes  
 Pilot good: yes  
 Orsat good: yes  
 Temp Check: 60  
 Meter Box Temp: 60  
 Reference Temp: Pass / Fail  
 Pass/Fail (+/- 2°): Pass / Fail  
 Temp Change Response: yes / no

K Factor: 0.13  
 Initial: 0.001  
 Mid-Point: 0.001  
 Final: 0.001  
 Pre-Test Set: 55  
 Post-Test Set: 60  
 Pass/Fail: Pass / Fail  
 Cycles / no: yes / no

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	COMMENTS
A	0	1018	0.17	1.60	331.275	61	NA	61	106	98	48	5	
1	4		0.26	2.37	334.00	62		61	103	100	45	6	33
2	8		0.26	2.37	340.75	63		62	100	105	46	5	40
3	12		0.21	1.91	344.00	63		62	100	100	46	5	37
4	16		0.22	2.00	346.96	63		62	100	100	47	5	37
5	20		0.22	2.00	350.10	62		62	100	98	47	6	40
6	24		0.20	1.86	353.28	62		61	100	98	49	6	40
7	28		0.20	1.86	356.16	62		61	100	100	49	5	43
8	32		0.20	1.86	359.20	62		61	100	100	49	5	41
9	36		0.18	1.67	362.60	62		61	100	100	49	5	41
10	40		0.18	1.67	365.07	62		61	100	100	49	5	44
11	44	1106	0.18	1.67	367.870	62		61	100	100	49	5	44
12	48	1120	0.18	1.67	368.020	62		61	101	98	56	5	46
B	4		0.24	2.22	370.82	62	NA	61	101	98	56	5	46
1	8		0.24	2.22	373.93	62		61	101	98	56	5	46
2	12		0.24	2.22	377.08	62		61	100	100	56	5	46
3	16		0.20	1.86	380.11	62		61	100	100	57	5	46
4	20		0.21	1.93	383.20	62		60	100	100	57	5	46
5	24		0.20	1.86	386.30	62		60	100	100	57	5	46
6	28		0.18	1.67	389.39	62		60	100	104	55	5	47
7	32		0.18	1.67	391.95	62		60	100	104	55	5	47
8	36		0.16	1.49	394.68	62		60	100	98	56	5	48
9	40		0.15	1.39	397.31	63		60	100	98	56	4	48
10	44		0.15	1.39	399.90	63		60	100	98	56	4	48
11	48	1208	0.10	0.93	402.055	63		60	100	98	57	4	49
12	52		0.10	0.93	402.055	63		60	100	98	57	4	49
Avg Delta P					Avg Delta H	Avg Tm	Min/Max	Max Temp	Max Vac	Max Temp	Max Temp	Max Temp	Max Temp
0.197083					1.181450	60.8	105	57	6	49	49	49	49
Avg Sqrt Delta P					Avg Sqrt Delta H	Comments:							
0.44192					1.34119	70.630 MP							



Process Journal  
 noon 12.00  
 MRN

3-1-0035  
 (90)

# ISOKINETIC FIELD DATA SHEET

Client: 15418.002.002.0001  
 Project ID: South VE  
 Mode/Source ID: South VE  
 Samp. Loc. ID: STK  
 Run No. ID: 2  
 Test Method ID: M0010  
 Date ID: 26FEB2018  
 Source/Location: South VE Stack  
 Sample Date: 2/27/18  
 Baro. Press (in Hg): 30.34  
 Operator: BO MAIT WINELEER

Stack Conditions  
 Assumed:   
 Actual:   
 % Moisture:   
 Impinger Vol (ml):   
 Silica gel (g):   
 CO2, % by Vol: 0.1  
 O2, % by Vol: 20.2  
 Temperature (°F): 63  
 Meter Temp (°F): 65  
 Static Press (in H2O): -0.75  
 Ambient Temp (°F): 73

Meter Box ID:   
 Meter Box Y: 29  
 Meter Box Del H: 0.9914  
 Probe ID / Length: P65, 1.9750  
 Probe Material: Bgro  
 Pitot / Thermocouple ID:   
 Pitot Coefficient: 0.84  
 Nozzle ID: G-300  
 Nozzle Measurements: 0.300, 0.300  
 Avg Nozzle Dia (in): 0.300  
 Area of Stack (ft²): 9.62  
 Sample Time: 96  
 Total Traverse Pts: 27

Sample Train (ft³):   
 Leak Check @ (in Hg):   
 Pitot leak check good:   
 Pitot inspection good:   
 Method 3 System good:   
 Temp Check:   
 Meter Box Temp:   
 Reference Temp:   
 Pass/Fail (+/- 2°):   
 Temp Change Response:   
 Initial: 0.001  
 Mid-Point: 0.001  
 Final: 0.001

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIPICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
1	0	1476	0.16	1.48	402.356	66	64	100	100	67	5	55	33.271
2	4		0.18	1.67	401.75	66	63	100	100	66	5	55	
3	8		0.17	1.67	401.55	66	65	100	98	64	5	50	
4	12		0.20	1.88	410.45	66	65	100	97	60	5	50	
5	16		0.20	1.88	413.86	66	65	100	101	59	6	50	
6	20		0.22	2.06	416.56	67	65	100	104	58	6	51	
7	24		0.20	1.88	419.80	65	63	100	103	57	6	51	
8	28		0.18	1.69	422.75	65	64	100	99	57	6	51	
9	32		0.17	1.69	425.74	65	65	100	100	58	5	52	
10	36		0.16	1.50	423.66	65	65	100	100	58	5	52	
11	40		0.15	1.41	431.67	65	66	100	100	59	4	54	
12	44	1534	0.10	0.94	434.65	65	66	100	99	59	4	55	
	48	1542			436.227								
A	4		0.18	1.69	436.337	67	67	100	100	61	5	51	
3	8		0.16	1.50	439.10	67	67	100	98	60	5	51	
4	12		0.18	1.69	441.86	67	67	100	99	58	5	48	
5	16		0.20	1.88	444.96	66	67	100	102	58	6	48	33.925
6	20		0.22	2.06	448.31	66	67	100	102	58	6	48	
7	24		0.22	2.06	450.90	66	67	100	102	59	6	48	
8	28		0.20	1.88	454.03	66	68	100	101	61	6	52	
9	32		0.18	1.69	457.27	66	68	100	101	61	6	51	
10	36		0.16	1.50	460.00	66	68	100	101	62	6	52	
11	40		0.15	1.41	463.02	65	68	100	102	62	5	53	
12	44		0.15	1.41	465.37	65	68	100	102	59	4	53	
13	48	1630	0.10	0.94	468.09	65	67	100	100	58	4	51	
					470.260								
			Avg Delta P	Avg Delta H	Orig Volume	Avg T <sub>s</sub>	Avg T <sub>m</sub>	Min/Max	Min/Max	Max	Max Vac	Min/Max	
			0.17458	1.63666	61,794	65.8	66	101	103	67	6	55	
			Avg Sqrt Delta P	Avg Sqrt Delta H	Comments:								
			0.41606	1.27392									



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# ISOKINETIC FIELD DATA SHEET

Client: 15418.002.002.0001  
 Project ID: 15418.002.002.0001  
 Meter Box Del H: 0.9934  
 Meter Box Y: 0.9750  
 Probe ID / Length: 7  
 Probe Material: Boro  
 Pitot / Thermocouple ID: 0.84  
 Pitot Coefficient: 0.8  
 Nozzle ID: 20.9  
 Nozzle Measurements: 0.302, 0.300, 0.300  
 Avg Nozzle Dia (in): 0.302  
 Area of Stack (ft²): 4.62  
 Sample Time: 90  
 Total Traverse Pts: 24

Stack Conditions  
 Assumed: 1  
 Actual: 259.225  
 DRY GAS METER READING (ft³): 262.12, 265.30, 268.30, 271.37, 274.40, 277.47, 280.61, 283.35, 286.21, 288.71, 291.92, 293.88, 293.680  
 ORIFICE PRESSURE Delta H (in H2O): 1.90, 2.00, 2.09, 2.09, 2.00, 2.00, 1.90, 1.71, 1.71, 1.43, 1.35, 1.14  
 VELOCITY PRESSURE Delta P (in H2O): 0.20, 0.21, 0.22, 0.22, 0.20, 0.20, 0.18, 0.18, 0.15, 0.14, 0.12  
 Ambient Temp (°F): 65

EPA Method 0010 - Semi-Volatiles  
 Meter Box ID: 29  
 Meter Box Y: 0.9934  
 Probe ID / Length: 7  
 Probe Material: Boro  
 Pitot / Thermocouple ID: 0.84  
 Pitot Coefficient: 0.8  
 Nozzle ID: 20.9  
 Nozzle Measurements: 0.302, 0.300, 0.300  
 Avg Nozzle Dia (in): 0.302  
 Area of Stack (ft²): 4.62  
 Sample Time: 90  
 Total Traverse Pts: 24

K Factor: 9.564

Initial: 0.001  
 Mid-Point: 0.001  
 Final: 0.001

Sample Train (ft³): 0.001  
 Leak Check @ (in Hg): 0.001  
 Pitot leak check good: yes / no  
 Pitot inspection good: yes / no  
 Method 3 System good: yes / no  
 Temp Check: Pre-Test Set: 65, Post-Test Set: 66  
 Meter Box Temp: 65  
 Reference Temp: 65  
 Pass/Fail (+/- 2°): Pass / Fail  
 Temp Change Response: yes / no

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant:time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM/OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (°F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	XAD EXIT TEMP (°F)	COMMENTS
A	0	1532			259.225	71	68	99	102	64	6	76	
1	4		0.20	1.90	262.12	71	69	100	103	63	6	73	
2	8		0.21	2.00	265.30	71	69	100	102	60	6	73	
3	12		0.22	2.09	268.30	71	69	100	99	58	6	72	
4	16		0.22	2.09	271.37	71	69	100	101	58	6	72	
5	20		0.20	1.90	274.40	71	70	100	100	57	6	73	
6	24		0.20	2.00	277.47	71	70	100	98	56	6	74	
7	28		0.18	1.71	280.61	71	70	100	102	56	6	74	
8	32		0.18	1.71	283.35	71	70	100	98	56	6	74	
9	36		0.15	1.43	286.21	71	70	100	98	56	6	74	
10	40		0.15	1.43	288.71	71	70	100	98	56	6	74	
11	44		0.14	1.35	291.92	71	70	100	97	56	6	74	
12	48	1640	0.12	1.14	293.88	71	70	100	99	58	6	76	
		1647			293.680								
B	1	4	0.20	1.90	296.550	71	70	99	99	59	6	54	
2	8		0.20	1.90	300.00	71	70	100	99	59	6	53	
3	12		0.21	2.00	302.86	71	69	100	99	59	6	53	
4	16		0.21	2.00	305.82	71	69	100	99	63	6	54	
5	20		0.22	2.09	308.83	71	69	100	99	61	6	55	
6	24		0.22	2.09	312.00	71	69	100	101	61	6	55	
7	28		0.20	1.90	315.01	71	69	100	100	61	6	55	
8	32		0.18	1.71	318.15	71	69	100	100	56	6	55	
9	36		0.17	1.62	320.71	71	69	100	98	55	6	55	
10	40		0.16	1.53	323.15	70	69	100	100	54	5	50	
11	44		0.14	1.15	325.14	70	69	100	98	54	5	43	
12	48	1735	0.13	1.14	328.258	70	69	100	98	53	5	43	
			Avg Delta P	Avg Delta H	Total Volume	Avg IS	Avg In	Min/Max	Min/Max	Max	Max Vac	Min/Max	
			0.12625	1.76416	69.033	70.2	64.3	100	98	64	6	55	
			Avg Sqr Delta P	Avg Sqr Delta H	Comments:								
			0.42967	1.32249	66.946								



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49100 491102

491100 491102

491100 491102

# SAMPLE RECOVERY FIELD DATA

EPA Method 0010 - Semi-Volatiles

Client Chemours W.O. # 15418.002.002.0001  
 Location/Plant Fayetteville, NC Source & Location South VE Stack

Run No. 1 Sample Date 2/27/18 Recovery Date 2/27/18  
 Sample I.D. Chemours - South VE - STK - 1 - M0010 - Analyst PMW Filter Number     

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	2	98	106	2					321.9	
Initial	0	100	100	0					300	
Gain	2	-2	6	2					21.9	

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 2 Sample Date 2/27/18 Recovery Date 2/27/18  
 Sample I.D. Chemours - South VE - STK - 2 - M0010 - Analyst PMW Filter Number     

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final	2	89	103						340.6	
Initial	0	100	100						300	
Gain	2	-11	3					-6	40.6	34.6

Impinger Color clear Labeled?   
 Silica Gel Condition Good Sealed?

Run No. 3 Sample Date      Recovery Date       
 Sample I.D. Chemours - South VE - STK - 3 - M0010 - Analyst      Filter Number     

Impinger										
	1	2	3	4	5	6	7	Imp.Total	8	Total
Contents	Empty	HPLC H2O	HPLC H2O						Silica Gel	
Final										
Initial		100	100						300	
Gain										

Impinger Color      Labeled?   
 Silica Gel Condition      Sealed?

Check COC for Sample IDs of Media Blanks



# METHODS AND ANALYZERS

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

---

**File:** C:\DATA\Chemours\fayetteville\february\030118 PPA day 1.cem

**Program Version:** 2.0, built 21 Feb 2015 **File Version:** 2.02

**Computer:** WSWCAIRSERVICES **Trailer:** 27

**Analog Input Device:** Keithley KUSB-3108

---

## Channel 1

Analyte	<b>O<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>25.0</b>
Span Concentration, %	<b>21.0</b>

## Channel 2

Analyte	<b>CO<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>20.0</b>
Span Concentration, %	<b>16.6</b>



# CALIBRATION DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

---

Start Time: 07:42

**O<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
12.0	CC62094
21.0	SG9169108

---

Calibration Results

<b>Zero</b>	10 mv
<b>Span, 21.0 %</b>	8011 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
381.0	10

---

**CO<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
8.9	CC62094
16.6	SG9169108

---

Calibration Results

<b>Zero</b>	1 mv
<b>Span, 16.6 %</b>	8293 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
500.1	1

# CALIBRATION ERROR DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

Start Time: 07:42

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

Slope 381.0                      Intercept 10.0

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
12.0	12.0	0.0	0.0	Pass
21.0	21.0	0.0	0.0	Pass

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

Slope 500.1                      Intercept 1.0

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
8.9	8.6	-0.3	-1.8	Pass
16.6	16.6	0.0	0.0	Pass

# BIAS

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

Start Time: 07:52

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.2	0.2	1.0	Pass
<b>Span</b>	12.0	12.1	0.1	0.5	Pass

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.1	0.1	0.6	Pass
<b>Span</b>	8.6	8.5	-0.1	-0.6	Pass

---

# RUN SUMMARY

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

---

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

---

Time: 09:20 to 11:14

### Run Averages

20.8      0.0

### Pre-run Bias at 07:52

Zero Bias	0.2	0.1
Span Bias	12.1	8.5
Span Gas	12.0	8.9

### Post-run Bias at 11:52

Zero Bias	0.1	0.0
Span Bias	11.9	8.4
Span Gas	12.0	8.9

Averages corrected for the average of the pre-run and post-run bias

20.9      0.0

*Ambient Air*  
*20.9 O<sub>2</sub>      0.0 CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

Start Time: 11:52

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.1	0.1	0.5	Pass
<b>Span</b>	12.0	11.9	-0.1	-0.5	Pass

---

<b>Calibration Drift</b>					
<b>Standard</b>	<b>Initial*</b>	<b>Final</b>	<b>Difference</b>	<b>Drift</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.2	0.1	-0.1	-0.5	Pass
<b>Span</b>	12.1	11.9	-0.2	-1.0	Pass

\*Bias No. 1

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.6	8.4	-0.2	-1.2	Pass

---

<b>Calibration Drift</b>					
<b>Standard</b>	<b>Initial*</b>	<b>Final</b>	<b>Difference</b>	<b>Drift</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.1	0.0	-0.1	-0.6	Pass
<b>Span</b>	8.5	8.4	-0.1	-0.6	Pass

\*Bias No. 1

# RUN SUMMARY

Number 4

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration **1**

---

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

---

Time: 11:57 to 13:53

### Run Averages

20.8      0.0

### Pre-run Bias at 11:52

Zero Bias	0.1	0.0
Span Bias	11.9	8.4
Span Gas	12.0	8.9

### Post-run Bias at 11:52

Zero Bias	0.1	0.0
Span Bias	11.9	8.4
Span Gas	12.0	8.9

**Averages corrected for the average of the pre-run and post-run bias**

21.1      0.0

*Ambient Air  
20.9% O<sub>2</sub>  
0.0% CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 3

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

Start Time: 11:52

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	11.9	-0.1	-0.5	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.1	0.1	0.0	0.0	Pass
Span	11.9	11.9	0.0	0.0	Pass

\*Bias No. 2

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.0	0.0	0.0	Pass
Span	8.6	8.4	-0.2	-1.2	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.0	0.0	0.0	Pass
Span	8.4	8.4	0.0	0.0	Pass

\*Bias No. 2

---

# RUN SUMMARY

Number 5

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

---

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

---

Time: 14:21 to 16:18

### Run Averages

20.8      0.0

### Pre-run Bias at 11:52

Zero Bias	0.1	0.0
Span Bias	11.9	8.4
Span Gas	12.0	8.9

### Post-run Bias at 16:32

Zero Bias	0.1	0.1
Span Bias	11.9	8.3
Span Gas	12.0	8.9

**Averages corrected for the average of the pre-run and post-run bias**

21.0      0.0

*Ambient Air*  
*20.9 % O<sub>2</sub>*  
*0.0 % CO<sub>2</sub>*



# BIAS AND CALIBRATION DRIFT

Number 4

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **1 Mar 2018**

Calibration 1

Start Time: 16:32

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	11.9	-0.1	-0.5	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.1	0.1	0.0	0.0	Pass
Span	11.9	11.9	0.0	0.0	Pass

\*Bias No. 3

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.6	8.3	-0.3	-1.8	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.4	8.3	-0.1	-0.6	Pass

\*Bias No. 3

# METHODS AND ANALYZERS

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

---

**File:** C:\DATA\Chemours\fayetteville\february\030218 ppa.cem  
**Program Version:** 2.0, built 21 Feb 2015 **File Version:** 2.02  
**Computer:** WSWCAIRSERVICES **Trailer:** 27  
**Analog Input Device:** Keithley KUSB-3108

---

## Channel 1

Analyte	<b>O<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>25.0</b>
Span Concentration, %	<b>21.0</b>

## Channel 2

Analyte	<b>CO<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>20.0</b>
Span Concentration, %	<b>16.6</b>

# CALIBRATION DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

---

Start Time: 07:19

**O<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

%	Cylinder ID
12.0	CC62094
21.0	SG9169108

---

Calibration Results

<b>Zero</b>	10 mv
<b>Span, 21.0 %</b>	8013 mv

---

Curve Coefficients

Slope	Intercept
381.1	10

---

**CO<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

%	Cylinder ID
8.9	CC62094
16.6	SG9169108

---

Calibration Results

<b>Zero</b>	1 mv
<b>Span, 16.6 %</b>	8292 mv

---

Curve Coefficients

Slope	Intercept
500.1	1

# CALIBRATION ERROR DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

Calibration 1

Start Time: 07:22

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

Slope 381.1                      Intercept 10.0

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
12.0	12.0	0.0	0.0	Pass
21.0	21.0	0.0	0.0	Pass

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

Slope 500.1                      Intercept 1.0

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
8.9	8.6	-0.3	-1.8	Pass
16.6	16.6	0.0	0.0	Pass

# BIAS

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

Calibration **1**

---

Start Time: 07:26

**O<sub>2</sub>**  
Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	12.0	12.0	0.0	0.0	Pass

---

**CO<sub>2</sub>**  
Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.6	8.5	-0.1	-0.6	Pass

---

# RUN SUMMARY

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

Calibration **1**

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

Time: 08:15 to 10:11

### Run Averages

21.0      0.0

### Pre-run Bias at 07:26

Zero Bias	0.0	0.0
Span Bias	12.0	8.5
Span Gas	12.0	8.9

### Post-run Bias at 10:24

Zero Bias	0.1	0.1
Span Bias	12.1	8.5
Span Gas	12.0	8.9

Averages corrected for the average of the pre-run and post-run bias

20.9      0.0

*Ambient Air*  
*20.9 % O<sub>2</sub>*  
*0.0 % CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **PPA**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **2 Mar 2018**

Calibration 1

Start Time: 10:24

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	12.1	0.1	0.5	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	12.1	0.1	0.5	Pass

\*Bias No. 1

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.6	8.5	-0.1	-0.6	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.5	8.5	0.0	0.0	Pass

\*Bias No. 1

# METHODS AND ANALYZERS

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

---

Client Folders.A-F\Chemours\15418.002.002 Fayetteville 2018 Stack Testing\Data\Week of February 26th\0227

**Program Version:** 2.0, built 21 Feb 2015 **File Version:** 2.02

**Computer:** WSWCAIRSERVICES **Trailer:** 27

**Analog Input Device:** MCC USB-1608G

---

## Channel 1

Analyte	<b>O<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>25.0</b>
Span Concentration, %	<b>21.0</b>

## Channel 2

Analyte	<b>CO<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>20.0</b>
Span Concentration, %	<b>16.6</b>



# CALIBRATION DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

---

Start Time: 08:06

**O<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
12.0	CC62094
21.0	SG9169108

---

Calibration Results

<b>Zero</b>	20 mv
<b>Span, 21.0 %</b>	8011 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
380.5	20

---

**CO<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
8.9	CC62094
16.6	SG9169108

---

Calibration Results

<b>Zero</b>	-1 mv
<b>Span, 16.6 %</b>	8286 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
499.8	-1

# CALIBRATION ERROR DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration 1

Start Time: 08:06

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

**Slope 380.5                      Intercept 20.0**

<b>Standard</b>	<b>Result</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
Zero	0.0	0.0	0.0	Pass
12.0	11.9	-0.1	-0.5	Pass
21.0	21.0	0.0	0.0	Pass

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

**Slope 499.8                      Intercept -1.0**

<b>Standard</b>	<b>Result</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
Zero	0.0	0.0	0.0	Pass
8.9	8.6	-0.3	-1.8	Pass
16.6	16.6	0.0	0.0	Pass

# BIAS

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration 1

Start Time: 08:12

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	12.0	12.0	0.0	0.0	Pass

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.6	8.5	-0.1	-0.6	Pass

---

# RUN SUMMARY

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration 1

---

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

---

Time: 10:18 to 12:08

### Run Averages

20.9                      0.1

### Pre-run Bias at 08:12

Zero Bias	0.0	0.0
Span Bias	12.0	8.5
Span Gas	12.0	8.9

### Post-run Bias at 13:37

Zero Bias	0.1	0.1
Span Bias	12.0	8.5
Span Gas	12.0	8.9

Averages corrected for the average of the pre-run and post-run bias

20.9                      0.1

*Ambient Air*  
*20.9 % O<sub>2</sub>*  
*0.0 % CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration 1

Start Time: 13:37

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	12.0	0.0	0.0	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	12.0	0.0	0.0	Pass

\*Bias No. 1

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.6	8.5	-0.1	-0.6	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.6	Pass
Span	8.5	8.5	0.0	0.0	Pass

\*Bias No. 1

# RUN SUMMARY

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration **1**

---

Method	O <sub>2</sub>	CO <sub>2</sub>
Conc. Units	EPA 3A	EPA 3A
	%	%

---

Time: 14:46 to 16:30

### Run Averages

20.9      0.2

### Pre-run Bias at 13:37

Zero Bias	0.1	0.1
Span Bias	12.0	8.5
Span Gas	12.0	8.9

### Post-run Bias at 16:53

Zero Bias	0.1	0.0
Span Bias	12.0	8.5
Span Gas	12.0	8.9

**Averages corrected for the average of the pre-run and post-run bias**

20.9      0.1

*Ambient Air*  
*20.9 % O<sub>2</sub>*  
*0.0 % CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 3

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **27 Feb 2018**

Calibration 1

Start Time: 16:53

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	12.0	0.0	0.0	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.1	0.1	0.0	0.0	Pass
Span	12.0	12.0	0.0	0.0	Pass

\*Bias No. 2

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.0	0.0	0.0	Pass
Span	8.6	8.5	-0.1	-0.6	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.1	0.0	-0.1	-0.6	Pass
Span	8.5	8.5	0.0	0.0	Pass

\*Bias No. 2

# METHODS AND ANALYZERS

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

---

**File:** C:\DATA\Chemours\fayetteville\february\022618 VES RUN 1 and 2.cem  
**Program Version:** 2.0, built 21 Feb 2015 **File Version:** 2.02  
**Computer:** WSWCAIRSERVICES **Trailer:** 27  
**Analog Input Device:** Keithley KUSB-3108

---

## Channel 1

Analyte	<b>O<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>25.0</b>
Span Concentration, %	<b>21.0</b>

## Channel 2

Analyte	<b>CO<sub>2</sub></b>
Method	<b>EPA 3A, Using Bias</b>
Analyzer Make, Model & Serial No.	<b>Servomex 4900</b>
Full-Scale Output, mv	<b>10000</b>
Analyzer Range, %	<b>20.0</b>
Span Concentration, %	<b>16.6</b>



# CALIBRATION DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

---

Start Time: 13:16

**O<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
12.0	CC62094
21.0	SG9169108

---

Calibration Results

<b>Zero</b>	10 mv
<b>Span, 21.0 %</b>	8014 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
381.1	10

---

**CO<sub>2</sub>**

Method: EPA 3A

Calibration Type: Linear Zero and High Span

---

Calibration Standards

<b>%</b>	<b>Cylinder ID</b>
8.9	CC62094
16.6	SG9169108

---

Calibration Results

<b>Zero</b>	-1 mv
<b>Span, 16.6 %</b>	8289 mv

---

Curve Coefficients

<b>Slope</b>	<b>Intercept</b>
500.0	-1

# CALIBRATION ERROR DATA

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

Calibration 1

Start Time: 13:16

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

Slope 381.1                      Intercept 10.0

---

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
12.0	12.0	0.0	0.0	Pass
21.0	21.0	0.0	0.0	Pass

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

Slope 500.0                      Intercept -1.0

---

Standard	Result	Difference	Error	Status
%	%	%	%	
Zero	0.0	0.0	0.0	Pass
8.9	8.6	-0.3	-1.8	Pass
16.6	16.6	0.0	0.0	Pass

---

# BIAS

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

Calibration **1**

Start Time: 13:21

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	12.0	12.0	0.0	0.0	Pass

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.6	8.5	-0.1	-0.6	Pass

---

# BIAS AND CALIBRATION DRIFT

Number 2

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

Calibration 1

Start Time: 15:29

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	12.0	11.9	-0.1	-0.5	Pass

---

<b>Calibration Drift</b>					
<b>Standard</b>	<b>Initial*</b>	<b>Final</b>	<b>Difference</b>	<b>Drift</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	12.0	11.9	-0.1	-0.5	Pass

\*Bias No. 1

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
<b>Standard</b>	<b>Cal.</b>	<b>Bias</b>	<b>Difference</b>	<b>Error</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.6	8.5	-0.1	-0.6	Pass

---

<b>Calibration Drift</b>					
<b>Standard</b>	<b>Initial*</b>	<b>Final</b>	<b>Difference</b>	<b>Drift</b>	<b>Status</b>
<b>Gas</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Zero</b>	0.0	0.0	0.0	0.0	Pass
<b>Span</b>	8.5	8.5	0.0	0.0	Pass

\*Bias No. 1

# RUN SUMMARY

Number 1

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

Calibration **1**

Method	O <sub>2</sub> EPA 3A	CO <sub>2</sub> EPA 3A
Conc. Units	%	%

Time: 15:52 to 17:35

### Run Averages

20.7      0.2

### Pre-run Bias at 15:29

Zero Bias	0.0	0.0
Span Bias	11.9	8.5
Span Gas	12.0	8.9

### Post-run Bias at 17:38

Zero Bias	0.1	0.0
Span Bias	11.9	8.6
Span Gas	12.0	8.9

Averages corrected for the average of the pre-run and post-run bias

20.9      0.2

*Ambica Air*  
*20.9 % O<sub>2</sub>*  
*0.0 % CO<sub>2</sub>*

# BIAS AND CALIBRATION DRIFT

Number 3

Client: **Chemours**  
Location: **Fayetteville, NC**  
Source: **VES**

Project Number: **15418.002.002.0001**  
Operator: **SR**  
Date: **26 Feb 2018**

Calibration 1

Start Time: 17:38

**O<sub>2</sub>**

Method: EPA 3A  
Span Conc. 21.0 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	12.0	11.9	-0.1	-0.5	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.1	0.1	0.5	Pass
Span	11.9	11.9	0.0	0.0	Pass

\*Bias No. 2

---

**CO<sub>2</sub>**

Method: EPA 3A  
Span Conc. 16.6 %

---

<b>Bias Results</b>					
Standard	Cal.	Bias	Difference	Error	Status
Gas	%	%	%	%	
Zero	0.0	0.0	0.0	0.0	Pass
Span	8.6	8.6	0.0	0.0	Pass

---

<b>Calibration Drift</b>					
Standard	Initial*	Final	Difference	Drift	Status
Gas	%	%	%	%	
Zero	0.0	0.0	0.0	0.0	Pass
Span	8.5	8.6	0.1	0.6	Pass

\*Bias No. 2

---

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**APPENDIX C  
LABORATORY ANALYTICAL DESCRIPTION AND  
ANALYTICAL REPORT**

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Note: The complete analytical report is included on the attached CD.

## **TestAmerica HFPO-DA Method 0010 Sampling Train Fraction Preparation and Analysis Summary**

The Method 0010 Sampling train fractions are transported from the Chemours Plant site in Fayetteville, NC to the TestAmerica Laboratory in Knoxville, TN for processing. The fractions are collected and recovered from the sampling train according to SW-846 additional guidelines found in Method 3542 for the breakdown of Method 0010 components. The train fraction designations are as follows:

- **Front-Half Composite**—consisting of a particulate filter, and a probe, nozzle and front portion of the filter holder bell housing glassware solvent rinses,
- **Back-Half Composite**—consisting of an XAD-2 resin module, and the back portion of the filter holder bell housing with connecting glassware solvent rinses,
- **Condensate and Impinger Contents**—consisting of the D.I. Water content used to initially charge the impingers and Condensate collected during the sampling run.
- **Breakthrough XAD-2 Resin Tube**—consisting of a standard XAD-2 module placed behind the Condensate Impingers as a final quality assurance indicator of the lack of breakthrough of the HFPO-DA through the sampling train.

In the laboratory, the Front-Half sample fraction components are placed in to an HDPE bottle and spiked with  $^{13}\text{C}_3$ -HFPO isotope dilution internal standard (IDA). This composite is extracted with basic methanol for 18 hours at room temperature followed by acidification using formic acid. The final formulation is filtered through a 0.45  $\mu\text{m}$  filter and analyzed by Method 8321A for HFPO-DA. Instrumental analysis for these extracts is conducted in the TestAmerica Denver Laboratory.

The Back-Half sample fraction components, including the approximately 40 grams of XAD-2 resin material, are transferred to an HDPE bottle and spiked with the IDA internal standard. This Back-Half Composite is extracted at room temperature using two (2) successive 18 hour periods and separate portions of basic methanol. The XAD-2 resin material is removed, and the extraction fluid is acidified using formic acid. The final formulation is filtered through a 0.45  $\mu\text{m}$  filter and analyzed by Method 8321A for HFPO-DA in the TestAmerica Denver Laboratory.

The Condensate Composite fraction of the sampling train is measured to record the total volume in the composite followed by preparation by concentration on a solid phase extractor (SPE). The SPE cartridge is treated with water/methanol mixture to release the HFPO-DA. The extract is run for the HFPO-DA using Method 8321A.

The Breakthrough XAD-2 Resin Tube fraction is prepared and analyzed by the same process as that used for the Back-half sampling train fraction.

Due to the sensitivity of the LCMS methodology, concentrations levels collected on Method 0010 sampling trains of HFPO-DA may require significant dilutions in order to report analytical data that is "hard quantified" within the calibration range of the process. The diluted samples avoid "E" (estimated) values for the results of the HFPO-DA.



## ANALYTICAL REPORT

Job Number: 140-10862-1

Job Description: South VE Emissions Test

Contract Number: LBIO-67048

For:

Chemours Company FC, LLC The  
c/o AECOM

Sabre Building, Suite 300

4051 Ogletown Road

Newark, DE 19713

Attention: Michael Aucoin



Approved for release.  
Courtney M Adkins  
Project Manager I  
3/16/2018 12:18 PM

---

Courtney M Adkins, Project Manager I  
5815 Middlebrook Pike, Knoxville, TN, 37921  
(865)291-3000  
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03/16/2018

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# Definitions/Glossary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
E	Result exceeded calibration range.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Method Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
8321A	PFOA and PFOS	SW846	TAL DEN
8321A	HFPO-DA	SW846	TAL DEN

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

# Sample Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-10862-1	C-2801,2802 R1 M0010 FH	Air	02/27/18 00:00	03/03/18 08:00
140-10862-2	C-2803,2804,2806 R1 M0010 BH	Air	02/27/18 00:00	03/03/18 08:00
140-10862-3	C-2805 R1 M0010 IMP COND	Air	02/27/18 00:00	03/03/18 08:00
140-10862-4	C-2807 R1 M0010 XAD-2	Air	02/27/18 00:00	03/03/18 08:00
140-10862-5	C-2808,2809 R2 M0010 FH	Air	02/27/18 00:00	03/03/18 08:00
140-10862-6	C-2810,2811,2813 R2 M0010 BH	Air	02/27/18 00:00	03/03/18 08:00
140-10862-7	C-2812 R2 M0010 IMP COND	Air	02/27/18 00:00	03/03/18 08:00
140-10862-8	C-2814 R2 M0010 XAD-2	Air	02/27/18 00:00	03/03/18 08:00
140-10862-9	C-2815,2816 R3 M0010 FH	Air	02/26/18 00:00	03/03/18 08:00
140-10862-10	C-2817,2818,2820 R3 M0010 BH	Air	02/26/18 00:00	03/03/18 08:00
140-10862-11	C-2819 R3 M0010 IMP COND	Air	02/26/18 00:00	03/03/18 08:00
140-10862-12	C-2821 R3 M0010 XAD-2	Air	02/26/18 00:00	03/03/18 08:00
140-10862-13	C-2822,2823 R QC M0010 FH BT	Air	02/27/18 00:00	03/03/18 08:00
140-10862-14	C-2824,2825,2827 R QC M0010 BH BT	Air	02/27/18 00:00	03/03/18 08:00
140-10862-15	C-2826 R QC M0010 IMP COND BT	Air	02/27/18 00:00	03/03/18 08:00
140-10862-16	C-2828 R QC M0010 XAD-2 BT	Air	02/27/18 00:00	03/03/18 08:00
140-10862-17	C-2829 R QC M0010 DI WATER RB	Air	02/27/18 00:00	03/03/18 08:00
140-10862-18	C-2830 R QC M0010 MEOH WITH 5% NH4OH RB	Air	02/27/18 00:00	03/03/18 08:00
140-10862-19	C-2831 R QC M0010 XAD-2 RB	Air	03/02/18 00:00	03/03/18 08:00
140-10862-20	C-2832 R QC M0010 MEOH WITH 5% NH4OH TB	Air	02/27/18 00:00	03/03/18 08:00
140-10862-21	C-2833 R QC M0010 XAD-2 TB	Air	03/02/18 00:00	03/03/18 08:00
140-10862-22	C-2834,2835,2836 R QC M0010 PROOF BLANK	Air	02/27/18 00:00	03/03/18 08:00
140-10862-23	A-6414 MEDIA CHECK XAD	Air	02/26/18 00:00	03/03/18 08:00
140-10862-24	A-6415 MEDIA CHECK FILTER	Air	02/26/18 00:00	03/03/18 08:00

## **Job Narrative 140-10862-1**

### **Sample Receipt**

The samples were received on March 3, 2018 at 8:00 AM in good condition and properly preserved.. The temperatures of the 5 coolers at receipt time were 1.3° C, 1.7° C, 2.3° C, 2.7° C and 2.9° C.

### **Quality Control and Data Interpretation**

Unless otherwise noted, all holding times, and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

### **Method 0010/Method 3542 Sampling Train Preparation**

Train fractions were extracted and prepared for analysis in TestAmerica's Knoxville laboratory. Extracts and condensate samples were forwarded to the Denver laboratory for HFPO-DA analysis. All results are reported in "Total ug" per sample.

### **LCMS**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### **Organic Prep**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **Comments**

Reporting Limits (RLs) and Method Detection Limits (MDLs) for the HFPO-DA used in this report were derived in Denver for reporting soils and water samples. Method 0010 sampling train matrix specific RLs and MDLs have not been established for HFPO-DA. The soil and water limits are expected to be reasonable approximations of the actual matrix specific limits, under these conditions.

The expanded deliverable section of the package is split into two sections: 8321A\_HFPO\_DU is specific to condensates, and Method DV-LC-0012 contains the XAD and Filter data. Both methods share the same calibration on 10/10/17. A single instance of this calibration and the associated detection limit check (DLCK) and Initial calibration verification (ICV) can be found in the 8321A\_HFPO\_DU section of the package as part of our automated package generation procedures.

# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## LCMS

### Analysis Batch: 404345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
DLCK 280-404345/13	Lab Control Sample	Total/NA	Air	8321A	

### Prep Batch: 406763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-1	C-2801,2802 R1 M0010 FH	Total/NA	Air	None	
140-10862-5	C-2808,2809 R2 M0010 FH	Total/NA	Air	None	
140-10862-9	C-2815,2816 R3 M0010 FH	Total/NA	Air	None	
140-10862-13	C-2822,2823 R QC M0010 FH BT	Total/NA	Air	None	
140-10862-18	C-2830 R QC M0010 MEOH WITH 5% NH4OH F	Total/NA	Air	None	
140-10862-20	C-2832 R QC M0010 MEOH WITH 5% NH4OH T	Total/NA	Air	None	
140-10862-24	A-6415 MEDIA CHECK FILTER	Total/NA	Air	None	
MB 280-406763/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406763/2-A	Lab Control Sample	Total/NA	Air	None	

### Prep Batch: 406764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-2	C-2803,2804,2806 R1 M0010 BH	Total/NA	Air	None	
140-10862-4	C-2807 R1 M0010 XAD-2	Total/NA	Air	None	
140-10862-6	C-2810,2811,2813 R2 M0010 BH	Total/NA	Air	None	
140-10862-8	C-2814 R2 M0010 XAD-2	Total/NA	Air	None	
140-10862-10	C-2817,2818,2820 R3 M0010 BH	Total/NA	Air	None	
140-10862-12	C-2821 R3 M0010 XAD-2	Total/NA	Air	None	
140-10862-14	C-2824,2825,2827 R QC M0010 BH BT	Total/NA	Air	None	
140-10862-16	C-2828 R QC M0010 XAD-2 BT	Total/NA	Air	None	
140-10862-19	C-2831 R QC M0010 XAD-2 RB	Total/NA	Air	None	
140-10862-21	C-2833 R QC M0010 XAD-2 TB	Total/NA	Air	None	
140-10862-22	C-2834,2835,2836 R QC M0010 PROOF BLANK	Total/NA	Air	None	
140-10862-23	A-6414 MEDIA CHECK XAD	Total/NA	Air	None	
MB 280-406764/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406764/2-A	Lab Control Sample	Total/NA	Air	None	

### Prep Batch: 406765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-3	C-2805 R1 M0010 IMP COND	Total/NA	Air	None	
140-10862-7	C-2812 R2 M0010 IMP COND	Total/NA	Air	None	
140-10862-11	C-2819 R3 M0010 IMP COND	Total/NA	Air	None	
140-10862-15	C-2826 R QC M0010 IMP COND BT	Total/NA	Air	None	
140-10862-17	C-2829 R QC M0010 DI WATER RB	Total/NA	Air	None	
MB 280-406765/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406765/2-A	Lab Control Sample	Total/NA	Air	None	
LCSD 280-406765/14-A	Lab Control Sample Dup	Total/NA	Air	None	
LLCS 280-406765/15-A	Lab Control Sample	Total/NA	Air	None	

### Analysis Batch: 407389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-1	C-2801,2802 R1 M0010 FH	Total/NA	Air	8321A	406763
140-10862-5	C-2808,2809 R2 M0010 FH	Total/NA	Air	8321A	406763
140-10862-9	C-2815,2816 R3 M0010 FH	Total/NA	Air	8321A	406763
140-10862-13	C-2822,2823 R QC M0010 FH BT	Total/NA	Air	8321A	406763
140-10862-18	C-2830 R QC M0010 MEOH WITH 5% NH4OH F	Total/NA	Air	8321A	406763
140-10862-20	C-2832 R QC M0010 MEOH WITH 5% NH4OH T	Total/NA	Air	8321A	406763

TestAmerica Knoxville



# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## LCMS (Continued)

### Analysis Batch: 407389 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-24	A-6415 MEDIA CHECK FILTER	Total/NA	Air	8321A	406763
MB 280-406763/1-A	Method Blank	Total/NA	Air	8321A	406763
LCS 280-406763/2-A	Lab Control Sample	Total/NA	Air	8321A	406763

### Analysis Batch: 407390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-2	C-2803,2804,2806 R1 M0010 BH	Total/NA	Air	8321A	406764
140-10862-4	C-2807 R1 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10862-6	C-2810,2811,2813 R2 M0010 BH	Total/NA	Air	8321A	406764
140-10862-8	C-2814 R2 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10862-10	C-2817,2818,2820 R3 M0010 BH	Total/NA	Air	8321A	406764
140-10862-12	C-2821 R3 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10862-14	C-2824,2825,2827 R QC M0010 BH BT	Total/NA	Air	8321A	406764
140-10862-16	C-2828 R QC M0010 XAD-2 BT	Total/NA	Air	8321A	406764
140-10862-19	C-2831 R QC M0010 XAD-2 RB	Total/NA	Air	8321A	406764
140-10862-21	C-2833 R QC M0010 XAD-2 TB	Total/NA	Air	8321A	406764
140-10862-22	C-2834,2835,2836 R QC M0010 PROOF BLANK	Total/NA	Air	8321A	406764
140-10862-23	A-6414 MEDIA CHECK XAD	Total/NA	Air	8321A	406764
MB 280-406764/1-A	Method Blank	Total/NA	Air	8321A	406764
LCS 280-406764/2-A	Lab Control Sample	Total/NA	Air	8321A	406764

### Analysis Batch: 407565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-5	C-2808,2809 R2 M0010 FH	Total/NA	Air	8321A	406763
140-10862-9	C-2815,2816 R3 M0010 FH	Total/NA	Air	8321A	406763

### Analysis Batch: 407567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10862-3	C-2805 R1 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10862-7	C-2812 R2 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10862-11	C-2819 R3 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10862-15	C-2826 R QC M0010 IMP COND BT	Total/NA	Air	8321A	406765
140-10862-17	C-2829 R QC M0010 DI WATER RB	Total/NA	Air	8321A	406765
MB 280-406765/1-A	Method Blank	Total/NA	Air	8321A	406765
LCS 280-406765/2-A	Lab Control Sample	Total/NA	Air	8321A	406765
LCSD 280-406765/14-A	Lab Control Sample Dup	Total/NA	Air	8321A	406765
LLCS 280-406765/15-A	Lab Control Sample	Total/NA	Air	8321A	406765

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Client Sample ID: C-2801,2802 R1 M0010 FH

Lab Sample ID: 140-10862-1

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	9.42		0.0750	0.0750	ug/Sample		03/05/18 14:00	03/09/18 12:12	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	79		50 - 200				03/05/18 14:00	03/09/18 12:12	1

## Client Sample ID: C-2803,2804,2806 R1 M0010 BH

Lab Sample ID: 140-10862-2

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	5.70		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:10	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	68		50 - 200				03/05/18 04:38	03/09/18 13:10	1

## Client Sample ID: C-2805 R1 M0010 IMP COND

Lab Sample ID: 140-10862-3

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0183	J	0.0500	0.00255	ug/Sample		03/11/18 10:52	03/12/18 09:29	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	86		50 - 200				03/11/18 10:52	03/12/18 09:29	1

## Client Sample ID: C-2807 R1 M0010 XAD-2

Lab Sample ID: 140-10862-4

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:14	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	73		50 - 200				03/05/18 04:38	03/09/18 13:14	1

## Client Sample ID: C-2808,2809 R2 M0010 FH

Lab Sample ID: 140-10862-5

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	47.6	E	0.100	0.100	ug/Sample		03/05/18 14:00	03/09/18 12:15	1
HFPO-DA	45.4		0.500	0.500	ug/Sample		03/05/18 14:00	03/12/18 08:27	5

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Client Sample ID: C-2808,2809 R2 M0010 FH

## Lab Sample ID: 140-10862-5

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	71		50 - 200	03/05/18 14:00	03/09/18 12:15	1
13C3 HFPO-DA	81	D	50 - 200	03/05/18 14:00	03/12/18 08:27	5

## Client Sample ID: C-2810,2811,2813 R2 M0010 BH

## Lab Sample ID: 140-10862-6

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	7.12		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	03/05/18 04:38	03/09/18 13:17	1

## Client Sample ID: C-2812 R2 M0010 IMP COND

## Lab Sample ID: 140-10862-7

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0413	J	0.0500	0.00255	ug/Sample		03/11/18 10:52	03/12/18 09:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	03/11/18 10:52	03/12/18 09:32	1

## Client Sample ID: C-2814 R2 M0010 XAD-2

## Lab Sample ID: 140-10862-8

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	5.24		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	54		50 - 200	03/05/18 04:38	03/09/18 13:20	1

## Client Sample ID: C-2815,2816 R3 M0010 FH

## Lab Sample ID: 140-10862-9

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	45.9	E	0.125	0.125	ug/Sample		03/05/18 14:00	03/09/18 12:18	1
HFPO-DA	46.9		0.625	0.625	ug/Sample		03/05/18 14:00	03/12/18 08:30	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	03/05/18 14:00	03/09/18 12:18	1

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2815,2816 R3 M0010 FH**

**Lab Sample ID: 140-10862-9**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78	D	50 - 200	03/05/18 14:00	03/12/18 08:30	5

**Client Sample ID: C-2817,2818,2820 R3 M0010 BH**

**Lab Sample ID: 140-10862-10**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	3.25		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	03/05/18 04:38	03/09/18 13:24	1

**Client Sample ID: C-2819 R3 M0010 IMP COND**

**Lab Sample ID: 140-10862-11**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0164		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 09:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200	03/11/18 10:52	03/12/18 09:35	1

**Client Sample ID: C-2821 R3 M0010 XAD-2**

**Lab Sample ID: 140-10862-12**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	03/05/18 04:38	03/09/18 13:27	1

**Client Sample ID: C-2822,2823 R QC M0010 FH BT**

**Lab Sample ID: 140-10862-13**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.128		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200	03/05/18 14:00	03/09/18 12:21	1

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2824,2825,2827 R QC M0010 BH BT**

**Lab Sample ID: 140-10862-14**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.849		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200	03/05/18 04:38	03/09/18 13:30	1

**Client Sample ID: C-2826 R QC M0010 IMP COND BT**

**Lab Sample ID: 140-10862-15**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0157		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 09:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	58		50 - 200	03/11/18 10:52	03/12/18 09:38	1

**Client Sample ID: C-2828 R QC M0010 XAD-2 BT**

**Lab Sample ID: 140-10862-16**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	72		50 - 200	03/05/18 04:38	03/09/18 13:33	1

**Client Sample ID: C-2829 R QC M0010 DI WATER RB**

**Lab Sample ID: 140-10862-17**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 09:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	03/11/18 10:52	03/12/18 09:42	1

**Client Sample ID: C-2830 R QC M0010 MEOH WITH 5% NH4OH RB**

**Lab Sample ID: 140-10862-18**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:25	1

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2830 R QC M0010 MEOH WITH 5% NH4OH  
RB**

**Lab Sample ID: 140-10862-18**

Date Collected: 02/27/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

**Matrix: Air**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		50 - 200	03/05/18 14:00	03/09/18 12:25	1

**Client Sample ID: C-2831 R QC M0010 XAD-2 RB**

**Lab Sample ID: 140-10862-19**

Date Collected: 03/02/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

**Matrix: Air**

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	71		50 - 200	03/05/18 04:38	03/09/18 13:40	1

**Client Sample ID: C-2832 R QC M0010 MEOH WITH 5% NH4OH  
TB**

**Lab Sample ID: 140-10862-20**

Date Collected: 02/27/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

**Matrix: Air**

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200	03/05/18 14:00	03/09/18 12:28	1

**Client Sample ID: C-2833 R QC M0010 XAD-2 TB**

**Lab Sample ID: 140-10862-21**

Date Collected: 03/02/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

**Matrix: Air**

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200	03/05/18 04:38	03/09/18 13:43	1

**Client Sample ID: C-2834,2835,2836 R QC M0010 PROOF  
BLANK**

**Lab Sample ID: 140-10862-22**

Date Collected: 02/27/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

**Matrix: Air**

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 04:38	03/09/18 13:46	1

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2834,2835,2836 R QC M0010 PROOF**

**Lab Sample ID: 140-10862-22**

**BLANK**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	03/05/18 04:38	03/09/18 13:46	1

**Client Sample ID: A-6414 MEDIA CHECK XAD**

**Lab Sample ID: 140-10862-23**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	56		50 - 200	03/05/18 04:38	03/09/18 13:50	1

**Client Sample ID: A-6415 MEDIA CHECK FILTER**

**Lab Sample ID: 140-10862-24**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	03/05/18 14:00	03/09/18 12:31	1

# Default Detection Limits

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Method: 8321A - HFPO-DA

Prep: None

Analyte	RL	MDL	Units	Method
HFPO-DA	0.00250	0.00128	ug/Sample	8321A

## Method: 8321A - PFOA and PFOS

Prep: None

Analyte	RL	MDL	Units	Method
HFPO-DA	0.0250	0.0250	ug/Sample	8321A
HFPO-DA	0.100	0.100	ug/Sample	8321A



# Surrogate Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Method: 8321A - HFPO-DA

Matrix: Air

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)
140-10862-3	C-2805 R1 M0010 IMP COND	86
140-10862-7	C-2812 R2 M0010 IMP COND	91
140-10862-11	C-2819 R3 M0010 IMP COND	86
140-10862-15	C-2826 R QC M0010 IMP CONI	58
140-10862-17	C-2829 R QC M0010 DI WATEF	95
LCS 280-406765/2-A	Lab Control Sample	90
LCSD 280-406765/14-A	Lab Control Sample Dup	92
LLCS 280-406765/15-A	Lab Control Sample	87
MB 280-406765/1-A	Method Blank	94

#### Surrogate Legend

HFPODA = 13C3 HFPO-DA

## Method: 8321A - PFOA and PFOS

Matrix: Air

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)
140-10862-1	C-2801,2802 R1 M0010 FH	79
140-10862-2	C-2803,2804,2806 R1 M0010 BI	68
140-10862-4	C-2807 R1 M0010 XAD-2	73
140-10862-5	C-2808,2809 R2 M0010 FH	71
140-10862-5	C-2808,2809 R2 M0010 FH	81 D
140-10862-6	C-2810,2811,2813 R2 M0010 BI	69
140-10862-8	C-2814 R2 M0010 XAD-2	54
140-10862-9	C-2815,2816 R3 M0010 FH	76
140-10862-9	C-2815,2816 R3 M0010 FH	78 D
140-10862-10	C-2817,2818,2820 R3 M0010 BI	69
140-10862-12	C-2821 R3 M0010 XAD-2	76
140-10862-13	C-2822,2823 R QC M0010 FH E	75
140-10862-14	C-2824,2825,2827 R QC M0010	73
140-10862-16	C-2828 R QC M0010 XAD-2 BT	72
140-10862-18	C-2830 R QC M0010 MEOH WI	74
140-10862-19	C-2831 R QC M0010 XAD-2 RB	71
140-10862-20	C-2832 R QC M0010 MEOH WI	75
140-10862-21	C-2833 R QC M0010 XAD-2 TB	75
140-10862-22	C-2834,2835,2836 R QC M0010	85
140-10862-23	A-6414 MEDIA CHECK XAD	56
140-10862-24	A-6415 MEDIA CHECK FILTER	76
DLCK 280-404345/13	Lab Control Sample	104
LCS 280-406763/2-A	Lab Control Sample	77
LCS 280-406764/2-A	Lab Control Sample	72
MB 280-406763/1-A	Method Blank	69
MB 280-406764/1-A	Method Blank	64

#### Surrogate Legend

HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Method: 8321A - HFPO-DA

**Lab Sample ID: MB 280-406765/1-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 09:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200				03/11/18 10:52	03/12/18 09:16	1

**Lab Sample ID: LCS 280-406765/2-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.0500	0.05486		ug/Sample		110	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	90		50 - 200				

**Lab Sample ID: LCSD 280-406765/14-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**  
**%Rec.**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
HFPO-DA	0.0500	0.05420		ug/Sample		108	50 - 150	1	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
13C3 HFPO-DA	92		50 - 200						

**Lab Sample ID: LLCS 280-406765/15-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**  
**%Rec.**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.00500	0.004384		ug/Sample		88	50 - 150
Surrogate	LLCS %Recovery	LLCS Qualifier	Limits				
13C3 HFPO-DA	87		50 - 200				

## Method: 8321A - PFOA and PFOS

**Lab Sample ID: DLCK 280-404345/13**  
**Matrix: Air**  
**Analysis Batch: 404345**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
HFPO-DA	0.250	0.2255		ug/L		90	70 - 130
Surrogate	DLCK %Recovery	DLCK Qualifier	Limits				
13C3 HFPO-DA	104		50 - 200				

TestAmerica Knoxville

# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Method: 8321A - PFOA and PFOS (Continued)

**Lab Sample ID: MB 280-406763/1-A**  
**Matrix: Air**  
**Analysis Batch: 407389**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406763**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:05	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200				03/05/18 14:00	03/09/18 12:05	1

**Lab Sample ID: LCS 280-406763/2-A**  
**Matrix: Air**  
**Analysis Batch: 407389**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406763**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.500	0.4835		ug/Sample		97	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	77		50 - 200				

**Lab Sample ID: MB 280-406764/1-A**  
**Matrix: Air**  
**Analysis Batch: 407390**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406764**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	64		50 - 200				03/05/18 04:38	03/09/18 13:04	1

**Lab Sample ID: LCS 280-406764/2-A**  
**Matrix: Air**  
**Analysis Batch: 407390**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406764**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	4.00	3.498		ug/Sample		87	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	72		50 - 200				

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2801,2802 R1 M0010 FH**

**Lab Sample ID: 140-10862-1**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	150 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:12	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2803,2804,2806 R1 M0010 BH**

**Lab Sample ID: 140-10862-2**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:10	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2805 R1 M0010 IMP COND**

**Lab Sample ID: 140-10862-3**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.05 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:29	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2807 R1 M0010 XAD-2**

**Lab Sample ID: 140-10862-4**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:14	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2808,2809 R2 M0010 FH**

**Lab Sample ID: 140-10862-5**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:15	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		5			407565	03/12/18 08:27	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2810,2811,2813 R2 M0010 BH**

**Lab Sample ID: 140-10862-6**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:17	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2812 R2 M0010 IMP COND**

**Lab Sample ID: 140-10862-7**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.05 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:32	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2814 R2 M0010 XAD-2**

**Lab Sample ID: 140-10862-8**

Date Collected: 02/27/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:20	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2815,2816 R3 M0010 FH**

**Lab Sample ID: 140-10862-9**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	250 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:18	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	250 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		5			407565	03/12/18 08:30	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2817,2818,2820 R3 M0010 BH**

**Lab Sample ID: 140-10862-10**

Date Collected: 02/26/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:24	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2819 R3 M0010 IMP COND**

**Lab Sample ID: 140-10862-11**

**Date Collected: 02/26/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:35	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2821 R3 M0010 XAD-2**

**Lab Sample ID: 140-10862-12**

**Date Collected: 02/26/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:27	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2822,2823 R QC M0010 FH BT**

**Lab Sample ID: 140-10862-13**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:21	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2824,2825,2827 R QC M0010 BH BT**

**Lab Sample ID: 140-10862-14**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:30	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2826 R QC M0010 IMP COND BT**

**Lab Sample ID: 140-10862-15**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:38	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

TestAmerica Knoxville

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2828 R QC M0010 XAD-2 BT**

**Lab Sample ID: 140-10862-16**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:33	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2829 R QC M0010 DI WATER RB**

**Lab Sample ID: 140-10862-17**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:42	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2830 R QC M0010 MEOH WITH 5% NH4OH RB**

**Lab Sample ID: 140-10862-18**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:25	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2831 R QC M0010 XAD-2 RB**

**Lab Sample ID: 140-10862-19**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:40	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2832 R QC M0010 MEOH WITH 5% NH4OH TB**

**Lab Sample ID: 140-10862-20**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:28	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

TestAmerica Knoxville

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: C-2833 R QC M0010 XAD-2 TB**

**Lab Sample ID: 140-10862-21**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:43	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: C-2834,2835,2836 R QC M0010 PROOF BLANK**

**Lab Sample ID: 140-10862-22**

**Date Collected: 02/27/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:46	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: A-6414 MEDIA CHECK XAD**

**Lab Sample ID: 140-10862-23**

**Date Collected: 02/26/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:50	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: A-6415 MEDIA CHECK FILTER**

**Lab Sample ID: 140-10862-24**

**Date Collected: 02/26/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:31	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406763/1-A**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:05	AGCM	TAL DEN
Instrument ID: LC_LCMS7										



# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406764/1-A**

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:04	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406765/1-A**

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:16	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: DLCK 280-404345/13**

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			404345	02/08/18 13:38	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 280-406763/2-A**

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:08	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 280-406764/2-A**

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:07	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 280-406765/2-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:19	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 280-406765/14-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:22	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample

Lab Sample ID: LLCS 280-406765/15-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:25	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

# Accreditation/Certification Summary

Client: Chemours Company FC, LLC The  
Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Laboratory: TestAmerica Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		N/A	
ANAB	DoD ELAP		L2311	02-13-19
Arkansas DEQ	State Program	6	88-0688	06-16-18
California	State Program	9	2423	06-30-18
Colorado	State Program	8	TN00009	02-28-19
Connecticut	State Program	1	PH-0223	09-30-19
Florida	NELAP	4	E87177	06-30-18
Georgia	State Program	4	906	04-13-20
Hawaii	State Program	9	N/A	04-13-18
Kansas	NELAP	7	E-10349	10-31-18
Kentucky (DW)	State Program	4	90101	12-31-18
Louisiana	NELAP	6	83979	06-30-18
Louisiana (DW)	NELAP	6	LA160005	12-31-18
Maryland	State Program	3	277	03-31-19
Michigan	State Program	5	9933	04-13-20
Nevada	State Program	9	TN00009	07-31-18
New Jersey	NELAP	2	TN001	06-30-18
New York	NELAP	2	10781	03-31-18
North Carolina (DW)	State Program	4	21705	07-31-18
North Carolina (WW/SW)	State Program	4	64	12-31-18
Ohio VAP	State Program	5	CL0059	11-22-18
Oklahoma	State Program	6	9415	08-31-18
Oregon	NELAP	10	TNI0189	01-01-19
Pennsylvania	NELAP	3	68-00576	12-31-18
Tennessee	State Program	4	2014	04-13-20
Texas	NELAP	6	T104704380-16-9	08-31-18
US Fish & Wildlife	Federal		LE-058448-0	07-31-18
USDA	Federal		P330-16-00262	08-20-19
Utah	NELAP	8	TN00009	07-31-18
Virginia	NELAP	3	460176	09-14-18
Washington	State Program	10	C593	01-19-19
West Virginia (DW)	State Program	3	9955C	12-31-18
West Virginia DEP	State Program	3	345	04-30-18
Wisconsin	State Program	5	998044300	08-31-18

## Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-18
Arizona	State Program	9	AZ0713	12-20-18
Arkansas DEQ	State Program	6	88-0687	06-01-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-18 *
Illinois	NELAP	5	200017	04-30-18

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: Chemours Company FC, LLC The  
 Project/Site: South VE Emissions Test

TestAmerica Job ID: 140-10862-1

## Laboratory: TestAmerica Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	04-30-18
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-18
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-18
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal		P330-16-00397	12-15-19
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-18
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 404345

Lab Sample ID: STD001 280-404345/3 IC Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:05 Lab File ID: hfpo718B08034.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Assign Peak	meyera	02/08/18 15:19

Lab Sample ID: STD002 280-404345/4 IC Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:08 Lab File ID: hfpo718B08035.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:19

Lab Sample ID: DLCK 280-404345/13 Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:38 Lab File ID: hfpo718B08044.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:20

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 407390

Lab Sample ID: 140-10862-21 Client Sample ID: C-2833 R QC M0010 XAD-2 TB

Date Analyzed: 03/09/18 13:43 Lab File ID: hfpo718C09101.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.03	Baseline	meyera	03/12/18 07:22

**8321A\_HFPO\_Du**

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**HFPO-DA**

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Matrix: Air

Level: Low

GC Column (1): Synergi Hyd ID: \_\_\_\_\_

Client Sample ID	Lab Sample ID	HFPODA #
C-2805 R1 M0010 IMP COND	140-10862-3	86
C-2812 R2 M0010 IMP COND	140-10862-7	91
C-2819 R3 M0010 IMP COND	140-10862-11	86
C-2826 R QC M0010 IMP COND BT	140-10862-15	58
C-2829 R QC M0010 DI WATER RB	140-10862-17	95
	MB 280-406765/1-A	94
	LCS 280-406765/2-A	90
	LCSD 280-406765/14-A	92
	LLCS 280-406765/15-A	87

HFPODA = 13C3 HFPO-DA

QC LIMITS  
50-200

# Column to be used to flag recovery values

FORM II 8321A



FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12020.d  
 Lab ID: LCS 280-406765/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LCS CONCENTRATION (ug/Sample)	LCS % REC	QC LIMITS REC	#
HFPO-DA	0.0500	0.05486	110	50-150	

# Column to be used to flag recovery and RPD values

FORM III  
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12021.d  
 Lab ID: LCSD 280-406765/14-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LCSD CONCENTRATION (ug/Sample)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
HFPO-DA	0.0500	0.05420	108	1	35	50-150	

# Column to be used to flag recovery and RPD values

FORM III  
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12022.d  
 Lab ID: LLCS 280-406765/15-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LLCS CONCENTRATION (ug/Sample)	LLCS % REC	QC LIMITS REC	#
HFPO-DA	0.00500	0.004384	88	50-150	

# Column to be used to flag recovery and RPD values

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: hfpo718C12019.d Lab Sample ID: MB 280-406765/1-A  
 Matrix: Air Date Extracted: 03/11/2018 10:52  
 Instrument ID: LC\_LCMS7 Date Analyzed: 03/12/2018 09:16  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-406765/2-A	hfpo718C120 20.d	03/12/2018 09:19
	LCSD 280-406765/14-A	hfpo718C120 21.d	03/12/2018 09:22
	LLCS 280-406765/15-A	hfpo718C120 22.d	03/12/2018 09:25
C-2805 R1 M0010 IMP COND	140-10862-3	hfpo718C120 23.d	03/12/2018 09:29
C-2812 R2 M0010 IMP COND	140-10862-7	hfpo718C120 24.d	03/12/2018 09:32
C-2819 R3 M0010 IMP COND	140-10862-11	hfpo718C120 25.d	03/12/2018 09:35
C-2826 R QC M0010 IMP COND BT	140-10862-15	hfpo718C120 26.d	03/12/2018 09:38
C-2829 R QC M0010 DI WATER RB	140-10862-17	hfpo718C120 27.d	03/12/2018 09:42

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: C-2805 R1 M0010 IMP COND Lab Sample ID: 140-10862-3  
 Matrix: Air Lab File ID: hfpo718C12023.d  
 Analysis Method: 8321A Date Collected: 02/27/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.05 (Sample) Date Analyzed: 03/12/2018 09:29  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.0183	J	0.0500	0.00255

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	86		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12023.d  
 Lims ID: 140-10862-A-3-A  
 Client ID: C-2805 R1 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:29:01 ALS Bottle#: 22 Worklist Smp#: 23  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-3-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	645479	8.65	3454
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		645479	10.0	3454
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	14876	0.1827	5.6

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12023.d

Injection Date: 12-Mar-2018 09:29:01

Instrument ID: LC\_LCMS7

Lims ID: 140-10862-A-3-A

Lab Sample ID: 280-10862-3

Client ID: C-2805 R1 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 22

Worklist Smp#: 23

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

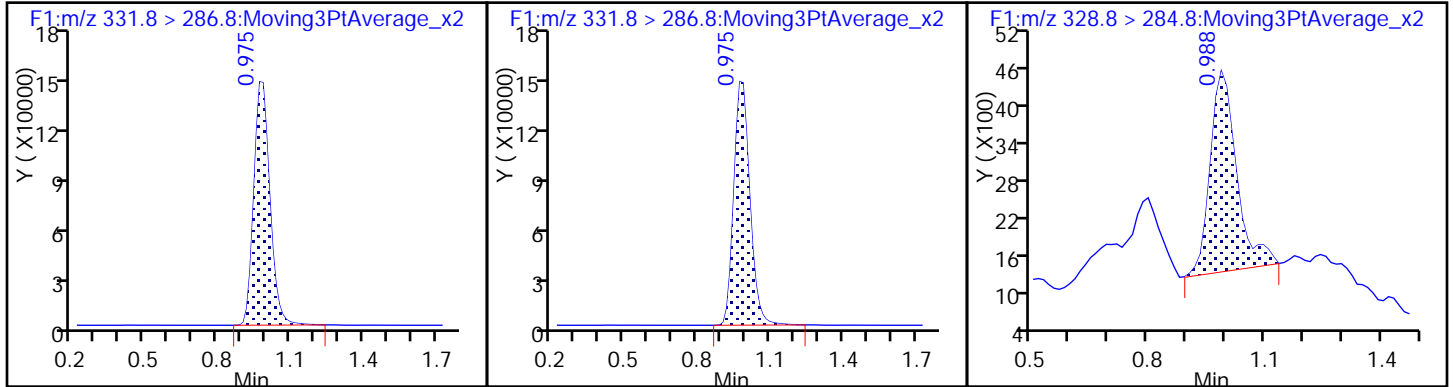
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12023.d  
 Lims ID: 140-10862-A-3-A  
 Client ID: C-2805 R1 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:29:01 ALS Bottle#: 22 Worklist Smp#: 23  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-3-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:44

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.65	86.46



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: C-2812 R2 M0010 IMP COND Lab Sample ID: 140-10862-7  
 Matrix: Air Lab File ID: hfpo718C12024.d  
 Analysis Method: 8321A Date Collected: 02/27/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.05 (Sample) Date Analyzed: 03/12/2018 09:32  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.0413	J	0.0500	0.00255

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	91		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12024.d  
 Lims ID: 140-10862-A-7-A  
 Client ID: C-2812 R2 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:32:16 ALS Bottle#: 23 Worklist Smp#: 24  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-7-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	677796	9.08	2550
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		677796	10.0	2550
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	32263	0.4135	9.4

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12024.d

Injection Date: 12-Mar-2018 09:32:16

Instrument ID: LC\_LCMS7

Lims ID: 140-10862-A-7-A

Lab Sample ID: 280-10862-7

Client ID: C-2812 R2 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 23

Worklist Smp#: 24

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

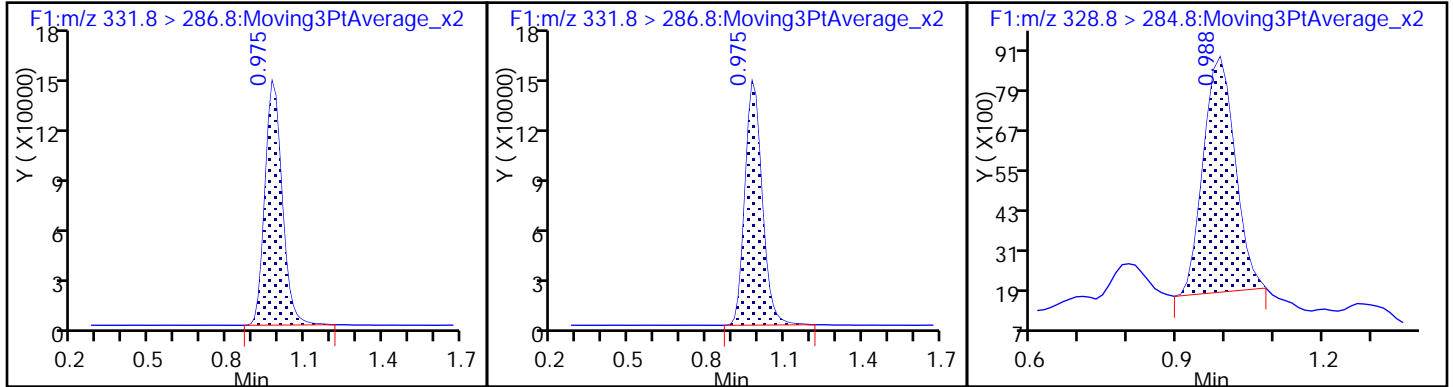
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12024.d  
 Lims ID: 140-10862-A-7-A  
 Client ID: C-2812 R2 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:32:16 ALS Bottle#: 23 Worklist Smp#: 24  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-7-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:47

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.08	90.78

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: C-2819 R3 M0010 IMP COND Lab Sample ID: 140-10862-11  
 Matrix: Air Lab File ID: hfpo718C12025.d  
 Analysis Method: 8321A Date Collected: 02/26/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:35  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.0164		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	86		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12025.d  
 Lims ID: 140-10862-A-11-A  
 Client ID: C-2819 R3 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:35:31 ALS Bottle#: 24 Worklist Smp#: 25  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-11-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	644570	8.63	3407
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		644570	10.0	3407
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	226661	3.27	89.1

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12025.d

Injection Date: 12-Mar-2018 09:35:31

Instrument ID: LC\_LCMS7

Lims ID: 140-10862-A-11-A

Lab Sample ID: 280-10862-11

Client ID: C-2819 R3 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 24

Worklist Smp#: 25

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

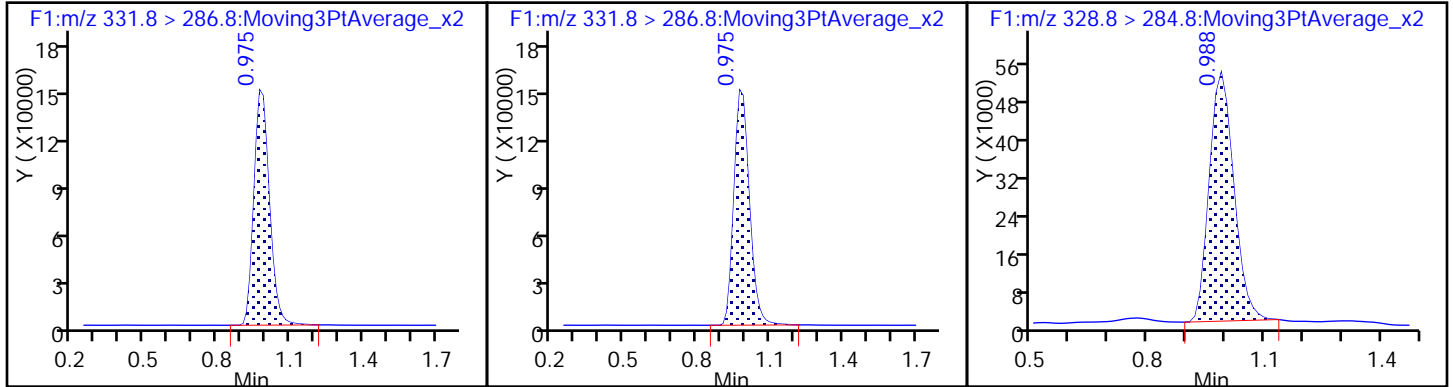
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12025.d  
 Lims ID: 140-10862-A-11-A  
 Client ID: C-2819 R3 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:35:31 ALS Bottle#: 24 Worklist Smp#: 25  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-11-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:51

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.63	86.33



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Denver</u>	Job No.: <u>140-10862-1</u>
SDG No.: _____	
Client Sample ID: <u>C-2826 R QC M0010 IMP COND BT</u>	Lab Sample ID: <u>140-10862-15</u>
Matrix: <u>Air</u>	Lab File ID: <u>hfpo718C12026.d</u>
Analysis Method: <u>8321A</u>	Date Collected: <u>02/27/2018 00:00</u>
Extraction Method: <u>None</u>	Date Extracted: <u>03/11/2018 10:52</u>
Sample wt/vol: <u>1(Sample)</u>	Date Analyzed: <u>03/12/2018 09:38</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20(uL)</u>	GC Column: <u>Synergi Hydro</u> ID: _____
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>407567</u>	Units: <u>ug/Sample</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.0157		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	58		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12026.d  
 Lims ID: 140-10862-A-15-A  
 Client ID: C-2826 R QC M0010 IMP COND BT  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:38:47 ALS Bottle#: 25 Worklist Smp#: 26  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 0.988 1.045 -0.057 1.000 431951 5.79 2123  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 0.988 1.045 -0.057 431951 10.0 2123  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 0.988 1.056 -0.068 1.000 146054 3.14 49.9

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12026.d

Injection Date: 12-Mar-2018 09:38:47

Instrument ID: LC\_LCMS7

Lims ID: 140-10862-A-15-A

Lab Sample ID: 280-10862-15

Client ID: C-2826 R QC M0010 IMP COND BT

Operator ID: JBH

ALS Bottle#: 25

Worklist Smp#: 26

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

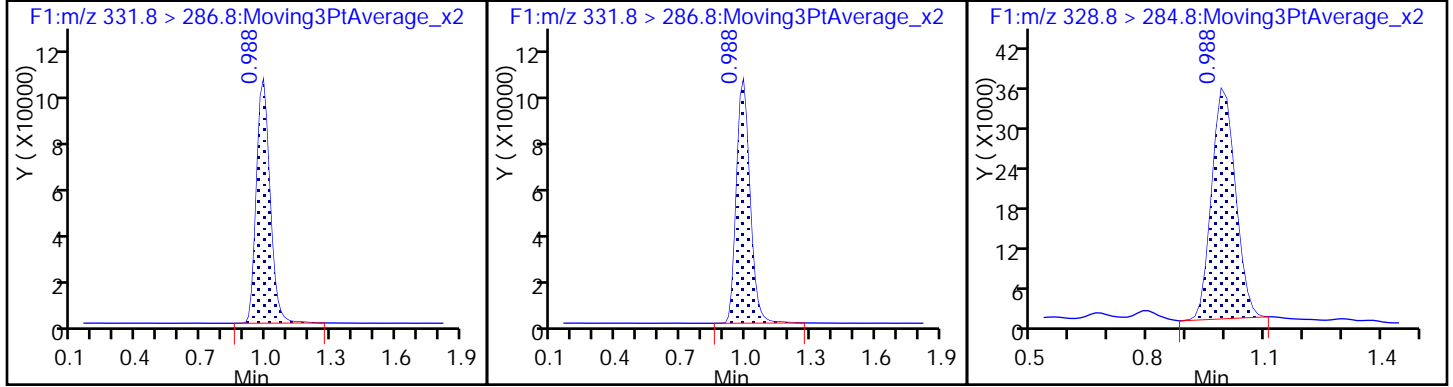
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12026.d  
 Lims ID: 140-10862-A-15-A  
 Client ID: C-2826 R QC M0010 IMP COND BT  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:38:47 ALS Bottle#: 25 Worklist Smp#: 26  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:54

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	5.79	57.86

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Denver</u>	Job No.: <u>140-10862-1</u>
SDG No.: _____	
Client Sample ID: <u>C-2829 R QC M0010 DI WATER RB</u>	Lab Sample ID: <u>140-10862-17</u>
Matrix: <u>Air</u>	Lab File ID: <u>hfpo718C12027.d</u>
Analysis Method: <u>8321A</u>	Date Collected: <u>02/27/2018 00:00</u>
Extraction Method: <u>None</u>	Date Extracted: <u>03/11/2018 10:52</u>
Sample wt/vol: <u>1(Sample)</u>	Date Analyzed: <u>03/12/2018 09:42</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20(uL)</u>	GC Column: <u>Synergi Hydro</u> ID: _____
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>407567</u>	Units: <u>ug/Sample</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	ND		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	95		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12027.d  
 Lims ID: 140-10862-A-17-A  
 Client ID: C-2829 R QC M0010 DI WATER RB  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:42:02 ALS Bottle#: 26 Worklist Smp#: 27  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-17-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:52:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 0.975 1.045 -0.070 1.000 711492 9.53 3452  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 0.975 1.045 -0.070 711492 10.0 3452

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12027.d

Injection Date: 12-Mar-2018 09:42:02

Instrument ID: LC\_LCMS7

Lims ID: 140-10862-A-17-A

Lab Sample ID: 280-10862-17

Client ID: C-2829 R QC M0010 DI WATER RB

Operator ID: JBH

ALS Bottle#: 26

Worklist Smp#: 27

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

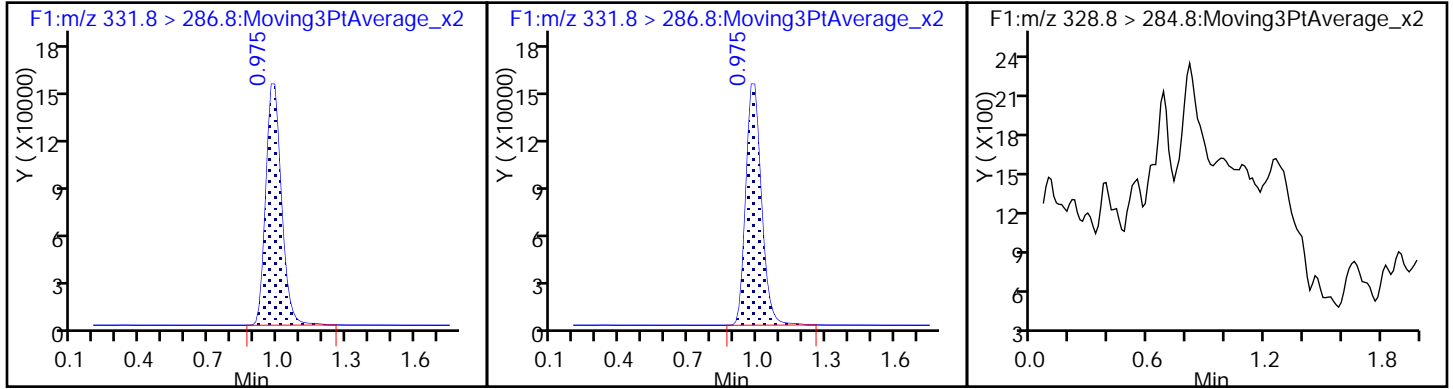
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12027.d  
 Lims ID: 140-10862-A-17-A  
 Client ID: C-2829 R QC M0010 DI WATER RB  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:42:02 ALS Bottle#: 26 Worklist Smp#: 27  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10862-A-17-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:52:51

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.53	95.30



FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10862-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8	LVL 9		RT WINDOW	AVG RT
HFPO-DA	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056		0.556 - 1.556	1.056
13C3 HFPO-DA	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.056	1.056		0.545 - 1.545	1.045

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 140-10862-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4		B	M1	M2								
13C3 HFPO-DA	75771	75964	72010	77000	Ave		74659.8778			2.6		30.0				
	75244	75940	75039	73687												
	71284															

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
 LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA  
 CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 140-10862-1 Analy Batch No.: 404345  
 SDG No.: \_\_\_\_\_  
 Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N  
 Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
HFPO-DA	1.1630	1.1250	1.0756	1.0527	1.1211	Lin1	0.0361	1.0638						1.0000		0.9900	
	1.1128	1.0911	1.0665	1.0507													

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 140-10862-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
		LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
13C3 HFPO-DA	Ave	757714	759642	720099	769995	752444	10.0	10.0	10.0	10.0	10.0
		759397	750388	736869	712841		10.0	10.0	10.0	10.0	

Curve Type Legend:

Ave = Average

FORM VI  
 LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 140-10862-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
HFPO-DA	13CP ODA	Lin1	22031 845082	42730 2046873	77455 3929397	162117 7489478	421775	0.250 10.0	0.500 25.0	1.00 50.0	2.00 100	5.00

Curve Type Legend:

Lin1 = Linear 1/conc ISTD

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d  
 Lims ID: std001  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 08-Feb-2018 13:05:38 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L1  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:13 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.042	1.045	-0.003		757714	10.0	1562	
\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.042	1.045	-0.003	1.000	757714	10.1	1562	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.056	1.056	0.0	1.000	22031	0.2394	4.4	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO\_CAL-1\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d

Injection Date: 08-Feb-2018 13:05:38

Instrument ID: LC\_LCMS7

Lims ID: std001

Client ID:

Operator ID: JBH

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

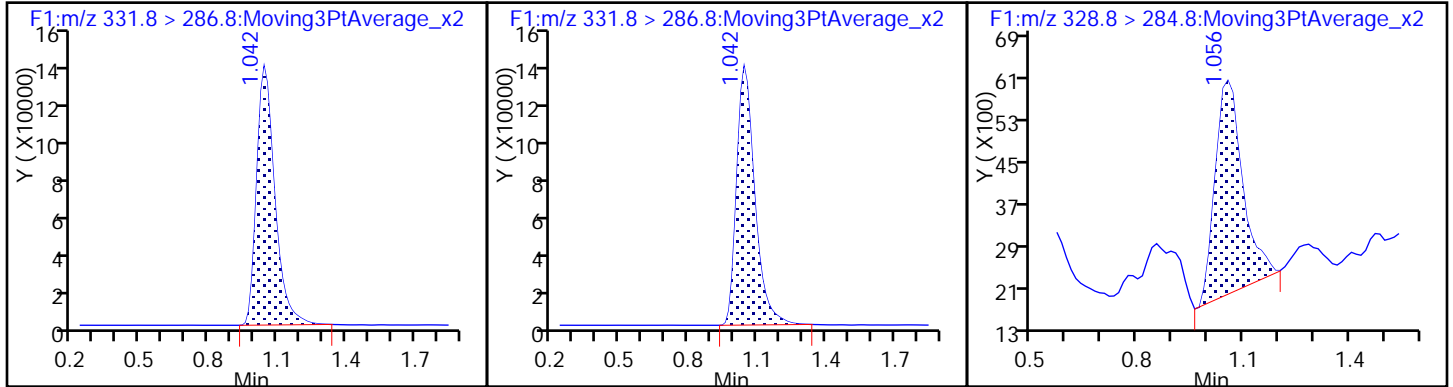
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 <sup>13</sup>C<sub>3</sub> HFPO-DA (IS)

\$ 3 <sup>13</sup>C<sub>3</sub> HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver

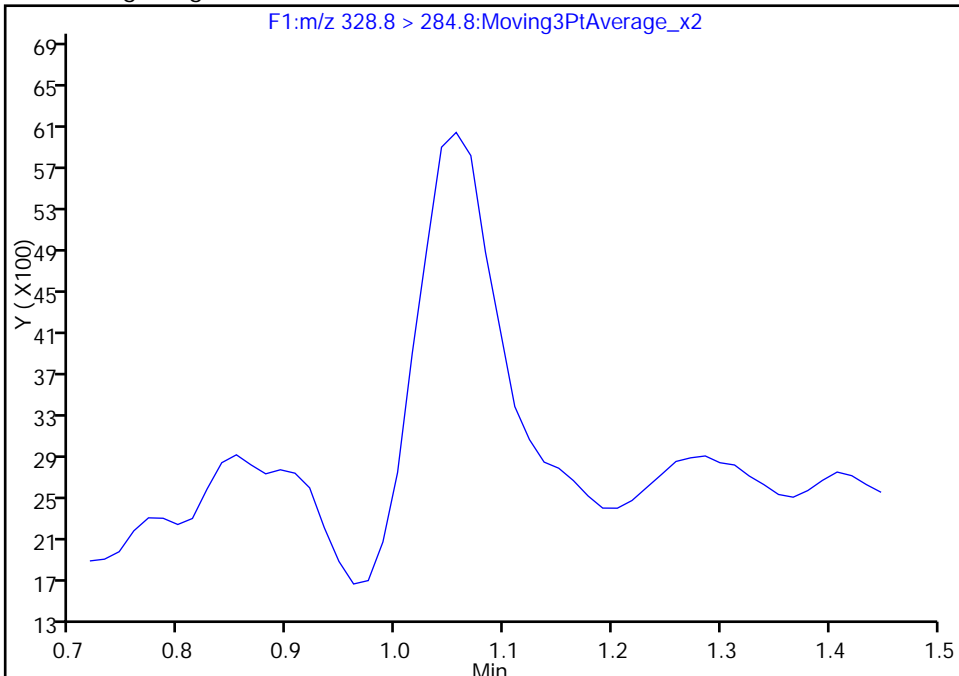
Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d  
Injection Date: 08-Feb-2018 13:05:38 Instrument ID: LC\_LCMS7  
Lims ID: std001  
Client ID:  
Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 20.0 ul Dil. Factor: 1.0000  
Method: HFPO Limit Group: LC - 8321A\_HFPO\_Du  
Column: Detector F1:M/RM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

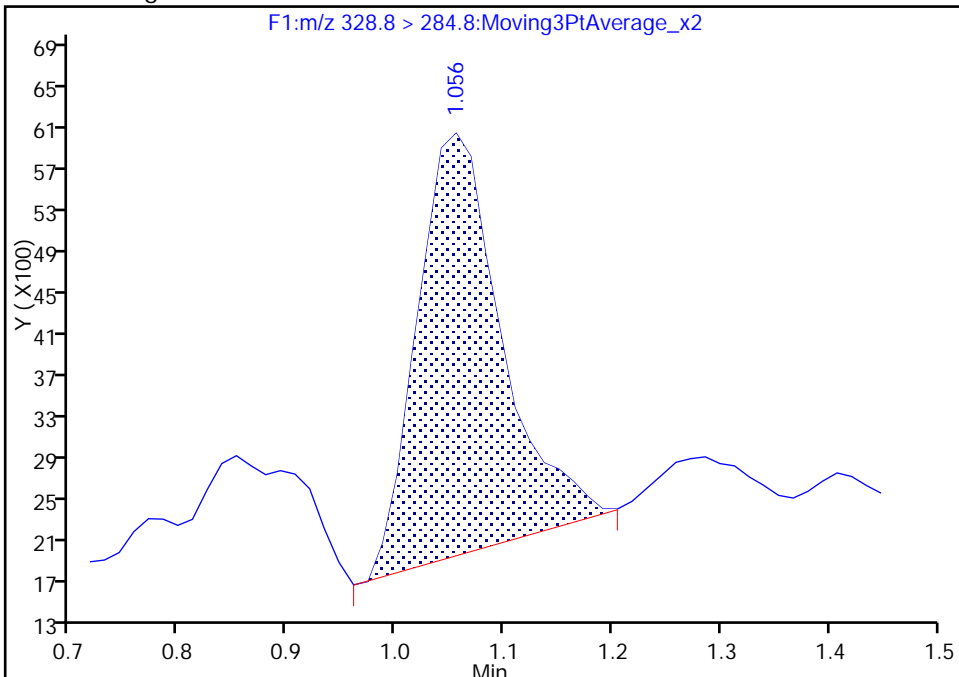
Not Detected  
Expected RT: 1.06

Processing Integration Results



RT: 1.06  
Area: 22031  
Amount: 0.239356  
Amount Units: ug/l

Manual Integration Results



Reviewer: meyera, 08-Feb-2018 15:19:01  
Audit Action: Manually Integrated

Audit Reason: Assign Peak



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d  
 Lims ID: std002  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 08-Feb-2018 13:08:52 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L2  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA	331.8 > 286.8	1.042	1.045	-0.003	1.000	759642	10.2	1267
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	1.042	1.045	-0.003		759642	10.0	1267
1 Perfluoro(2-propoxypropanoic) acid								M
328.8 > 284.8	1.056	1.056	0.0	1.000	42730	0.4948	6.5	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO\_CAL-2\_00033 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d

Injection Date: 08-Feb-2018 13:08:52

Instrument ID: LC\_LCMS7

Lims ID: std002

Client ID:

Operator ID: JBH

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

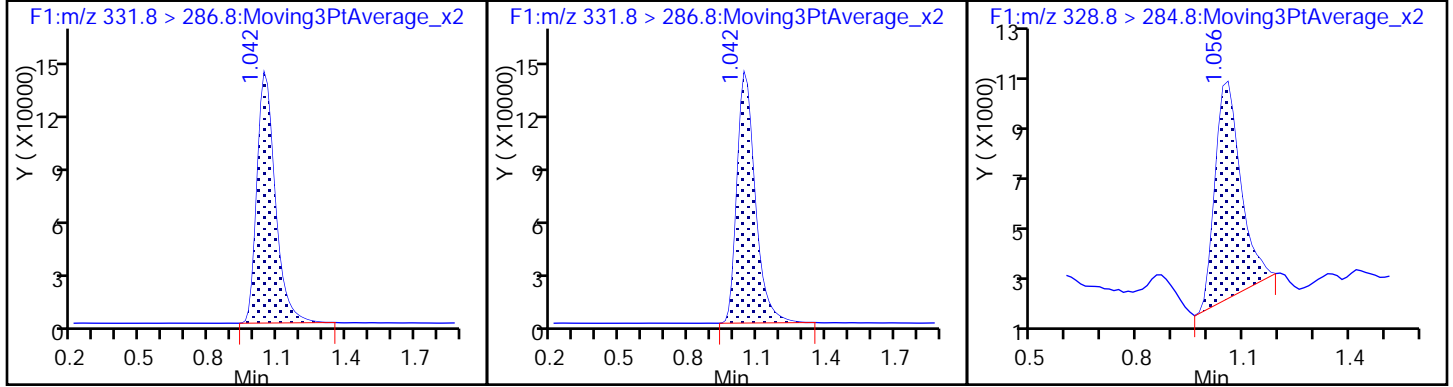
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver

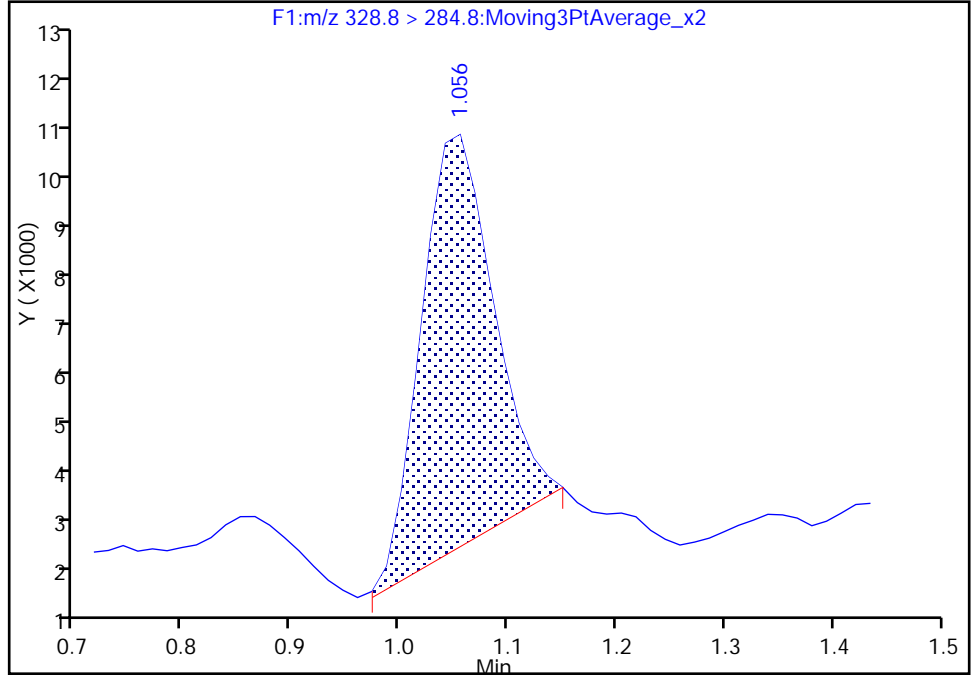
Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d  
Injection Date: 08-Feb-2018 13:08:52 Instrument ID: LC\_LCMS7  
Lims ID: std002  
Client ID:  
Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 20.0 ul Dil. Factor: 1.0000  
Method: HFPO Limit Group: LC - 8321A\_HFPO\_Du  
Column: Detector F1:M/RM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

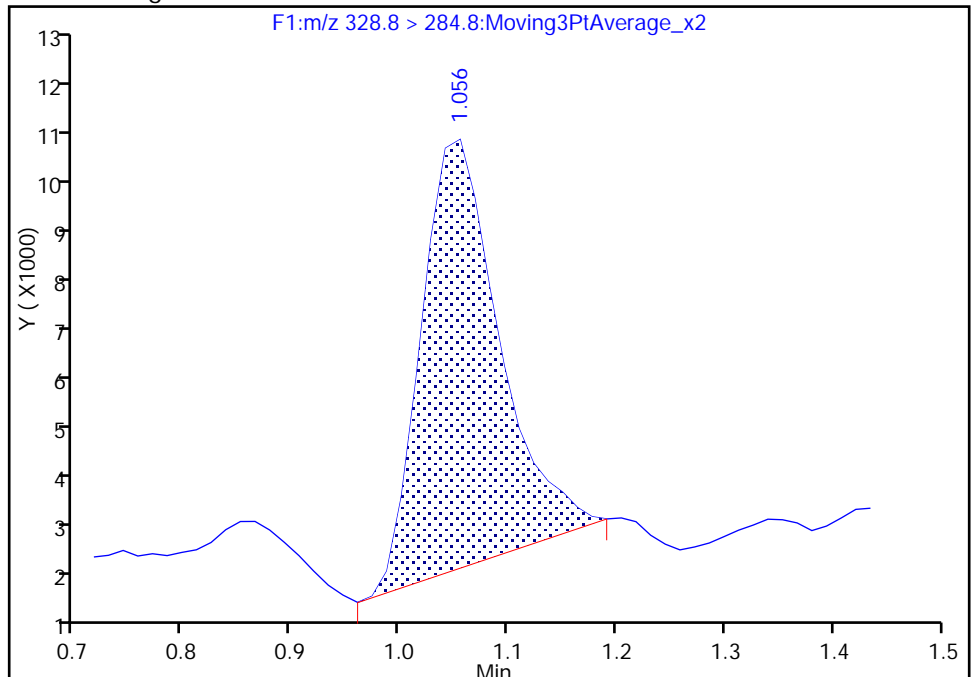
RT: 1.06  
Area: 38092  
Amount: 0.452274  
Amount Units: ug/l

Processing Integration Results



RT: 1.06  
Area: 42730  
Amount: 0.494804  
Amount Units: ug/l

Manual Integration Results



Reviewer: meyera, 08-Feb-2018 15:19:12  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08036.d  
 Lims ID: std003  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 08-Feb-2018 13:12:06 ALS Bottle#: 4 Worklist Smp#: 5  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L3  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.042	1.045	-0.003		720099	10.0	956	
\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.042	1.045	-0.003	1.000	720099	9.65	956	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.056	1.056	0.0	1.000	77455	0.9771	10.6	

Reagents:

HFPO\_CAL-3\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08036.d

Injection Date: 08-Feb-2018 13:12:06

Instrument ID: LC\_LCMS7

Lims ID: std003

Client ID:

Operator ID: JBH

ALS Bottle#: 4

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

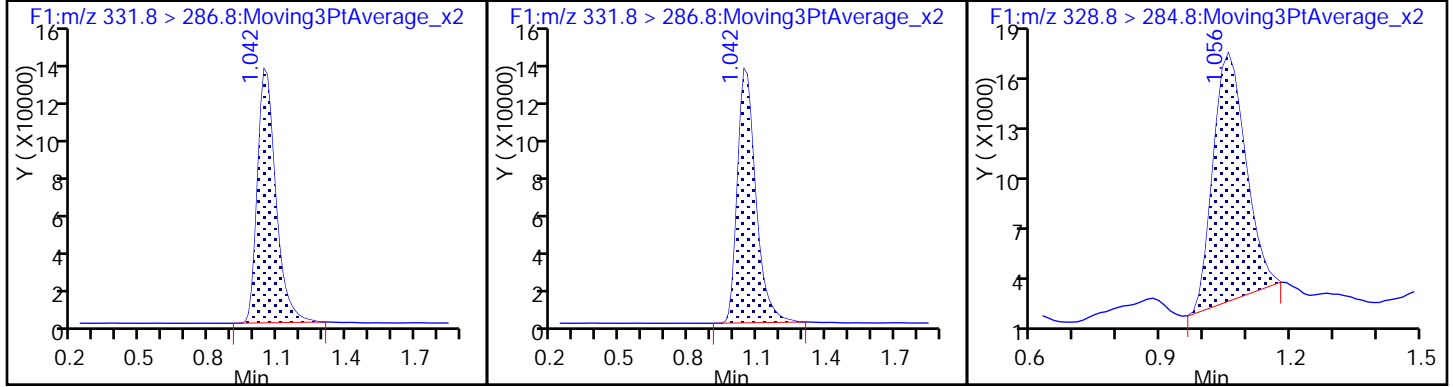
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08037.d  
 Lims ID: std004  
 Client ID:  
 Sample Type: IC Calib Level: 4  
 Inject. Date: 08-Feb-2018 13:15:21 ALS Bottle#: 5 Worklist Smp#: 6  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L4  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 769995 10.3 1154  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 769995 10.0 1154  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 162117 1.95 26.1

Reagents:

HFPO\_CAL-4\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08037.d

Injection Date: 08-Feb-2018 13:15:21

Instrument ID: LC\_LCMS7

Lims ID: std004

Client ID:

Operator ID: JBH

ALS Bottle#: 5

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

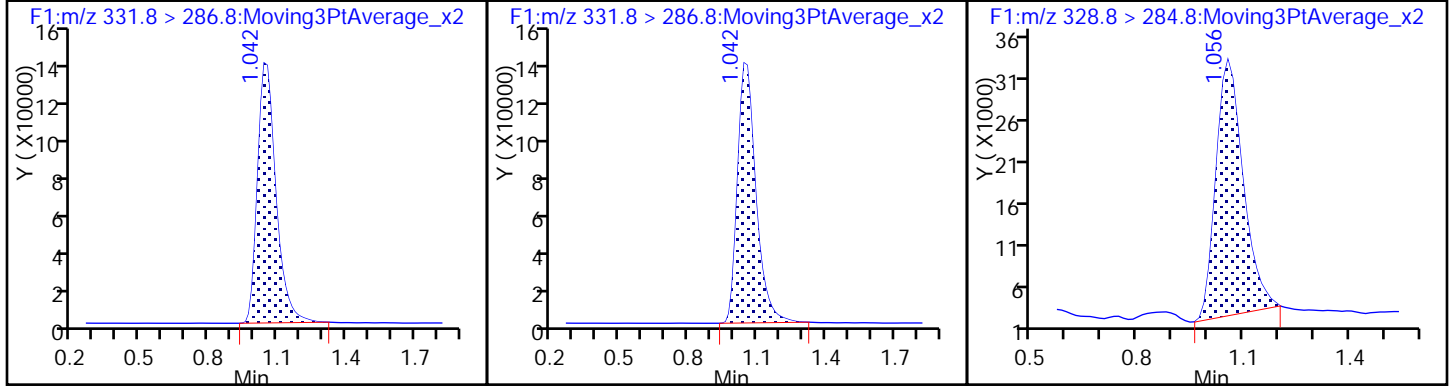
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08038.d  
 Lims ID: std005  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 08-Feb-2018 13:18:35 ALS Bottle#: 6 Worklist Smp#: 7  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L5  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 752444 10.0 1072  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 752444 10.1 1072  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 421775 5.24 66.0

Reagents:

HFPO\_CAL-5\_00080 Amount Added: 1.00 Units: mL



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08038.d

Injection Date: 08-Feb-2018 13:18:35

Instrument ID: LC\_LCMS7

Lims ID: std005

Client ID:

Operator ID: JBH

ALS Bottle#: 6

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

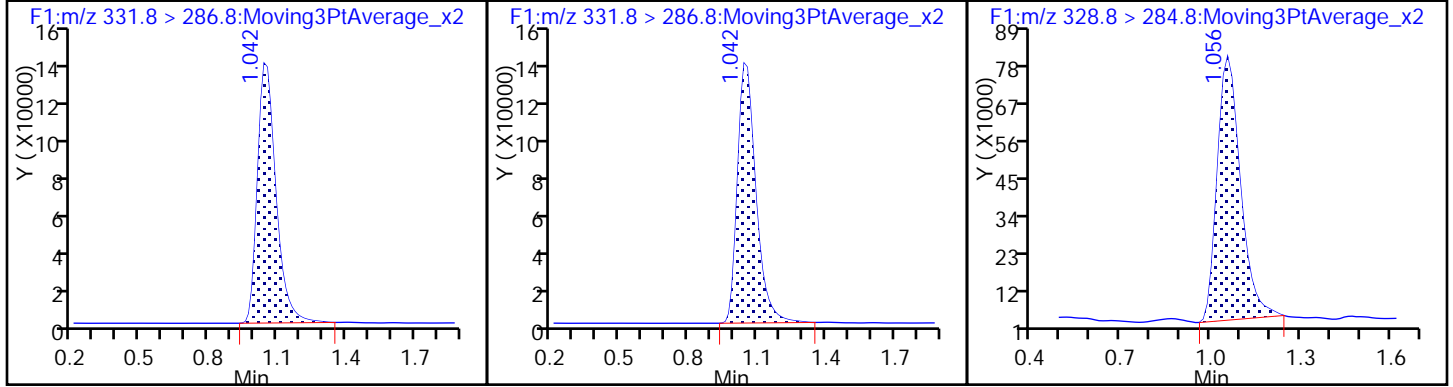
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08039.d  
 Lims ID: std006  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 08-Feb-2018 13:21:49 ALS Bottle#: 7 Worklist Smp#: 8  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L6  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759397 10.2 1193  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 759397 10.0 1193  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 845082 10.4 146

Reagents:

HFPO\_CAL-6\_00080 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08039.d

Injection Date: 08-Feb-2018 13:21:49

Instrument ID: LC\_LCMS7

Lims ID: std006

Client ID:

Operator ID: JBH

ALS Bottle#: 7

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

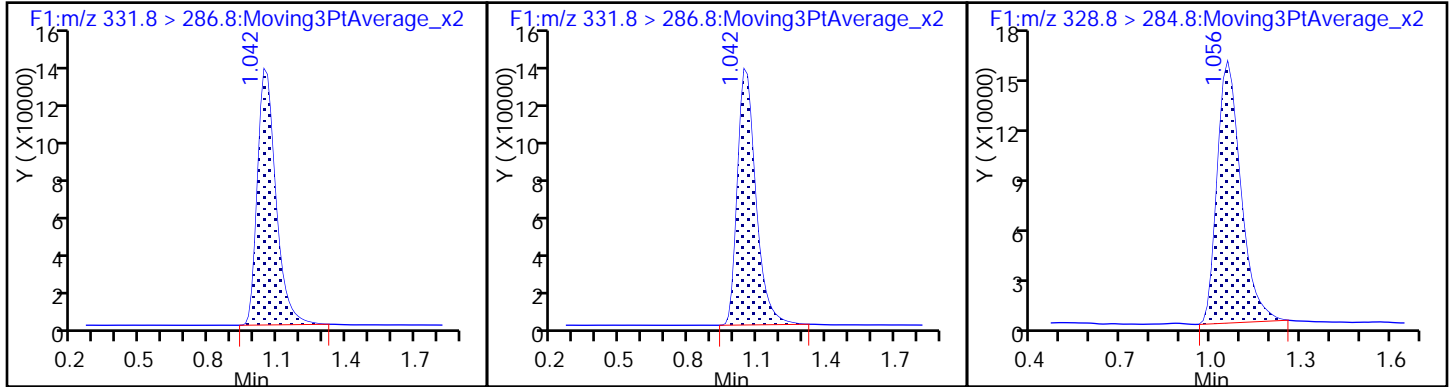
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08040.d  
 Lims ID: std007  
 Client ID:  
 Sample Type: IC Calib Level: 7  
 Inject. Date: 08-Feb-2018 13:25:03 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L7  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 750388 10.0 1247  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 750388 10.1 1247  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 2046873 25.6 246

Reagents:

HFPO\_CAL-7\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08040.d

Injection Date: 08-Feb-2018 13:25:03

Instrument ID: LC\_LCMS7

Lims ID: std007

Client ID:

Operator ID: JBH

ALS Bottle#: 8

Worklist Smp#: 9

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

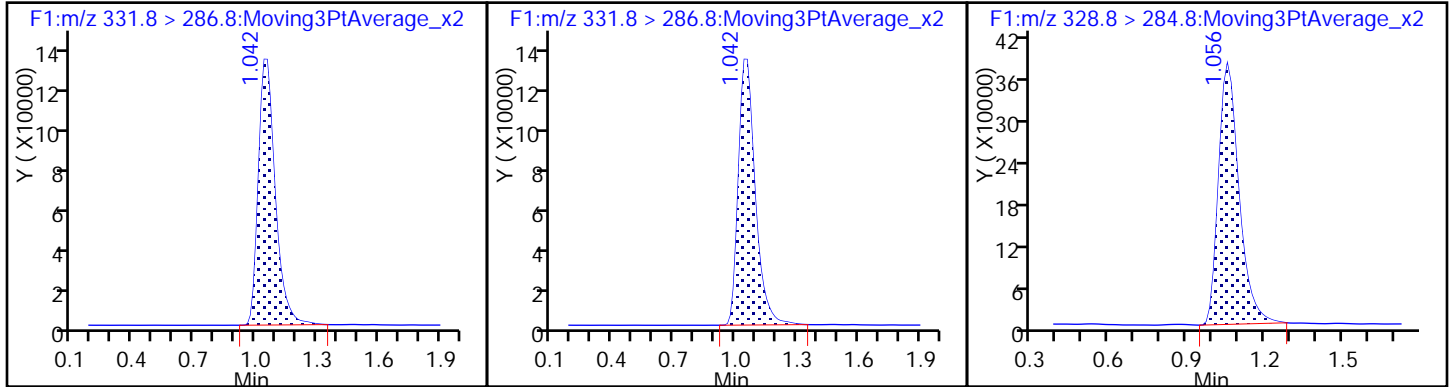
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08041.d  
 Lims ID: std008  
 Client ID:  
 Sample Type: IC Calib Level: 8  
 Inject. Date: 08-Feb-2018 13:28:18 ALS Bottle#: 9 Worklist Smp#: 10  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L8  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.056 1.045 0.011 1.000 736869 9.87 1055  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.056 1.045 0.011 736869 10.0 1055  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 3929397 50.1 416

Reagents:

HFPO\_CAL-8\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08041.d

Injection Date: 08-Feb-2018 13:28:18

Instrument ID: LC\_LCMS7

Lims ID: std008

Client ID:

Operator ID: JBH

ALS Bottle#: 9

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

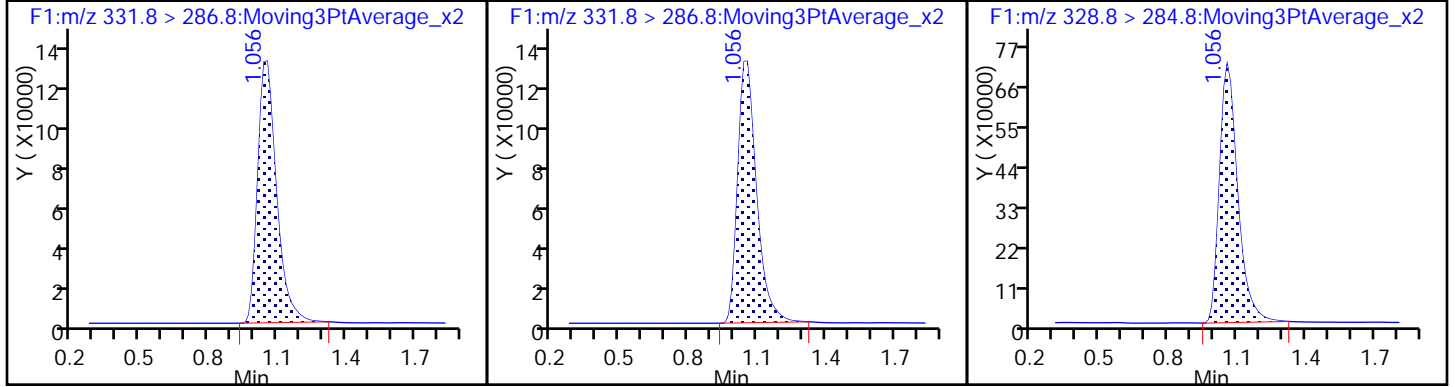
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Lims ID: std009  
 Client ID:  
 Sample Type: IC Calib Level: 9  
 Inject. Date: 08-Feb-2018 13:31:32 ALS Bottle#: 10 Worklist Smp#: 11  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L9  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.056 1.045 0.011 712841 10.0 1141  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.056 1.045 0.011 1.000 712841 9.55 1141  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 7489478 98.7 561

Reagents:

HFPO\_CAL-9\_00001 Amount Added: 1.00 Units: mL



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Injection Date: 08-Feb-2018 13:31:32

Instrument ID: LC\_LCMS7

Lims ID: std009

Client ID:

Operator ID: JBH

ALS Bottle#: 10

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

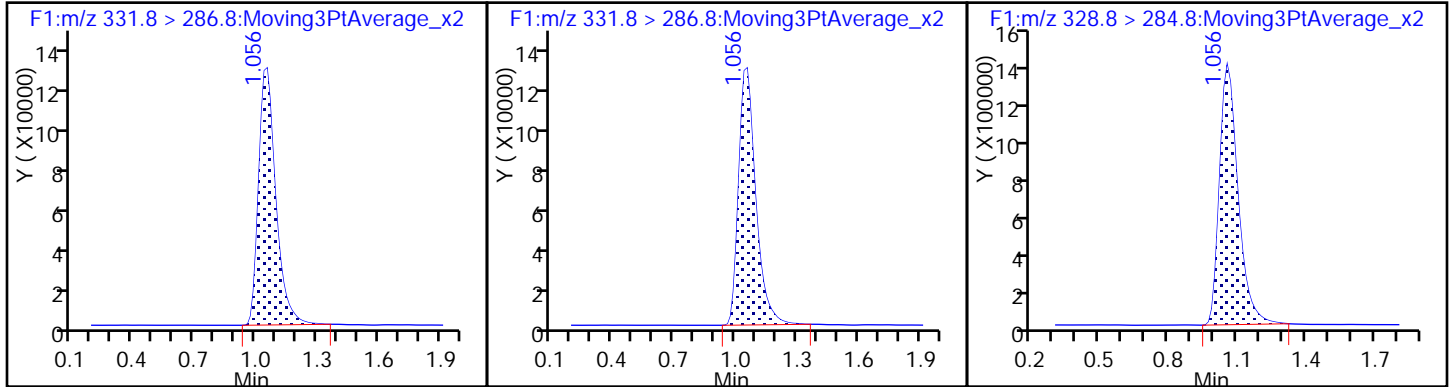
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-407567/18 Calibration Date: 03/12/2018 09:12  
 Instrument ID: LC\_LCMS7 Calib Start Date: 02/08/2018 13:05  
 GC Column: Synergi Hydro ID: \_\_\_\_\_ Calib End Date: 02/08/2018 13:31  
 Lab File ID: hfpo718C12018.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		0.9658		9.04	10.0	-9.6	20.0
13C3 HFPO-DA	Ave	74660	55461		7.43	10.0	-25.7	

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12018.d  
 Lims ID: CCV L6  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 12-Mar-2018 09:12:45 ALS Bottle#: 4 Worklist Smp#: 18  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L6  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.029 1.045 -0.016 1.000 554608 7.43 2070  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.029 1.045 -0.016 554608 10.0 2070  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.042 1.056 -0.014 1.000 535617 9.04 147

Reagents:

HFPO\_CAL-6\_00083 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12018.d

Injection Date: 12-Mar-2018 09:12:45

Instrument ID: LC\_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 4

Worklist Smp#: 18

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

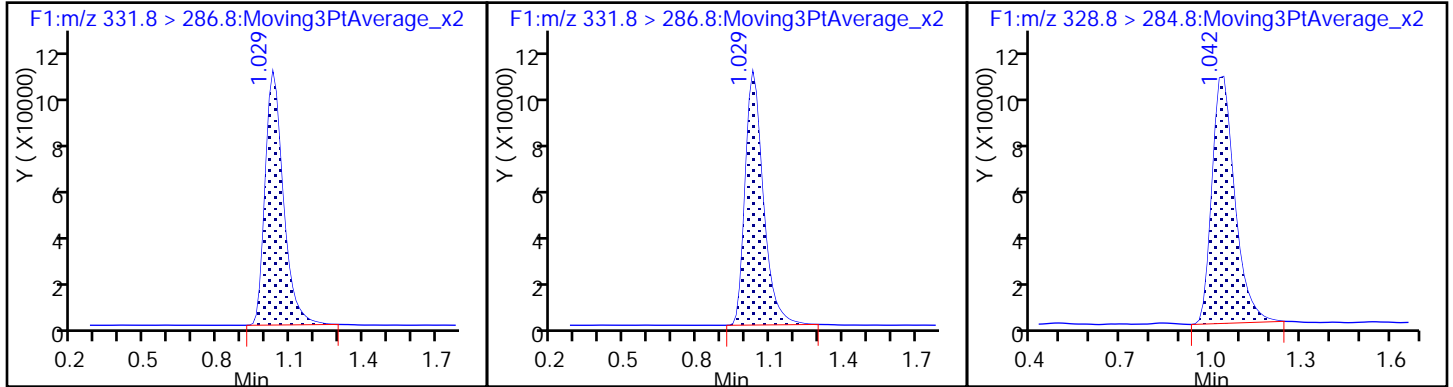
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-407567/28 Calibration Date: 03/12/2018 09:45  
 Instrument ID: LC\_LCMS7 Calib Start Date: 02/08/2018 13:05  
 GC Column: Synergi Hydro ID: \_\_\_\_\_ Calib End Date: 02/08/2018 13:31  
 Lab File ID: hfpo718C12028.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.105		5.16	5.00	3.2	20.0
13C3 HFPO-DA	Ave	74660	55461		7.43	10.0	-25.7	

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12028.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 12-Mar-2018 09:45:17 ALS Bottle#: 3 Worklist Smp#: 28  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:52:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.015 1.045 -0.030 1.000 554610 7.43 1522  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.015 1.045 -0.030 554610 10.0 1522  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.015 1.056 -0.041 1.000 306348 5.16 91.8

Reagents:

HFPO\_CAL-5\_00083 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12028.d

Injection Date: 12-Mar-2018 09:45:17

Instrument ID: LC\_LCMS7

Lims ID: CCV L5

Client ID:

Operator ID: JBH

ALS Bottle#: 3

Worklist Smp#: 28

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

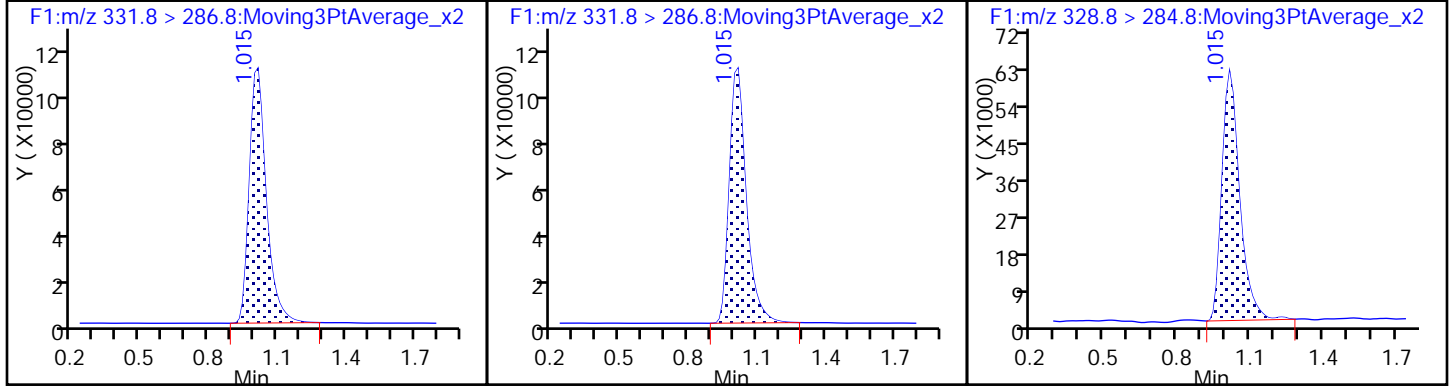
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

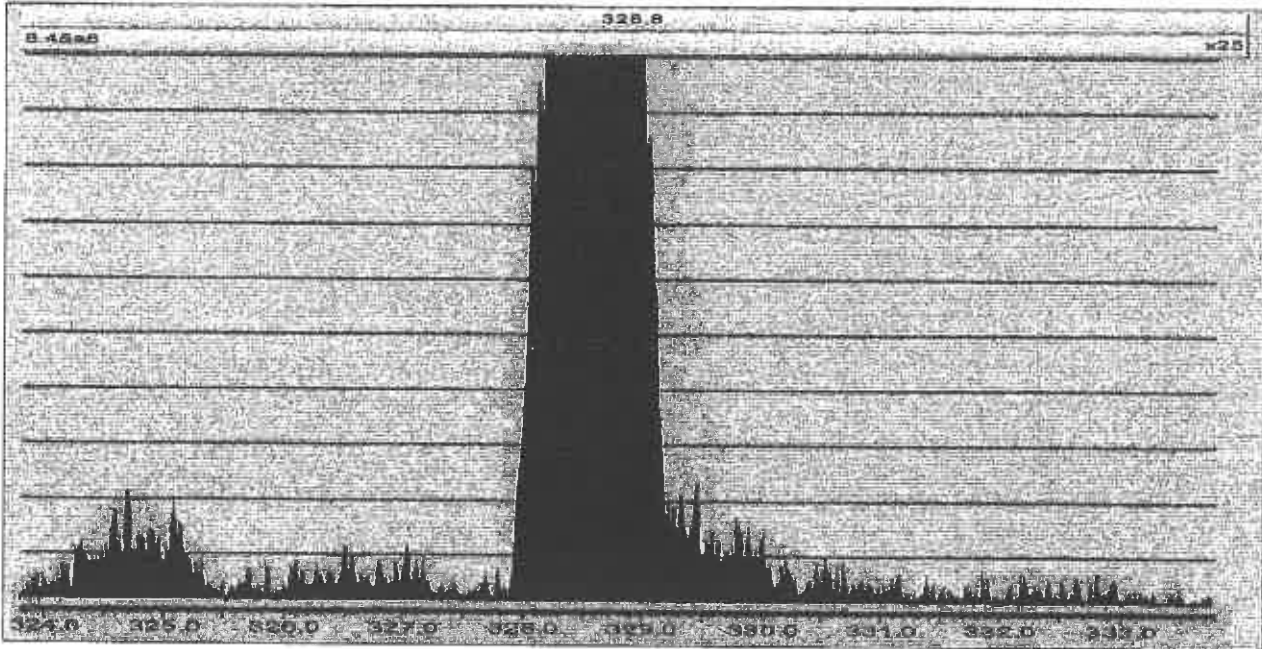
1 Perfluoro(2-propoxypropanoic) acid



File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS\FBA453

Printed: Monday, March 12, 2018 08:05:24 Mountain Daylight Time



Type	Start Mass	End Mass	Set Mass
MS1 Scan	323.80	333.80	
<b>Source (ES-)</b>	<b>Settings</b>	<b>Readbacks</b>	
Capillary (kV)	0.50	0.53	
Cone (V)	10.00	-21.06	
Extractor (V)	3.00	-10.61	
Source Temperature (°C)	120	120	
Desolvation Temperature (°C)	200	200	
Cone Gas Flow (L/Hr)	50	49	
Desolvation Gas Flow (L/Hr)	800	795	
Collision Gas Flow (mL/Min)	0.15	0.04	
<b>Analyser</b>	<b>Settings</b>	<b>Readbacks</b>	
LM 1 Resolution	2.8		
HM 1 Resolution	14.8		
Ion Energy 1	0.7		
MS Mode Collision Energy	7.00		
MSMS Mode Collision Energy	20.00		
MS Mode Entrance	0.50		
MS Mode Exit	0.50		
Gas On MS Mode Entrance	0.50		
Gas On MS Mode Exit	0.50		
Gas On MSMS Mode Entrance	0.50		
Gas On MSMS Mode Exit	0.50		
Gas Off MS Mode Entrance	30.00		
Gas Off MS Mode Exit	30.00		
Gas Off MSMS Mode Entrance	2.00		
Gas Off MSMS Mode Exit	2.00		
ScanWave MS Mode Entrance	0.50		
ScanWave MS Mode Exit	0.50		
ScanWave MSMS Mode Entrance	0.50		
ScanWave MSMS Mode Ext	0.50		
LM 2 Resolution	2.9		
HM 2 Resolution	14.7		
Ion Energy 2	0.3		

*chudapom  
3/13/18*



File: C:\MassLynx\8321.PRO\ACQU\UDB\HFPOMRM.lpr  
Instrument: XEVO-TQMS\FVBA453  
Printed: Monday, March 12, 2018 08:05:24 Mountain Daylight Time

Multiplier 523.81  
Active Reservoir A

Pressure Gauges  
Collision Cell Pressure (mbar) 7.830201e-005

Instrument Configuration

Automatic Mode  
MS Inter-scan delay (secs) 0.005  
Polarity/Mode switch Inter-scan delay (secs) 0.020  
Enhanced Inter-scan delay (secs) 0.020  
Inter-channel delay - See Tables

MS 1 Delay Table:

R delay  
≤ 0.500 0.005  
≤ 2.000 0.008  
≤ 4.000 0.010  
≤ 11.000 0.012  
> 11.000 0.014

*chudapom*  
*3/13/18*

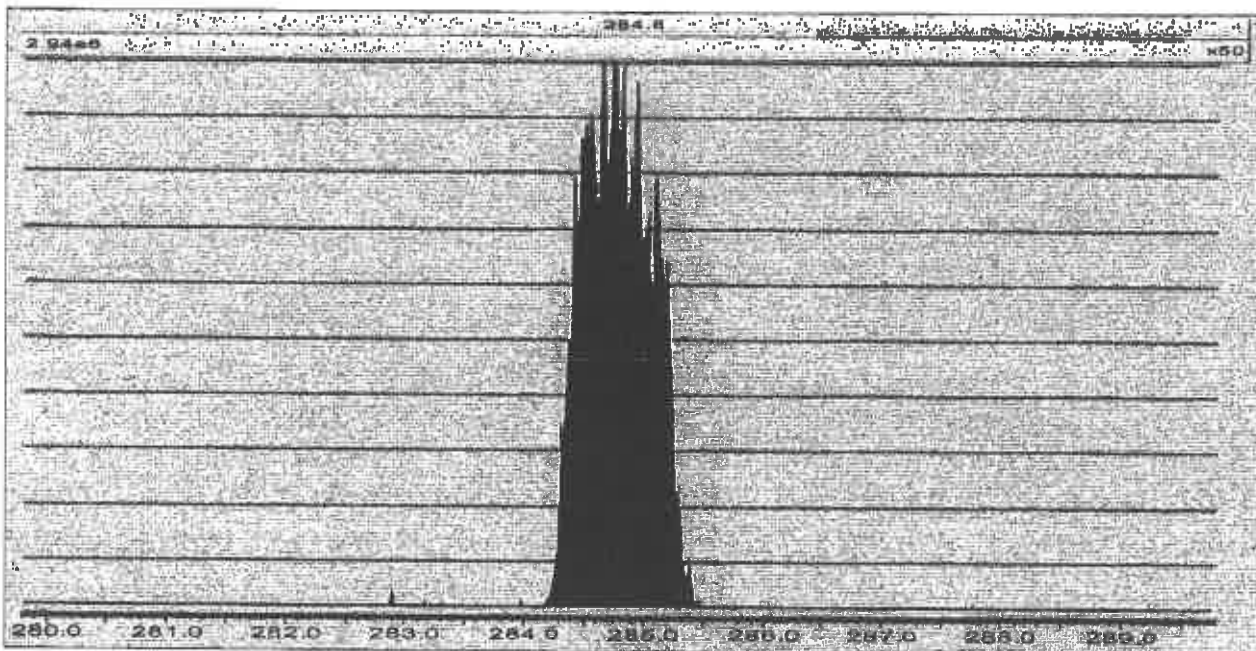
MS 2 Delay Table:

R delay  
≤ 8.000 0.005  
≤ 25.000 0.006  
> 25.000 0.007

File: C:\MassLynx\8321.PROVACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS#VBA453

Printed: Monday, March 12, 2018 08:06:05 Mountain Daylight Time



Type	Start Mass	End Mass	Set Mass
Daughter Scan	279.80	289.80	328.80

Source (ES-)	Settings	Readbacks
Capillary (kV)	0.50	0.52
Cone (V)	10.00	-21.06
Extractor (V)	3.00	-10.61
Source Temperature (°C)	120	120
Desolvation Temperature (°C)	200	200
Cone Gas Flow (L/Hr)	50	50
Desolvation Gas Flow (L/Hr)	800	791
Collision Gas Flow (mL/Min)	0.15	0.14

Analyser	Settings	Readbacks
LM 1 Resolution	2.8	
HM 1 Resolution	14.8	
Ion Energy 1	0.7	
MS Mode Collision Energy	7.00	
MSMS Mode Collision Energy	20.00	
MS Mode Entrance	0.50	
MS Mode Exit	0.50	
Gas On MS Mode Entrance	0.50	
Gas On MS Mode Exit	0.50	
Gas On MSMS Mode Entrance	0.50	
Gas On MSMS Mode Exit	0.50	
Gas Off MS Mode Entrance	30.00	
Gas Off MS Mode Exit	30.00	
Gas Off MSMS Mode Entrance	2.00	
Gas Off MSMS Mode Exit	2.00	
ScanWave MS Mode Entrance	0.50	
ScanWave MS Mode Exit	0.50	
ScanWave MSMS Mode Entrance	0.50	
ScanWave MSMS Mode Exit	0.50	
LM 2 Resolution	2.9	
HM 2 Resolution	14.7	
Ion Energy 2	0.3	

*oldapom*  
*3/13/18*

File: C:\MassLynx\8321.PROVACQUDE\HFPOMRM.lpr

Instrument: XEVO-TQMS\FVA453

Printed: Monday, March 12, 2018 08:06:05 Mountain Daylight Time

Multiplier 523.81  
Active Reservoir A

Pressure Gauges  
Collision Cell Pressure (mbar) 1.119026e-003

Instrument Configuration

Automatic Mode

MS Inter-scan delay (secs) 0.005

Polarity/Mode switch Inter-scan delay (secs) 0.020

Enhanced Inter-scan delay (secs) 0.020

Inter-channel delay - See Tables

MS 1 Delay Table:

R delay

<= 0.500 0.005

<= 2.000 0.008

<= 4.000 0.010

<= 11.000 0.012

> 11.000 0.014

MS 2 Delay Table:

R delay

<= 8.000 0.005

<= 25.000 0.005

> 25.000 0.007

*dmurphyam*  
*3/13/18*

File: c:\masslynx\8321.pro\acqddb\hfpo.exp

Printed: Monday, March 12, 2018 10:32:13 Mountain Daylight Time

Creation Time Fri 18 Nov 2016 09:08:40  
Instrument Identifier XEVO-TQMS#VBA453  
Version Number 1.0  
Duration (min) 2.0  
Calibration Filename C:\MassLynx\IntelliStart\Results\Unit Mass Resolution\Calibration\_20100811

\_2.cal  
Solvent Delay Divert Valve Enabled 0  
Number Of Functions 1

Function 1 : MRM of 2 mass pairs, Time 0.00 to 2.00, ES-

Type MRM  
Ion Mode ES-  
Inter Channel Delay (sec) -1.000  
InterScan Time (sec) -1.000  
Span (Da) 0.5  
Start Time (min) 0.0  
End Time (min) 2.0

Ch	Prnt (Da)	Daq (Da)	Dwell (s)	Cone (V)	Coll (eV)	Delay (s)	Compound
1	329.80	284.80	0.400	10.00	7.00	-1.000	HFPO
2	331.80	286.80	0.400	10.00	7.00	-1.000	HFPO IS

*chudapam*

*3/13/18*

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 280-406765/1-A  
 Matrix: Air Lab File ID: hfpo718C12019.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:16  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	ND		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	94		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d  
 Lims ID: MB 280-406765/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 12-Mar-2018 09:16:02 ALS Bottle#: 18 Worklist Smp#: 19  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: MB280-406765/1-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA

331.8 > 286.8 1.029 1.045 -0.016 1.000 701542 9.40 2791

\* 2 13C3 HFPO-DA (IS)

331.8 > 286.8 1.029 1.045 -0.016 701542 10.0 2791

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d

Injection Date: 12-Mar-2018 09:16:02

Instrument ID: LC\_LCMS7

Lims ID: MB 280-406765/1-A

Client ID:

Operator ID: JBH

ALS Bottle#: 18

Worklist Smp#: 19

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

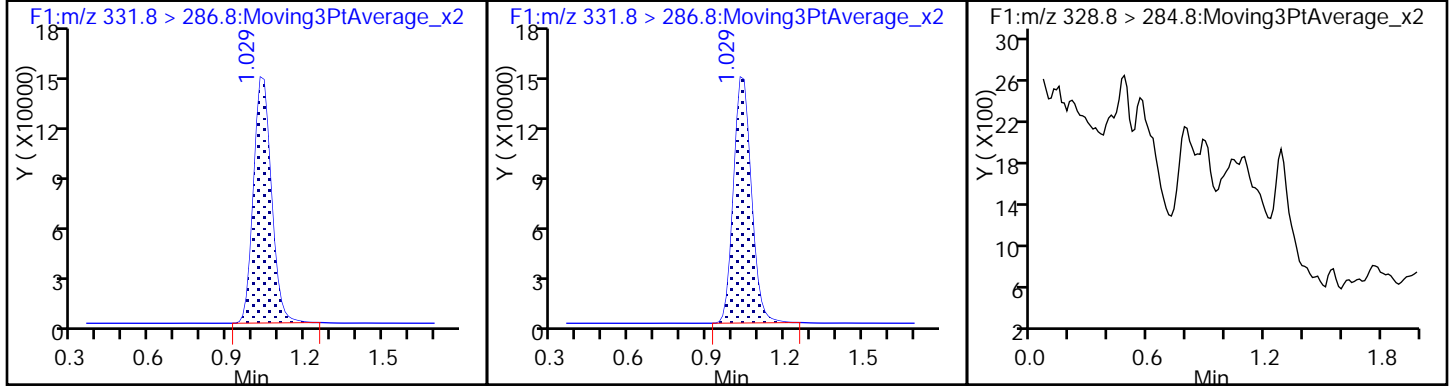
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d  
 Lims ID: MB 280-406765/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 12-Mar-2018 09:16:02 ALS Bottle#: 18 Worklist Smp#: 19  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: MB280-406765/1-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:29

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.40	93.97



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 280-406765/2-A  
 Matrix: Air Lab File ID: hfpo718C12020.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:19  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.05486		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	90		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d  
 Lims ID: LCS 280-406765/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 12-Mar-2018 09:19:17 ALS Bottle#: 19 Worklist Smp#: 20  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCS280-406765/2-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	668790	8.96	3108
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		668790	10.0	3108
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	783092	11.0	306

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d

Injection Date: 12-Mar-2018 09:19:17

Instrument ID: LC\_LCMS7

Lims ID: LCS 280-406765/2-A

Client ID:

Operator ID: JBH

ALS Bottle#: 19

Worklist Smp#: 20

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

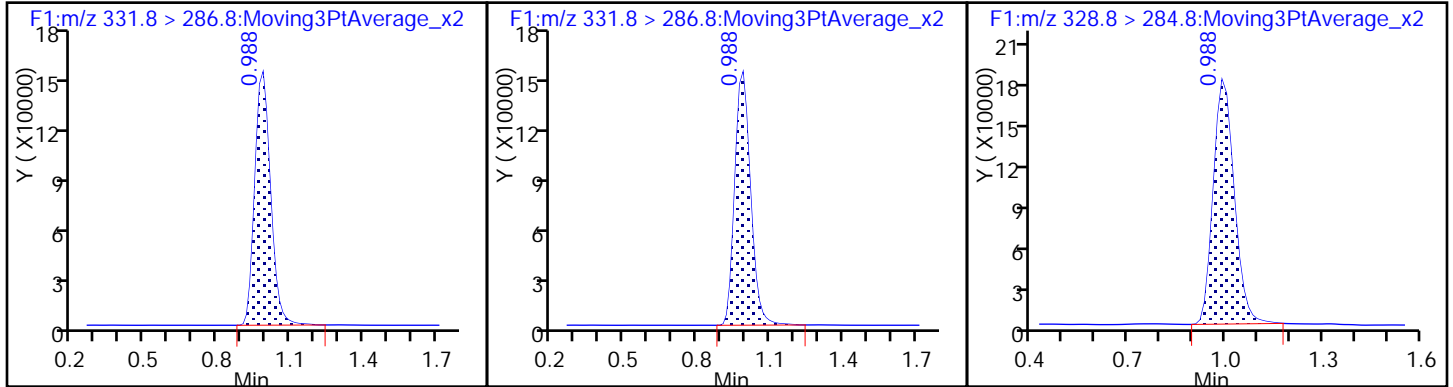
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d  
 Lims ID: LCS 280-406765/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 12-Mar-2018 09:19:17 ALS Bottle#: 19 Worklist Smp#: 20  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCS280-406765/2-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.96	89.58

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCSD 280-406765/14-A  
 Matrix: Air Lab File ID: hfpo718C12021.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:22  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.05420		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	92		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d  
 Lims ID: LCSD 280-406765/14-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 12-Mar-2018 09:22:32 ALS Bottle#: 20 Worklist Smp#: 21  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCSD280-406765/14-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	683235	9.15	2358
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		683235	10.0	2358
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	790356	10.8	260

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d

Injection Date: 12-Mar-2018 09:22:32

Instrument ID: LC\_LCMS7

Lims ID: LCSD 280-406765/14-A

Client ID:

Operator ID: JBH

ALS Bottle#: 20

Worklist Smp#: 21

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

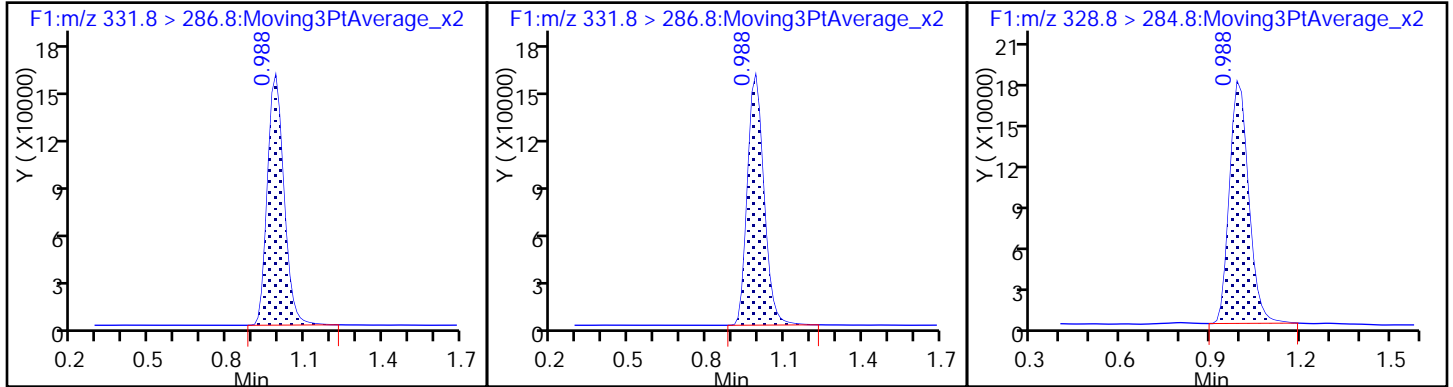
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d  
 Lims ID: LCSD 280-406765/14-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 12-Mar-2018 09:22:32 ALS Bottle#: 20 Worklist Smp#: 21  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCSD280-406765/14-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:37

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.15	91.51



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LLCS 280-406765/15-A  
 Matrix: Air Lab File ID: hfpo718C12022.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:25  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.004384		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	87		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d  
 Lims ID: LLCS 280-406765/15-A  
 Client ID:  
 Sample Type: LLCS  
 Inject. Date: 12-Mar-2018 09:25:47 ALS Bottle#: 21 Worklist Smp#: 22  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LLCS280-406765/15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	648824	8.69	2403
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		648824	10.0	2403
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	62868	0.8769	21.3

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d

Injection Date: 12-Mar-2018 09:25:47

Instrument ID: LC\_LCMS7

Lims ID: LLCS 280-406765/15-A

Client ID:

Operator ID: JBH

ALS Bottle#: 21

Worklist Smp#: 22

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

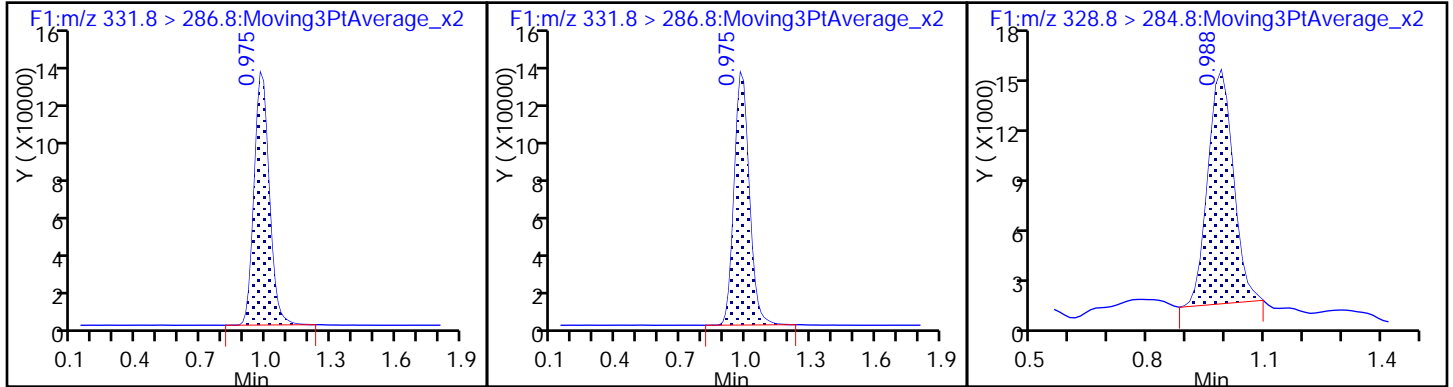
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d  
 Lims ID: LLCS 280-406765/15-A  
 Client ID:  
 Sample Type: LLCS  
 Inject. Date: 12-Mar-2018 09:25:47 ALS Bottle#: 21 Worklist Smp#: 22  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LLCS280-406765/15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:40

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.69	86.90

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Start Date: 02/08/2018 13:05

Analysis Batch Number: 404345 End Date: 02/08/2018 13:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD001 280-404345/3 IC		02/08/2018 13:05	1	hfpo718B08034.d	Synergi Hydro
STD002 280-404345/4 IC		02/08/2018 13:08	1	hfpo718B08035.d	Synergi Hydro
STD003 280-404345/5 IC		02/08/2018 13:12	1	hfpo718B08036.d	Synergi Hydro
STD004 280-404345/6 IC		02/08/2018 13:15	1	hfpo718B08037.d	Synergi Hydro
STD005 280-404345/7 IC		02/08/2018 13:18	1	hfpo718B08038.d	Synergi Hydro
STD006 280-404345/8 IC		02/08/2018 13:21	1	hfpo718B08039.d	Synergi Hydro
STD007 280-404345/9 IC		02/08/2018 13:25	1	hfpo718B08040.d	Synergi Hydro
STD008 280-404345/10 IC		02/08/2018 13:28	1	hfpo718B08041.d	Synergi Hydro
STD009 280-404345/11 IC		02/08/2018 13:31	1	hfpo718B08042.d	Synergi Hydro

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Start Date: 03/12/2018 09:12

Analysis Batch Number: 407567 End Date: 03/12/2018 10:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-407567/18		03/12/2018 09:12	1	hfpo718C12018.d	Synergi Hydro
MB 280-406765/1-A		03/12/2018 09:16	1	hfpo718C12019.d	Synergi Hydro
LCS 280-406765/2-A		03/12/2018 09:19	1	hfpo718C12020.d	Synergi Hydro
LCSD 280-406765/14-A		03/12/2018 09:22	1	hfpo718C12021.d	Synergi Hydro
LLCS 280-406765/15-A		03/12/2018 09:25	1	hfpo718C12022.d	Synergi Hydro
140-10862-3		03/12/2018 09:29	1	hfpo718C12023.d	Synergi Hydro
140-10862-7		03/12/2018 09:32	1	hfpo718C12024.d	Synergi Hydro
140-10862-11		03/12/2018 09:35	1	hfpo718C12025.d	Synergi Hydro
140-10862-15		03/12/2018 09:38	1	hfpo718C12026.d	Synergi Hydro
140-10862-17		03/12/2018 09:42	1	hfpo718C12027.d	Synergi Hydro
CCV 280-407567/28		03/12/2018 09:45	1	hfpo718C12028.d	Synergi Hydro
ZZZZZ		03/12/2018 09:48	1		Synergi Hydro
ZZZZZ		03/12/2018 09:51	1		Synergi Hydro
ZZZZZ		03/12/2018 09:55	1		Synergi Hydro
ZZZZZ		03/12/2018 09:58	1		Synergi Hydro
ZZZZZ		03/12/2018 10:01	1		Synergi Hydro
ZZZZZ		03/12/2018 10:04	1		Synergi Hydro
CCV 280-407567/35		03/12/2018 10:08	1		Synergi Hydro

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Lab Sample ID	Client Sample ID	Method Chain	Basis	VolumeCollect	VolCondUsed	InitialAmount	FinalAmount	HFPO I.S. 00009	HFPO Spike 00004
MB 280-406765/1		None, 8321A				1 Sample	5 mL	0.1 mL	
LCS 280-406765/2		None, 8321A				1 Sample	5 mL	0.1 mL	0.1 mL
140-10862-A-3	C-2805 R1 M0010 IMP COND	None, 8321A	T	200 mL	10 mL	0.05 Sample	5 mL	0.1 mL	
140-10862-A-7	C-2812 R2 M0010 IMP COND	None, 8321A	T	190 mL	9.5 mL	0.05 Sample	5 mL	0.1 mL	
140-10862-A-11	C-2819 R3 M0010 IMP COND	None, 8321A	T	250 mL	250 mL	1 Sample	5 mL	0.1 mL	
140-10862-A-15	C-2826 R QC M0010 IMP COND BT	None, 8321A	T	250 mL	250 mL	1 Sample	5 mL	0.1 mL	
140-10862-A-17	C-2829 R QC M0010 DI WATER RB	None, 8321A	T	250 mL	250 mL	1 Sample	5 mL	0.1 mL	
LCSD 280-406765/14		None, 8321A				1 Sample	5 mL	0.1 mL	0.1 mL
LLCS 280-406765/15		None, 8321A				1 Sample	5 mL	0.1 mL	0.01 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 280-406765/1		None, 8321A		250 mL					
LCS 280-406765/2		None, 8321A		250 mL					
140-10862-A-3	C-2805 R1 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight-270.7g, tare weight-27.0g					
140-10862-A-7	C-2812 R2 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight-272.4g, tare weight-26.5g					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
140-10862-A-11	C-2819 R3 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight-271.9g, tare weight- 26.5g					
140-10862-A-15	C-2826 R QC M0010 IMP COND BT	None, 8321A	T	brought up to 250mL for Denver lab to extract, Gross weight- 266.4g, tare weight- 27.8g					
140-10862-A-17	C-2829 R QC M0010 DI WATER RB	None, 8321A	T	brought up to 250mL for Denver lab to extract, Gross weight- 277.2g, tare weight- 38.1g					
LCSD 280-406765/14		None, 8321A		250 mL					
LLCS 280-406765/15		None, 8321A		250 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10862-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Batch Notes	
Acid ID	2%FormicAcid_147
Balance ID	24350888 (Denver)
Batch Comment	Batch originated by David Stout who brought samples to 250mL Reviewer:HA
Elution Solution ID	10%NH4OH_123
Extraction End time	12:40
Extraction End Date	03/11/2018
Extraction Start time	11:22
Extraction Start Date	03/11/2018
H2O ID	HPLC_water_867
Pipette/Syringe/Dispenser ID	m2. spe-1, syringe
Solvent	Methanol_196
SPE Cartridge Lot ID	S308-0079
SPE Cartridge Type	strata-x-aw-8BSO38FCH
Analyst ID - Spike Analyst	HA
Analyst ID - Spike Witness Analyst	HA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



**Reagent ID: HFPO\_CAL-5\_00083**

Description: level5  
 No. of Bottles: 1  
 Storage Location: LCMS  
 Reagent Volume: 1.000 mL  
 Creation Date: 03/07/2018  
 Open Date:  
 Container(s): 4991513  
 Comment: level-5

Expiration Date: 03/21/2018  
 Laboratory: TestAmerica Denver  
 Prepared By: Meyer, Andrew GC  
 Solvent: 80:20 Methanol : H2O  
 Solvent Lot: 00016

**Reagent Analyte Information**

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00010	03/06/2019	0.80000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00010	03/06/2019	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00005	03/07/2019	0.50000	ug/mL	5.00000	ug/L

**Source Reagents**

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00010	Internal Standard for HFPO 0.8ug/ml		03/06/19				20.00000	uL
HFPO Spike_00005	HFPO LCS/Calibration Spike 0.5ug/ml		03/07/19				10.00000	uL

*Andrew Meyer*  
3/13/18



**Reagent ID: HFPO\_CAL-6\_00083**

Description: level6  
 No. of Bottles: 1  
 Storage Location: LCMS  
 Reagent Volume: 1.000 mL  
 Creation Date: 03/07/2018  
 Open Date:  
 Container(s): 4991514  
 Comment: level-6

Expiration Date: 03/21/2018  
 Laboratory: TestAmerica Denver  
 Prepared By: Meyer, Andrew GC  
 Solvent: 80:20 Methanol : H2O  
 Solvent Lot: 00016

**Reagent Analyte Information**

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00010	03/08/2019	0.50000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00010	03/08/2019	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00005	03/07/2019	0.50000	ug/mL	10.00000	ug/L

**Source Reagents**

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00010	Internal Standard for HFPO 0.5ug/ml		03/08/19				20.00000	uL
HFPO Spike_00005	HFPO LCS/Calibration Spike 0.5ug/ml		03/07/19				20.00000	uL

*chudapom*  
*3/13/18*

## ANALYTICAL REPORT

Job Number: 140-10863-1

Job Description: Polymer Processing Area Emissions Test

Contract Number: LBIO-67048

For:

Chemours Company FC, LLC The  
c/o AECOM

Sabre Building, Suite 300

4051 Ogletown Road

Newark, DE 19713

Attention: Michael Aucoin



Approved for release.  
Courtney M Adkins  
Project Manager I  
3/26/2018 8:55 AM

---

Courtney M Adkins, Project Manager I  
5815 Middlebrook Pike, Knoxville, TN, 37921  
(865)291-3000  
courtney.adkins@testamericainc.com  
03/26/2018

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# Definitions/Glossary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
X	Surrogate is outside control limits
E	Result exceeded calibration range.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Method Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
8321A	PFOA and PFOS	SW846	TAL DEN
8321A	HFPO-DA	SW846	TAL DEN

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



# Sample Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-10863-1	H-2201,2202 R1 M0010 FH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-3	H-2205 R1 M0010 IMP COND	Air	03/01/18 00:00	03/03/18 08:00
140-10863-4	H-2207 R1 M0010 XAD-2	Air	03/01/18 00:00	03/03/18 08:00
140-10863-5	H-2208,2209 R2 M0010 FH	Air	03/02/18 00:00	03/03/18 08:00
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Air	03/02/18 00:00	03/03/18 08:00
140-10863-7	H-2212 R2 M0010 IMP COND	Air	03/02/18 00:00	03/03/18 08:00
140-10863-8	H-2214 R2 M0010 XAD-2	Air	03/02/18 00:00	03/03/18 08:00
140-10863-9	H-2222,2223 R4 M0010 FH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-11	H-2226 R4 M0010 IMP COND	Air	03/01/18 00:00	03/03/18 08:00
140-10863-12	H-2228 R4 M0010 XAD-2	Air	03/01/18 00:00	03/03/18 08:00
140-10863-13	H-2229,2230 R5 M0010 FH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-14	H-2231,2232,2234 R5 M0010 BH	Air	03/01/18 00:00	03/03/18 08:00
140-10863-15	H-2233 R5 M0010 IMP COND	Air	03/01/18 00:00	03/03/18 08:00
140-10863-16	H-2235 R5 M0010 XAD-2	Air	03/01/18 00:00	03/03/18 08:00
140-10863-17	H-2243,2244 R QC M0010 FH BT	Air	03/02/18 00:00	03/03/18 08:00
140-10863-18	H-2245,2246,2248 R QC M0010 BH BT	Air	03/02/18 00:00	03/03/18 08:00
140-10863-19	H-2247 R QC M0010 IMP COND BT	Air	03/02/18 00:00	03/03/18 08:00
140-10863-20	H-2249 R QC M0010 XAD-2 BT	Air	03/02/18 00:00	03/03/18 08:00
140-10863-21	H-2250 R QC M0010 DI WATER RB	Air	03/01/18 00:00	03/03/18 08:00
140-10863-22	H-2251 R QC M0010 MEOH WITH 5% NH4OH RB	Air	03/01/18 00:00	03/03/18 08:00
140-10863-23	H-2252 R QC M0010 XAD-2 RB	Air	03/01/18 00:00	03/03/18 08:00
140-10863-24	H-2253 R QC M0010 MEOH WITH 5% HN4OH TB	Air	03/01/18 00:00	03/03/18 08:00
140-10863-25	H-2254 R QC M0010 XAD-2 TB	Air	03/01/18 00:00	03/03/18 08:00
140-10863-26	H-2255,2256,2257 R QC M0010 PROOF BLANK	Air	03/01/18 00:00	03/03/18 08:00

## Job Narrative 140-10863-1

### Sample Receipt

The samples were received on March 3, 2018 at 8:00 AM in good condition and properly preserved. The temperatures of the 5 coolers at receipt time were 1.3° C, 1.7° C, 2.3° C, 2.7° C and 2.9° C.

### Quality Control and Data Interpretation

Unless otherwise noted, all holding times, and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

### Method 0010/Method 3542 Sampling Train Preparation

Train fractions were extracted and prepared for analysis in TestAmerica's Knoxville laboratory. Extracts and condensate samples were forwarded to the Denver laboratory for HFPO-DA analysis. All results are reported in "Total ug" per sample.

### LCMS

Samples associated with this analytical batch were originally analyzed with an "E" flag to indicate that the HFPO-DA exceeded the calibration curve of the method. Project specific calculations are provided as an addendum to this narrative.

### Organic Prep

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Comments

Reporting Limits (RLs) and Method Detection Limits (MDLs) for the HFPO-DA used in this report were derived in Denver for reporting soils and water samples. Method 0010 sampling train matrix specific RLs and MDLs have not been established for HFPO-DA. The soil and water limits are expected to be reasonable approximations of the actual matrix specific limits, under these conditions.

The expanded deliverable section of the package is split into two sections: 8321A\_HFPO\_DU is specific to condensates, and Method DV-LC-0012 contains the XAD and Filter data. Both methods share the same calibration on 10/10/17. A single instance of this calibration and the associated detection limit check (DLCK) and Initial calibration verification (ICV) can be found in the 8321A\_HFPO\_DU section of the package as part of our automated package generation procedures.

**Chemours PPA Stack Test Analytical Report**  
**TestAmerica Job No. 140-10863-1**  
**March 23, 2018**

The following samples exceeded the Method 8321A calibration range for HFPO-DA and required that dilution of the extracts be performed:

- H-2203, H-2204 and H-2206 (PPA Stack) Run #1 Back-Half Composite (XAD-2 Resin and Glassware Rinses)
- H-2210, H-2211 and H-2213 (PPA Stack) Run #2 Back-Half Composite (XAD-2 Resin and Glassware Rinses)

The original analysis concentration which displays the “E” flag is provided with the data set indicating that the value provided is estimated. The  $^{13}\text{C}_3$  – HFPO-DA isotope dilution internal standard (IDA) recovery percentage (%) however, is provided with this analysis run.

A second analysis concentration displays an accurate concentration of the HFPO-DA in the diluted sample extract, but the value is uncorrected for the IDA recovery percentage from the original matrix. The recovery percentage presented with the second concentration represents a post-spike of IDA to benchmark the instrument quantification of native HFPO-DA.

Final recovery-corrected concentrations of the native HFPO-DA are provided by calculation using the original recovery value of the IDA and the diluted extract values of the native HFPO-DA. The final concentrations are calculated as follows:

- H-2203, H-2204 and H-2206 (PPA Stack) Run#1 Back-Half Composite (XAD-2 and Resin and Rinses)

$$(27,400 \text{ ug}) \times \left(\frac{70}{51}\right) = 37,600 \text{ ug}$$

- H-2210, H-2211 and H-2213 (PPA Stack) Run #2 Back-Half Composite (XAD-2 Resin and Glassware Rinses)

$$(41,600 \text{ ug}) \times \left(\frac{69}{54}\right) = 53,200 \text{ ug}$$

# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## LCMS

### Analysis Batch: 404345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
DLCK 280-404345/13	Lab Control Sample	Total/NA	Air	8321A	

### Prep Batch: 406763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-1	H-2201,2202 R1 M0010 FH	Total/NA	Air	None	
140-10863-5	H-2208,2209 R2 M0010 FH	Total/NA	Air	None	
140-10863-9	H-2222,2223 R4 M0010 FH	Total/NA	Air	None	
140-10863-13	H-2229,2230 R5 M0010 FH	Total/NA	Air	None	
140-10863-17	H-2243,2244 R QC M0010 FH BT	Total/NA	Air	None	
140-10863-22	H-2251 R QC M0010 MEOH WITH 5% NH4OH F	Total/NA	Air	None	
140-10863-24	H-2253 R QC M0010 MEOH WITH 5% HN4OH T	Total/NA	Air	None	
MB 280-406763/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406763/2-A	Lab Control Sample	Total/NA	Air	None	

### Prep Batch: 406764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	None	
140-10863-2 - DL	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	None	
140-10863-4	H-2207 R1 M0010 XAD-2	Total/NA	Air	None	
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	None	
140-10863-6 - DL	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	None	
140-10863-8	H-2214 R2 M0010 XAD-2	Total/NA	Air	None	
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Total/NA	Air	None	
140-10863-12	H-2228 R4 M0010 XAD-2	Total/NA	Air	None	
140-10863-14	H-2231,2232,2234 R5 M0010 BH	Total/NA	Air	None	
140-10863-16	H-2235 R5 M0010 XAD-2	Total/NA	Air	None	
140-10863-18	H-2245,2246,2248 R QC M0010 BH BT	Total/NA	Air	None	
140-10863-20	H-2249 R QC M0010 XAD-2 BT	Total/NA	Air	None	
140-10863-23	H-2252 R QC M0010 XAD-2 RB	Total/NA	Air	None	
140-10863-25	H-2254 R QC M0010 XAD-2 TB	Total/NA	Air	None	
140-10863-26	H-2255,2256,2257 R QC M0010 PROOF BLANK	Total/NA	Air	None	
MB 280-406764/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406764/2-A	Lab Control Sample	Total/NA	Air	None	

### Prep Batch: 406765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-3	H-2205 R1 M0010 IMP COND	Total/NA	Air	None	
140-10863-7	H-2212 R2 M0010 IMP COND	Total/NA	Air	None	
140-10863-11	H-2226 R4 M0010 IMP COND	Total/NA	Air	None	
140-10863-15	H-2233 R5 M0010 IMP COND	Total/NA	Air	None	
140-10863-19	H-2247 R QC M0010 IMP COND BT	Total/NA	Air	None	
140-10863-21	H-2250 R QC M0010 DI WATER RB	Total/NA	Air	None	
MB 280-406765/1-A	Method Blank	Total/NA	Air	None	
LCS 280-406765/2-A	Lab Control Sample	Total/NA	Air	None	
LCSD 280-406765/14-A	Lab Control Sample Dup	Total/NA	Air	None	
LLCS 280-406765/15-A	Lab Control Sample	Total/NA	Air	None	

### Prep Batch: 407095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	None	
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	None	

TestAmerica Knoxville

# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## LCMS (Continued)

### Prep Batch: 407095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Total/NA	Air	None	
140-10863-14	H-2231,2232,2234 R5 M0010 BH	Total/NA	Air	None	

### Analysis Batch: 407389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-1	H-2201,2202 R1 M0010 FH	Total/NA	Air	8321A	406763
140-10863-5	H-2208,2209 R2 M0010 FH	Total/NA	Air	8321A	406763
140-10863-9	H-2222,2223 R4 M0010 FH	Total/NA	Air	8321A	406763
140-10863-13	H-2229,2230 R5 M0010 FH	Total/NA	Air	8321A	406763
140-10863-17	H-2243,2244 R QC M0010 FH BT	Total/NA	Air	8321A	406763
140-10863-22	H-2251 R QC M0010 MEOH WITH 5% NH4OH F	Total/NA	Air	8321A	406763
140-10863-24	H-2253 R QC M0010 MEOH WITH 5% HN4OH T	Total/NA	Air	8321A	406763
MB 280-406763/1-A	Method Blank	Total/NA	Air	8321A	406763
LCS 280-406763/2-A	Lab Control Sample	Total/NA	Air	8321A	406763

### Analysis Batch: 407390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	8321A	406764
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	8321A	406764
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Total/NA	Air	8321A	406764
140-10863-12	H-2228 R4 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10863-14	H-2231,2232,2234 R5 M0010 BH	Total/NA	Air	8321A	406764
140-10863-16	H-2235 R5 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10863-18	H-2245,2246,2248 R QC M0010 BH BT	Total/NA	Air	8321A	406764
140-10863-20	H-2249 R QC M0010 XAD-2 BT	Total/NA	Air	8321A	406764
140-10863-23	H-2252 R QC M0010 XAD-2 RB	Total/NA	Air	8321A	406764
140-10863-25	H-2254 R QC M0010 XAD-2 TB	Total/NA	Air	8321A	406764
140-10863-26	H-2255,2256,2257 R QC M0010 PROOF BLANK	Total/NA	Air	8321A	406764
MB 280-406764/1-A	Method Blank	Total/NA	Air	8321A	406764
LCS 280-406764/2-A	Lab Control Sample	Total/NA	Air	8321A	406764

### Analysis Batch: 407391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	8321A	407095
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	8321A	407095
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Total/NA	Air	8321A	407095
140-10863-14	H-2231,2232,2234 R5 M0010 BH	Total/NA	Air	8321A	407095

### Analysis Batch: 407565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-1	H-2201,2202 R1 M0010 FH	Total/NA	Air	8321A	406763
140-10863-5	H-2208,2209 R2 M0010 FH	Total/NA	Air	8321A	406763
140-10863-9	H-2222,2223 R4 M0010 FH	Total/NA	Air	8321A	406763
140-10863-13	H-2229,2230 R5 M0010 FH	Total/NA	Air	8321A	406763
140-10863-17	H-2243,2244 R QC M0010 FH BT	Total/NA	Air	8321A	406763

### Analysis Batch: 407566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	8321A	407095
140-10863-4	H-2207 R1 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10863-6	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	8321A	407095

TestAmerica Knoxville

# QC Association Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## LCMS (Continued)

### Analysis Batch: 407566 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-8	H-2214 R2 M0010 XAD-2	Total/NA	Air	8321A	406764
140-10863-10	H-2224,2225,2227 R4 M0010 BH	Total/NA	Air	8321A	406764
140-10863-18	H-2245,2246,2248 R QC M0010 BH BT	Total/NA	Air	8321A	406764

### Analysis Batch: 407567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-3	H-2205 R1 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10863-7	H-2212 R2 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10863-11	H-2226 R4 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10863-15	H-2233 R5 M0010 IMP COND	Total/NA	Air	8321A	406765
140-10863-19	H-2247 R QC M0010 IMP COND BT	Total/NA	Air	8321A	406765
140-10863-21	H-2250 R QC M0010 DI WATER RB	Total/NA	Air	8321A	406765
MB 280-406765/1-A	Method Blank	Total/NA	Air	8321A	406765
LCS 280-406765/2-A	Lab Control Sample	Total/NA	Air	8321A	406765
LCSD 280-406765/14-A	Lab Control Sample Dup	Total/NA	Air	8321A	406765
LLCS 280-406765/15-A	Lab Control Sample	Total/NA	Air	8321A	406765

### Analysis Batch: 408337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10863-2 - DL	H-2203,2204,2206 R1 M0010 BH	Total/NA	Air	8321A	406764
140-10863-6 - DL	H-2210,2211,2213 R2 M0010 BH	Total/NA	Air	8321A	406764

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Client Sample ID: H-2201,2202 R1 M0010 FH

## Lab Sample ID: 140-10863-1

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	714	E	0.150	0.150	ug/Sample		03/05/18 14:00	03/09/18 12:34	1
HFPO-DA	716		7.50	7.50	ug/Sample		03/05/18 14:00	03/12/18 08:33	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	30	X	50 - 200				03/05/18 14:00	03/09/18 12:34	1
13C3 HFPO-DA	79	D	50 - 200				03/05/18 14:00	03/12/18 08:33	50

## Client Sample ID: H-2203,2204,2206 R1 M0010 BH

## Lab Sample ID: 140-10863-2

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	15100	E	0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:53	1
HFPO-DA	27000	E	100	100	ug/Sample		03/07/18 09:47	03/09/18 14:42	1
HFPO-DA	27400		200	200	ug/Sample		03/07/18 09:47	03/12/18 09:06	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	4	X	50 - 200				03/05/18 04:38	03/09/18 13:53	1
13C3 HFPO-DA	69		50 - 200				03/07/18 09:47	03/09/18 14:42	1
13C3 HFPO-DA	70	D	50 - 200				03/07/18 09:47	03/12/18 09:06	2

### Method: 8321A - PFOA and PFOS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	15300	E	10.0	10.0	ug/Sample		03/05/18 04:38	03/19/18 13:23	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	51	D	50 - 200				03/05/18 04:38	03/19/18 13:23	50

## Client Sample ID: H-2205 R1 M0010 IMP COND

## Lab Sample ID: 140-10863-3

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.118	J	0.125	0.00638	ug/Sample		03/11/18 10:52	03/12/18 09:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200				03/11/18 10:52	03/12/18 09:48	1

## Client Sample ID: H-2207 R1 M0010 XAD-2

## Lab Sample ID: 140-10863-4

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/12/18 08:53	1

TestAmerica Knoxville

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2207 R1 M0010 XAD-2**

**Lab Sample ID: 140-10863-4**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	61		50 - 200	03/05/18 04:38	03/12/18 08:53	1

**Client Sample ID: H-2208,2209 R2 M0010 FH**

**Lab Sample ID: 140-10863-5**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	611	E	0.100	0.100	ug/Sample		03/05/18 14:00	03/09/18 12:41	1
HFPO-DA	557		5.00	5.00	ug/Sample		03/05/18 14:00	03/12/18 08:37	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	26	X	50 - 200	03/05/18 14:00	03/09/18 12:41	1
13C3 HFPO-DA	86	D	50 - 200	03/05/18 14:00	03/12/18 08:37	50

**Client Sample ID: H-2210,2211,2213 R2 M0010 BH**

**Lab Sample ID: 140-10863-6**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	19200	E	0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:59	1
HFPO-DA	41700	E	100	100	ug/Sample		03/07/18 09:47	03/09/18 14:45	1
HFPO-DA	41600		400	400	ug/Sample		03/07/18 09:47	03/12/18 09:09	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	4	X	50 - 200	03/05/18 04:38	03/09/18 13:59	1
13C3 HFPO-DA	66		50 - 200	03/07/18 09:47	03/09/18 14:45	1
13C3 HFPO-DA	69	D	50 - 200	03/07/18 09:47	03/12/18 09:09	4

**Method: 8321A - PFOA and PFOS - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	16800	E	10.0	10.0	ug/Sample		03/05/18 04:38	03/19/18 13:26	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	54	D	50 - 200	03/05/18 04:38	03/19/18 13:26	50

**Client Sample ID: H-2212 R2 M0010 IMP COND**

**Lab Sample ID: 140-10863-7**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.125	0.00638	ug/Sample		03/11/18 10:52	03/12/18 09:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	03/11/18 10:52	03/12/18 09:51	1

TestAmerica Knoxville



# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Client Sample ID: H-2214 R2 M0010 XAD-2

## Lab Sample ID: 140-10863-8

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.399		0.200	0.200	ug/Sample		03/05/18 04:38	03/12/18 08:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	72		50 - 200	03/05/18 04:38	03/12/18 08:56	1

## Client Sample ID: H-2222,2223 R4 M0010 FH

## Lab Sample ID: 140-10863-9

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	690	E	0.100	0.100	ug/Sample		03/05/18 14:00	03/09/18 12:44	1
HFPO-DA	682		5.00	5.00	ug/Sample		03/05/18 14:00	03/12/18 08:40	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	24	X	50 - 200	03/05/18 14:00	03/09/18 12:44	1
13C3 HFPO-DA	76	D	50 - 200	03/05/18 14:00	03/12/18 08:40	50

## Client Sample ID: H-2224,2225,2227 R4 M0010 BH

## Lab Sample ID: 140-10863-10

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - PFOA and PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	137	E	0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:06	1
HFPO-DA	212		100	100	ug/Sample		03/07/18 09:47	03/09/18 14:48	1
HFPO-DA	139		1.00	1.00	ug/Sample		03/05/18 04:38	03/12/18 08:59	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	58		50 - 200	03/05/18 04:38	03/09/18 14:06	1
13C3 HFPO-DA	75		50 - 200	03/07/18 09:47	03/09/18 14:48	1
13C3 HFPO-DA	64	D	50 - 200	03/05/18 04:38	03/12/18 08:59	5

## Client Sample ID: H-2226 R4 M0010 IMP COND

## Lab Sample ID: 140-10863-11

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

### Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.227		0.125	0.00638	ug/Sample		03/11/18 10:52	03/12/18 09:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	03/11/18 10:52	03/12/18 09:55	1

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2228 R4 M0010 XAD-2**

**Lab Sample ID: 140-10863-12**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.90		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	63		50 - 200	03/05/18 04:38	03/09/18 14:09	1

**Client Sample ID: H-2229,2230 R5 M0010 FH**

**Lab Sample ID: 140-10863-13**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	539	E	0.100	0.100	ug/Sample		03/05/18 14:00	03/09/18 12:47	1
HFPO-DA	534		5.00	5.00	ug/Sample		03/05/18 14:00	03/12/18 08:43	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	28	X	50 - 200	03/05/18 14:00	03/09/18 12:47	1
13C3 HFPO-DA	77	D	50 - 200	03/05/18 14:00	03/12/18 08:43	50

**Client Sample ID: H-2231,2232,2234 R5 M0010 BH**

**Lab Sample ID: 140-10863-14**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	11.3		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:16	1
HFPO-DA	ND		100	100	ug/Sample		03/07/18 09:47	03/09/18 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	71		50 - 200	03/05/18 04:38	03/09/18 14:16	1
13C3 HFPO-DA	75		50 - 200	03/07/18 09:47	03/09/18 14:51	1

**Client Sample ID: H-2233 R5 M0010 IMP COND**

**Lab Sample ID: 140-10863-15**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.250		0.125	0.00638	ug/Sample		03/11/18 10:52	03/12/18 09:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	03/11/18 10:52	03/12/18 09:58	1

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2235 R5 M0010 XAD-2**

**Lab Sample ID: 140-10863-16**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.362		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	66		50 - 200	03/05/18 04:38	03/09/18 14:19	1

**Client Sample ID: H-2243,2244 R QC M0010 FH BT**

**Lab Sample ID: 140-10863-17**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	6.11	E	0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:51	1
HFPO-DA	5.89		0.0500	0.0500	ug/Sample		03/05/18 14:00	03/12/18 08:46	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	66		50 - 200	03/05/18 14:00	03/09/18 12:51	1
13C3 HFPO-DA	70	D	50 - 200	03/05/18 14:00	03/12/18 08:46	2

**Client Sample ID: H-2245,2246,2248 R QC M0010 BH BT**

**Lab Sample ID: 140-10863-18**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	50.6	E	0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:22	1
HFPO-DA	52.4		0.400	0.400	ug/Sample		03/05/18 04:38	03/12/18 09:03	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	70		50 - 200	03/05/18 04:38	03/09/18 14:22	1
13C3 HFPO-DA	66	D	50 - 200	03/05/18 04:38	03/12/18 09:03	2

**Client Sample ID: H-2247 R QC M0010 IMP COND BT**

**Lab Sample ID: 140-10863-19**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0106		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 10:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	03/11/18 10:52	03/12/18 10:01	1

# Client Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2249 R QC M0010 XAD-2 BT**

**Lab Sample ID: 140-10863-20**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	67		50 - 200	03/05/18 04:38	03/09/18 14:25	1

**Client Sample ID: H-2250 R QC M0010 DI WATER RB**

**Lab Sample ID: 140-10863-21**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - HFPO-DA**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 10:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		50 - 200	03/11/18 10:52	03/12/18 10:04	1

**Client Sample ID: H-2251 R QC M0010 MEOH WITH 5% NH4OH RB**

**Lab Sample ID: 140-10863-22**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200	03/05/18 14:00	03/09/18 12:54	1

**Client Sample ID: H-2252 R QC M0010 XAD-2 RB**

**Lab Sample ID: 140-10863-23**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Sample Container: Air Train

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.291		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	27	X	50 - 200	03/05/18 04:38	03/09/18 14:29	1

# Client Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2253 R QC M0010 MEOH WITH 5% HN4OH TB**

**Lab Sample ID: 140-10863-24**

Date Collected: 03/01/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

Matrix: Air

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		50 - 200				03/05/18 14:00	03/09/18 12:57	1

**Client Sample ID: H-2254 R QC M0010 XAD-2 TB**

**Lab Sample ID: 140-10863-25**

Date Collected: 03/01/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

Matrix: Air

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		50 - 200				03/05/18 04:38	03/09/18 14:32	1

**Client Sample ID: H-2255,2256,2257 R QC M0010 PROOF BLANK**

**Lab Sample ID: 140-10863-26**

Date Collected: 03/01/18 00:00  
Date Received: 03/03/18 08:00  
Sample Container: Air Train

Matrix: Air

**Method: 8321A - PFOA and PFOS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0948		0.0250	0.0250	ug/Sample		03/05/18 04:38	03/09/18 14:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200				03/05/18 04:38	03/09/18 14:35	1

# Default Detection Limits

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Method: 8321A - HFPO-DA

Prep: None

Analyte	RL	MDL	Units	Method
HFPO-DA	0.00250	0.00128	ug/Sample	8321A

## Method: 8321A - PFOA and PFOS

Prep: None

Analyte	RL	MDL	Units	Method
HFPO-DA	0.0250	0.0250	ug/Sample	8321A
HFPO-DA	0.100	0.100	ug/Sample	8321A

# Surrogate Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Method: 8321A - HFPO-DA

Matrix: Air

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)
140-10863-3	H-2205 R1 M0010 IMP COND	91
140-10863-7	H-2212 R2 M0010 IMP COND	89
140-10863-11	H-2226 R4 M0010 IMP COND	92
140-10863-15	H-2233 R5 M0010 IMP COND	88
140-10863-19	H-2247 R QC M0010 IMP COND	69
140-10863-21	H-2250 R QC M0010 DI WATEF	81
LCS 280-406765/2-A	Lab Control Sample	90
LCSD 280-406765/14-A	Lab Control Sample Dup	92
LLCS 280-406765/15-A	Lab Control Sample	87
MB 280-406765/1-A	Method Blank	94

#### Surrogate Legend

HFPODA = 13C3 HFPO-DA

## Method: 8321A - PFOA and PFOS

Matrix: Air

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)
140-10863-1	H-2201,2202 R1 M0010 FH	30 X
140-10863-1	H-2201,2202 R1 M0010 FH	79 D
140-10863-2	H-2203,2204,2206 R1 M0010 BI	4 X
140-10863-2	H-2203,2204,2206 R1 M0010 BI	69
140-10863-2	H-2203,2204,2206 R1 M0010 BI	70 D
140-10863-2 - DL	H-2203,2204,2206 R1 M0010 BI	51 D
140-10863-4	H-2207 R1 M0010 XAD-2	61
140-10863-5	H-2208,2209 R2 M0010 FH	26 X
140-10863-5	H-2208,2209 R2 M0010 FH	86 D
140-10863-6	H-2210,2211,2213 R2 M0010 BI	4 X
140-10863-6	H-2210,2211,2213 R2 M0010 BI	66
140-10863-6	H-2210,2211,2213 R2 M0010 BI	69 D
140-10863-6 - DL	H-2210,2211,2213 R2 M0010 BI	54 D
140-10863-8	H-2214 R2 M0010 XAD-2	72
140-10863-9	H-2222,2223 R4 M0010 FH	24 X
140-10863-9	H-2222,2223 R4 M0010 FH	76 D
140-10863-10	H-2224,2225,2227 R4 M0010 BI	58
140-10863-10	H-2224,2225,2227 R4 M0010 BI	75
140-10863-10	H-2224,2225,2227 R4 M0010 BI	64 D
140-10863-12	H-2228 R4 M0010 XAD-2	63
140-10863-13	H-2229,2230 R5 M0010 FH	28 X
140-10863-13	H-2229,2230 R5 M0010 FH	77 D
140-10863-14	H-2231,2232,2234 R5 M0010 BI	71
140-10863-14	H-2231,2232,2234 R5 M0010 BI	75
140-10863-16	H-2235 R5 M0010 XAD-2	66
140-10863-17	H-2243,2244 R QC M0010 FH E	66
140-10863-17	H-2243,2244 R QC M0010 FH E	70 D
140-10863-18	H-2245,2246,2248 R QC M0010	70
140-10863-18	H-2245,2246,2248 R QC M0010	66 D

# Surrogate Summary

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Method: 8321A - PFOA and PFOS (Continued)

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	HFPODA (50-200)			
140-10863-20	H-2249 R QC M0010 XAD-2 BT	67			
140-10863-22	H-2251 R QC M0010 MEOH WI	73			
140-10863-23	H-2252 R QC M0010 XAD-2 RB	27 X			
140-10863-24	H-2253 R QC M0010 MEOH WI	74			
140-10863-25	H-2254 R QC M0010 XAD-2 TB	74			
140-10863-26	H-2255,2256,2257 R QC M0010	88			
DLCK 280-404345/13	Lab Control Sample	104			
LCS 280-406763/2-A	Lab Control Sample	77			
LCS 280-406764/2-A	Lab Control Sample	72			
MB 280-406763/1-A	Method Blank	69			
MB 280-406764/1-A	Method Blank	64			

### Surrogate Legend

HFPODA = 13C3 HFPO-DA



# QC Sample Results

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Method: 8321A - HFPO-DA

**Lab Sample ID: MB 280-406765/1-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00250	0.000128	ug/Sample		03/11/18 10:52	03/12/18 09:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200				03/11/18 10:52	03/12/18 09:16	1

**Lab Sample ID: LCS 280-406765/2-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.0500	0.05486		ug/Sample		110	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	90		50 - 200				

**Lab Sample ID: LCSD 280-406765/14-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
HFPO-DA	0.0500	0.05420		ug/Sample		108	50 - 150	1	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
13C3 HFPO-DA	92		50 - 200						

**Lab Sample ID: LLCS 280-406765/15-A**  
**Matrix: Air**  
**Analysis Batch: 407567**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406765**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.00500	0.004384		ug/Sample		88	50 - 150
Surrogate	LLCS %Recovery	LLCS Qualifier	Limits				
13C3 HFPO-DA	87		50 - 200				

## Method: 8321A - PFOA and PFOS

**Lab Sample ID: DLCK 280-404345/13**  
**Matrix: Air**  
**Analysis Batch: 404345**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.250	0.2255		ug/L		90	70 - 130
Surrogate	DLCK %Recovery	DLCK Qualifier	Limits				
13C3 HFPO-DA	104		50 - 200				

TestAmerica Knoxville

# QC Sample Results

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Method: 8321A - PFOA and PFOS (Continued)

**Lab Sample ID: MB 280-406763/1-A**  
**Matrix: Air**  
**Analysis Batch: 407389**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406763**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0250	0.0250	ug/Sample		03/05/18 14:00	03/09/18 12:05	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200				03/05/18 14:00	03/09/18 12:05	1

**Lab Sample ID: LCS 280-406763/2-A**  
**Matrix: Air**  
**Analysis Batch: 407389**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406763**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	0.500	0.4835		ug/Sample		97	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	77		50 - 200				

**Lab Sample ID: MB 280-406764/1-A**  
**Matrix: Air**  
**Analysis Batch: 407390**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 406764**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.200	0.200	ug/Sample		03/05/18 04:38	03/09/18 13:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	64		50 - 200				03/05/18 04:38	03/09/18 13:04	1

**Lab Sample ID: LCS 280-406764/2-A**  
**Matrix: Air**  
**Analysis Batch: 407390**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 406764**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
HFPO-DA	4.00	3.498		ug/Sample		87	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	72		50 - 200				

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2201,2202 R1 M0010 FH**

**Lab Sample ID: 140-10863-1**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	300 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:34	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	300 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		50			407565	03/12/18 08:33	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2203,2204,2206 R1 M0010 BH**

**Lab Sample ID: 140-10863-2**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:53	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		1			407391	03/09/18 14:42	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		2			407566	03/12/18 09:06	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None	DL		1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A	DL	50			408337	03/19/18 13:23	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2205 R1 M0010 IMP COND**

**Lab Sample ID: 140-10863-3**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.02 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:48	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2207 R1 M0010 XAD-2**

**Lab Sample ID: 140-10863-4**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407566	03/12/18 08:53	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

TestAmerica Knoxville

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2208,2209 R2 M0010 FH**

**Lab Sample ID: 140-10863-5**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:41	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		50			407565	03/12/18 08:37	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2210,2211,2213 R2 M0010 BH**

**Lab Sample ID: 140-10863-6**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:59	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		1			407391	03/09/18 14:45	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		4			407566	03/12/18 09:09	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None	DL		1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A	DL	50			408337	03/19/18 13:26	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2212 R2 M0010 IMP COND**

**Lab Sample ID: 140-10863-7**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.02 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:51	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2214 R2 M0010 XAD-2**

**Lab Sample ID: 140-10863-8**

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407566	03/12/18 08:56	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

TestAmerica Knoxville

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2222,2223 R4 M0010 FH**

**Lab Sample ID: 140-10863-9**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:44	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		50			407565	03/12/18 08:40	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2224,2225,2227 R4 M0010 BH**

**Lab Sample ID: 140-10863-10**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:06	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		1			407391	03/09/18 14:48	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		5			407566	03/12/18 08:59	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2226 R4 M0010 IMP COND**

**Lab Sample ID: 140-10863-11**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.02 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:55	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2228 R4 M0010 XAD-2**

**Lab Sample ID: 140-10863-12**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:09	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Client Sample ID: H-2229,2230 R5 M0010 FH

Lab Sample ID: 140-10863-13

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:47	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	200 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		50			407565	03/12/18 08:43	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: H-2231,2232,2234 R5 M0010 BH

Lab Sample ID: 140-10863-14

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:16	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			0.00025 Sample	50 mL	407095	03/07/18 09:47		TAL DEN
Total/NA	Analysis	8321A		1			407391	03/09/18 14:51	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: H-2233 R5 M0010 IMP COND

Lab Sample ID: 140-10863-15

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			0.02 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:58	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: H-2235 R5 M0010 XAD-2

Lab Sample ID: 140-10863-16

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:19	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: H-2243,2244 R QC M0010 FH BT

Lab Sample ID: 140-10863-17

Date Collected: 03/02/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN

TestAmerica Knoxville

# Lab Chronicle

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2243,2244 R QC M0010 FH BT**

**Lab Sample ID: 140-10863-17**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			407389	03/09/18 12:51	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		2			407565	03/12/18 08:46	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2245,2246,2248 R QC M0010 BH BT**

**Lab Sample ID: 140-10863-18**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:22	AGCM	TAL DEN
Instrument ID: LC_LCMS7										
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		2			407566	03/12/18 09:03	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2247 R QC M0010 IMP COND BT**

**Lab Sample ID: 140-10863-19**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 10:01	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2249 R QC M0010 XAD-2 BT**

**Lab Sample ID: 140-10863-20**

**Date Collected: 03/02/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:25	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2250 R QC M0010 DI WATER RB**

**Lab Sample ID: 140-10863-21**

**Date Collected: 03/01/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2250 R QC M0010 DI WATER RB**

**Lab Sample ID: 140-10863-21**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			407567	03/12/18 10:04	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2251 R QC M0010 MEOH WITH 5% NH4OH RB**

**Lab Sample ID: 140-10863-22**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:54	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2252 R QC M0010 XAD-2 RB**

**Lab Sample ID: 140-10863-23**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:29	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2253 R QC M0010 MEOH WITH 5% HN4OH TB**

**Lab Sample ID: 140-10863-24**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:57	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: H-2254 R QC M0010 XAD-2 TB**

**Lab Sample ID: 140-10863-25**

Date Collected: 03/01/18 00:00

Matrix: Air

Date Received: 03/03/18 08:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:32	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

TestAmerica Knoxville



# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

**Client Sample ID: H-2255,2256,2257 R QC M0010 PROOF  
BLANK**

**Lab Sample ID: 140-10863-26**

**Date Collected: 03/01/18 00:00**

**Matrix: Air**

**Date Received: 03/03/18 08:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 14:35	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406763/1-A**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:05	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406764/1-A**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:04	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 280-406765/1-A**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:16	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: DLCK 280-404345/13**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			404345	02/08/18 13:38	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

# Lab Chronicle

Client: Chemours Company FC, LLC The  
Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 280-406763/2-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	406763	03/05/18 14:00		TAL DEN
Total/NA	Analysis	8321A		1			407389	03/09/18 12:08	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 280-406764/2-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	400 mL	406764	03/05/18 04:38		TAL DEN
Total/NA	Analysis	8321A		1			407390	03/09/18 13:07	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 280-406765/2-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:19	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 280-406765/14-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:22	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

## Client Sample ID: Lab Control Sample

Lab Sample ID: LLCS 280-406765/15-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	5 mL	406765	03/11/18 10:52	HMA	TAL DEN
Total/NA	Analysis	8321A		1			407567	03/12/18 09:25	AGCM	TAL DEN
Instrument ID: LC_LCMS7										

### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Knoxville

# Accreditation/Certification Summary

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Laboratory: TestAmerica Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		N/A	
ANAB	DoD ELAP		L2311	02-13-19
Arkansas DEQ	State Program	6	88-0688	06-16-18
California	State Program	9	2423	06-30-18
Colorado	State Program	8	TN00009	02-28-19
Connecticut	State Program	1	PH-0223	09-30-19
Florida	NELAP	4	E87177	06-30-18
Georgia	State Program	4	906	04-13-20
Hawaii	State Program	9	N/A	04-13-18
Kansas	NELAP	7	E-10349	10-31-18
Kentucky (DW)	State Program	4	90101	12-31-18
Louisiana	NELAP	6	83979	06-30-18
Louisiana (DW)	NELAP	6	LA160005	12-31-18
Maryland	State Program	3	277	03-31-19
Michigan	State Program	5	9933	04-13-20
Nevada	State Program	9	TN00009	07-31-18
New Jersey	NELAP	2	TN001	06-30-18
New York	NELAP	2	10781	03-31-18
North Carolina (DW)	State Program	4	21705	07-31-18
North Carolina (WW/SW)	State Program	4	64	12-31-18
Ohio VAP	State Program	5	CL0059	11-22-18
Oklahoma	State Program	6	9415	08-31-18
Oregon	NELAP	10	TNI0189	01-01-19
Pennsylvania	NELAP	3	68-00576	12-31-18
Tennessee	State Program	4	2014	04-13-20
Texas	NELAP	6	T104704380-16-9	08-31-18
US Fish & Wildlife	Federal		LE-058448-0	07-31-18
USDA	Federal		P330-16-00262	08-20-19
Utah	NELAP	8	TN00009	07-31-18
Virginia	NELAP	3	460176	09-14-18
Washington	State Program	10	C593	01-19-19
West Virginia (DW)	State Program	3	9955C	12-31-18
West Virginia DEP	State Program	3	345	04-30-18
Wisconsin	State Program	5	998044300	08-31-18

## Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	01-08-19
Arizona	State Program	9	AZ0713	12-20-18
Arkansas DEQ	State Program	6	88-0687	06-01-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-18 *
Illinois	NELAP	5	200017	04-30-18

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: Chemours Company FC, LLC The  
 Project/Site: Polymer Processing Aid Emissions Test

TestAmerica Job ID: 140-10863-1

## Laboratory: TestAmerica Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	04-30-18
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-18
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-18
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal		P330-16-00397	12-15-19
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-18
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 404345

Lab Sample ID: STD001 280-404345/3 IC Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:05 Lab File ID: hfpo718B08034.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Assign Peak	meyera	02/08/18 15:19

Lab Sample ID: STD002 280-404345/4 IC Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:08 Lab File ID: hfpo718B08035.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:19

Lab Sample ID: DLCK 280-404345/13 Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/08/18 13:38 Lab File ID: hfpo718B08044.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:20

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 407389

Lab Sample ID: 140-10863-22 Client Sample ID: H-2251 R QC M0010 MEOH WITH 5% NH4OH RB

Date Analyzed: 03/09/18 12:54 Lab File ID: hfpo718C09086.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.04	Assign Peak	meyera	03/09/18 13:17

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 407390

Lab Sample ID: 140-10863-2 Client Sample ID: H-2203,2204,2206 R1 M0010 BH

Date Analyzed: 03/09/18 13:53 Lab File ID: hfpo718C09104.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.08	Baseline	meyera	03/12/18 07:23
13C3 HFPO-DA	1.10	Baseline	meyera	03/12/18 07:23

Lab Sample ID: 140-10863-6 Client Sample ID: H-2210,2211,2213 R2 M0010 BH

Date Analyzed: 03/09/18 13:59 Lab File ID: hfpo718C09106.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C3 HFPO-DA	1.08	Baseline	meyera	03/12/18 07:23
HFPO-DA	1.10	Baseline	meyera	03/12/18 07:23

Lab Sample ID: 140-10863-12 Client Sample ID: H-2228 R4 M0010 XAD-2

Date Analyzed: 03/09/18 14:09 Lab File ID: hfpo718C09109.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	03/12/18 07:24

Lab Sample ID: 140-10863-16 Client Sample ID: H-2235 R5 M0010 XAD-2

Date Analyzed: 03/09/18 14:19 Lab File ID: hfpo718C09112.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.04	Assign Peak	meyera	03/12/18 07:24

Lab Sample ID: 140-10863-20 Client Sample ID: H-2249 R QC M0010 XAD-2 BT

Date Analyzed: 03/09/18 14:25 Lab File ID: hfpo718C09114.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.03	Assign Peak	meyera	03/12/18 07:25

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 407390

Lab Sample ID: 140-10863-23 Client Sample ID: H-2252 R QC M0010 XAD-2 RB

Date Analyzed: 03/09/18 14:29 Lab File ID: hfpo718C09115.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.03	Assign Peak	meyera	03/12/18 07:25

Lab Sample ID: 140-10863-25 Client Sample ID: H-2254 R QC M0010 XAD-2 TB

Date Analyzed: 03/09/18 14:32 Lab File ID: hfpo718C09116.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.03	Assign Peak	meyera	03/12/18 07:25



LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Analysis Batch Number: 407391

Lab Sample ID: 140-10863-14 Client Sample ID: H-2231,2232,2234 R5 M0010 BH

Date Analyzed: 03/09/18 14:51 Lab File ID: hfpo718C09122.d GC Column: Synergi Hydro ID: \_\_\_\_\_

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.03	Baseline	meyera	03/12/18 07:26

**8321A\_HFPO\_Du**

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**HFPO-DA**

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Matrix: Air

Level: Low

GC Column (1): Synergi Hyd ID: \_\_\_\_\_

Client Sample ID	Lab Sample ID	HFPODA #
H-2205 R1 M0010 IMP COND	140-10863-3	91
H-2212 R2 M0010 IMP COND	140-10863-7	89
H-2226 R4 M0010 IMP COND	140-10863-11	92
H-2233 R5 M0010 IMP COND	140-10863-15	88
H-2247 R QC M0010 IMP COND BT	140-10863-19	69
H-2250 R QC M0010 DI WATER RB	140-10863-21	81
	MB 280-406765/1-A	94
	LCS 280-406765/2-A	90
	LCSD 280-406765/14-A	92
	LLCS 280-406765/15-A	87

HFPODA = 13C3 HFPO-DA

QC LIMITS  
50-200

# Column to be used to flag recovery values

FORM II 8321A

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12020.d  
 Lab ID: LCS 280-406765/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LCS CONCENTRATION (ug/Sample)	LCS % REC	QC LIMITS REC	#
HFPO-DA	0.0500	0.05486	110	50-150	

# Column to be used to flag recovery and RPD values

FORM III  
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12021.d  
 Lab ID: LCSD 280-406765/14-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LCSD CONCENTRATION (ug/Sample)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
HFPO-DA	0.0500	0.05420	108	1	35	50-150	

# Column to be used to flag recovery and RPD values

FORM III  
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Air Level: Low Lab File ID: hfpo718C12022.d  
 Lab ID: LLCS 280-406765/15-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Sample)	LLCS CONCENTRATION (ug/Sample)	LLCS % REC	QC LIMITS REC	#
HFPO-DA	0.00500	0.004384	88	50-150	

# Column to be used to flag recovery and RPD values

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: hfpo718C12019.d Lab Sample ID: MB 280-406765/1-A  
 Matrix: Air Date Extracted: 03/11/2018 10:52  
 Instrument ID: LC\_LCMS7 Date Analyzed: 03/12/2018 09:16  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-406765/2-A	hfpo718C120 20.d	03/12/2018 09:19
	LCSD 280-406765/14-A	hfpo718C120 21.d	03/12/2018 09:22
	LLCS 280-406765/15-A	hfpo718C120 22.d	03/12/2018 09:25
H-2205 R1 M0010 IMP COND	140-10863-3	hfpo718C120 29.d	03/12/2018 09:48
H-2212 R2 M0010 IMP COND	140-10863-7	hfpo718C120 30.d	03/12/2018 09:51
H-2226 R4 M0010 IMP COND	140-10863-11	hfpo718C120 31.d	03/12/2018 09:55
H-2233 R5 M0010 IMP COND	140-10863-15	hfpo718C120 32.d	03/12/2018 09:58
H-2247 R QC M0010 IMP COND BT	140-10863-19	hfpo718C120 33.d	03/12/2018 10:01
H-2250 R QC M0010 DI WATER RB	140-10863-21	hfpo718C120 34.d	03/12/2018 10:04

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: H-2205 R1 M0010 IMP COND Lab Sample ID: 140-10863-3  
 Matrix: Air Lab File ID: hfpo718C12029.d  
 Analysis Method: 8321A Date Collected: 03/01/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.02 (Sample) Date Analyzed: 03/12/2018 09:48  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.118	J	0.125	0.00638

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	91		50-200



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12029.d  
 Lims ID: 140-10863-A-3-A  
 Client ID: H-2205 R1 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:48:32 ALS Bottle#: 27 Worklist Smp#: 29  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-3-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	1.029	1.045	-0.016	1.000	676950	9.07	3280
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	1.029	1.045	-0.016		676950	10.0	3280
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	1.029	1.056	-0.027	1.000	36295	0.4700	9.0

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12029.d

Injection Date: 12-Mar-2018 09:48:32

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-3-A

Lab Sample ID: 280-10863-3

Client ID: H-2205 R1 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 27

Worklist Smp#: 29

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

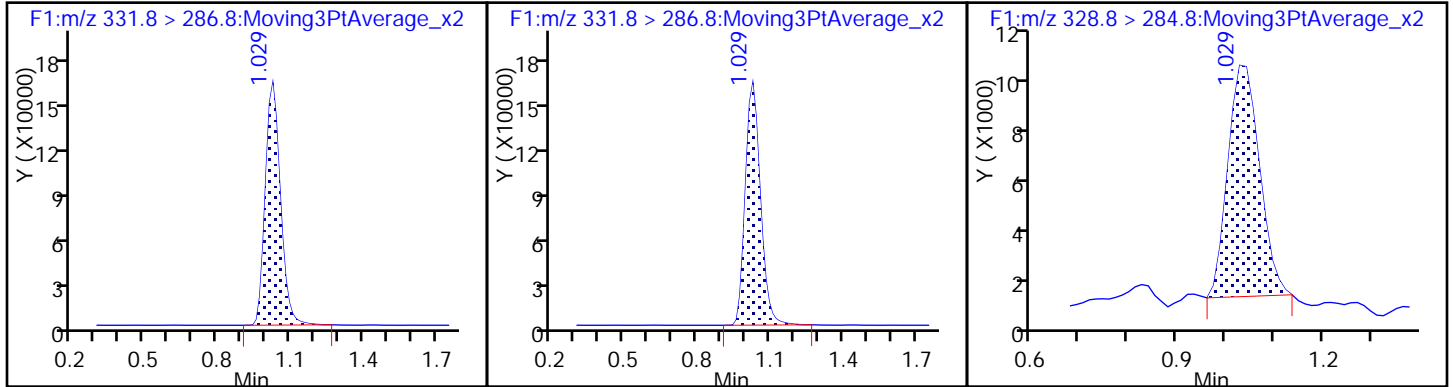
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12029.d  
 Lims ID: 140-10863-A-3-A  
 Client ID: H-2205 R1 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:48:32 ALS Bottle#: 27 Worklist Smp#: 29  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-3-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:00

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.07	90.67

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: H-2212 R2 M0010 IMP COND Lab Sample ID: 140-10863-7  
 Matrix: Air Lab File ID: hfpo718C12030.d  
 Analysis Method: 8321A Date Collected: 03/02/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.02 (Sample) Date Analyzed: 03/12/2018 09:51  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	ND		0.125	0.00638

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	89		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12030.d  
 Lims ID: 140-10863-A-7-A  
 Client ID: H-2212 R2 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:51:46 ALS Bottle#: 28 Worklist Smp#: 30  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-7-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	667447	8.94	2962
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		667447	10.0	2962

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12030.d

Injection Date: 12-Mar-2018 09:51:46

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-7-A

Lab Sample ID: 280-10863-7

Client ID: H-2212 R2 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 28

Worklist Smp#: 30

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

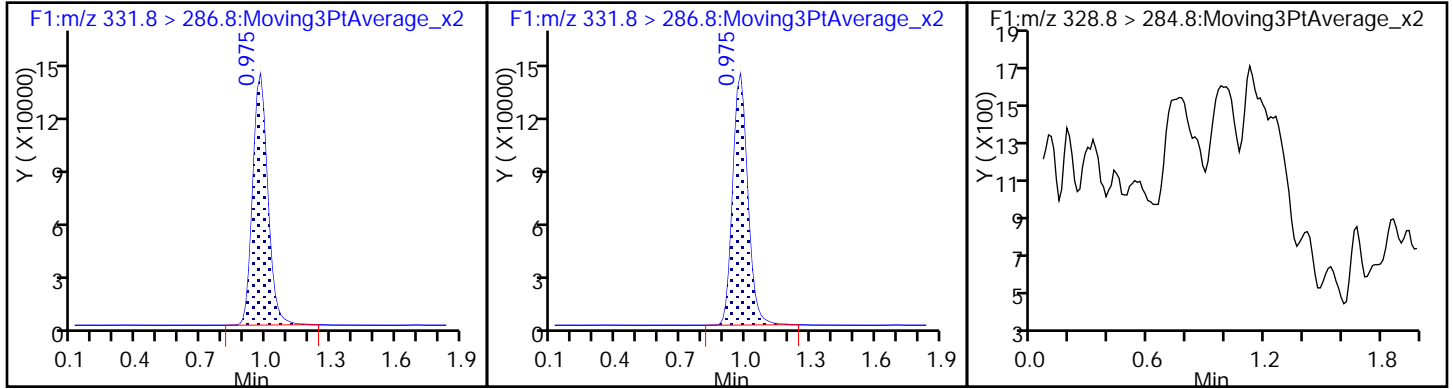
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12030.d  
 Lims ID: 140-10863-A-7-A  
 Client ID: H-2212 R2 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:51:46 ALS Bottle#: 28 Worklist Smp#: 30  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-7-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:03

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.94	89.40

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: H-2226 R4 M0010 IMP COND Lab Sample ID: 140-10863-11  
 Matrix: Air Lab File ID: hfpo718C12031.d  
 Analysis Method: 8321A Date Collected: 03/01/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.02 (Sample) Date Analyzed: 03/12/2018 09:55  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.227		0.125	0.00638

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	92		50-200



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12031.d  
 Lims ID: 140-10863-A-11-A  
 Client ID: H-2226 R4 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:55:02 ALS Bottle#: 29 Worklist Smp#: 31  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-11-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	685103	9.18	3116
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		685103	10.0	3116
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	68666	0.9082	25.2

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12031.d

Injection Date: 12-Mar-2018 09:55:02

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-11-A

Lab Sample ID: 280-10863-11

Client ID: H-2226 R4 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 29

Worklist Smp#: 31

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

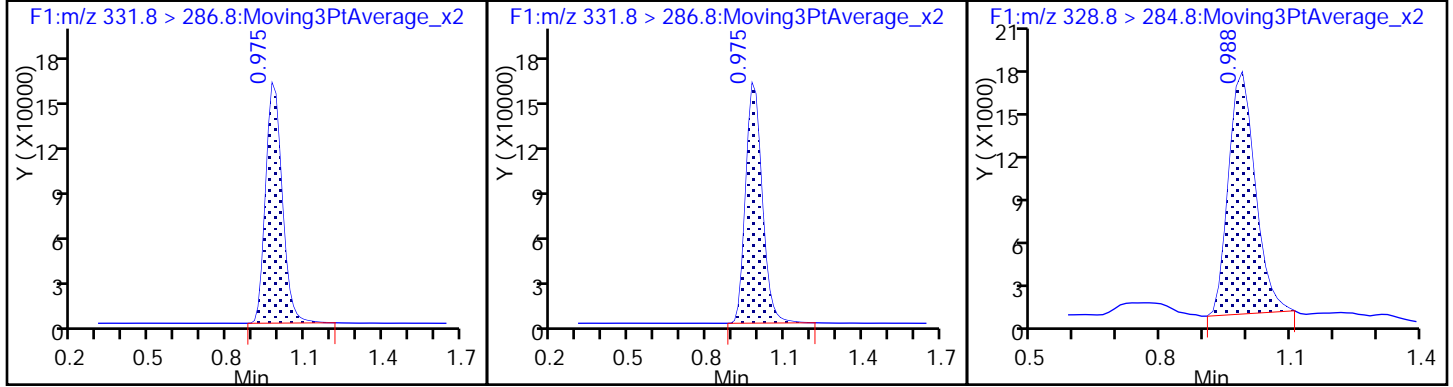
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12031.d  
 Lims ID: 140-10863-A-11-A  
 Client ID: H-2226 R4 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:55:02 ALS Bottle#: 29 Worklist Smp#: 31  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-11-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:07

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.18	91.76

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: H-2233 R5 M0010 IMP COND Lab Sample ID: 140-10863-15  
 Matrix: Air Lab File ID: hfpo718C12032.d  
 Analysis Method: 8321A Date Collected: 03/01/2018 00:00  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 0.02 (Sample) Date Analyzed: 03/12/2018 09:58  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.250		0.125	0.00638

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	88		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12032.d  
 Lims ID: 140-10863-A-15-A  
 Client ID: H-2233 R5 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:58:18 ALS Bottle#: 30 Worklist Smp#: 32  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	659295	8.83	2446
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		659295	10.0	2446
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	1.002	1.056	-0.054	1.000	72566	1.00	26.4

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12032.d

Injection Date: 12-Mar-2018 09:58:18

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-15-A

Lab Sample ID: 280-10863-15

Client ID: H-2233 R5 M0010 IMP COND

Operator ID: JBH

ALS Bottle#: 30

Worklist Smp#: 32

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

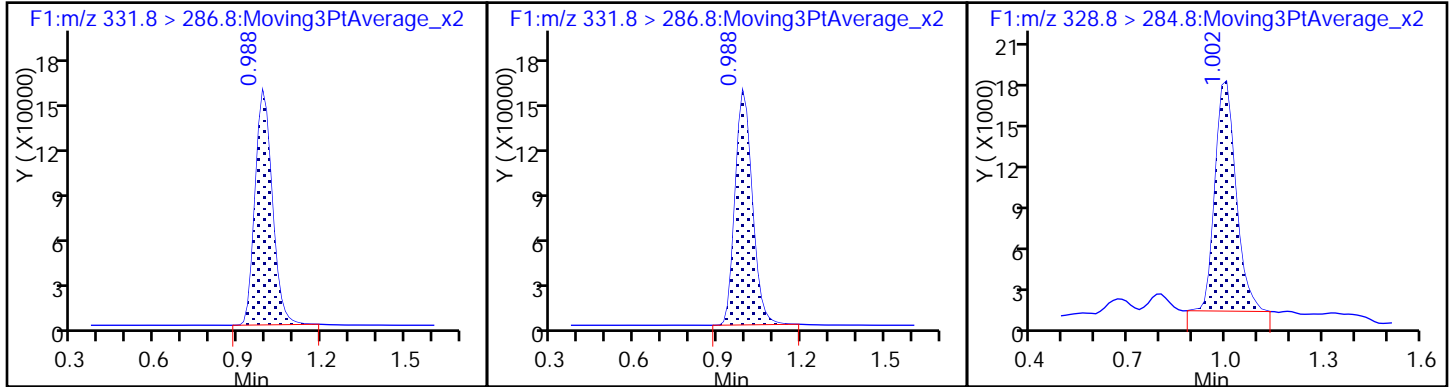
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12032.d  
 Lims ID: 140-10863-A-15-A  
 Client ID: H-2233 R5 M0010 IMP COND  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 09:58:18 ALS Bottle#: 30 Worklist Smp#: 32  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:10

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.83	88.31

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
SDG No.: \_\_\_\_\_  
Client Sample ID: H-2247 R QC M0010 IMP Lab Sample ID: 140-10863-19  
COND BT  
Matrix: Air Lab File ID: hfpo718C12033.d  
Analysis Method: 8321A Date Collected: 03/02/2018 00:00  
Extraction Method: None Date Extracted: 03/11/2018 10:52  
Sample wt/vol: 1 (Sample) Date Analyzed: 03/12/2018 10:01  
Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.0106		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	69		50-200



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12033.d  
 Lims ID: 140-10863-A-19-A  
 Client ID: H-2247 R QC M0010 IMP COND BT  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 10:01:34 ALS Bottle#: 31 Worklist Smp#: 33  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-19-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	513558	6.88	1874
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		513558	10.0	1874
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	1.002	1.056	-0.054	1.000	117337	2.11	38.5

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12033.d

Injection Date: 12-Mar-2018 10:01:34

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-19-A

Lab Sample ID: 280-10863-19

Client ID: H-2247 R QC M0010 IMP COND BT

Operator ID: JBH

ALS Bottle#: 31

Worklist Smp#: 33

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

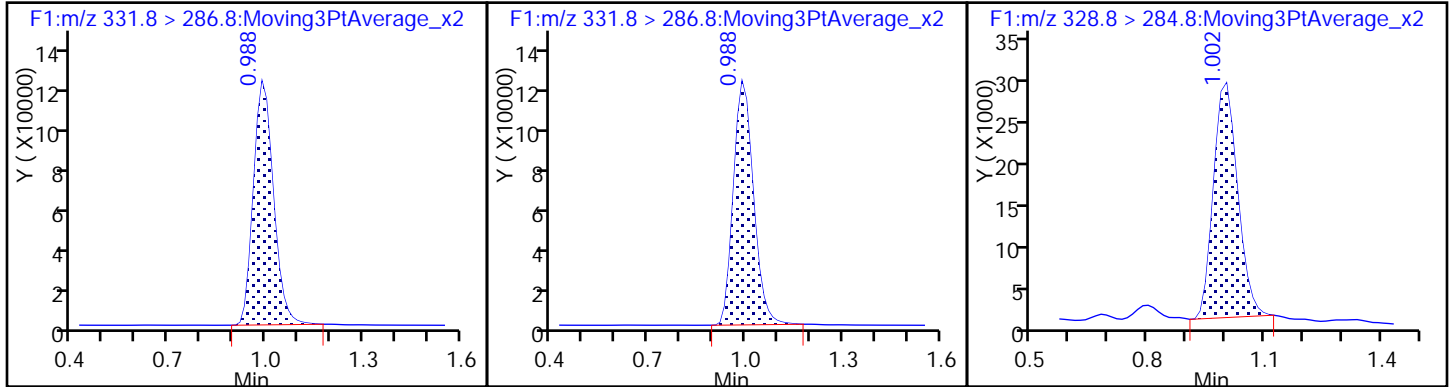
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12033.d  
 Lims ID: 140-10863-A-19-A  
 Client ID: H-2247 R QC M0010 IMP COND BT  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 10:01:34 ALS Bottle#: 31 Worklist Smp#: 33  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-19-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:14

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	6.88	68.79

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Denver</u>	Job No.: <u>140-10863-1</u>
SDG No.: _____	
Client Sample ID: <u>H-2250 R QC M0010 DI WATER RB</u>	Lab Sample ID: <u>140-10863-21</u>
Matrix: <u>Air</u>	Lab File ID: <u>hfpo718C12034.d</u>
Analysis Method: <u>8321A</u>	Date Collected: <u>03/01/2018 00:00</u>
Extraction Method: <u>None</u>	Date Extracted: <u>03/11/2018 10:52</u>
Sample wt/vol: <u>1(Sample)</u>	Date Analyzed: <u>03/12/2018 10:04</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20(uL)</u>	GC Column: <u>Synergi Hydro</u> ID: _____
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>407567</u>	Units: <u>ug/Sample</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	ND		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	81		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12034.d  
 Lims ID: 140-10863-A-21-A  
 Client ID: H-2250 R QC M0010 DI WATER RB  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 10:04:50 ALS Bottle#: 32 Worklist Smp#: 34  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-21-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 0.975 1.045 -0.070 1.000 605199 8.11 2271  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 0.975 1.045 -0.070 605199 10.0 2271

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12034.d

Injection Date: 12-Mar-2018 10:04:50

Instrument ID: LC\_LCMS7

Lims ID: 140-10863-A-21-A

Lab Sample ID: 280-10863-21

Client ID: H-2250 R QC M0010 DI WATER RB

Operator ID: JBH

ALS Bottle#: 32

Worklist Smp#: 34

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

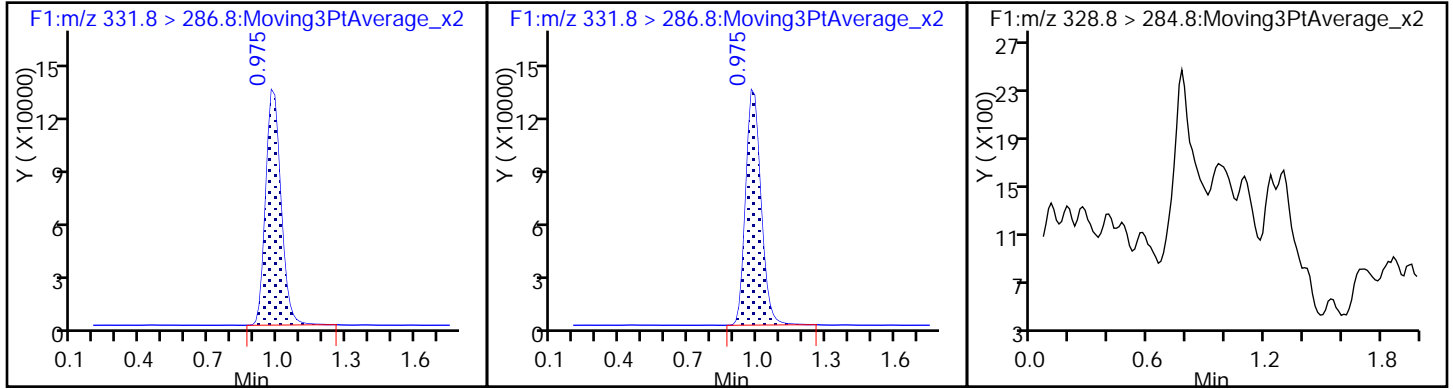
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12034.d  
 Lims ID: 140-10863-A-21-A  
 Client ID: H-2250 R QC M0010 DI WATER RB  
 Sample Type: Client  
 Inject. Date: 12-Mar-2018 10:04:50 ALS Bottle#: 32 Worklist Smp#: 34  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: 140-10863-A-21-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:18

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.11	81.06

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 140-10863-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8	LVL 9		RT WINDOW	AVG RT
HFPO-DA	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056		0.556 - 1.556	1.056
13C3 HFPO-DA	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.056	1.056		0.545 - 1.545	1.045



FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 140-10863-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5 LVL 9	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
13C3 HFPO-DA	75771 75244 71284	75964 75940	72010 75039	77000 73687	Ave		74659.8778			2.6			30.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
 LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA  
 CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 140-10863-1 Analy Batch No.: 404345  
 SDG No.: \_\_\_\_\_  
 Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N  
 Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
HFPO-DA	1.1630	1.1250	1.0756	1.0527	1.1211	Lin1	0.0361	1.0638						1.0000		0.9900	
	1.1128	1.0911	1.0665	1.0507													

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 140-10863-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
		LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
13C3 HFPO-DA	Ave	757714	759642	720099	769995	752444	10.0	10.0	10.0	10.0	10.0
		759397	750388	736869	712841		10.0	10.0	10.0	10.0	

Curve Type Legend:

Ave = Average

FORM VI  
 LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 140-10863-1 Analy Batch No.: 404345

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 GC Column: Synergi Hyd ID: \_\_\_\_\_ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
HFPO-DA	13CP ODA	Lin1	22031 845082	42730 2046873	77455 3929397	162117 7489478	421775	0.250 10.0	0.500 25.0	1.00 50.0	2.00 100	5.00

Curve Type Legend:

Lin1 = Linear 1/conc ISTD

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d  
 Lims ID: std001  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 08-Feb-2018 13:05:38 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L1  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:13 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.042	1.045	-0.003		757714	10.0	1562	
\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.042	1.045	-0.003	1.000	757714	10.1	1562	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.056	1.056	0.0	1.000	22031	0.2394	4.4	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO\_CAL-1\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d

Injection Date: 08-Feb-2018 13:05:38

Instrument ID: LC\_LCMS7

Lims ID: std001

Client ID:

Operator ID: JBH

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

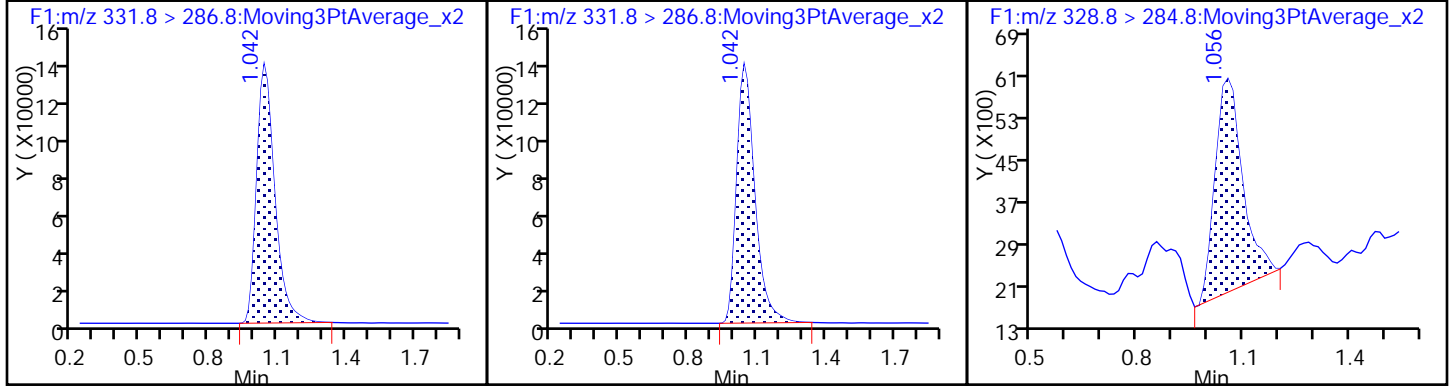
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 <sup>13</sup>C3 HFPO-DA (IS)

\$ 3 <sup>13</sup>C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver

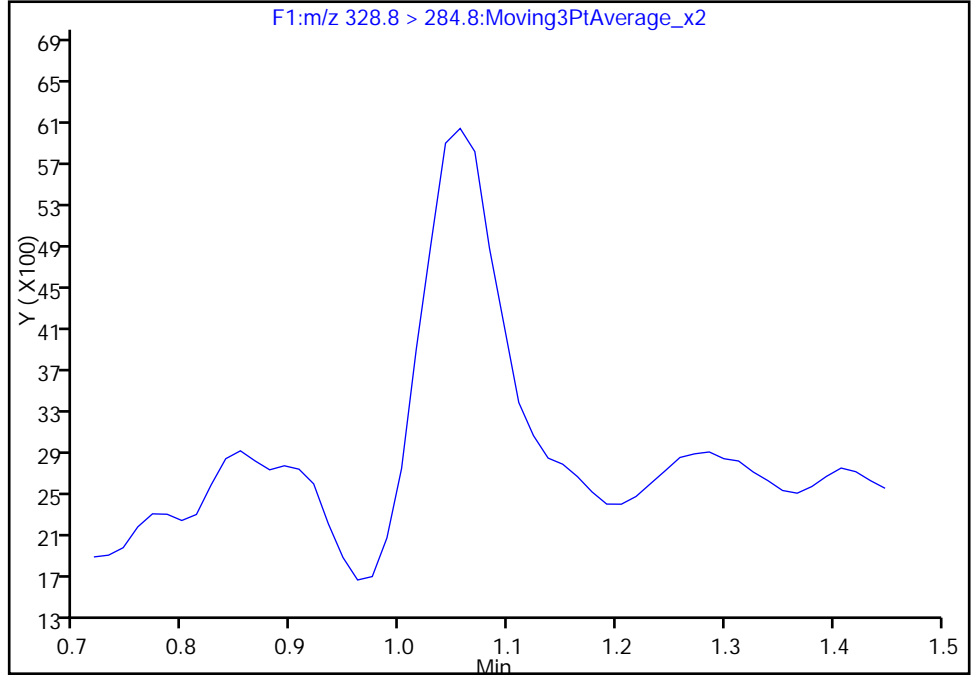
Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08034.d  
Injection Date: 08-Feb-2018 13:05:38 Instrument ID: LC\_LCMS7  
Lims ID: std001  
Client ID:  
Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 20.0 ul Dil. Factor: 1.0000  
Method: HFPO Limit Group: LC - 8321A\_HFPO\_Du  
Column: Detector F1:MRM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

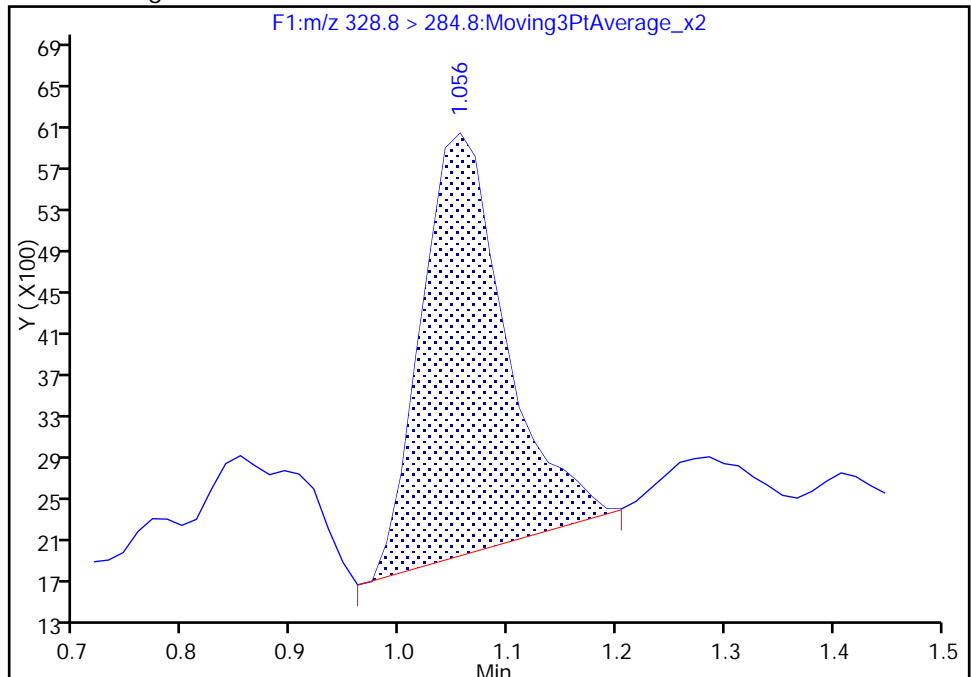
Not Detected  
Expected RT: 1.06

Processing Integration Results



RT: 1.06  
Area: 22031  
Amount: 0.239356  
Amount Units: ug/l

Manual Integration Results



Reviewer: meyera, 08-Feb-2018 15:19:01  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d  
 Lims ID: std002  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 08-Feb-2018 13:08:52 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L2  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.042	1.045	-0.003	1.000	759642	10.2	1267	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.042	1.045	-0.003		759642	10.0	1267	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.056	1.056	0.0	1.000	42730	0.4948	6.5	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO\_CAL-2\_00033 Amount Added: 1.00 Units: mL



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d

Injection Date: 08-Feb-2018 13:08:52

Instrument ID: LC\_LCMS7

Lims ID: std002

Client ID:

Operator ID: JBH

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

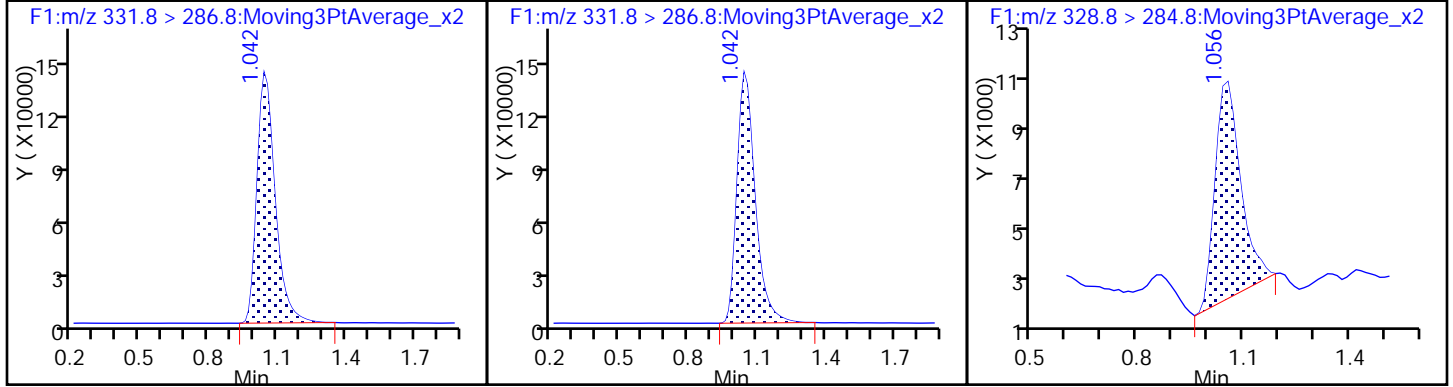
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver

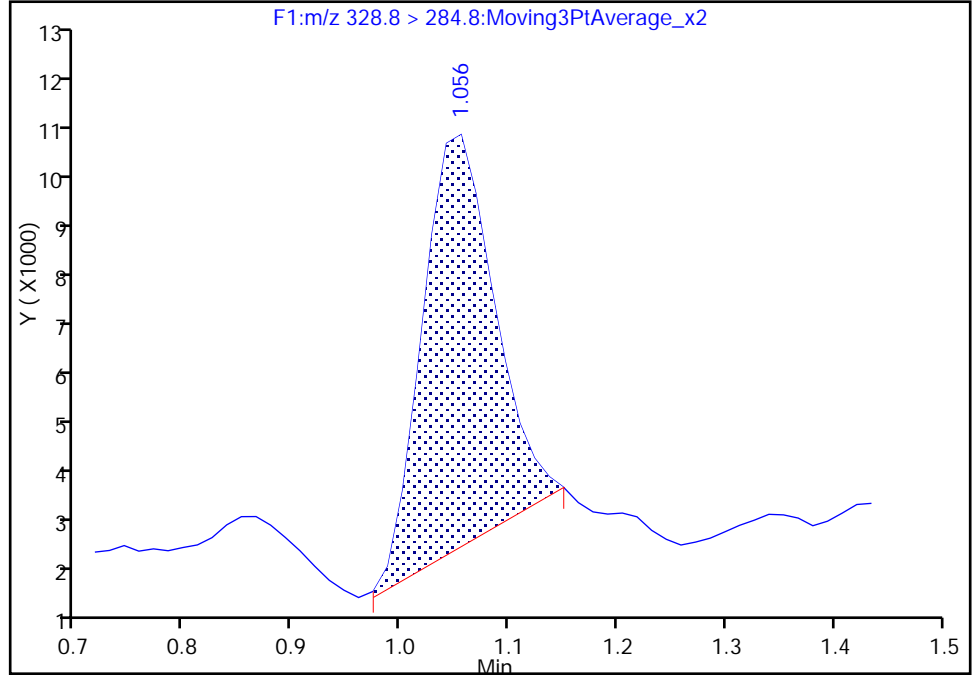
Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08035.d  
Injection Date: 08-Feb-2018 13:08:52 Instrument ID: LC\_LCMS7  
Lims ID: std002  
Client ID:  
Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 20.0 ul Dil. Factor: 1.0000  
Method: HFPO Limit Group: LC - 8321A\_HFPO\_Du  
Column: Detector F1:M/RM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

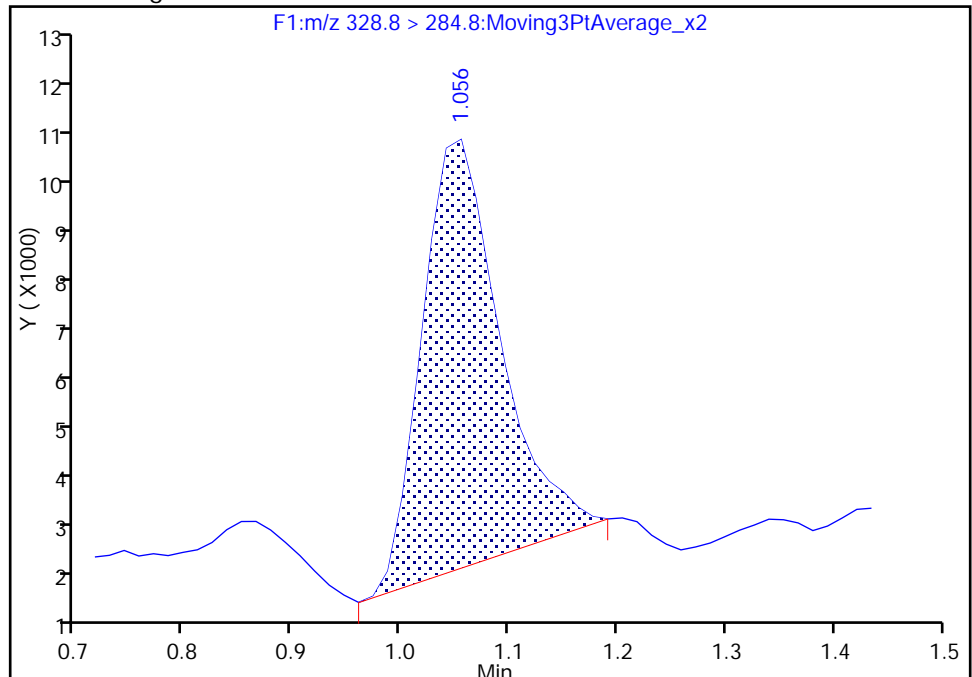
RT: 1.06  
Area: 38092  
Amount: 0.452274  
Amount Units: ug/l

Processing Integration Results



RT: 1.06  
Area: 42730  
Amount: 0.494804  
Amount Units: ug/l

Manual Integration Results



Reviewer: meyera, 08-Feb-2018 15:19:12  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08036.d  
 Lims ID: std003  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 08-Feb-2018 13:12:06 ALS Bottle#: 4 Worklist Smp#: 5  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L3  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.042	1.045	-0.003		720099	10.0	956	
\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.042	1.045	-0.003	1.000	720099	9.65	956	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.056	1.056	0.0	1.000	77455	0.9771	10.6	

Reagents:

HFPO\_CAL-3\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08036.d

Injection Date: 08-Feb-2018 13:12:06

Instrument ID: LC\_LCMS7

Lims ID: std003

Client ID:

Operator ID: JBH

ALS Bottle#: 4

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

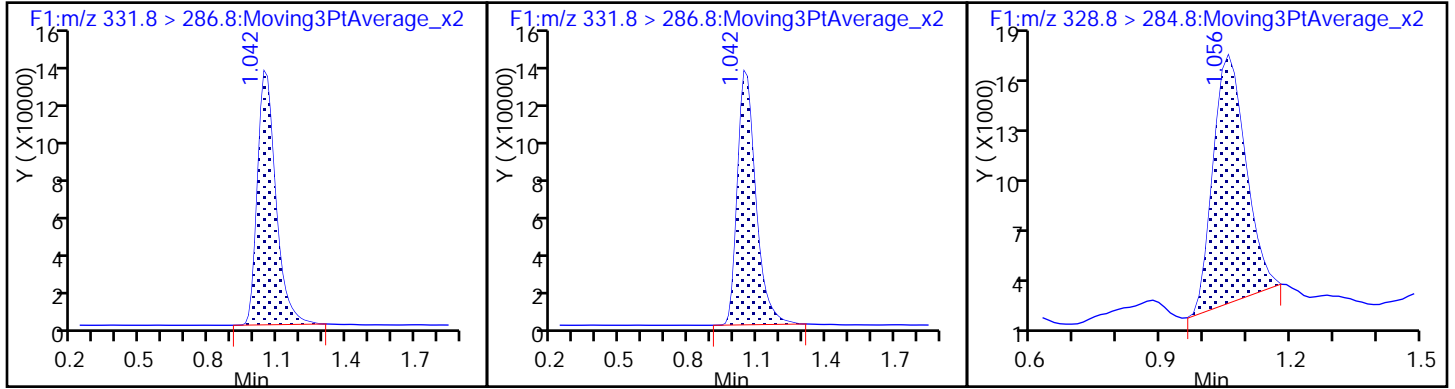
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08037.d  
 Lims ID: std004  
 Client ID:  
 Sample Type: IC Calib Level: 4  
 Inject. Date: 08-Feb-2018 13:15:21 ALS Bottle#: 5 Worklist Smp#: 6  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L4  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 769995 10.3 1154  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 769995 10.0 1154  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 162117 1.95 26.1

Reagents:

HFPO\_CAL-4\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08037.d

Injection Date: 08-Feb-2018 13:15:21

Instrument ID: LC\_LCMS7

Lims ID: std004

Client ID:

Operator ID: JBH

ALS Bottle#: 5

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

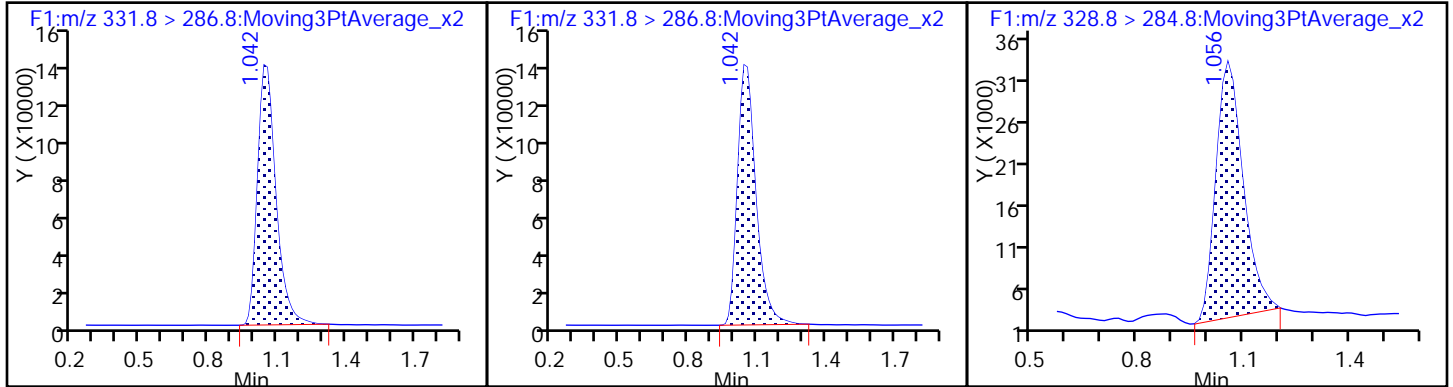
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08038.d  
 Lims ID: std005  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 08-Feb-2018 13:18:35 ALS Bottle#: 6 Worklist Smp#: 7  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L5  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 752444 10.0 1072  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 752444 10.1 1072  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 421775 5.24 66.0

Reagents:

HFPO\_CAL-5\_00080 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08038.d

Injection Date: 08-Feb-2018 13:18:35

Instrument ID: LC\_LCMS7

Lims ID: std005

Client ID:

Operator ID: JBH

ALS Bottle#: 6

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

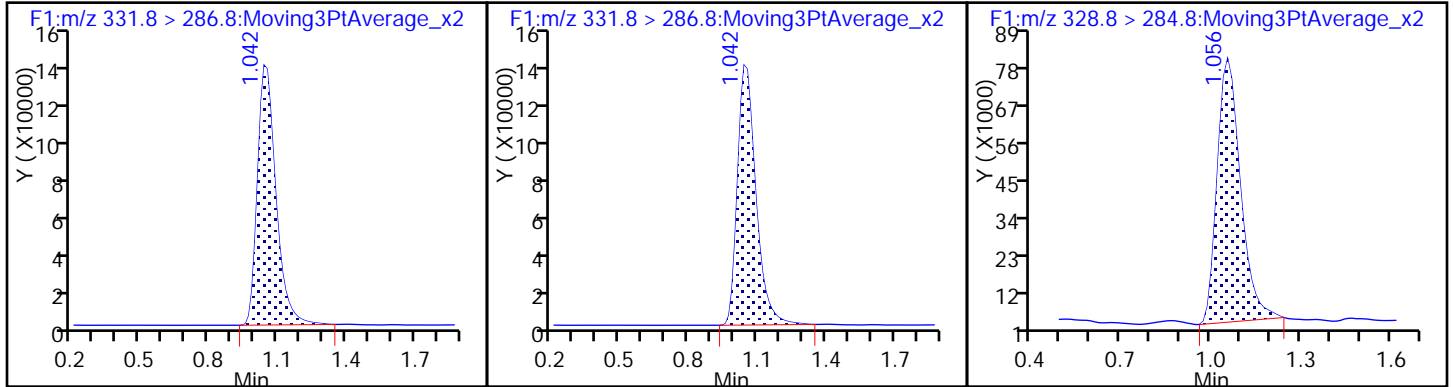
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid





TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08039.d  
 Lims ID: std006  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 08-Feb-2018 13:21:49 ALS Bottle#: 7 Worklist Smp#: 8  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L6  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759397 10.2 1193  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 759397 10.0 1193  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 845082 10.4 146

Reagents:

HFPO\_CAL-6\_00080 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08039.d

Injection Date: 08-Feb-2018 13:21:49

Instrument ID: LC\_LCMS7

Lims ID: std006

Client ID:

Operator ID: JBH

ALS Bottle#: 7

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

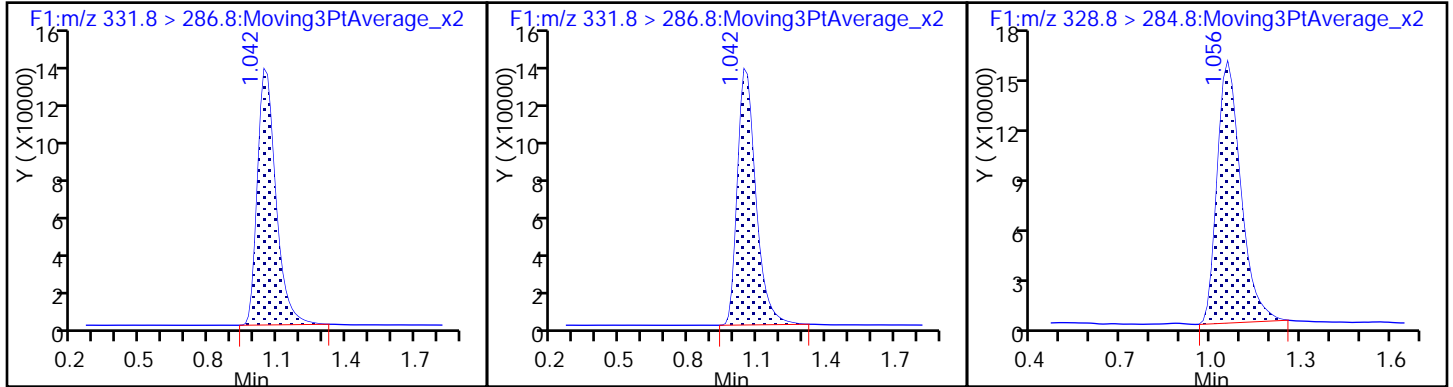
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08040.d  
 Lims ID: std007  
 Client ID:  
 Sample Type: IC Calib Level: 7  
 Inject. Date: 08-Feb-2018 13:25:03 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L7  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.042 1.045 -0.003 750388 10.0 1247  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.042 1.045 -0.003 1.000 750388 10.1 1247  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 2046873 25.6 246

Reagents:

HFPO\_CAL-7\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08040.d

Injection Date: 08-Feb-2018 13:25:03

Instrument ID: LC\_LCMS7

Lims ID: std007

Client ID:

Operator ID: JBH

ALS Bottle#: 8

Worklist Smp#: 9

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

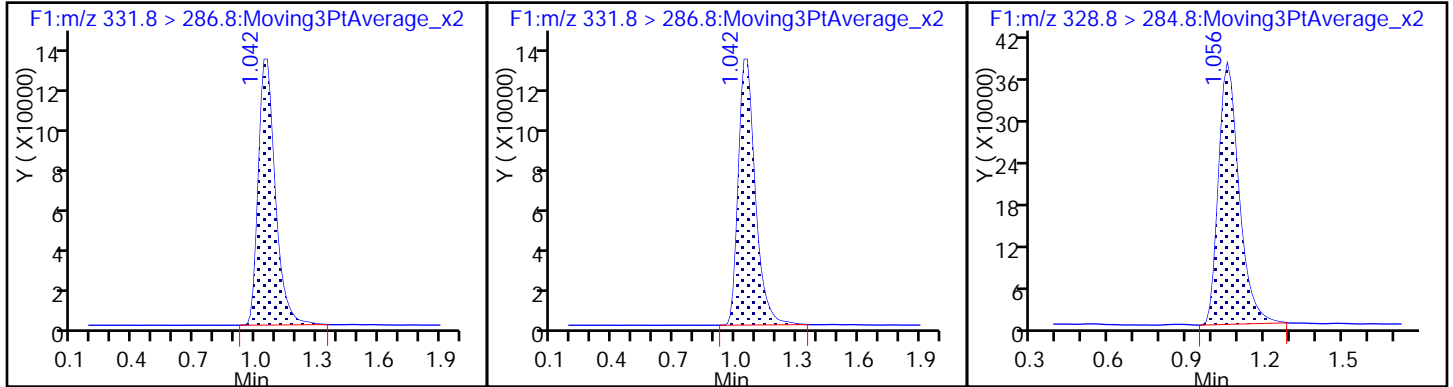
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08041.d  
 Lims ID: std008  
 Client ID:  
 Sample Type: IC Calib Level: 8  
 Inject. Date: 08-Feb-2018 13:28:18 ALS Bottle#: 9 Worklist Smp#: 10  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L8  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.056 1.045 0.011 1.000 736869 9.87 1055  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.056 1.045 0.011 736869 10.0 1055  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 3929397 50.1 416

Reagents:

HFPO\_CAL-8\_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08041.d

Injection Date: 08-Feb-2018 13:28:18

Instrument ID: LC\_LCMS7

Lims ID: std008

Client ID:

Operator ID: JBH

ALS Bottle#: 9

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

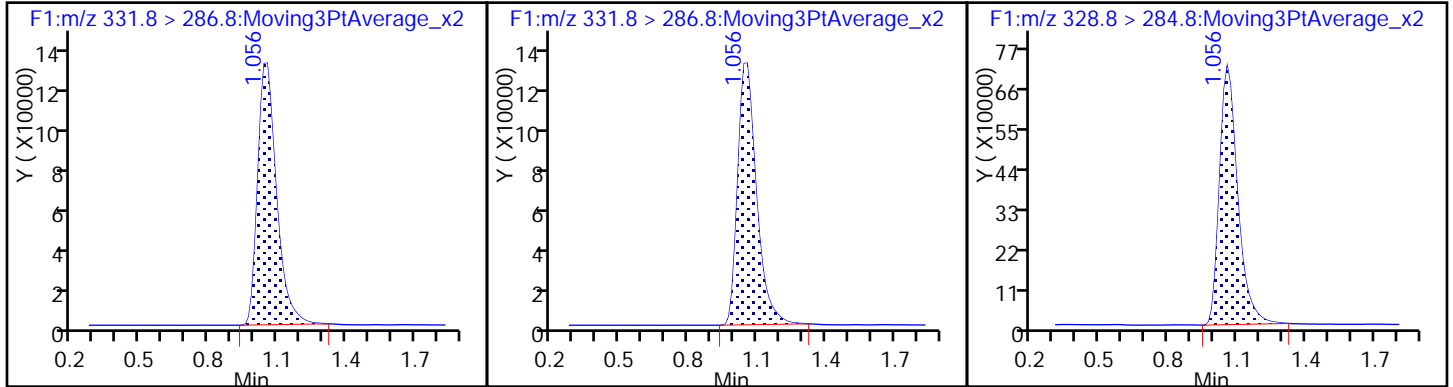
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Lims ID: std009  
 Client ID:  
 Sample Type: IC Calib Level: 9  
 Inject. Date: 08-Feb-2018 13:31:32 ALS Bottle#: 10 Worklist Smp#: 11  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: L9  
 Misc. Info.: HFPO18B08  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.056 1.045 0.011 712841 10.0 1141  
 \$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.056 1.045 0.011 1.000 712841 9.55 1141  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.056 1.056 0.0 1.000 7489478 98.7 561

Reagents:

HFPO\_CAL-9\_00001 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d

Injection Date: 08-Feb-2018 13:31:32

Instrument ID: LC\_LCMS7

Lims ID: std009

Client ID:

Operator ID: JBH

ALS Bottle#: 10

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

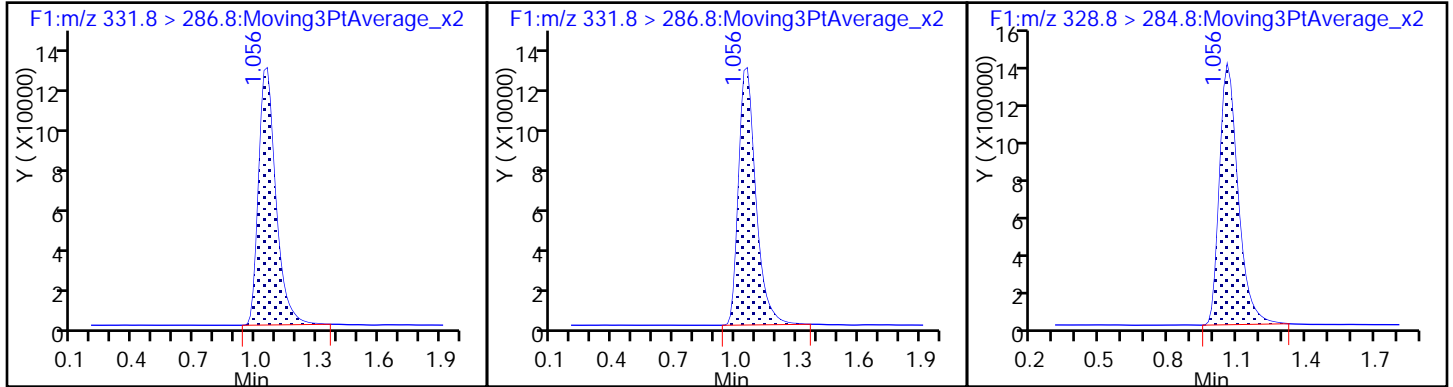
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid





FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-407567/18 Calibration Date: 03/12/2018 09:12  
 Instrument ID: LC\_LCMS7 Calib Start Date: 02/08/2018 13:05  
 GC Column: Synergi Hydro ID: \_\_\_\_\_ Calib End Date: 02/08/2018 13:31  
 Lab File ID: hfpo718C12018.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		0.9658		9.04	10.0	-9.6	20.0
13C3 HFPO-DA	Ave	74660	55461		7.43	10.0	-25.7	

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12018.d  
 Lims ID: CCV L6  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 12-Mar-2018 09:12:45 ALS Bottle#: 4 Worklist Smp#: 18  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L6  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.029 1.045 -0.016 1.000 554608 7.43 2070  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.029 1.045 -0.016 554608 10.0 2070  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.042 1.056 -0.014 1.000 535617 9.04 147

Reagents:

HFPO\_CAL-6\_00083 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12018.d

Injection Date: 12-Mar-2018 09:12:45

Instrument ID: LC\_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 4

Worklist Smp#: 18

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

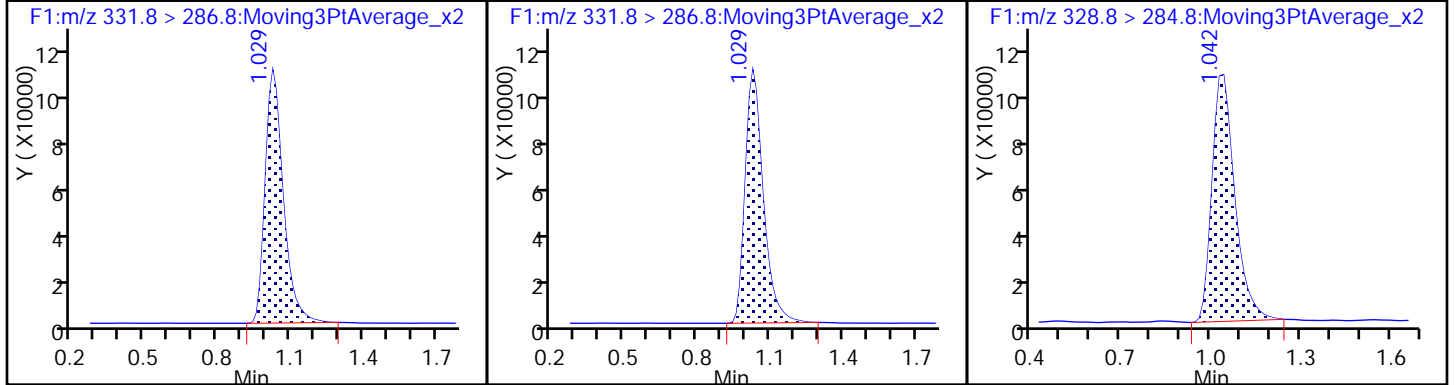
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-407567/28 Calibration Date: 03/12/2018 09:45  
 Instrument ID: LC\_LCMS7 Calib Start Date: 02/08/2018 13:05  
 GC Column: Synergi Hydro ID: \_\_\_\_\_ Calib End Date: 02/08/2018 13:31  
 Lab File ID: hfpo718C12028.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.105		5.16	5.00	3.2	20.0
13C3 HFPO-DA	Ave	74660	55461		7.43	10.0	-25.7	

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12028.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 12-Mar-2018 09:45:17 ALS Bottle#: 3 Worklist Smp#: 28  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:21 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:52:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.015 1.045 -0.030 1.000 554610 7.43 1522  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.015 1.045 -0.030 554610 10.0 1522  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.015 1.056 -0.041 1.000 306348 5.16 91.8

Reagents:

HFPO\_CAL-5\_00083 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12028.d

Injection Date: 12-Mar-2018 09:45:17

Instrument ID: LC\_LCMS7

Lims ID: CCV L5

Client ID:

Operator ID: JBH

ALS Bottle#: 3

Worklist Smp#: 28

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

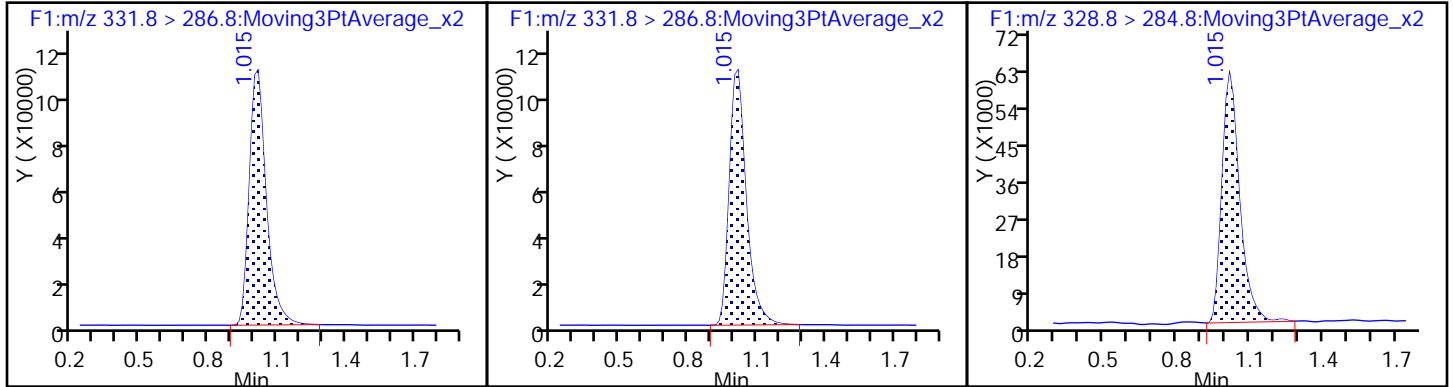
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-407567/35 Calibration Date: 03/12/2018 10:08  
 Instrument ID: LC\_LCMS7 Calib Start Date: 02/08/2018 13:05  
 GC Column: Synergi Hydro ID: \_\_\_\_\_ Calib End Date: 02/08/2018 13:31  
 Lab File ID: hfpo718C12035.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		0.9781		9.16	10.0	-8.4	20.0
13C3 HFPO-DA	Ave	74660	55347		7.41	10.0	-25.9	

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12035.d  
 Lims ID: CCV L6  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 12-Mar-2018 10:08:06 ALS Bottle#: 4 Worklist Smp#: 35  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L6  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Sublist: chrom-HFPO\*sub1  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:29 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:53:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA  
 331.8 > 286.8 1.002 1.045 -0.043 1.000 553470 7.41 1641  
 \* 2 13C3 HFPO-DA (IS)  
 331.8 > 286.8 1.002 1.045 -0.043 553470 10.0 1641  
 1 Perfluoro(2-propoxypropanoic) acid  
 328.8 > 284.8 1.015 1.056 -0.041 1.000 541321 9.16 150

Reagents:

HFPO\_CAL-6\_00083 Amount Added: 1.00 Units: mL



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12035.d

Injection Date: 12-Mar-2018 10:08:06

Instrument ID: LC\_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 4

Worklist Smp#: 35

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

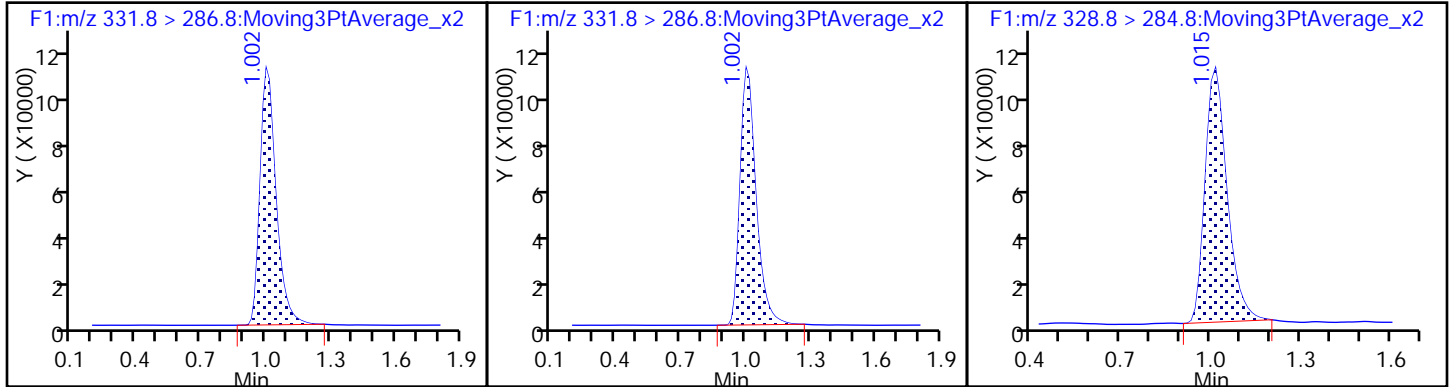
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

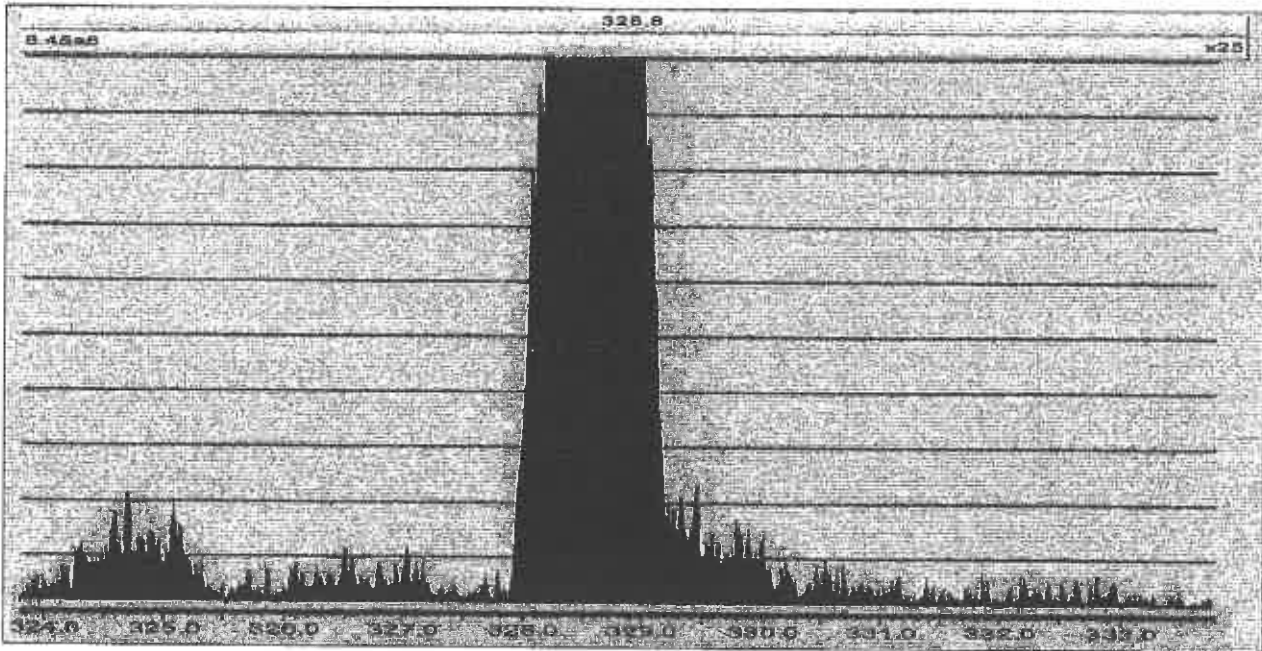
1 Perfluoro(2-propoxypropanoic) acid



File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS\FBA453

Printed: Monday, March 12, 2018 08:05:24 Mountain Daylight Time



Type	Start Mass	End Mass	Set Mass
MS1 Scan	323.80	333.80	
<b>Source (ES-)</b>	<b>Settings</b>	<b>Readbacks</b>	
Capillary (kV)	0.50	0.53	
Cone (V)	10.00	-21.06	
Extractor (V)	3.00	-10.61	
Source Temperature (°C)	120	120	
Desolvation Temperature (°C)	200	200	
Cone Gas Flow (L/Hr)	50	49	
Desolvation Gas Flow (L/Hr)	800	795	
Collision Gas Flow (mL/Min)	0.15	0.04	
<b>Analyser</b>	<b>Settings</b>	<b>Readbacks</b>	
LM 1 Resolution	2.8		
HM 1 Resolution	14.8		
Ion Energy 1	0.7		
MS Mode Collision Energy	7.00		
MSMS Mode Collision Energy	20.00		
MS Mode Entrance	0.50		
MS Mode Exit	0.50		
Gas On MS Mode Entrance	0.50		
Gas On MS Mode Exit	0.50		
Gas On MSMS Mode Entrance	0.50		
Gas On MSMS Mode Exit	0.50		
Gas Off MS Mode Entrance	30.00		
Gas Off MS Mode Exit	30.00		
Gas Off MSMS Mode Entrance	2.00		
Gas Off MSMS Mode Exit	2.00		
ScanWave MS Mode Entrance	0.50		
ScanWave MS Mode Exit	0.50		
ScanWave MSMS Mode Entrance	0.50		
ScanWave MSMS Mode Exit	0.50		
LM 2 Resolution	2.9		
HM 2 Resolution	14.7		
Ion Energy 2	0.3		

*chudapom  
3/13/18*

File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.lpr  
Instrument: XEVO-TQMS\FVBA453  
Printed: Monday, March 12, 2018 08:05:24 Mountain Daylight Time

Multiplier 523.81  
Active Reservoir A

Pressure Gauges  
Collision Cell Pressure (mbar) 7.830201e-005

**Instrument Configuration**

Automatic Mode  
MS Inter-scan delay (secs) 0.005  
Polarity/Mode switch Inter-scan delay (secs) 0.020  
Enhanced Inter-scan delay (secs) 0.020  
Inter-channel delay - See Tables

**MS 1 Delay Table:**

R delay  
≤ 0.500 0.005  
≤ 2.000 0.008  
≤ 4.000 0.010  
≤ 11.000 0.012  
> 11.000 0.014

*chudapom*  
*3/13/18*

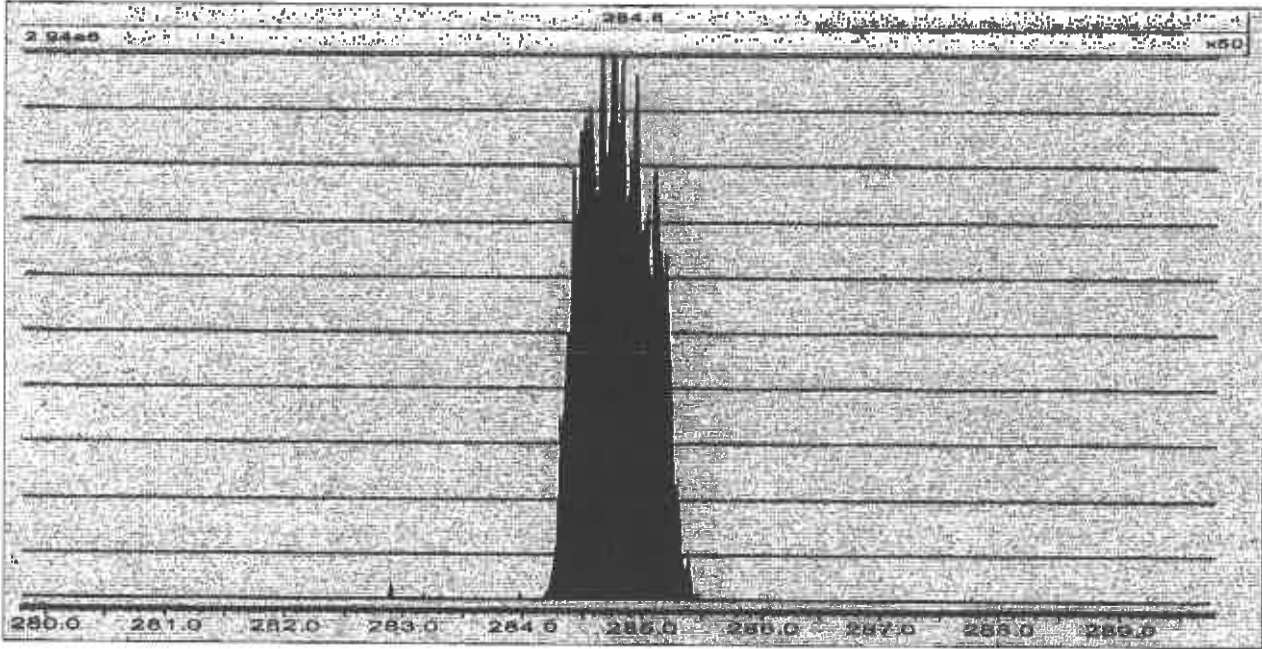
**MS 2 Delay Table:**

R delay  
≤ 8.000 0.005  
≤ 25.000 0.006  
> 25.000 0.007

File: C:\MassLynx\8321.PROVACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS#VBA453

Printed: Monday, March 12, 2018 08:06:05 Mountain Daylight Time



Type	Start Mass	End Mass	Set Mass
Daughter Scan	279.80	289.80	328.80
<b>Source (ES-)</b>	<b>Settings</b>	<b>Readbacks</b>	
Capillary (kV)	0.50	0.52	
Cone (V)	10.00	-21.06	
Extractor (V)	3.00	-10.61	
Source Temperature (°C)	120	120	
Desolvation Temperature (°C)	200	200	
Cone Gas Flow (L/Hr)	50	50	
Desolvation Gas Flow (L/Hr)	800	791	
Collision Gas Flow (mL/Min)	0.15	0.14	
<b>Analyser</b>	<b>Settings</b>	<b>Readbacks</b>	
LM 1 Resolution	2.8		
HM 1 Resolution	14.8		
Ion Energy 1	0.7		
MS Mode Collision Energy	7.00		
MSMS Mode Collision Energy	20.00		
MS Mode Entrance	0.50		
MS Mode Exit	0.50		
Gas On MS Mode Entrance	0.50		
Gas On MS Mode Exit	0.50		
Gas On MSMS Mode Entrance	0.50		
Gas On MSMS Mode Exit	0.50		
Gas Off MS Mode Entrance	30.00		
Gas Off MS Mode Exit	30.00		
Gas Off MSMS Mode Entrance	2.00		
Gas Off MSMS Mode Exit	2.00		
ScanWave MS Mode Entrance	0.50		
ScanWave MS Mode Exit	0.50		
ScanWave MSMS Mode Entrance	0.50		
ScanWave MSMS Mode Exit	0.50		
LM 2 Resolution	2.9		
HM 2 Resolution	14.7		
Ion Energy 2	0.3		

*Handwritten:* dudapom  
3/13/18

File: C:\MassLynx\8321.PROVACQUDE\HFPOMRM.lpr

Instrument: XEVO-TQMS\FVA453

Printed: Monday, March 12, 2018 08:06:05 Mountain Daylight Time

Multiplier 523.81  
Active Reservoir A

Pressure Gauges  
Collision Cell Pressure (mbar) 1.119026e-003

Instrument Configuration

Automatic Mode

MS Inter-scan delay (secs) 0.005

Polarity/Mode switch Inter-scan delay (secs) 0.020

Enhanced Inter-scan delay (secs) 0.020

Inter-channel delay - See Tables

MS 1 Delay Table:

R delay

<= 0.500 0.005

<= 2.000 0.008

<= 4.000 0.010

<= 11.000 0.012

> 11.000 0.014

MS 2 Delay Table:

R delay

<= 8.000 0.005

<= 25.000 0.005

> 25.000 0.007

*mduram*  
*3/13/18*

File: c:\masslynx\18321.pro\acqddb\hfpo.exp

Printed: Monday, March 12, 2018 10:32:13 Mountain Daylight Time

Creation Time Fri 18 Nov 2016 09:08:40  
Instrument Identifier XEVO-TQMS#VBA453  
Version Number 1.0  
Duration (min) 2.0  
Calibration Filename C:\MassLynx\IntelliStart\Results\Unit Mass Resolution\Calibration\_20100811

\_2.cal  
Solvent Delay Divert Valve Enabled 0  
Number Of Functions 1

Function 1 : MRM of 2 mass pairs, Time 0.00 to 2.00, ES-

Type MRM  
Ion Mode ES-  
Inter Channel Delay (sec) -1.000  
InterScan Time (sec) -1.000  
Span (Da) 0.5  
Start Time (min) 0.0  
End Time (min) 2.0

Ch	Prnt (Da)	Daq (Da)	Dwell (s)	Cone (V)	Coll (eV)	Delay (s)	Compound
1	329.80	284.80	0.400	10.00	7.00	-1.000	HFPO
2	331.80	286.80	0.400	10.00	7.00	-1.000	HFPO IS

*chudapam*

*3/13/18*

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 280-406765/1-A  
 Matrix: Air Lab File ID: hfpo718C12019.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:16  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	ND		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	94		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d  
 Lims ID: MB 280-406765/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 12-Mar-2018 09:16:02 ALS Bottle#: 18 Worklist Smp#: 19  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: MB280-406765/1-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA

331.8 > 286.8 1.029 1.045 -0.016 1.000 701542 9.40 2791

\* 2 13C3 HFPO-DA (IS)

331.8 > 286.8 1.029 1.045 -0.016 701542 10.0 2791



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d

Injection Date: 12-Mar-2018 09:16:02

Instrument ID: LC\_LCMS7

Lims ID: MB 280-406765/1-A

Client ID:

Operator ID: JBH

ALS Bottle#: 18

Worklist Smp#: 19

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

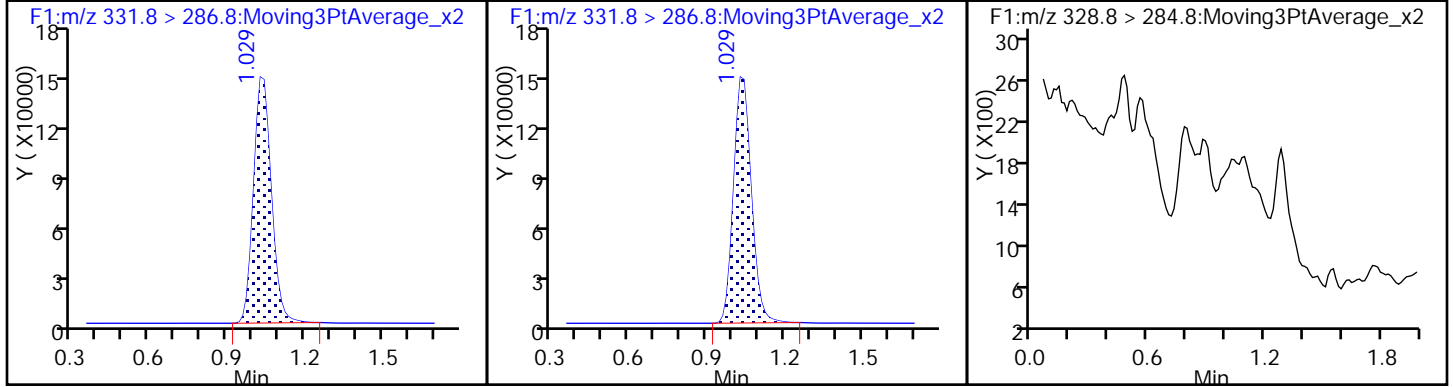
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12019.d  
 Lims ID: MB 280-406765/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 12-Mar-2018 09:16:02 ALS Bottle#: 18 Worklist Smp#: 19  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: MB280-406765/1-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:29

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.40	93.97

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 280-406765/2-A  
 Matrix: Air Lab File ID: hfpo718C12020.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:19  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.05486		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	90		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d  
 Lims ID: LCS 280-406765/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 12-Mar-2018 09:19:17 ALS Bottle#: 19 Worklist Smp#: 20  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCS280-406765/2-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	668790	8.96	3108
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		668790	10.0	3108
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	783092	11.0	306

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d

Injection Date: 12-Mar-2018 09:19:17

Instrument ID: LC\_LCMS7

Lims ID: LCS 280-406765/2-A

Client ID:

Operator ID: JBH

ALS Bottle#: 19

Worklist Smp#: 20

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

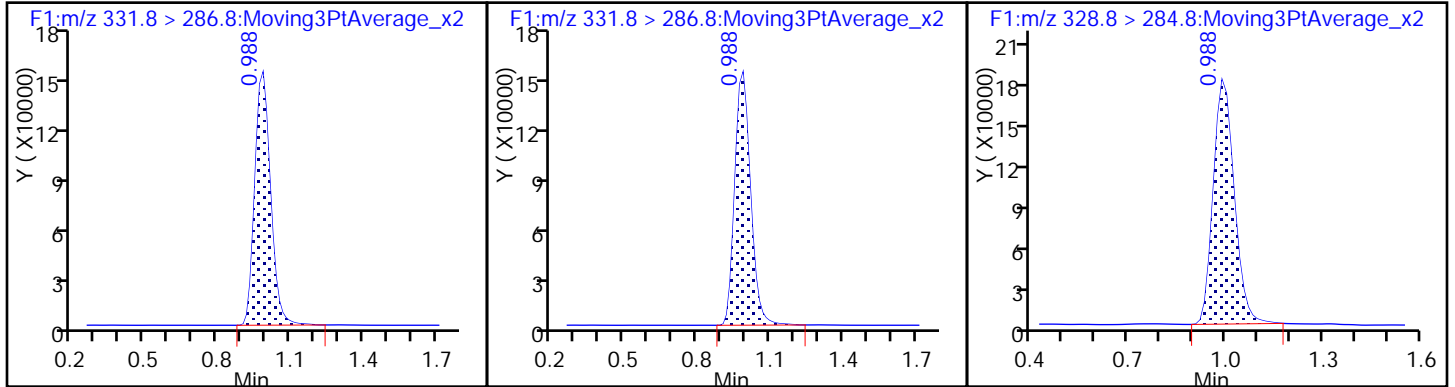
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12020.d  
 Lims ID: LCS 280-406765/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 12-Mar-2018 09:19:17 ALS Bottle#: 19 Worklist Smp#: 20  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCS280-406765/2-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.96	89.58

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCSD 280-406765/14-A  
 Matrix: Air Lab File ID: hfpo718C12021.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:22  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.05420		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	92		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d  
 Lims ID: LCSD 280-406765/14-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 12-Mar-2018 09:22:32 ALS Bottle#: 20 Worklist Smp#: 21  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCSD280-406765/14-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.988	1.045	-0.057	1.000	683235	9.15	2358
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.988	1.045	-0.057		683235	10.0	2358
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	790356	10.8	260



TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d

Injection Date: 12-Mar-2018 09:22:32

Instrument ID: LC\_LCMS7

Lims ID: LCSD 280-406765/14-A

Client ID:

Operator ID: JBH

ALS Bottle#: 20

Worklist Smp#: 21

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

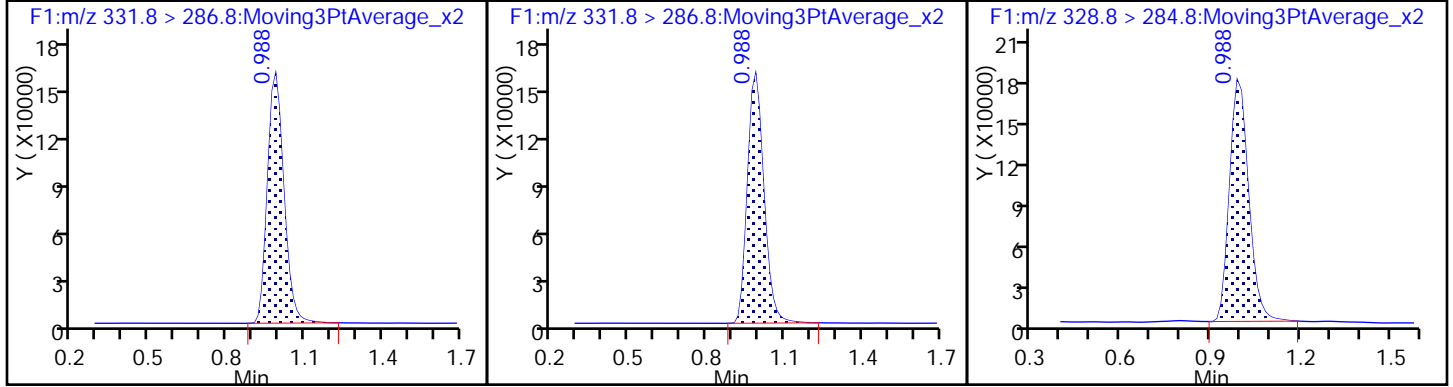
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12021.d  
 Lims ID: LCSD 280-406765/14-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 12-Mar-2018 09:22:32 ALS Bottle#: 20 Worklist Smp#: 21  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LCSD280-406765/14-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:37

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	9.15	91.51

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LLCS 280-406765/15-A  
 Matrix: Air Lab File ID: hfpo718C12022.d  
 Analysis Method: 8321A Date Collected: \_\_\_\_\_  
 Extraction Method: None Date Extracted: 03/11/2018 10:52  
 Sample wt/vol: 1(Sample) Date Analyzed: 03/12/2018 09:25  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Synergi Hydro ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 407567 Units: ug/Sample

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
13252-13-6	HFPO-DA	0.004384		0.00250	0.000128

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	87		50-200

TestAmerica Denver  
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d  
 Lims ID: LLCS 280-406765/15-A  
 Client ID:  
 Sample Type: LLCS  
 Inject. Date: 12-Mar-2018 09:25:47 ALS Bottle#: 21 Worklist Smp#: 22  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LLCS280-406765/15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA	331.8 > 286.8	0.975	1.045	-0.070	1.000	648824	8.69	2403
* 2 13C3 HFPO-DA (IS)	331.8 > 286.8	0.975	1.045	-0.070		648824	10.0	2403
1 Perfluoro(2-propoxypropanoic) acid	328.8 > 284.8	0.988	1.056	-0.068	1.000	62868	0.8769	21.3

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d

Injection Date: 12-Mar-2018 09:25:47

Instrument ID: LC\_LCMS7

Lims ID: LLCS 280-406765/15-A

Client ID:

Operator ID: JBH

ALS Bottle#: 21

Worklist Smp#: 22

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

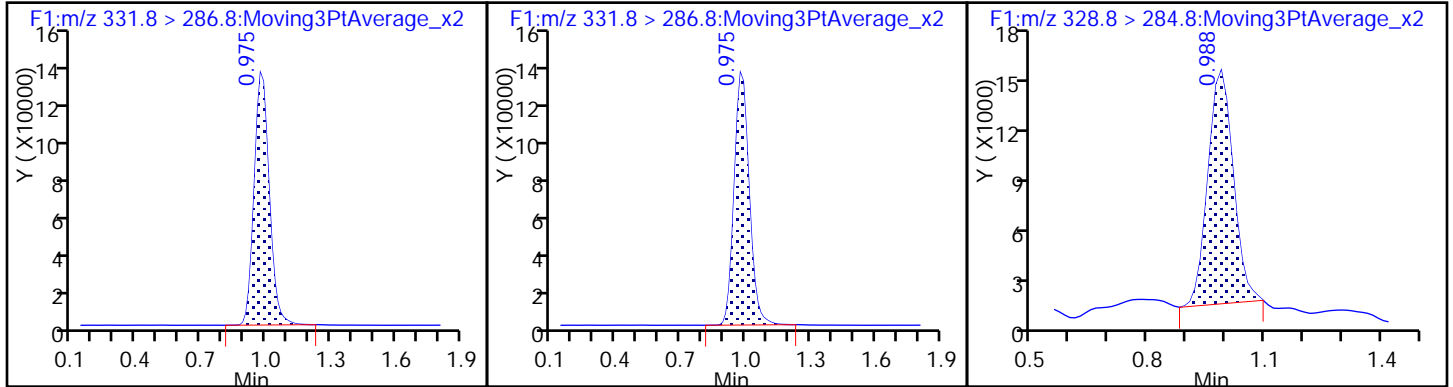
Method: HFPO

Limit Group: LC - 8321A\_HFPO\_Du

\$ 3 13C3 HFPO-DA

\* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver  
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\hfpo718C12022.d  
 Lims ID: LLCS 280-406765/15-A  
 Client ID:  
 Sample Type: LLCS  
 Inject. Date: 12-Mar-2018 09:25:47 ALS Bottle#: 21 Worklist Smp#: 22  
 Injection Vol: 20.0 ul Dil. Factor: 1.0000  
 Sample Info: LLCS280-406765/15-A  
 Misc. Info.: HFPO18C12  
 Operator ID: JBH Instrument ID: LC\_LCMS7  
 Method: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180312-67919.b\HFPO.m  
 Limit Group: LC - 8321A\_HFPO\_Du  
 Last Update: 12-Mar-2018 10:54:04 Calib Date: 08-Feb-2018 13:31:32  
 Integrator: Picker  
 Quant Method: Internal/External Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Denver\ChromData\LC\_LCMS7\20180208-67079.b\hfpo718B08042.d  
 Column 1 : Det: F1:MRM  
 Process Host: XAWRK016

First Level Reviewer: meyera Date: 12-Mar-2018 10:50:40

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.69	86.90

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Start Date: 02/08/2018 13:05

Analysis Batch Number: 404345 End Date: 02/08/2018 13:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD001 280-404345/3 IC		02/08/2018 13:05	1	hfpo718B08034.d	Synergi Hydro
STD002 280-404345/4 IC		02/08/2018 13:08	1	hfpo718B08035.d	Synergi Hydro
STD003 280-404345/5 IC		02/08/2018 13:12	1	hfpo718B08036.d	Synergi Hydro
STD004 280-404345/6 IC		02/08/2018 13:15	1	hfpo718B08037.d	Synergi Hydro
STD005 280-404345/7 IC		02/08/2018 13:18	1	hfpo718B08038.d	Synergi Hydro
STD006 280-404345/8 IC		02/08/2018 13:21	1	hfpo718B08039.d	Synergi Hydro
STD007 280-404345/9 IC		02/08/2018 13:25	1	hfpo718B08040.d	Synergi Hydro
STD008 280-404345/10 IC		02/08/2018 13:28	1	hfpo718B08041.d	Synergi Hydro
STD009 280-404345/11 IC		02/08/2018 13:31	1	hfpo718B08042.d	Synergi Hydro

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS7 Start Date: 03/12/2018 09:12

Analysis Batch Number: 407567 End Date: 03/12/2018 10:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-407567/18		03/12/2018 09:12	1	hfpo718C12018.d	Synergi Hydro
MB 280-406765/1-A		03/12/2018 09:16	1	hfpo718C12019.d	Synergi Hydro
LCS 280-406765/2-A		03/12/2018 09:19	1	hfpo718C12020.d	Synergi Hydro
LCSD 280-406765/14-A		03/12/2018 09:22	1	hfpo718C12021.d	Synergi Hydro
LLCS 280-406765/15-A		03/12/2018 09:25	1	hfpo718C12022.d	Synergi Hydro
ZZZZZ		03/12/2018 09:29	1		Synergi Hydro
ZZZZZ		03/12/2018 09:32	1		Synergi Hydro
ZZZZZ		03/12/2018 09:35	1		Synergi Hydro
ZZZZZ		03/12/2018 09:38	1		Synergi Hydro
ZZZZZ		03/12/2018 09:42	1		Synergi Hydro
CCV 280-407567/28		03/12/2018 09:45	1	hfpo718C12028.d	Synergi Hydro
140-10863-3		03/12/2018 09:48	1	hfpo718C12029.d	Synergi Hydro
140-10863-7		03/12/2018 09:51	1	hfpo718C12030.d	Synergi Hydro
140-10863-11		03/12/2018 09:55	1	hfpo718C12031.d	Synergi Hydro
140-10863-15		03/12/2018 09:58	1	hfpo718C12032.d	Synergi Hydro
140-10863-19		03/12/2018 10:01	1	hfpo718C12033.d	Synergi Hydro
140-10863-21		03/12/2018 10:04	1	hfpo718C12034.d	Synergi Hydro
CCV 280-407567/35		03/12/2018 10:08	1	hfpo718C12035.d	Synergi Hydro



LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Lab Sample ID	Client Sample ID	Method Chain	Basis	VolumeCollect	VolCondUsed	InitialAmount	FinalAmount	HFPO I.S. 00009	HFPO Spike 00004
MB 280-406765/1		None, 8321A				1 Sample	5 mL	0.1 mL	
LCS 280-406765/2		None, 8321A				1 Sample	5 mL	0.1 mL	0.1 mL
140-10863-A-3	H-2205 R1 M0010 IMP COND	None, 8321A	T	210 mL	4.2 mL	0.02 Sample	5 mL	0.1 mL	
140-10863-A-7	H-2212 R2 M0010 IMP COND	None, 8321A	T	300 mL	6.0 mL	0.02 Sample	5 mL	0.1 mL	
140-10863-A-11	H-2226 R4 M0010 IMP COND	None, 8321A	T	210 mL	4.2 mL	0.02 Sample	5 mL	0.1 mL	
140-10863-A-15	H-2233 R5 M0010 IMP COND	None, 8321A	T	200 mL	4.0 mL	0.02 Sample	5 mL	0.1 mL	
140-10863-A-19	H-2247 R QC M0010 IMP COND BT	None, 8321A	T	250 mL	250 mL	1 Sample	5 mL	0.1 mL	
140-10863-A-21	H-2250 R QC M0010 DI WATER RB	None, 8321A	T	250 mL	250 mL	1 Sample	5 mL	0.1 mL	
LCSD 280-406765/14		None, 8321A				1 Sample	5 mL	0.1 mL	0.1 mL
LLCS 280-406765/15		None, 8321A				1 Sample	5 mL	0.1 mL	0.01 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 280-406765/1		None, 8321A		250 mL					
LCS 280-406765/2		None, 8321A		250 mL					
140-10863-A-3	H-2205 R1 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight- 269.6g, tare weight- 26.9g					
140-10863-A-7	H-2212 R2 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight- 267.3g, tare weight- 26.5g					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
140-10863-A-11	H-2226 R4 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight- 276.4g, tare weight- 27.5g					
140-10863-A-15	H-2233 R5 M0010 IMP COND	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight- 272.5g, tare weight- 27.5g					
140-10863-A-19	H-2247 R QC M0010 IMP COND BT	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight-267.4g, tare weight 27.1g					
140-10863-A-21	H-2250 R QC M0010 DI WATER RB	None, 8321A	T	brought up to 250mL for Denver lab to extract Gross weight- 276.4g, tare weight 35.1g					
LCSD 280-406765/14		None, 8321A		250 mL					
LLCS 280-406765/15		None, 8321A		250 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 140-10863-1

SDG No.: \_\_\_\_\_

Batch Number: 406765 Batch Start Date: 03/11/18 10:52 Batch Analyst: Atkinson, Hannah M

Batch Method: None Batch End Date: 03/11/18 14:19

Batch Notes	
Acid ID	2%FormicAcid_147
Balance ID	24350888 (Denver)
Batch Comment	Batch originated by David Stout who brought samples to 250mL Reviewer:HA
Elution Solution ID	10%NH4OH_123
Extraction End time	12:40
Extraction End Date	03/11/2018
Extraction Start time	11:22
Extraction Start Date	03/11/2018
H2O ID	HPLC_water_867
Pipette/Syringe/Dispenser ID	m2. spe-1, syringe
Solvent	Methanol_196
SPE Cartridge Lot ID	S308-0079
SPE Cartridge Type	strata-x-aw-8BSO38FCH
Analyst ID - Spike Analyst	HA
Analyst ID - Spike Witness Analyst	HA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



**Reagent ID: HFPO\_CAL-5\_00083**

Description: level5  
 No. of Bottles: 1  
 Storage Location: LCMS  
 Reagent Volume: 1.000 mL  
 Creation Date: 03/07/2018  
 Open Date:  
 Container(s): 4991513  
 Comment: level-5

Expiration Date: 03/21/2018  
 Laboratory: TestAmerica Denver  
 Prepared By: Meyer, Andrew GC  
 Solvent: 80:20 Methanol : H2O  
 Solvent Lot: 00016

**Reagent Analyte Information**

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00010	03/06/2019	0.80000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00010	03/06/2019	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00005	03/07/2019	0.50000	ug/mL	5.00000	ug/L

**Source Reagents**

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00010	Internal Standard for HFPO 0.8ug/ml		03/06/19				20.00000	uL
HFPO Spike_00005	HFPO LCS/Calibration Spike 0.5ug/ml		03/07/19				10.00000	uL

*Andrew Meyer*  
3/13/18



**Reagent ID: HFPO\_CAL-6\_00083**

**Description:** level6  
**No. of Bottles:** 1  
**Storage Location:** LCMS  
**Reagent Volume:** 1.000 mL  
**Creation Date:** 03/07/2018  
**Open Date:**  
**Container(s):** 4991514  
**Comment:** level-6

**Expiration Date:** 03/21/2018  
**Laboratory:** TestAmerica Denver  
**Prepared By:** Meyer, Andrew GC  
**Solvent:** 80:20 Methanol : H2O  
**Solvent Lot:** 00016

**Reagent Analyte Information**

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00010	03/08/2019	0.50000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00010	03/08/2019	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00005	03/07/2019	0.50000	ug/mL	10.00000	ug/L

**Source Reagents**

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00010	Internal Standard for HFPO 0.5ug/ml		03/08/19				20.00000	uL
HFPO Spike_00005	HFPO LGS/Calibration Spike 0.5ug/ml		03/07/19				20.00000	uL

*chudapom*  
*3/13/18*

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**APPENDIX D**  
**SAMPLE CALCULATIONS**

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SAMPLE CALCULATIONS FOR  
FLOW, MOISTURE AND ISO

Client: Chemours

Plant: Fayetteville, NC

Test Number: Run 1 - Hydrolysis

Test Date: 3/1/2018

Test Location: PPA Stack

Test Period: 0920-1114

1. Volume of dry gas sampled at standard conditions (68 deg F, 29.92 in. Hg), dscf.

$$Vm(std) = \frac{17.64 \times Y \times Vm \times \left( Pb + \frac{\text{delta H}}{13.6} \right)}{(Tm + 460)}$$

$$Vm(std) = \frac{17.64 \times 0.9916 \times 46.050 \times \left( 29.84 + \frac{0.864}{13.6} \right)}{65.92 + 460} = 45.801$$

Where:

$Vm(std)$  = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dscf.  
 $Vm$  = Volume of gas sample measured by the dry gas meter at meter conditions, dcf.  
 $Pb$  = Barometric Pressure, in Hg.  
 $\text{delt H}$  = Average pressure drop across the orifice meter, in H<sub>2</sub>O  
 $Tm$  = Average dry gas meter temperature, deg F.  
 $Y$  = Dry gas meter calibration factor.  
 $17.64$  = Factor that includes ratio of standard temperature (528 deg R) to standard pressure (29.92 in. Hg), deg R/in. Hg.  
 $13.6$  = Specific gravity of mercury.

2. Volume of water vapor in the gas sample corrected to standard conditions, scf.

$$Vw(std) = (0.04707 \times Vwc) + (0.04715 \times Wwsg)$$

$$Vw(std) = (0.04707 \times 11.0) + (0.04715 \times 13.4) = 1.150$$

Where:

$Vw(std)$  = Volume of water vapor in the gas sample corrected to standard conditions, scf.  
 $Vwc$  = Volume of liquid condensed in impingers, ml.  
 $Wwsg$  = Weight of water vapor collected in silica gel, g.  
 $0.04707$  = Factor which includes the density of water (0.002201 lb/ml), the molecular weight of water (18.0 lb/lb-mole), the ideal gas constant 21.85 (in. Hg) (ft<sup>3</sup>/lb-mole)(deg R); absolute temperature at standard conditions (528 deg R), absolute pressure at standard conditions (29.92 in. Hg), ft<sup>3</sup>/ml.  
 $0.04715$  = Factor which includes the molecular weight of water (18.0 lb/lb-mole), the ideal gas constant 21.85 (in. Hg) (ft<sup>3</sup>/lb-mole)(deg R); absolute temperature at standard conditions (528 deg R), absolute pressure at standard conditions (29.92 in. Hg), and 453.6 g/lb, ft<sup>3</sup>/g.

3. Moisture content

$$bws = \frac{Vw(std)}{Vw(std) + Vm(std)}$$

$$bws = \frac{1.150}{1.150 + 45.801} = 0.024$$

Where:

bws = Proportion of water vapor, by volume, in the gas stream, dimensionless.

4. Mole fraction of dry gas.

$$Md = 1 - bws$$

$$Md = 1 - 0.024 = 0.976$$

Where:

Md = Mole fraction of dry gas, dimensionless.

5. Dry molecular weight of gas stream, lb/lb-mole.

$$MWd = (0.440 \times \% CO_2) + (0.320 \times \% O_2) + (0.280 \times (\% N_2 + \% CO))$$

$$MWd = (0.440 \times 0.0) + (0.320 \times 20.9) + (0.280 \times (79.1 + 0.0))$$

$$= 28.84$$

Where:

MWd = Dry molecular weight, lb/lb-mole.  
 % CO<sub>2</sub> = Percent carbon dioxide by volume, dry basis.  
 % O<sub>2</sub> = Percent oxygen by volume, dry basis.  
 % N<sub>2</sub> = Percent nitrogen by volume, dry basis.  
 % CO = Percent carbon monoxide by volume, dry basis.  
 0.440 = Molecular weight of carbon dioxide, divided by 100.  
 0.320 = Molecular weight of oxygen, divided by 100.  
 0.280 = Molecular weight of nitrogen or carbon monoxide, divided by 100.

6. Actual molecular weight of gas stream (wet basis), lb/lb-mole.

$$MWS = (MWd \times Md) + (18 \times (1 - Md))$$

$$MWS = (28.84 \times 0.976) + (18 \times (1 - 0.976)) = 28.57$$

Where:

MWS = Molecular weight of wet gas, lb/lb-mole.  
 18 = Molecular weight of water, lb/lb-mole.



7. Average velocity of gas stream at actual conditions, ft/sec.

$$V_s = \frac{85.49 \times C_p \times ((\Delta p)_{avg})^{1/2} \times \left( \frac{T_s (avg)}{P_s \times MW_s} \right)^{1/2}}{538}$$

$$V_s = \frac{85.49 \times 0.84 \times 0.743942 \times \left( \frac{538}{29.63 \times 28.57} \right)^{1/2}}{538} = 42.6$$

Where:

- $V_s$  = Average gas stream velocity, ft/sec.
- 85.49 = Pitot tube constant, ft/sec x  $\frac{(lb/lb-mole)(in. Hg)^{1/2}}{(deg R)(in H_2O)}$
- $C_p$  = Pitot tube coefficient, dimensionless.
- $T_s$  = Absolute gas stream temperature, deg R =  $T_s, deg F + 460$ .
- $P_s$  = Absolute gas stack pressure, in. Hg. =  $P_b + \frac{P(static)}{13.6}$
- $\Delta p$  = Velocity head of stack, in. H<sub>2</sub>O

8. Average gas stream volumetric flowrate at actual conditions, wacf/min.

$$Q_s(act) = 60 \times V_s \times A_s$$

$$Q_s(act) = 60 \times 42.6 \times 4.90 = 12516$$

Where:

- $Q_s(act)$  = Volumetric flowrate of wet stack gas at actual conditions, wacf/min.
- $A_s$  = Cross-sectional area of stack, ft<sup>2</sup>.
- 60 = Conversion factor from seconds to minutes.

9. Average gas stream dry volumetric flowrate at standard conditions, dscf/min.

$$Q_s(std) = \frac{17.64 \times M_d \times \left( \frac{P_s}{T_s} \right) \times Q_s(act)}{538}$$

$$Q_s(std) = \frac{17.64 \times 0.976 \times \left( \frac{29.63}{538} \right) \times 12516}{538}$$

$$= 11872$$

Where:

- $Q_s(std)$  = Volumetric flowrate of dry stack gas at standard conditions, dscf/min.

10. Isokinetic variation calculated from intermediate values, percent.

$$I = \frac{17.327 \times T_s \times V_m(\text{std})}{V_s \times O \times P_s \times M_d \times (D_n)^2}$$

$$I = \frac{17.327 \times 538 \times 45.801}{42.6 \times 96 \times 29.63 \times 0.976 \times (0.189)^2} = 101.1$$

Where:

- I = Percent of isokinetic sampling.
- O = Total sampling time, minutes.
- Dn = Diameter of nozzle, inches.
- 17.327 = Factor which includes standard temperature (528 deg R), standard pressure (29.92 in. Hg), the formula for calculating area of circle  $D^2/4$ , conversion of square feet to square inches (144), conversion of seconds to minutes (60), and conversion to percent (100),  $\frac{(\text{in. Hg})(\text{in}^2)(\text{min})}{(\text{deg R})(\text{ft}^2)(\text{sec})}$

**SAMPLE CALCULATIONS FOR  
HFPO DIMER ACID (METHOD 0010)**

**Client: Chemours**  
**Test Number: Run 1** - Hydrolysis  
**Test Location: PPA**

**Plant: Fayetteville, NC**  
**Test Date: 3/1/2018**  
**Test Period: 0920-1114**

**1. HFPO Dimer Acid concentration, lbs/dscf.**

$$C_1 = \frac{W \times 2.2046 \times 10^{-9}}{Vm(std)}$$

$$C_1 = \frac{38316.1 \times 2.2046 \times 10^{-9}}{45.801}$$

$$= 1.84E-06$$

Where:

W = Weight of HFPO Dimer Acid collected in sample in ug.

C<sub>1</sub> = HFPO Dimer Acid concentration, lbs/dscf.

2.2046x10<sup>-9</sup> = Conversion factor from ug to lbs.

**2. HFPO Dimer Acid concentration, ug/dscm.**

$$C_2 = \frac{W}{(Vm(std) \times 0.02832)}$$

$$C_2 = \frac{38316.1}{(45.801 \times 0.02832)}$$

$$= 29537.4$$

Where:

C<sub>2</sub> = HFPO Dimer Acid concentration, ug/dscm.

0.02832 = Conversion factor from cubic feet to cubic meters.

**3. HFPO Dimer Acid mass emission rate, lb/hr.**

$$\begin{aligned} \text{PMR1} &= C_1 \times Qs(\text{std}) \times 60 \text{ min/hr} \\ \text{PMR1} &= 1.84\text{E-}06 \times 11872 \times 60 \\ &= 1.31\text{E+}00 \end{aligned}$$

Where:

$$\text{PMR1} = \text{HFPO Dimer Acid mass emission rate, lb/hr.}$$

**4. HFPO Dimer Acid mass emission rate, g/sec.**

$$\begin{aligned} \text{PMR2} &= \text{PMR1} \times 453.59 / 3600 \\ \text{PMR2} &= 1.31\text{E+}00 \times 453.59 / 3600 \\ &= 1.65\text{E-}01 \end{aligned}$$

Where:

$$\text{PMR2} = \text{HFPO Dimer Acid mass emission rate, g/sec.}$$

$$454 = \text{Conversion factor from pounds to grams.}$$

$$3600 = \text{Conversion factor from hours to seconds.}$$

---

**APPENDIX E**  
**EQUIPMENT CALIBRATION RECORDS**

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# Long Cal and Temperature Cal Datasheet for Standard Dry Gas Meter Console

Calibrator PM Meter Box Number 31 Ambient Temp 71 Thermocouple Simulator  
 Date 4-Feb-18 Wet Test Meter Number P-2952 Temp Reference Source \_\_\_\_\_ (Accuracy +/- 1°F)  
 Dry Gas Meter Number 17485128

Setting	Gas Volume		Temperatures				Baro Press, in Hg (Pb)	Calibration Results	
	Wet Test Meter	Dry Gas Meter	Wet Test Meter	Dry Gas Meter	Average, °F (Td)	Time, min (O)			Y
0.5	5.0	ft <sup>3</sup> (Vd)	°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	70.0	13.0	0.9976	1.9063
			449.372	69.00	69.00				
			454.378	71.00	71.00				
1.0	5.0	ft <sup>3</sup> (Vw)	°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	70.0	9.5	0.9972	2.0302
			5.006	70.00	70.00				
			454.378	71.00	71.00				
1.5	10.07	ft <sup>3</sup> (Vd)	°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	70.0	16.0	0.9918	2.1197
			5.016	71.50	71.50				
			459.394	74.00	74.00				
2.0	10.0	ft <sup>3</sup> (Vd)	°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	70.0	13.7	0.9894	2.0992
			10.192	74.00	74.00				
			469.586	74.00	74.00				
3.0	10.0	ft <sup>3</sup> (Vd)	°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	70.0	11.3	0.9819	2.1383
			10.143	74.50	74.50				
			479.729	75.00	75.00				
			°F (Tw)	°F (Td <sub>o</sub> )	°F (Td <sub>i</sub> )	Average	0.9916	2.0587	
			489.943	76.00	76.00				
			10.214	75.50	75.50				

Vw - Gas Volume passing through the wet test meter  
 Vd - Gas Volume passing through the dry gas meter  
 Tw - Temp of gas in the wet test meter  
 Tdi - Temp of the inlet gas of the dry gas meter  
 Tdo - Temp of the outlet gas of the dry gas meter  
 Td - Average temp of the gas in the dry gas meter  
 O - Time of calibration run  
 Pb - Barometric Pressure  
 ΔH - Pressure differential across orifice  
 Y - Ratio of accuracy of wet test meter to dry gas meter

$$Y = \frac{Vw * Pb * (td + 460)}{Vd * \left[ Pb + \frac{(\Delta H)}{13.6} \right] * (tw + 460)}$$

$$\Delta H = \left[ \frac{0.0317 * \Delta H}{Pb * (td + 460)} \right] * \left[ \frac{(tw + 460) * O^2}{Vw} \right]$$

Reference Temperature	Temperature Reading from Individual Thermocouple Input <sup>1</sup>						Average Temperature Reading	Temp Difference <sup>2</sup> (%)
	Channel Number							
Select Temperature	1	2	3	4	5	6		
○ °C								
● °F	32	32	32	32	32	32	32.0	0.0%
	212	213	213	212	212	212	212.4	-0.1%
	932	933	933	932	932	932	932.4	0.0%
	1832	1833	1833	1832	1832	1832	1832.4	0.0%

<sup>1</sup> - Channel Temps must agree with +/- 5°F or 3°C  
<sup>2</sup> - Acceptable Temperature Difference less than 1.5 %  
 Temp Diff =  $\left[ \frac{(\text{Reference Temp}(^{\circ}\text{F}) + 460) - (\text{Test Temp}(^{\circ}\text{F}) + 460)}{\text{Reference Temp}(^{\circ}\text{F}) + 460} \right]$

# Long Cal and Temperature Cal Datasheet for Standard Dry Gas Meter Console

Calibrator PM Meter Box Number 29 Ambient Temp 71  
 Date 20-Jan-18 Wet Test Meter Number P-2952 Temp Reference Source Thermocouple Simulator (Accuracy +/- 1°F)  
 Dry Gas Meter Number 17176777

Setting Orifice Manometer	Gas Volume		Temperatures				Baro Press, in Hg ( Pb)	Calibration Results	
	Wet Test Meter	Dry Gas Meter	Wet Test Meter	Dry Gas Meter	Average, °F (Td)	Time, min (O)			Y
0.5	5.0	ft <sup>3</sup> (Vd)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	68.0	13.0	0.9968	1.8982
		739.961	70.0	67.00	67.00				
		744.952		69.00	69.00				
1.0	10.0	ft <sup>3</sup> (Vw)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	71.5	18.40	0.9983	1.8888
		4.991	70.0	68.00	70.00				
		744.952		73.00	73.00				
1.5	11.0	ft <sup>3</sup> (Vd)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	74.0	17.3	0.9905	2.0602
		10.021	70.0	71.50	73.00				
		754.973		73.00	75.00				
2.0	10.1	ft <sup>3</sup> (Vw)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	76.0	13.6	0.9924	2.0061
		766.121	70.0	74.00	74.00				
		776.363		75.00	75.00				
3.0	10.4	ft <sup>3</sup> (Vd)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	78.0	11.5	0.9889	2.0217
		10.242	70.0	76.00	76.00				
		776.363		77.00	77.00				
		ft <sup>3</sup> (Vw)	°F (Tw)	Outlet, °F (Tdo)	Inlet, °F (Tdi)	Average	Average	0.9934	1.9750
		10.598	70.0	78.00	78.00				

Vw - Gas Volume passing through the wet test meter  
 Vd - Gas Volume passing through the dry gas meter  
 Tw - Temp of gas in the wet test meter  
 Tdi - Temp of the inlet gas of the dry gas meter  
 Tdo - Temp of the outlet gas of the dry gas meter  
 Td - Average temp of the gas in the dry gas meter

0 - Time of calibration run  
 Pb - Barometric Pressure  
 ΔH - Pressure differential across orifice  
 Y - Ratio of accuracy of wet test meter to dry gas meter

$$Y = \frac{Vw * Pb * (td + 460)}{Vd * \left[ Pb + \frac{(\Delta H)}{13.6} \right] * (tw + 460)}$$

$$\Delta H = \left[ \frac{0.0317 * \Delta H}{Pb * (td + 460)} \right] * \left[ \frac{(tw + 460) * O}{Vw} \right]^2$$

Reference Temperature	Temperature Reading from Individual Thermocouple Input 1						Average Temperature Reading	Temp Difference 2 (%)
	Select Temperature	Channel Number						
○ °C								
● °F								
32		2	3	4	5	6	32.0	0.0%
212	32	32	32	32	32	32	213.0	-0.1%
932	213	213	213	213	213	213	933.0	-0.1%
1832	933	933	933	933	933	933	1831.0	0.0%
	1831	1831	1831	1831	1831	1831		

1 - Channel Temps must agree with +/- 5°F or 3°C  
 2 - Acceptable Temperature Difference less than 1.5 %  
 Temp Diff =  $\left[ \frac{(\text{Reference Temp}(\text{°F}) + 460) - (\text{Test Temp}(\text{°F}) + 460)}{\text{Reference Temp}(\text{°F}) + 460} \right]$

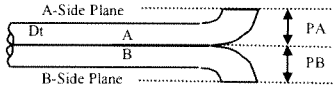
# Type S Pitot Tube Inspection Data Form

Pitot Tube Identification Number:     P-563    

If all Criteria PASS  
Cp is equal to 0.84

Inspection Date   2/19/18   Individual Conducting Inspection                     KS                    

**PASS/FAIL**

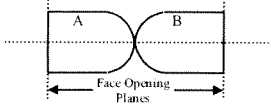


Distance to A Plane (PA) - inches     0.469      
 Distance to B Plane (PB) - inches     0.469      
 Pitot OD (Dt) - inches     0.375    

PASS  
PASS

$1.05 D_t < P < 1.5 D_t$

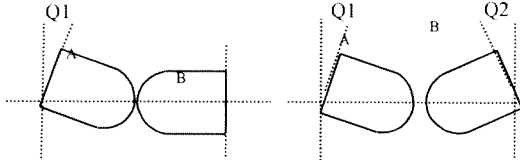
PA must Equal PB



Are Open Faces Aligned Perpendicular to the Tube Axis

YES     NO

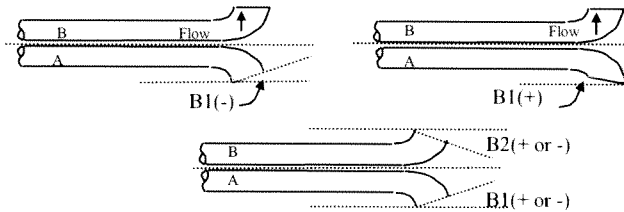
PASS



Angle of Q1 from vertical A Tube - degrees (absolute)     1      
 Angle of Q2 from vertical B Tube - degrees (absolute)     1    

PASS  
PASS

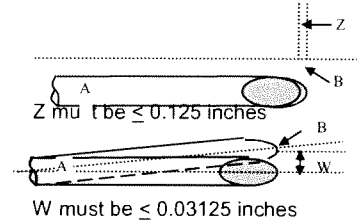
Q1 and Q2 must be  $\leq 10^\circ$



Angle of B1 from vertical A Tube - degrees (absolute)     2      
 Angle of B1 from vertical B Tube - degrees (absolute)     1    

PASS  
PASS

B1 or B2 must be  $\leq 5^\circ$

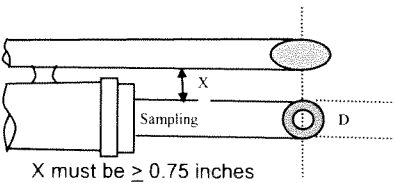


Horizontal offset between A and B Tubes (Z) - inches     0.006    

PASS

Vertical offset between A and B Tubes (W) - inches     0.012    

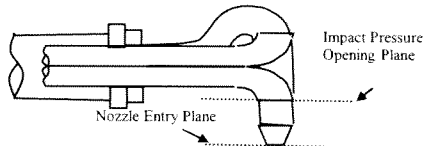
PASS



Distance between Sample Nozzle and Pitot (X) - inches     0.9325    

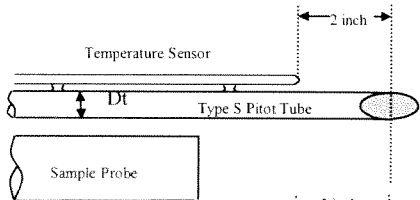
PASS

X must be  $\geq 0.75$  inches



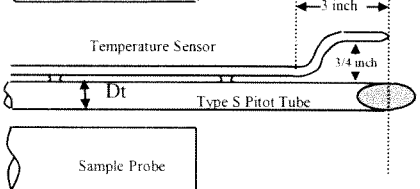
Impact Pressure Opening Plane is above the Nozzle Entry Plane

YES     NO  
 NA



Thermocouple meets the Distance Criteria in the adjacent figure

YES     NO  
 NA



Thermocouple meets the Distance Criteria in the adjacent figure

YES     NO  
 NA



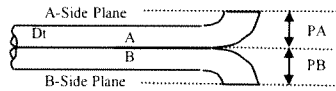
# Type S Pitot Tube Inspection Data Form

Pitot Tube Identification Number:           P-694          

If all Criteria PASS  
Cp is equal to 0.84

Inspection Date   2/19/18   Individual Conducting Inspection           KS          

**PASS/FAIL**

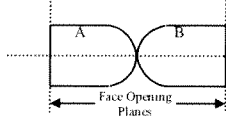


Distance to A Plane (PA) - inches   0.432    
 Distance to B Plane (PB) - inches   0.432    
 Pitot OD (Dt) - inches   0.375  

PASS  
PASS

$1.05 D_t < P < 1.5 D_t$

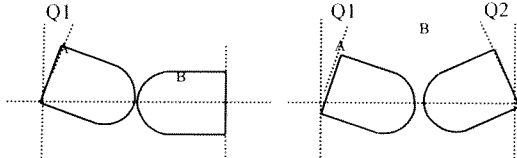
PA must Equal PB



Are Open Faces Aligned  
Perpendicular to the Tube Axis

YES     NO

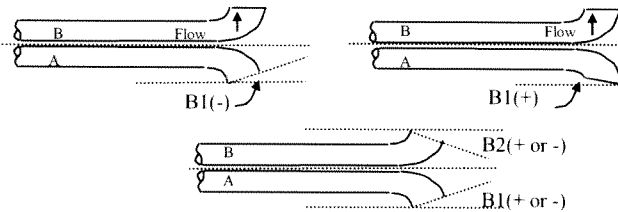
PASS



Angle of Q1 from vertical A Tube-  
degrees (absolute)           4            
 Angle of Q2 from vertical B Tube-  
degrees (absolute)           3          

PASS  
PASS

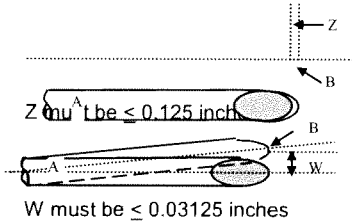
Q1 and Q2 must be  $\leq 10^\circ$



Angle of B1 from  
vertical A Tube-  
degrees (absolute)           4            
 Angle of B1 from  
vertical B Tube-  
degrees (absolute)           2          

PASS  
PASS

B1 or B2 must be  $\leq 5^\circ$

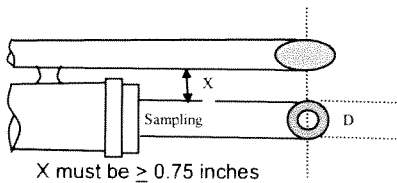


Horizontal offset between A and  
B Tubes (Z) - inches   0.024  

PASS

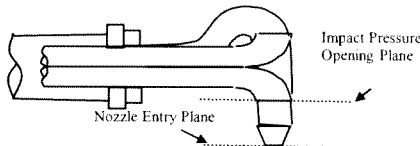
Vertical offset between A and B  
Tubes (W) - inches   0.028  

PASS



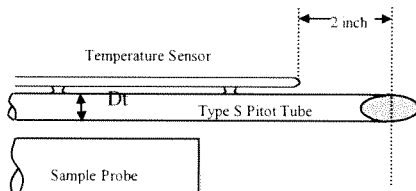
Distance between Sample  
Nozzle and Pitot (X) - inches   0.962  

PASS



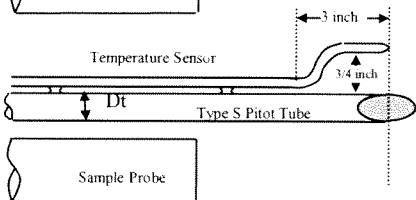
Impact Pressure  
Opening Plane is  
above the Nozzle  
Entry Plane

YES     NO  
  
 NA



Thermocouple meets  
the Distance Criteria  
in the adjacent figure

YES     NO  
  
 NA



Thermocouple meets  
the Distance Criteria  
in the adjacent figure

YES     NO  
  
 NA

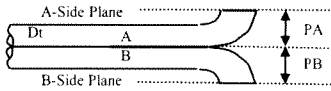
# Type S Pitot Tube Inspection Data Form

Pitot Tube Identification Number: P-695

If all Criteria PASS  
Cp is equal to 0.84

Inspection Date 1/5/18 Individual Conducting Inspection PM

**PASS/FAIL**

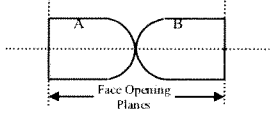


Distance to A Plane (PA) - inches 0.46  
 Distance to B Plane (PB) - inches 0.46  
 Pitot OD (D<sub>t</sub>) - inches 0.375

PASS  
 PASS

$1.05 D_t < P < 1.5 D_t$

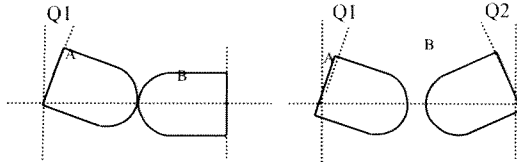
PA must Equal PB



Are Open Faces Aligned  
 Perpendicular to the Tube Axis

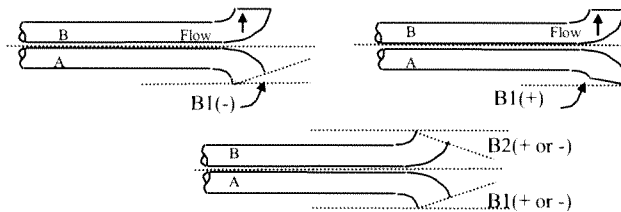
YES  NO

PASS



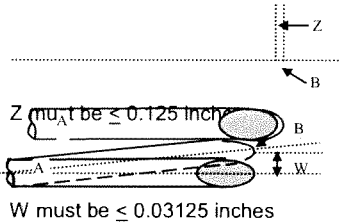
Angle of Q1 from vertical A Tube-  
 degrees (absolute) 0 PASS  
 Angle of Q2 from vertical B Tube-  
 degrees (absolute) 1 PASS

Q1 and Q2 must be  $\leq 10^\circ$



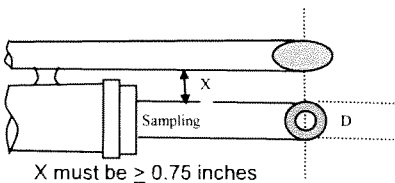
Angle of B1 from  
 vertical A Tube-  
 degrees (absolute) 0 PASS  
 Angle of B1 from  
 vertical B Tube-  
 degrees (absolute) 0 PASS

B1 or B2 must be  $\leq 5^\circ$



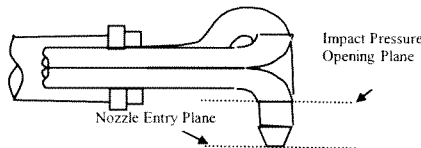
Horizontal offset between A and  
 B Tubes (Z) - inches 0.006 PASS

Vertical offset between A and B  
 Tubes (W) - inches 0.018 PASS



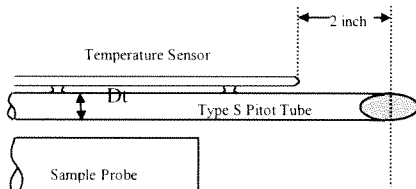
Distance between Sample  
 Nozzle and Pitot (X) - inches 0.78 PASS

X must be  $\geq 0.75$  inches



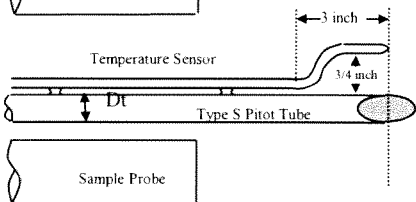
Impact Pressure  
 Opening Plane is  
 above the Nozzle  
 Entry Plane

YES  NO  
 NA



Thermocouple meets  
 the Distance Criteria  
 in the adjacent figure

YES  NO  
 NA



Thermocouple meets  
 the Distance Criteria  
 in the adjacent figure

YES  NO  
 NA

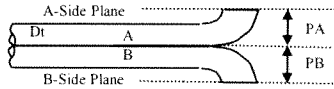
# Type S Pitot Tube Inspection Data Form

Pitot Tube Identification Number: P-697

If all Criteria PASS  
Cp is equal to 0.84

Inspection Date 1/5/18 Individual Conducting Inspection PM

**PASS/FAIL**

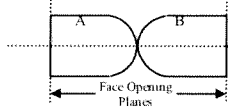


Distance to A Plane (PA) - inches 0.46  
 Distance to B Plane (PB) - inches 0.46  
 Pitot OD (Dt) - inches 0.375

PASS  
 PASS

$1.05 D_t < P < 1.5 D_t$

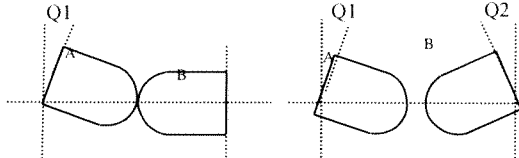
PA must Equal PB



Are Open Faces Aligned  
 Perpendicular to the Tube Axis

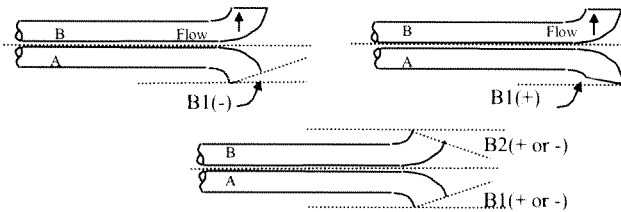
YES  NO

PASS



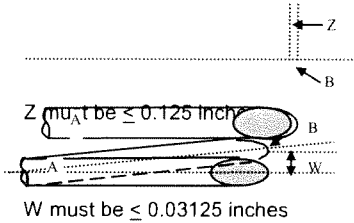
Angle of Q1 from vertical A Tube-  
 degrees (absolute) 0 PASS  
 Angle of Q2 from vertical B Tube-  
 degrees (absolute) 0 PASS

Q1 and Q2 must be  $\leq 10^\circ$



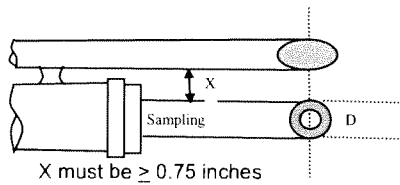
Angle of B1 from  
 vertical A Tube-  
 degrees (absolute) 0 PASS  
 Angle of B1 from  
 vertical B Tube-  
 degrees (absolute) 0 PASS

B1 or B2 must be  $\leq 5^\circ$

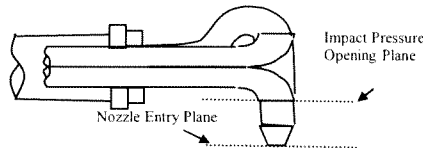


Horizontal offset between A and  
 B Tubes (Z) - inches 0.007 PASS

Vertical offset between A and B  
 Tubes (W) - inches 0.018 PASS

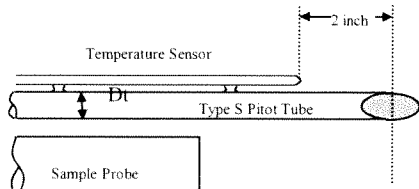


Distance between Sample  
 Nozzle and Pitot (X) - inches 0.8 PASS



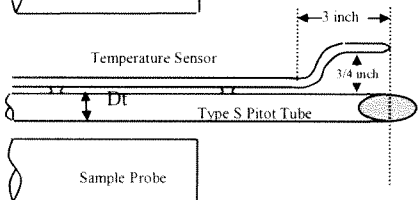
Impact Pressure  
 Opening Plane is  
 above the Nozzle  
 Entry Plane

YES  NO  
 NA



Thermocouple meets  
 the Distance Criteria  
 in the adjacent figure

YES  NO  
 NA



Thermocouple meets  
 the Distance Criteria  
 in the adjacent figure

YES  NO  
 NA

# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Part Number: E03NI79E15A00E4	Reference Number: 82-124627728-1
Cylinder Number: CC62094	Cylinder Volume: 150.5 CF
Laboratory: 124 - Riverton (SAP) - NJ	Cylinder Pressure: 2015 PSIG
PGVP Number: B52017	Valve Outlet: 590
Gas Code: CO2,O2,BALN	Certification Date: Jul 10, 2017

**Expiration Date: Jul 10, 2025**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

<b>ANALYTICAL RESULTS</b>					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	9.000 %	8.911 %	G1	+/- 0.7% NIST Traceable	07/10/2017
OXYGEN	12.00 %	12.00 %	G1	+/- 0.5% NIST Traceable	07/10/2017
NITROGEN	Balance				

<b>CALIBRATION STANDARDS</b>					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12061336	CC360792	11.002 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 11, 2018
NTRMplus	09060208	CC262337	9.961 % OXYGEN/NITROGEN	+/- 0.3%	Nov 08, 2018

<b>ANALYTICAL EQUIPMENT</b>		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA 510-CO2-19GYCXEG	NDIR	Jun 30, 2017
Horiba MPA 510-O2-7TWMJ041	Paramagnetic	Jul 07, 2017

Triad Data Available Upon Request



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Signature on file  
Approved for Release

# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Part Number: E03NI62E15A0224	Reference Number: 82-401044874-1
Cylinder Number: SG9169108	Cylinder Volume: 157.2 CF
Laboratory: 124 - Riverton (SAP) - NJ	Cylinder Pressure: 2015 PSIG
PGVP Number: B52017	Valve Outlet: 590
Gas Code: CO2,O2,BALN	Certification Date: Nov 18, 2017

**Expiration Date: Nov 18, 2025**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

<b>ANALYTICAL RESULTS</b>					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	17.00 %	16.58 %	G1	+/- 0.7% NIST Traceable	11/18/2017
OXYGEN	21.00 %	21.00 %	G1	+/- 0.5% NIST Traceable	11/18/2017
NITROGEN	Balance			-	

<b>CALIBRATION STANDARDS</b>					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12061336	CC360792	11.002 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 11, 2018
NTRM	09061415	CC273526	22.53 % OXYGEN/NITROGEN	+/- 0.4%	Mar 08, 2019

<b>ANALYTICAL EQUIPMENT</b>		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA 510-CO2-19GYCXEG	NDIR	Oct 30, 2017
Horiba MPA 510-O2-7TWMJ041	Paramagnetic	Oct 27, 2017

Triad Data Available Upon Request



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Signature on file  
Approved for Release



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**APPENDIX F**  
**LIST OF PROJECT PARTICIPANTS**

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The following WESTON employees participated in this project.

Paul Meeter	Senior Project Manager
Steve Rathfon	Team Leader
Kyle Schweitzer	Team Member
Matt Winkeler	Team Member