Source Test Report

The Chemours Company, FC, LLC
Fayetteville Works
22828 Highway 87W
Fayetteville, NC 28306

Source Tested: Vinyl Ethers South (VES) Carbon Bed
Test Date: October 9 and 10, 2023

Project No. AST-2023-4327

Prepared By
Alliance Technical Group, LLC
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Regulatory Information

Permit No. North Carolina Department of Air Quality (NCDAQ) Title V Air Permit No. 03735T48

Source Information

Source Name	*Target Parameter*
VES Carbon Bed (Inlet / Outlet)	HFPO-DA

Contact Information

Test Location
The Chemours Company, FC, LLC
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22828 Highway 87W
Fayetteville, North Carolina

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Alliance Technical Group, LLC (Alliance) has completed the source testing as described in this report. Results apply only to the source(s) tested and operating condition(s) for the specific test date(s) and time(s) identified within this report. All results are intended to be considered in their entirety, and Alliance is not responsible for use of less than the complete test report without written consent. This report shall not be reproduced in full or in part without written approval from the customer.

To the best of my knowledge and abilities, all information, facts and test data are correct. Data presented in this report has been checked for completeness and is accurate, error-free and legible. Onsite testing was conducted in accordance with approved internal Standard Operating Procedures. Any deviations or problems are detailed in the relevant sections in the test report.

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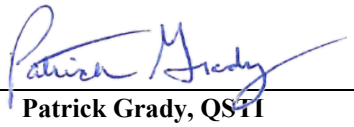

Patrick Grady, QSTI
Project Manager
Alliance Technical Group, LLC

11/21/2023
Date

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Introduction

1.0 Introduction

Alliance Technical Group, LLC (Alliance) was retained by The Chemours Company (Chemours) to conduct compliance testing at the Fayetteville Works facility in Fayetteville, North Carolina. The facility operates under North Carolina Department of Air Quality (NCDAQ) Title V Air Permit No. 03735T48. Source emissions testing was conducted at the inlet and outlet of the Vinyl Ethers South (VES) carbon bed. The testing was conducted to evaluate emissions of hexafluoro-propylene oxide-dimer acid (HFPO-DA). HFPO-DA, hexafluoro-propylene oxide dimer acid fluoride (HFPO-DAF) and hexafluoro-propylene oxide dimer acid ammonium salt are captured and reported together as HFPO-DA.

1.1 Source and Control System Descriptions

VES is part of the fluoromonomer area at the Fayetteville facility. This area produces fluorocarbon compounds used to produce Chemours products, such as IXM, Krytox® and Viton®. Indoor air fugitive emissions from VES are vented to a carbon bed which is then vented to atmosphere through a process stack (NEP-Hdr2).

1.2 Project Team

Personnel involved in this project are identified in the following table.

Table 1-1: Project Team

Facility Personnel	Christel Compton Eddie Vega
Regulatory Personnel	Gary Saunders
Alliance Personnel	Patrick Grady Antonio Anderson Ted LaBonte Jeff Sheldon Samantha Waters

Summary of Results

2.0 Summary of Results

Alliance conducted compliance testing at the Fayetteville Works Facility in Fayetteville, NC on October 9 and 10, 2023. Testing consisted of determining the emission rates of HFPO-DA at the inlet and outlet of the VES carbon bed. Table 2-1 provides a summary of the emission testing results. Any difference between the summary results listed in the following tables and the detailed results contained in appendices is due to rounding for presentation.

Table 2-1: Summary of Results

Run Number	Run 1	Run 2	Run 3	Average
Date	**10/9/23**	**10/10/23**	**10/10/23**	**--**
HFPO-DA Data				
Outlet Emission Rate, lb/hr	1.8E-05	7.4E-06	8.8E-06	1.1E-05
Inlet Emission Rate, lb/hr	6.7E-05	7.1E-05	8.0E-05	7.3E-05
Reduction Efficiency, %	73	90	89	84

Testing Methodology

3.0 Testing Methodology

The emission testing program was conducted in accordance with the test methods listed in Table 3-1. Method descriptions are provided below while quality assurance/quality control data is provided in Appendix D.

Table 3-1: Source Testing Methodology

Parameter	U.S. EPA Reference Test Methods	Notes/Remarks
Volumetric Flow Rate	1 & 2	Full Velocity Traverses
Moisture Content	4	Gravimetric Analysis
Hexafluoro-Propylene Oxide-Dimer Acid	OTM-45	Isokinetic Sampling

3.1 U.S. EPA Reference Test Methods 1 and 2 – Sampling/Traverse Points and Volumetric Flow Rate

The sampling location and number of traverse (sampling) points were selected in accordance with U.S. EPA Reference Test Method 1. To determine the minimum number of traverse points, the upstream and downstream distances were equated into equivalent diameters and compared to Figure 1-1 in U.S. EPA Reference Test Method 1.

Full velocity traverses were conducted in accordance with U.S. EPA Reference Test Method 2 to determine the average stack gas velocity pressure, static pressure and temperature. The velocity and static pressure measurement system consisted of a pitot tube and inclined manometer. The stack gas temperature was measured with a K-type thermocouple and pyrometer.

Oxygen and carbon dioxide concentrations were assumed to be ambient as there is no combustion source associated with the VES process.

3.2 U.S. EPA Reference Test Method 4 – Moisture Content

The stack gas moisture content was determined in accordance with U.S. EPA Reference Test Method 4. The gas conditioning train consisted of a series of chilled impingers. Prior to testing, each impinger was filled with a known quantity of water or silica gel. Each impinger was analyzed gravimetrically before and after each test run on the same balance to determine the amount of moisture condensed.

3.3 Modified Method 0010 – Hexafluoro-Propylene Oxide-Dimer Acid

HFPO-DA emissions were evaluated in accordance with Modified Method 0010. Testing followed the submitted protocol in the execution of our onsite sampling and analysis activities. Modified Method 0010 procedure was followed as outlined in the protocol submitted to NC Division of Air Quality. Modified Method 0010 sampling and analysis procedures performed for this project are consistent with OTM-45, which was released by EPA in January 2021, subsequent to Chemours submittal of plans to DAQ.

The sample train consisted of a borosilicate glass nozzle attached directly to a heated borosilicate glass-lined probe. The probe was connected directly to a heated borosilicate glass filter holder containing a solvent-extracted glass fiber filter. In order to minimize possible thermal degradation of the HFPO-DA, the probe and particulate filter were heated to just above stack temperature to minimize water vapor condensation before the filter. The filter holder exit was connected to a water-cooled coil condenser followed by a water-cooled sorbent module containing

approximately 40 grams of XAD-2 resin. The XAD-2 inlet temperature was monitored to ensure that the module is maintained at a temperature below 20°C.

The XAD-2 resin trap was followed by a condensate knockout impinger and a series of two impingers each containing 100-ml of high purity deionized water. The water impingers were followed by another condensate knockout impinger equipped with a second XAD-2 resin trap to account for any sample breakthrough. The final impinger contained approximately 250 grams of dry pre-weighed silica gel. The water impingers and condensate impingers were submerged in an ice bath through the duration of the testing. The water in the ice bath was also used to circulate around the coil condenser and the XAD-2 resin traps.

Exhaust gases were extracted from the sample locations isokinetically using a metering console equipped with a vacuum pump, a calibrated orifice, oil manometer and probe/filter heat controllers.

3.4 HFPO-DA Sample Train and Equipment Preparation

Prior to conducting the field work the following procedures were conducted to prepare the field sampling glassware and sample recovery tools.

1. Wash all glassware, brushes, and ancillary tools with low residue soap and hot water.
2. Rinse all glassware, brushes, and ancillary tools three (3) times with D.I. H_20.
3. Bake glassware (with the exception of probe liners) at 450˚C for approximately 2 hours, (XAD-2 resin tube glassware is cleaned by Eurofins/TestAmerica by this same procedure).
4. Solvent rinse three (3) times all glassware, brushes, and ancillary tools with the following sequence of solvents: acetone, methylene chloride, hexane, and methanol.
5. Clean glassware and tools will be sealed in plastic bags or aluminum foil for transport to the sampling site.
6. Squirt bottles will be new dedicated bottles of known history and dedicated to the D.I. Water and methanol/ammonium hydroxide (MeOH/ 5% NH_4OH) solvent contents. Squirt bottles will be labelled with the solvent content it contains.

3.5 HFPO-DA Sample Train Recovery

Following completion of each test run, the sample probe, nozzle and front-half of the filter holder were brushed and rinsed three times each with the MeOH/ 5% NH_4OH solution (Container #1). The glass fiber filter was removed from its housing and transferred to a polyethylene bottle (Container #2). Any particulate matter and filter fibers which adhered to the filter holder and gasket were also placed in Container #2. The XAD-2 resin trap was sealed, labelled and placed in an iced sample cooler. The back-half of the filter holder, coil condenser condensate trap and connecting glassware were rinsed with the same MeOH/ 5% NH_4OH solution and placed in Container #3.

The volume of water collected in the second and third impingers was measured for moisture determinations and then placed in Container #4. Impingers #2 and #3 were then rinsed with the MeOH/ 5% NH_4OH solution and placed in Container #5. The second (breakthrough) XAD-2 resin trap was sealed, labelled and placed in an iced sample cooler. The second condensate trap was rinsed with the MeOH/ 5% NH_4OH solution and placed in Container #5. The contents of the fifth impinger were placed in its original container and weighed for moisture determinations.

Containers were sealed and labeled with the appropriate sample information. Samples remained chilled until analysis. HFPO-DA analysis was conducted using liquid chromatography/dual mass spectrometry (LC/MS/MS).

Appendix A

Alliance TECHNICAL GROUP

Location: Chemours Company - Fayetteville Works Facility, NC
Source: VES Carbon Bed Inlet
Project No.: AST-2023-4327
Run No.: 1
Parameter: HFPO-DA

Meter Pressure (Pm), in. Hg

$$Pm = Pb + \frac{\Delta H}{13.6}$$

where,

Pb	29.70	= barometric pressure, in. Hg
ΔH	1.954	= pressure differential of orifice, in H_2O
Pm	29.84	= in. Hg

Absolute Stack Gas Pressure (Ps), in. Hg

$$Ps = Pb + \frac{Pg}{13.6}$$

where,

Pb	29.70	= barometric pressure, in. Hg
Pg	-2.20	= static pressure, in. H_2O
Ps	29.54	= in. Hg

Standard Meter Volume (Vmstd), dscf

$$Vmstd = \frac{17.636 \times Y \times Vm \times Pm}{Tm}$$

where,

Y	0.989	= meter correction factor
Vm	79.648	= meter volume, cf
Pm	29.84	= absolute meter pressure, in. Hg
Tm	536.1	= absolute meter temperature, °R
Vmstd	77.337	= dscf

Standard Wet Volume (Vwstd), scf

$$Vwstd = 0.04716 \times Vlc$$

where,

Vlc	38.4	= volume of H_2O collected, ml
Vwstd	1.811	= scf

Moisture Fraction (BWSsat), dimensionless (theoretical at saturated conditions)

$$BWSsat = \frac{10^{6.37-\left(\frac{2,827}{Ts+365}\right)}}{Ps}$$

where,

Ts	77.4	= stack temperature, °F
Ps	29.54	= absolute stack gas pressure, in. Hg
BWSsat	0.032	= dimensionless

Moisture Fraction (BWS), dimensionless (measured)

$$BWS = \frac{Vwstd}{(Vwstd + Vmstd)}$$

where,

Vwstd	1.811	= standard wet volume, scf
Vmstd	77.337	= standard meter volume, dscf
BWS	0.023	= dimensionless

Moisture Fraction (BWS), dimensionless

$$BWS = BWSmsd \text{ unless } BWSsat < BWSmsd$$

where,

BWSsat	0.032	= moisture fraction (theoretical at saturated conditions)
BWSmsd	0.023	= moisture fraction (measured)
BWS	0.023	

Molecular Weight (DRY) (Md), lb/lb-mole

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O2) + (0.28\,(100 - \%CO_2 - \%O2))$$

where,

CO_2	0.1	= carbon dioxide concentration, %
O_2	20.9	= oxygen concentration, %
Md	28.85	= lb/lb mol

Molecular Weight (WET) (Ms), lb/lb-mole

$$Ms = Md\,(1 - BWS) + 18.015\,(BWS)$$

where,

Md	28.85	= molecular weight (DRY), lb/lb mol
BWS	0.023	= moisture fraction, dimensionless
Ms	28.60	= lb/lb mol

Average Velocity (Vs), ft/sec

$$Vs = 85.49 \times Cp \times (\Delta P^{1/2})\,avg \times \sqrt{\frac{Ts}{Ps \times Ms}}$$

where,

Cp	0.840	= pitot tube coefficient
$\Delta P^{1/2}$	0.812	= velocity head of stack gas, $(in.\ H_2O)^{1/2}$
Ts	537.0	= absolute stack temperature, °R
Ps	29.54	= absolute stack gas pressure, in. Hg
Ms	28.60	= molecular weight of stack gas, lb/lb mol
Vs	46.5	= ft/sec

Location: Chemours Company - Fayetteville Works Facility, NC
Source: VES Carbon Bed Inlet
Project No.: AST-2023-4327
Run No.: 1
Parameter: HFPO-DA

Average Stack Gas Flow at Stack Conditions (Qa), acfm

$$Qa = 60 \times Vs \times As$$

where,

Vs	46.5	= stack gas velocity, ft/sec
As	7.07	= cross-sectional area of stack, ft^2
Qa	19,716	= acfm

Average Stack Gas Flow at Standard Conditions (Qs), dscfm

$$Qs = 17.636 \times Qa \times (1 - BWS) \times \frac{Ps}{Ts}$$

where,

Qa	19,716	= average stack gas flow at stack conditions, acfm
BWS	0.023	= moisture fraction, dimensionless
Ps	29.54	= absolute stack gas pressure, in. Hg
Ts	537.0	= absolute stack temperature, °R
Qs	18,687	= dscfm

Dry Gas Meter Calibration Check (Yqa), dimensionless

$$Yqa = \frac{Y - \left(\frac{\Theta}{Vm} \sqrt{\frac{0.0319 \times Tm \times 29}{\Delta H@ \times \left(Pb + \frac{\Delta Havg.}{13.6}\right) \times Md}} \sqrt{\Delta H}\,avg.\right)}{v} \times 100$$

where,

Y	0.989	= meter correction factor, dimensionless
Θ	96	= run time, min.
Vm	79.648	= total meter volume, dcf
Tm	536.1	= absolute meter temperature, °R
ΔH@	1.85	= orifice meter calibration coefficient, in. H_2O
Pb	29.70	= barometric pressure, in. Hg
ΔH avg	1.954	= average pressure differential of orifice, in H_2O
Md	28.85	= molecular weight (DRY), lb/lb mol
$(\Delta H)^{1/2}$	1.397	= average squareroot pressure differential of orifice, $(in. H2O)^{1/2}$
Yqa	5.0	= percent

Volume of Nozzle (Vn), ft^3

$$Vn = \frac{Ts}{Ps}\left(0.002669 \times Vlc + \frac{Vm \times Pm \times Y}{Tm}\right)$$

where,

Ts	537.0	= absolute stack temperature, °R
Ps	29.54	= absolute stack gas pressure, in. Hg
Vlc	38.4	= volume of H_2O collected, ml
Vm	79.648	= meter volume, cf
Pm	29.84	= absolute meter pressure, in. Hg
Y	0.989	= meter correction factor, unitless
Tm	536.1	= absolute meter temperature, °R
Vn	81.592	= volume of nozzle, ft^3

Isokinetic Sampling Rate (I), %

$$I = \left(\frac{Vn}{\theta \times 60 \times An \times Vs}\right) \times 100$$

where,

Vn	81.592	= nozzle volume, ft3
θ	96.0	= run time, minutes
An	0.00029	= area of nozzle, ft^2
Vs	46.5	= average velocity, ft/sec
I	105.6	= %

HFPO-DA Concentration (C), ug/dscm

$$C = \frac{M \times 35.3147}{Vmstd}$$

where,

M	2	= HFPO-DA mass, ug
Vmstd	77.337	= standard meter volume, dscf
C_{NH3}	9.5E-01	= ug/dscm

HFPO-DA Emission Rate (ER), lb/hr

$$ER = \frac{M \times Qs \times 60}{Vmstd \times 4.54E + 11}$$

where,

M	2.1	= HFPO-DA mass, ug
Qs	18,687	= average stack gas flow at standard conditions, dscfm
Vmstd	77.337	= standard meter volume, dscf
ER	6.7E-05	= lb/hr

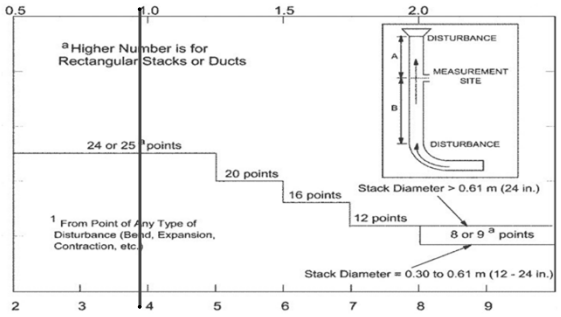
Appendix B

Method 1 Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Date: 10/09/23

Stack Parameters

Duct Orientation:	Vertical	
Duct Design:	Circular	
Distance from Far Wall to Outside of Port:	46.00	in
Nipple Length:	10.00	in
Depth of Duct:	36.00	in
Cross Sectional Area of Duct:	7.07	ft^2
No. of Test Ports:	2	
Distance A:	2.9	ft
Distance A Duct Diameters:	1.0	**(must be > 0.5)**
Distance B:	3.4	ft
Distance B Duct Diameters:	1.1	**(must be > 2)**
Minimum Number of Traverse Points:	24	
Actual Number of Traverse Points:	24	
Number of Readings per Point:	1	
Measurer (Initial and Date):	JS 10/9/23	
Reviewer (Initial and Date):	AA 10/9/23	



CIRCULAR DUCT

LOCATION OF TRAVERSE POINTS

Number of traverse points on a diameter

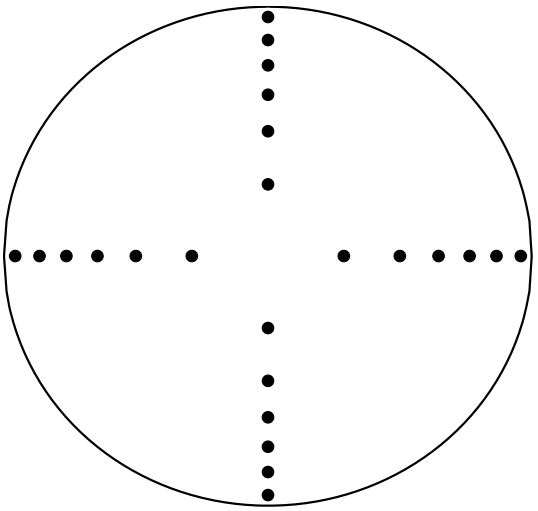
	2	3	4	5	6	7	8	9	10	11	12
1	14.6	--	6.7	--	4.4	--	3.2	--	2.6	--	2.1
2	85.4	--	25.0	--	14.6	--	10.5	--	8.2	--	6.7
3	--	--	75.0	--	29.6	--	19.4	--	14.6	--	11.8
4	--	--	93.3	--	70.4	--	32.3	--	22.6	--	17.7
5	--	--	--	--	85.4	--	67.7	--	34.2	--	25.0
6	--	--	--	--	95.6	--	80.6	--	65.8	--	35.6
7	--	--	--	--	--	--	89.5	--	77.4	--	64.4
8	--	--	--	--	--	--	96.8	--	85.4	--	75.0
9	--	--	--	--	--	--	--	--	91.8	--	82.3
10	--	--	--	--	--	--	--	--	97.4	--	88.2
11	--	--	--	--	--	--	--	--	--	--	93.3
12	--	--	--	--	--	--	--	--	--	--	97.9

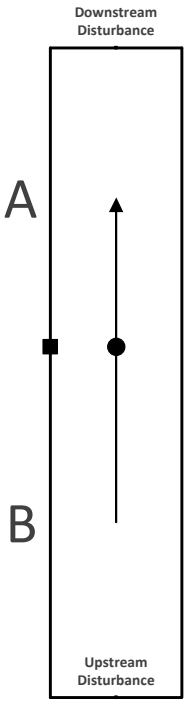
**Percent of stack diameter from inside wall to traverse point.*

Traverse Point	% of Diameter	Distance from inside wall	Distance from outside of port
1	2.1	1.00	11.00
2	6.7	2.41	12.41
3	11.8	4.25	14.25
4	17.7	6.37	16.37
5	25.0	9.00	19.00
6	35.6	12.82	22.82
7	64.4	23.18	33.18
8	75.0	27.00	37.00
9	82.3	29.63	39.63
10	88.2	31.75	41.75
11	93.3	33.59	43.59
12	97.9	35.00	45.00

Stack Diagram
A = 2.9 ft.
B = 3.4 ft.
Depth of Duct = 36 in.

Cross Sectional Area





Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		10/9/23	10/10/23	10/10/23	--
Start Time		17:20	9:08	12:00	--
Stop Time		19:24	11:08	13:50	--
Run Time, min	(θ)	96.0	96.0	96.0	96.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	29.70	29.94	29.94	29.86
Meter Correction Factor	(Y)	0.989	0.989	0.989	0.989
Orifice Calibration Value	(ΔH @)	1.85	1.85	1.85	1.85
Meter Volume, ft^3	(Vm)	79.648	75.320	74.216	76.395
Meter Temperature, °F	(Tm)	76.4	77.9	83.7	79.3
Meter Temperature, °R	(Tm)	536.1	537.6	543.4	539.0
Meter Orifice Pressure, in. WC	(ΔH)	1.954	1.775	1.712	1.814
Volume H_2O Collected, mL	(Vlc)	38.4	39.1	40.3	39.3
Nozzle Diameter, in	(Dn)	0.230	0.230	0.230	0.230
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
FH HFPO-DA Mass, ug	$M_{(HFPODA)}$	1.68	1.69	2.08	1.8
BH HFPO-DA Mass, ug	$M_{(HFPODA)}$	0.40	0.52	0.44	0.5
Total HFPO-DA Mass, ug	$M_{(HFPODA)}$	2.1	2.2	2.5	2.3
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	77.337	73.485	71.625	74.149
Standard Water Volume, ft^3	(Vwstd)	1.811	1.844	1.901	1.852
Moisture Fraction Measured	(BWSmsd)	0.023	0.024	0.026	0.024
Moisture Fraction @ Saturation	(BWSsat)	0.032	0.026	0.029	0.029
Moisture Fraction	(BWS)	0.023	0.024	0.026	0.024
Meter Pressure, in Hg	(Pm)	29.84	30.07	30.07	29.99
Volume at Nozzle, ft^3	(Vn)	81.592	76.234	74.887	77.57
Isokinetic Sampling Rate, (%)	(I)	105.6	105.6	105.9	105.7
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	5.0	4.6	5.0	4.9
EMISSION CALCULATIONS					
HFPO-DA Concentration, ug/dscm	$C_{(HFPODA)}$	9.5E-01	1.1E+00	1.2E+00	1.1
HFPO-DA Emission Rate, lb/hr	$ER_{(HFPODA)}$	6.7E-05	7.1E-05	8.0E-05	0.0

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		10/9/23	10/10/23	10/10/23	--
Start Time		17:20	9:08	12:00	--
Stop Time		19:24	11:08	13:50	--
Run Time, min		96.0	96.0	96.0	96.0
VELOCITY HEAD, in. WC					
Point 1		0.75	0.47	0.27	0.50
Point 2		0.72	0.55	0.28	0.52
Point 3		0.72	0.56	0.32	0.53
Point 4		0.69	0.56	0.38	0.54
Point 5		0.66	0.54	0.38	0.53
Point 6		0.65	0.60	0.64	0.63
Point 7		0.63	0.57	0.63	0.61
Point 8		0.61	0.62	0.66	0.63
Point 9		0.55	0.64	0.66	0.62
Point 10		0.56	0.63	0.66	0.62
Point 11		0.58	0.72	0.65	0.65
Point 12		0.59	0.63	0.62	0.61
Point 13		0.62	0.47	0.68	0.59
Point 14		0.65	0.50	0.66	0.60
Point 15		0.70	0.56	0.68	0.65
Point 16		0.68	0.55	0.67	0.63
Point 17		0.70	0.60	0.62	0.64
Point 18		0.72	0.62	0.61	0.65
Point 19		0.68	0.58	0.64	0.63
Point 20		0.66	0.60	0.62	0.63
Point 21		0.64	0.62	0.60	0.62
Point 22		0.68	0.64	0.58	0.63
Point 23		0.70	0.62	0.55	0.62
Point 24		0.71	0.65	0.56	0.64
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.812	0.766	0.747	0.775
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	29.70	29.94	29.94	29.86
Static Pressure, in. WC	(Pg)	-2.20	-2.20	-2.20	-2.20
Stack Pressure, in. Hg	(Ps)	29.54	29.78	29.78	29.70
Stack Cross-sectional Area, ft^2	(As)	7.07	7.07	7.07	7.07
Temperature, °F	(Ts)	77.4	71.8	75.3	74.8
Temperature, °R	(Ts)	537.0	531.5	534.9	534.5
Moisture Fraction Measured	(BWSmsd)	0.023	0.024	0.026	0.024
Moisture Fraction @ Saturation	(BWSsat)	0.032	0.026	0.029	0.029
Moisture Fraction	(BWS)	0.023	0.024	0.026	0.024
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.90
CO_2 Concentration, %	(CO_2)	0.1	0.1	0.1	0.10
Molecular Weight, lb/lb-mole (dry)	(Md)	28.85	28.85	28.85	28.85
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.60	28.59	28.57	28.59
Velocity, ft/sec	(Vs)	46.5	43.4	42.5	44.2
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	19,716	18,424	18,046	18,729
At Standard Conditions, scfm	(Qsw)	19,125	18,204	17,717	18,349
At Standard Conditions, dscfm	(Qs)	18,687	17,759	17,259	17,902

Cyclonic Flow Check

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Date 09/13/23

Sample Point	Angle (ΔP=0)
1	8
2	10
3	12
4	12
5	10
6	8
7	10
8	12
9	12
10	10
11	8
12	10
13	5
14	5
15	5
16	10
17	10
18	12
19	10
20	10
21	10
22	8
23	12
24	10
Average	10

Method 4 Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Parameter HFPO-DA
Analysis Gravimetric

Run 1	Date:	10/9/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	299.1	513.8	755.6	684.3	710.2	446.3	298.5	949.1	4656.9
Final Mass, g	317.6	513.9	754.4	684.9	711.9	447.6	304.4	960.6	4695.3
Gain	18.5	0.1	-1.2	0.6	1.7	1.3	5.9	11.5	38.4
Run 2	**Date:**	10/10/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	300.3	514.5	737.0	780.7	745.2	486.2	301.9	932.3	4798.1
Final Mass, g	312.3	515.2	735.2	779.3	746.1	488.2	313.5	947.4	4837.2
Gain	12.0	0.7	-1.8	-1.4	0.9	2.0	11.6	15.1	39.1
Run 3	**Date:**	10/10/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	299.9	447.5	747.9	692.6	710.5	513.6	299.9	871.2	4583.1
Final Mass, g	317.9	448.2	747.8	693.4	711.2	514.8	308.4	881.7	4623.4
Gain	18.0	0.7	-0.1	0.8	0.7	1.2	8.5	10.5	40.3

Alliance TECHNICAL GROUP

Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC			**Start Time:**	17:20	**Source:**	VES Carbon Bed Inlet
Date:	10/9/23	**Run 1**	VALID	**End Time:**	19:24	**Project No.:**	AST-2023-4327	**Parameter:**	HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.	STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	Meter Box ID:	5		Est. Tm:	85	°F		Pb:	29.70	in. Hg	Vlc (ml)
Barometric:	29.77	in. Hg	Y:	0.989		Est. Ts:	70	°F		Pg:	-2.20	in. WC	38.4
Static Press:	-2.20	in. WC	ΔH @ (in.WC):	1.85		Est. ΔP:	0.68	in. WC		O_2:	20.9	%	K-FACTOR
Stack Press:	29.61	in. Hg	Probe ID:	P4-1		Est. Dn:	0.210	in.		CO_2:	0.1	%	3.047
CO_2:	0.0	%	Liner Material:	glass		Target Rate:	0.68	scfm					
O_2:	20.9	%	Pitot ID:	P4-1		LEAK CHECKS	Pre	Mid 1	Mid 2	Mid 3	Post	Check Pt.	Initial	Final	Corr.
N_2/CO:	79.1	%	Pitot Cp/Type:	0.840	S-type	Leak Rate (cfm):	0.000	--	--	--	0.000	Mid 1 (cf)			--
Md:	28.84	lb/lb-mole	Nozzle ID:	G-4	glass	Vacuum (in Hg):	15	--	--	--	10	Mid 2 (cf)			--
Ms:	28.62	lb/lb-mole	Nozzle Dn (in.):	0.230		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)			--
												Mid-Point Leak Check Vol (cf):			--

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			69	69	Ideal	Actual		69	69	69	68		
1	0.00	4.00	20.501	0.75	70	77	2.19	2.20	5	85	85	54	41	96.5	49.49
2	4.00	8.00	23.700	0.72	71	78	2.10	2.10	5	85	85	50	40	101.5	48.54
3	8.00	12.00	27.000	0.72	71	78	2.10	2.10	6	85	85	48	40	101.5	48.54
4	12.00	16.00	30.300	0.69	71	78	2.02	2.00	6	85	84	46	40	106.8	47.52
5	16.00	20.00	33.700	0.66	72	78	1.93	1.90	6	85	84	44	38	108.9	46.47
6	20.00	24.00	37.100	0.65	73	78	1.91	1.90	6	85	85	45	38	109.6	46.12
7	24.00	28.00	40.500	0.63	75	78	1.86	1.90	6	86	85	45	38	104.3	45.40
8	28.00	32.00	43.700	0.61	75	78	1.80	1.80	6	86	85	46	38	99.4	44.68
9	32.00	36.00	46.700	0.55	75	78	1.62	1.60	6	86	86	48	39	108.1	42.42
10	36.00	40.00	49.800	0.56	77	77	1.66	1.70	6	86	85	46	39	106.7	42.77
11	40.00	44.00	52.900	0.58	77	78	1.72	1.70	6	86	85	45	38	108.3	43.56
12	44.00	48.00	56.100	0.59	77	77	1.75	1.80	6	86	85	46	38	103.9	43.90
1	48.00	52.00	59.200	0.62	75	77	1.83	1.80	7	85	85	56	36	105.1	45.00
2	52.00	56.00	62.400	0.65	76	77	1.92	1.90	7	85	85	48	36	99.2	46.08
3	56.00	60.00	65.500	0.70	77	77	2.07	2.10	7	86	85	47	37	107.8	47.81
4	60.00	64.00	69.000	0.68	78	77	2.02	2.00	7	85	85	47	37	106.0	47.13
5	64.00	68.00	72.400	0.70	80	77	2.08	2.10	8	85	85	47	37	107.2	47.81
6	68.00	72.00	75.900	0.72	80	77	2.14	2.20	8	86	85	47	37	108.8	48.49
7	72.00	76.00	79.500	0.68	80	77	2.03	2.00	8	85	85	47	37	108.8	47.13
8	76.00	80.00	83.000	0.66	80	77	1.97	2.00	8	85	85	48	37	107.2	46.43
9	80.00	84.00	86.400	0.64	81	77	1.91	1.90	8	85	85	48	38	108.7	45.72
10	84.00	88.00	89.800	0.68	81	77	2.03	2.00	8	85	85	48	38	108.6	47.13
11	88.00	92.00	93.300	0.70	81	77	2.09	2.10	8	85	85	48	38	107.0	47.81
12	92.00	96.00	96.800	0.71	81	77	2.12	2.10	8	85	85	48	38	101.7	48.16
	Final DGM:		100.149												

RESULTS	Run Time		Vm		ΔP		Tm		Ts		Max Vac	ΔH		%ISO	BWS	Y_{qa}
	96.0	min	79.648	ft^3	0.66	in. WC	76.4	°F	77.4	°F	8	1.954	in. WC	105.6	0.023	5.0

Alliance TECHNICAL GROUP

Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC			**Start Time:**	9:08	**Source:**	VES Carbon Bed Inlet
Date:	10/10/23	**Run 2**	VALID	**End Time:**	11:08	**Project No.:**	AST-2023-4327	**Parameter:**	HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.	STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	Meter Box ID:	5		Est. Tm:	76	°F		Pb:	29.94	in. Hg	Vlc (ml)
Barometric:	29.77	in. Hg	Y:	0.989		Est. Ts:	77	°F		Pg:	-2.20	in. WC	39.1
Static Press:	-2.20	in. WC	ΔH @ (in.WC):	1.85		Est. ΔP:	0.66	in. WC		O_2:	20.9	%	K-FACTOR
Stack Press:	29.61	in. Hg	Probe ID:	P4-1		Est. Dn:	0.215	in.		CO_2:	0.1	%	2.96
CO_2:	0.0	%	Liner Material:	glass		Target Rate:	0.68	scfm					
O_2:	20.9	%	Pitot ID:	P4-1		LEAK CHECKS	Pre	Mid 1	Mid 2	Mid 3	Post	Check Pt.	Initial	Final	Corr.
N_2/CO:	79.1	%	Pitot Cp/Type:	0.840	S-type	Leak Rate (cfm):	0.000	--	--	--	0.005	Mid 1 (cf)			--
Md:	28.84	lb/lb-mole	Nozzle ID:	G-4	glass	Vacuum (in Hg):	15	--	--	--	10	Mid 2 (cf)			--
Ms:	28.62	lb/lb-mole	Nozzle Dn (in.):	0.230		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)			--
												Mid-Point Leak Check Vol (cf):			--

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			--	--	Ideal	Actual		--	--	--	--		
1	0.00	4.00	101.830	0.47	64	71	1.38	1.40	5	82	82	47	38	98.3	38.96
2	4.00	8.00	104.400	0.55	69	71	1.62	1.60	5	82	81	42	39	94.6	42.15
3	8.00	12.00	107.100	0.56	70	71	1.66	1.70	5	83	80	40	39	104.0	42.53
4	12.00	16.00	110.100	0.56	73	71	1.67	1.70	6	83	80	40	40	106.9	42.53
5	16.00	20.00	113.200	0.54	73	71	1.61	1.60	6	80	80	40	42	108.8	41.76
6	20.00	24.00	116.300	0.60	75	71	1.79	1.80	7	80	80	42	42	106.2	44.02
7	24.00	28.00	119.500	0.57	75	71	1.70	1.70	7	81	80	42	44	108.9	42.91
8	28.00	32.00	122.700	0.62	77	71	1.86	1.90	7	81	80	43	45	109.0	44.75
9	32.00	36.00	126.050	0.64	78	71	1.92	1.90	8	81	80	44	45	107.1	45.46
10	36.00	40.00	129.400	0.63	80	71	1.90	1.90	8	81	80	45	45	109.1	45.11
11	40.00	44.00	132.800	0.72	80	71	2.17	2.20	8	81	80	47	47	108.2	48.22
12	44.00	48.00	136.400	0.63	81	71	1.90	1.90	8	81	80	47	47	105.7	45.11
1	48.00	52.00	139.700	0.47	74	71	1.40	1.40	8	81	80	58	43	105.1	38.96
2	52.00	56.00	142.500	0.50	76	72	1.49	1.50	8	81	80	52	43	108.5	40.22
3	56.00	60.00	145.490	0.56	78	72	1.68	1.70	8	81	80	50	44	109.7	42.57
4	60.00	64.00	148.700	0.55	80	73	1.65	1.70	6	80	80	50	43	106.6	42.22
5	64.00	68.00	151.800	0.60	80	73	1.80	1.80	6	81	80	50	43	105.4	44.10
6	68.00	72.00	155.000	0.62	83	73	1.87	1.90	6	81	80	51	43	106.4	44.83
7	72.00	76.00	158.300	0.58	83	73	1.75	1.80	6	81	80	52	42	109.9	43.36
8	76.00	80.00	161.600	0.60	83	73	1.81	1.80	6	80	80	52	42	101.5	44.10
9	80.00	84.00	164.700	0.62	84	73	1.87	1.90	7	80	80	52	43	109.4	44.83
10	84.00	88.00	168.100	0.64	84	73	1.94	1.90	7	80	80	52	43	98.2	45.55
11	88.00	92.00	171.200	0.62	85	73	1.88	1.90	7	80	80	52	43	96.3	44.83
12	92.00	96.00	174.200	0.65	85	73	1.97	2.00	7	81	80	52	44	92.5	45.90
	Final DGM:		177.150												

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y_{qa}
	96.0 min	75.320 ft^3	0.59 in. WC	77.9 °F	71.8 °F	8	1.775 in. WC	105.6	0.024	4.6

Alliance TECHNICAL GROUP

Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC			**Start Time:**	12:00	**Source:**	VES Carbon Bed Inlet
Date:	10/10/23	**Run 3**	VALID	**End Time:**	13:50	**Project No.:**	AST-2023-4327

Parameter: HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.	STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	Meter Box ID:	5		Est. Tm:	78	°F		Pb:	29.94	in. Hg	Vlc (ml)
Barometric:	29.77	in. Hg	Y:	0.989		Est. Ts:	72	°F		Pg:	-2.20	in. WC	40.3
Static Press:	-2.20	in. WC	ΔH @ (in.WC):	1.85		Est. ΔP:	0.59	in. WC		O_2:	20.9	%	K-FACTOR
Stack Press:	29.61	in. Hg	Probe ID:	P4-1		Est. Dn:	0.220	in.		CO_2:	0.1	%	2.997
CO_2:	0.0	%	Liner Material:	glass		Target Rate:	0.68	scfm					
O_2:	20.9	%	Pitot ID:	P4-1		LEAK CHECKS	Pre	Mid 1	Mid 2	Mid 3	Post	Check Pt.	Initial / Final / Corr.
N_2/CO:	79.1	%	Pitot Cp/Type:	0.840	S-type	Leak Rate (cfm):	0.000	--	--	--	0.000	Mid 1 (cf)	--
Md:	28.84	lb/lb-mole	Nozzle ID:	G-4	glass	Vacuum (in Hg):	15	--	--	--	10	Mid 2 (cf)	--
Ms:	28.62	lb/lb-mole	Nozzle Dn (in.):	0.230		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)	--
												Mid-Point Leak Check Vol (cf):	--

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			--	--	Ideal	Actual		--	--	--	--		
1	0.00	4.00	178.558	0.27	75	74	0.80	0.80	4	79	80	58	42	106.0	29.61
2	4.00	8.00	180.700	0.28	78	75	0.84	0.83	4	80	80	56	43	108.8	30.18
3	8.00	12.00	182.950	0.32	78	75	0.96	0.96	5	80	80	54	43	106.4	32.27
4	12.00	16.00	185.300	0.38	80	75	1.14	1.10	5	80	80	52	43	103.5	35.16
5	16.00	20.00	187.800	0.38	81	75	1.14	1.10	5	80	80	52	43	107.4	35.16
6	20.00	24.00	190.400	0.64	82	75	1.92	1.90	5	80	80	50	43	105.1	45.63
7	24.00	28.00	193.700	0.63	83	75	1.89	1.90	7	80	80	48	43	102.5	45.28
8	28.00	32.00	196.900	0.66	85	75	1.99	2.00	7	80	80	48	44	106.1	46.34
9	32.00	36.00	200.300	0.66	85	75	1.99	2.00	7	80	80	48	44	107.6	46.34
10	36.00	40.00	203.750	0.66	86	75	2.00	2.00	8	80	80	49	44	100.3	46.34
11	40.00	44.00	206.970	0.65	86	75	1.96	2.00	8	80	80	49	44	101.0	45.99
12	44.00	48.00	210.190	0.62	86	75	1.87	1.90	7	80	80	51	44	101.2	44.92
1	48.00	52.00	213.340	0.68	82	76	2.04	2.00	7	80	80	59	42	107.0	47.08
2	52.00	56.00	216.800	0.66	84	76	1.98	2.00	7	82	82	51	40	100.1	46.39
3	56.00	60.00	220.000	0.68	84	76	2.04	2.00	7	82	82	50	41	104.8	47.08
4	60.00	64.00	223.400	0.67	85	75	2.02	2.00	8	85	84	49	40	108.4	46.69
5	64.00	68.00	226.900	0.62	85	75	1.87	1.90	8	85	85	48	40	109.4	44.92
6	68.00	72.00	230.300	0.61	85	75	1.84	1.90	8	85	85	48	40	107.0	44.55
7	72.00	76.00	233.600	0.64	86	76	1.93	1.90	8	85	85	48	40	107.6	45.68
8	76.00	80.00	237.000	0.62	86	75	1.87	1.90	8	85	85	49	41	109.2	44.92
9	80.00	84.00	240.400	0.60	86	75	1.81	1.80	8	85	85	49	41	104.4	44.19
10	84.00	88.00	243.600	0.58	87	76	1.75	1.80	8	85	85	49	41	109.5	43.48
11	88.00	92.00	246.900	0.55	87	76	1.66	1.70	8	85	85	50	41	105.6	42.34
12	92.00	96.00	250.000	0.56	87	76	1.69	1.70	8	85	85	50	41	93.6	42.73
	Final DGM:		252.774												

RESULTS

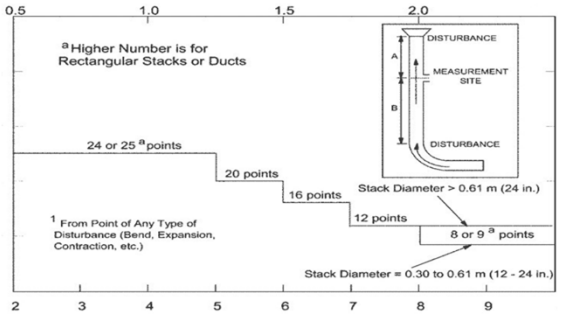
Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y_{qa}
96.0 min	74.216 ft^3	0.57 in. WC	83.7 °F	75.3 °F	8	1.712 in. WC	105.9	0.026	5.0

Method 1 Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Date: 10/09/23

Stack Parameters

Duct Orientation:	Horizontal	
Duct Design:	Circular	
Distance from Far Wall to Outside of Port:	46.50	in
Nipple Length:	10.50	in
Depth of Duct:	36.00	in
Cross Sectional Area of Duct:	7.07	ft^2
No. of Test Ports:	2	
Distance A:	12.5	ft
Distance A Duct Diameters:	4.2	**(must be > 0.5)**
Distance B:	31.0	ft
Distance B Duct Diameters:	10.3	**(must be > 2)**
Minimum Number of Traverse Points:	12	
Actual Number of Traverse Points:	12	
Number of Readings per Point:	2	
Measurer (Initial and Date):	JS 10/9/23	
Reviewer (Initial and Date):	AA 10/9/23	



CIRCULAR DUCT

LOCATION OF TRAVERSE POINTS

Number of traverse points on a diameter

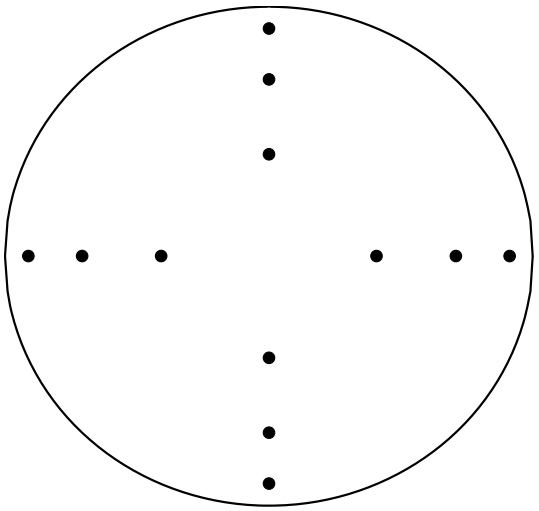
	2	3	4	5	6	7	8	9	10	11	12
1	14.6	--	6.7	--	4.4	--	3.2	--	2.6	--	2.1
2	85.4	--	25.0	--	14.6	--	10.5	--	8.2	--	6.7
3	--	--	75.0	--	29.6	--	19.4	--	14.6	--	11.8
4	--	--	93.3	--	70.4	--	32.3	--	22.6	--	17.7
5	--	--	--	--	85.4	--	67.7	--	34.2	--	25.0
6	--	--	--	--	95.6	--	80.6	--	65.8	--	35.6
7	--	--	--	--	--	--	89.5	--	77.4	--	64.4
8	--	--	--	--	--	--	96.8	--	85.4	--	75.0
9	--	--	--	--	--	--	--	--	91.8	--	82.3
10	--	--	--	--	--	--	--	--	97.4	--	88.2
11	--	--	--	--	--	--	--	--	--	--	93.3
12	--	--	--	--	--	--	--	--	--	--	97.9

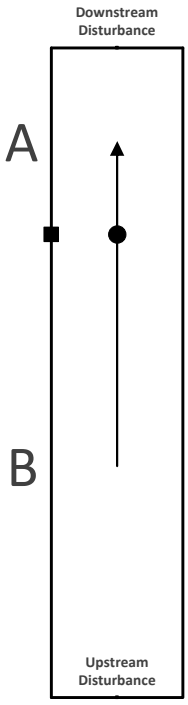
**Percent of stack diameter from inside wall to traverse point.*

Traverse Point	% of Diameter	Distance from inside wall	Distance from outside of port
1	4.4	1.58	12.08
2	14.6	5.26	15.76
3	29.6	10.66	21.16
4	70.4	25.34	35.84
5	85.4	30.74	41.24
6	95.6	34.42	44.92
7	--	--	--
8	--	--	--
9	--	--	--
10	--	--	--
11	--	--	--
12	--	--	--

Stack Diagram
A = 12.5 ft.
B = 31 ft.
Depth of Duct = 36 in.

Cross Sectional Area





Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		10/9/23	10/10/23	10/10/23	--
Start Time		17:20	9:08	12:00	--
Stop Time		19:24	11:08	13:50	--
Run Time, min	(θ)	96.0	96.0	96.0	96.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	29.70	29.94	29.94	29.86
Meter Correction Factor	(Y)	0.975	0.975	0.975	0.975
Orifice Calibration Value	(ΔH @)	1.618	1.618	1.618	1.618
Meter Volume, ft^3	(Vm)	61.727	57.513	60.721	59.987
Meter Temperature, °F	(Tm)	76.5	72.2	84.5	77.7
Meter Temperature, °R	(Tm)	536.2	531.8	544.1	537.4
Meter Orifice Pressure, in. WC	(ΔH)	1.093	0.961	1.026	1.027
Volume H_2O Collected, mL	(Vlc)	25.7	45.2	53.9	41.6
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
FH HFPO-DA Mass, ug	$M_{(HFPODA)}$	0.38	0.24	0.30	0.3
BH HFPO-DA Mass, ug	$M_{(HFPODA)}$	0.25	0.03	0.02	0.1
Total HFPO-DA Mass, ug	$M_{(HFPODA)}$	0.6	0.3	0.3	0.4
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	58.949	55.804	57.595	57.449
Standard Water Volume, ft^3	(Vwstd)	1.212	2.132	2.542	1.962
Moisture Fraction Measured	(BWSmsd)	0.020	0.037	0.042	0.033
Moisture Fraction @ Saturation	(BWSsat)	0.036	0.031	0.036	0.034
Moisture Fraction	(BWS)	0.020	0.031	0.036	0.029
Meter Pressure, in Hg	(Pm)	29.78	30.01	30.02	29.94
Volume at Nozzle, ft^3	(Vn)	61.932	58.703	61.442	60.69
Isokinetic Sampling Rate, (%)	(I)	101.2	102.5	104.1	102.6
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.9	1.4	2.1	1.4
EMISSION CALCULATIONS					
Inlet HFPO-DA Emission Rate, lb/hr		6.7E-05	7.1E-05	8.0E-05	7.3E-05
Outlet HFPO-DA Emission Rate, lb/hr		1.8E-05	7.4E-06	8.8E-06	1.1E-05
Reduction Efficiency, %	RE	73	90	89	84

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		10/9/23	10/10/23	10/10/23	--
Start Time		17:20	9:08	12:00	--
Stop Time		19:24	11:08	13:50	--
Run Time, min		96.0	96.0	96.0	96.0
VELOCITY HEAD, in. WC					
Point 1		0.20	0.19	0.20	0.20
Point 2		0.21	0.18	0.20	0.20
Point 3		0.25	0.18	0.20	0.21
Point 4		0.34	0.18	0.23	0.25
Point 5		0.35	0.21	0.23	0.26
Point 6		0.33	0.21	0.26	0.27
Point 7		0.34	0.25	0.26	0.28
Point 8		0.33	0.25	0.26	0.28
Point 9		0.36	0.35	0.32	0.34
Point 10		0.37	0.34	0.32	0.34
Point 11		0.32	0.36	0.32	0.33
Point 12		0.30	0.36	0.32	0.33
Point 13		0.20	0.21	0.20	0.20
Point 14		0.19	0.20	0.22	0.20
Point 15		0.26	0.20	0.23	0.23
Point 16		0.30	0.21	0.22	0.24
Point 17		0.28	0.25	0.26	0.26
Point 18		0.25	0.25	0.27	0.26
Point 19		0.35	0.29	0.35	0.33
Point 20		0.33	0.30	0.35	0.33
Point 21		0.36	0.35	0.35	0.35
Point 22		0.36	0.33	0.36	0.35
Point 23		0.33	0.34	0.35	0.34
Point 24		0.29	0.35	0.35	0.33
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.545	0.510	0.523	0.526
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	29.70	29.94	29.94	29.86
Static Pressure, in. WC	(Pg)	1.20	1.20	1.40	1.27
Stack Pressure, in. Hg	(Ps)	29.79	30.03	30.04	29.95
Stack Cross-sectional Area, ft^2	(As)	7.07	7.07	7.07	7.07
Temperature, °F	(Ts)	81.2	77.0	81.7	79.9
Temperature, °R	(Ts)	540.8	536.6	541.4	539.6
Moisture Fraction Measured	(BWSmsd)	0.020	0.037	0.042	0.033
Moisture Fraction @ Saturation	(BWSsat)	0.036	0.031	0.036	0.034
Moisture Fraction	(BWS)	0.020	0.031	0.036	0.029
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.90
CO_2 Concentration, %	(CO_2)	0.1	0.1	0.1	0.10
Molecular Weight, lb/lb-mole (dry)	(Md)	28.85	28.85	28.85	28.85
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.63	28.52	28.46	28.54
Velocity, ft/sec	(Vs)	31.2	29.0	29.9	30.0
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	13,220	12,294	12,668	12,727
At Standard Conditions, scfm	(Qsw)	12,842	12,132	12,398	12,457
At Standard Conditions, dscfm	(Qs)	12,583	11,759	11,952	12,098

Cyclonic Flow Check

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Date 10/09/23

Sample Point	Angle (ΔP=0)
1	8
2	5
3	8
4	8
5	8
6	5
7	5
8	8
9	8
10	10
11	5
12	5
Average	7

Method 4 Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Parameter HFPO-DA
Analysis Gravimetric

Run 1	Date:	10/9/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	298.5	528.6	704.5	740.4	738.6	472.4	298.4	929.3	4710.7
Final Mass, g	304.3	529.0	704.2	740.4	739.6	473.2	306.0	939.7	4736.4
Gain	5.8	0.4	-0.3	0.0	1.0	0.8	7.6	10.4	25.7
Run 2	**Date:**	10/10/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	301.5	506.6	706.4	693.7	705.3	471.4	302.8	863.6	4551.3
Final Mass, g	321.2	507.0	706.2	694.0	706.1	471.6	316.2	874.2	4596.5
Gain	19.7	0.4	-0.2	0.3	0.8	0.2	13.4	10.6	45.2
Run 3	**Date:**	10/10/23							
Impinger No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	399.9	528.6	705.4	742.6	739.0	473.6	299.5	873.0	4761.6
Final Mass, g	414.2	530.0	705.2	743.8	740.1	473.7	323.9	884.6	4815.5
Gain	14.3	1.4	-0.2	1.2	1.1	0.1	24.4	11.6	53.9

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Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC			**Start Time:**	17:20	**Source:**	VES Carbon Bed Outlet
Date:	10/9/23	**Run 1**	VALID	**End Time:**	19:24	**Project No.:**	AST-2023-4327	**Parameter:**	HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.	STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	**Meter Box ID:**	8		**Est. Tm:**	75	°F		**Pb:**	29.70	in. Hg	**Vlc (ml)**
Barometric:	29.77	in. Hg	**Y:**	0.975		**Est. Ts:**	72	°F		**Pg:**	1.20	in. WC	25.7
Static Press:	1.40	in. WC	**ΔH @ (in.WC):**	1.618		**Est. ΔP:**	0.31	in. WC		**O_2:**	20.9	%	**K-FACTOR**
Stack Press:	29.87	in. Hg	**Probe ID:**	P4-2		**Est. Dn:**	0.227	in.		**CO_2:**	0.1	%	3.673
CO_2:	0.0	%	**Liner Material:**	glass		**Target Rate:**	0.52	scfm					
O_2:	20.9	%	**Pitot ID:**	P4-2		**LEAK CHECKS**	**Pre**	**Mid 1**	**Mid 2**	**Mid 3**	**Post**	**Check Pt.**	**Initial**	**Final**	**Corr.**
N_2/CO:	79.1	%	**Pitot Cp/Type:**	0.840	S-type	Leak Rate (cfm):	0.000	0.000	--	--	0.000	Mid 1 (cf)	911.079	911.219	0.140
Md:	28.84	lb/lb-mole	**Nozzle ID:**	GS-7	glass	Vacuum (in Hg):	10	9	--	--	10	Mid 2 (cf)			--
Ms:	28.62	lb/lb-mole	**Nozzle Dn (in.):**	0.250		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)			--
												Mid-Point Leak Check Vol (cf):			0.140

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			70	70	Ideal	Actual		69	69	69	69		
A1	0.00	4.00	879.874	0.20	71	82	0.72	0.72	2	100	100	45	58	100.6	25.56
1	4.00	8.00	881.950	0.21	70	82	0.75	0.75	5	100	100	46	57	105.7	26.19
2	8.00	12.00	884.180	0.25	71	83	0.89	0.90	5	99	100	44	53	102.5	28.61
2	12.00	16.00	886.540	0.34	74	84	1.22	1.20	6	99	100	45	51	99.7	33.39
3	16.00	20.00	889.230	0.35	74	83	1.26	1.30	6	99	100	47	50	97.2	33.85
3	20.00	24.00	891.890	0.33	75	83	1.19	1.20	6	99	100	48	52	101.3	32.87
4	24.00	28.00	894.590	0.34	77	82	1.23	1.20	6	100	99	46	52	97.9	33.33
4	28.00	32.00	897.250	0.33	77	80	1.20	1.20	6	99	99	46	52	101.1	32.78
5	32.00	36.00	899.960	0.36	78	80	1.31	1.30	6	100	100	45	52	93.7	34.23
5	36.00	40.00	902.590	0.37	78	80	1.35	1.40	7	100	100	46	52	104.5	34.70
6	40.00	44.00	905.560	0.32	80	80	1.17	1.20	7	100	100	46	52	104.7	32.27
6	44.00	48.00	908.340	0.30	80	80	1.10	1.10	6	100	100	47	53	106.5	31.25
B1	48.00	52.00	911.079	0.20	73	80	0.72	0.72	4	100	100	45	60	107.5	25.52
1	52.00	56.00	913.310	0.19	74	80	0.69	0.69	4	100	100	45	56	101.7	24.87
2	56.00	60.00	915.370	0.26	74	80	0.94	0.94	5	100	100	45	51	101.8	29.09
2	60.00	64.00	917.780	0.30	76	81	1.09	1.10	5	92	96	44	49	101.9	31.28
3	64.00	68.00	920.380	0.28	77	81	1.02	1.00	5	88	90	41	48	101.3	30.22
3	68.00	72.00	922.880	0.25	78	81	0.91	0.91	5	89	90	40	48	104.8	28.55
4	72.00	76.00	925.330	0.35	78	81	1.27	1.30	6	90	91	42	46	99.9	33.79
4	76.00	80.00	928.090	0.33	79	81	1.20	1.20	6	89	89	41	46	102.3	32.81
5	80.00	84.00	930.840	0.36	81	81	1.32	1.30	6	90	88	40	46	97.6	34.26
5	84.00	88.00	933.590	0.36	80	81	1.31	1.30	6	90	91	40	46	99.5	34.26
6	88.00	92.00	936.390	0.33	81	81	1.21	1.20	6	90	90	38	45	100.0	32.81
6	92.00	96.00	939.090	0.29	81	81	1.06	1.10	6	90	90	39	46	104.7	30.75
	Final DGM:		941.741												

RESULTS	Run Time		Vm		ΔP		Tm		Ts		Max Vac	ΔH		%ISO	BWS	Y_{qa}
	96.0	min	61.727	ft^3	0.30	in. WC	76.5	°F	81.2	°F	7	1.093	in. WC	101.2	0.020	0.9

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Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC		**Start Time:**	9:08	**Source:**	VES Carbon Bed Outlet	
Date:	10/10/23	Run 2 VALID	**End Time:**	11:08	**Project No.:**	AST-2023-4327	**Parameter:** HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.		STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	Meter Box ID:	8		Est. Tm:	77	°F			Pb:	29.94	in. Hg	Vlc (ml)
Barometric:	29.77	in. Hg	Y:	0.975		Est. Ts:	81	°F			Pg:	1.20	in. WC	45.2
Static Press:	1.40	in. WC	ΔH @ (in.WC):	1.618		Est. ΔP:	0.30	in. WC			O_2:	20.9	%	K-FACTOR
Stack Press:	29.87	in. Hg	Probe ID:	P4-2		Est. Dn:	0.229	in.			CO_2:	0.1	%	3.62
CO_2:	0.0	%	Liner Material:	glass		Target Rate:	0.52	scfm						
O_2:	20.9	%	Pitot ID:	P4-2		LEAK CHECKS	Pre	Mid 1	Mid 2	Mid 3	Post	Check Pt.	Initial	Final	Corr.
N_2/CO:	79.1	%	Pitot Cp/Type:	0.840	S-type	Leak Rate (cfm):	0.002	0.001	--	--	0.001	Mid 1 (cf)	970.968	971.195	0.227
Md:	28.84	lb/lb-mole	Nozzle ID:	GS-7	glass	Vacuum (in Hg):	10	9	--	--	10	Mid 2 (cf)	971.195	971.269	0.074
Ms:	28.62	lb/lb-mole	Nozzle Dn (in.):	0.250		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)			--
												Mid-Point Leak Check Vol (cf):			0.301

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			--	--	Ideal	Actual		--	--	--	--		
A1	0.00	4.00	942.984	0.19	62	73	0.68	0.70	5	85	86	34	51	93.1	24.71
1	4.00	8.00	944.840	0.18	62	75	0.64	0.65	5	84	85	35	45	98.6	24.09
2	8.00	12.00	946.750	0.18	65	75	0.65	0.65	5	89	85	34	48	99.1	24.09
2	12.00	16.00	948.680	0.18	66	75	0.65	0.65	5	86	86	34	45	95.8	24.09
3	16.00	20.00	950.550	0.21	67	75	0.76	0.75	5	85	83	35	46	101.8	26.02
3	20.00	24.00	952.700	0.21	68	75	0.76	0.75	5	84	88	35	46	101.2	26.02
4	24.00	28.00	954.840	0.25	68	75	0.90	0.90	5	85	86	36	47	102.7	28.39
4	28.00	32.00	957.210	0.25	69	75	0.90	0.90	5	85	86	36	47	99.1	28.39
5	32.00	36.00	959.500	0.35	70	75	1.27	1.25	5	85	87	36	48	103.7	33.60
5	36.00	40.00	962.340	0.34	70	75	1.23	1.25	5	85	87	36	49	107.8	33.11
6	40.00	44.00	965.250	0.36	70	75	1.30	1.30	5	85	84	37	51	102.3	34.07
6	44.00	48.00	968.090	0.36	73	76	1.31	1.30	5	85	84	37	51	103.2	34.11
B1	48.00	52.00	971.269	0.21	71	78	0.76	0.78	5	85	90	39	60	102.8	26.10
1	52.00	56.00	973.450	0.20	73	78	0.73	0.75	5	85	91	39	58	104.9	25.47
2	56.00	60.00	975.630	0.20	75	79	0.73	0.73	5	85	88	39	56	99.8	25.49
2	60.00	64.00	977.710	0.21	76	79	0.76	0.75	5	85	87	40	56	99.1	26.12
3	64.00	68.00	979.830	0.25	77	79	0.91	0.90	5	85	84	39	56	103.1	28.50
3	68.00	72.00	982.240	0.25	77	79	0.91	0.90	5	85	86	40	56	103.1	28.50
4	72.00	76.00	984.650	0.29	77	79	1.06	1.05	5	85	85	40	56	100.1	30.70
4	76.00	80.00	987.170	0.30	78	79	1.09	1.10	5	85	85	41	55	98.3	31.22
5	80.00	84.00	989.690	0.35	78	79	1.28	1.30	5	85	85	42	56	100.8	33.72
5	84.00	88.00	992.480	0.33	80	79	1.21	1.20	5	85	85	42	58	101.9	32.74
6	88.00	92.00	995.230	0.34	80	80	1.24	1.25	5	85	85	44	56	101.2	33.27
6	92.00	96.00	998.000	0.35	80	80	1.28	1.30	5	85	86	43	55	100.8	33.75
	Final DGM:		1000.798												

RESULTS	Run Time		Vm		ΔP		Tm		Ts		Max Vac	ΔH		%ISO	BWS	Y_{qa}
	96.0	min	57.513	ft^3	0.26	in. WC	72.2	°F	77.0	°F	5	0.961	in. WC	102.5	0.031	1.4

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Isokinetic Field Data

Location:	Chemours Company - Fayetteville Works Facility, NC			**Start Time:**	12:00	**Source:**	VES Carbon Bed Outlet
Date:	10/10/23	**Run 3**	VALID	**End Time:**	13:50	**Project No.:**	AST-2023-4327	**Parameter:**	HFPO-DA

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.		STACK DATA (FINAL)			MOIST. DATA
Moisture:	2.0	% est.	**Meter Box ID:**	8		**Est. Tm:**	72	°F			**Pb:**	29.94	in. Hg	**Vlc (ml)**
Barometric:	29.77	in. Hg	**Y:**	0.975		**Est. Ts:**	77	°F			**Pg:**	1.40	in. WC	53.9
Static Press:	1.40	in. WC	**ΔH @ (in.WC):**	1.618		**Est. ΔP:**	0.26	in. WC			**O_2:**	20.9	%	**K-FACTOR**
Stack Press:	29.87	in. Hg	**Probe ID:**	P4-2		**Est. Dn:**	0.237	in.			**CO_2:**	0.1	%	3.619
CO_2:	0.0	%	**Liner Material:**	glass		**Target Rate:**	0.52	scfm						
O_2:	20.9	%	**Pitot ID:**	P4-2		**LEAK CHECKS**	**Pre**	**Mid 1**	**Mid 2**	**Mid 3**	**Post**	**Check Pt.**	**Initial**	**Final**	**Corr.**
N_2/CO:	79.1	%	**Pitot Cp/Type:**	0.840	S-type	Leak Rate (cfm):	0.000	0.000	--	--	0.000	Mid 1 (cf)	31.097	31.248	0.151
Md:	28.84	lb/lb-mole	**Nozzle ID:**	GS-7	glass	Vacuum (in Hg):	8	7	--	--	10	Mid 2 (cf)			--
Ms:	28.62	lb/lb-mole	**Nozzle Dn (in.):**	0.250		Pitot Tube:	Pass	--	--	--	Pass	Mid 3 (cf)			--
												Mid-Point Leak Check Vol (cf):			0.151

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft^3)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average	Stack				Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
	Begin	End			--	--	Ideal	Actual		--	--	--	--		
A1	0.00	4.00	1.433	0.20	77	81	0.73	0.75	6	85	88	46	43	103.3	25.54
1	4.00	8.00	3.590	0.20	81	83	0.73	0.75	6	85	88	47	44	104.3	25.59
2	8.00	12.00	5.780	0.20	82	83	0.73	0.75	6	85	86	49	45	100.8	25.59
2	12.00	16.00	7.900	0.23	82	82	0.84	0.85	6	85	88	48	45	101.9	27.41
3	16.00	20.00	10.200	0.23	83	82	0.84	0.85	6	85	87	46	45	97.3	27.41
3	20.00	24.00	12.400	0.26	83	82	0.95	1.00	6	85	87	50	46	104.0	29.15
4	24.00	28.00	14.900	0.26	84	82	0.95	0.96	6	85	87	46	46	108.0	29.15
4	28.00	32.00	17.500	0.26	84	82	0.95	0.96	6	85	87	46	46	108.0	29.15
5	32.00	36.00	20.100	0.32	84	82	1.17	1.20	7	85	86	49	45	97.4	32.33
5	36.00	40.00	22.700	0.32	84	82	1.17	1.20	7	85	87	49	45	108.6	32.33
6	40.00	44.00	25.600	0.32	84	82	1.17	1.20	7	85	87	49	45	104.9	32.33
6	44.00	48.00	28.400	0.32	84	82	1.17	1.20	7	85	86	49	45	101.0	32.33
B1	48.00	52.00	31.248	0.20	84	82	0.73	0.75	6	90	86	45	45	97.1	25.56
1	52.00	56.00	33.300	0.22	84	82	0.81	0.80	6	90	86	44	44	103.8	26.81
2	56.00	60.00	35.600	0.23	85	81	0.85	0.85	6	89	85	44	45	100.4	27.39
2	60.00	64.00	37.880	0.22	86	82	0.81	0.80	6	88	85	44	44	103.4	26.81
3	64.00	68.00	40.180	0.26	86	82	0.96	0.95	6	87	85	44	46	102.2	29.15
3	68.00	72.00	42.650	0.27	87	81	1.00	1.00	6	87	86	47	46	99.2	29.67
4	72.00	76.00	45.100	0.35	87	81	1.29	1.30	7	85	86	48	45	103.6	33.79
4	76.00	80.00	48.010	0.35	87	81	1.29	1.30	7	85	86	47	46	95.7	33.79
5	80.00	84.00	50.700	0.35	87	81	1.29	1.30	7	85	85	47	46	105.0	33.79
5	84.00	88.00	53.650	0.36	87	81	1.33	1.30	7	84	85	49	48	103.9	34.26
6	88.00	92.00	56.610	0.35	87	81	1.29	1.30	7	84	84	45	46	102.1	33.79
6	92.00	96.00	59.480	0.35	88	81	1.30	1.30	7	85	85	46	46	100.4	33.79
	Final DGM:		62.305												

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y_{qa}
	96.0 min	60.721 ft^3	0.28 in. WC	84.5 °F	81.7 °F	7	1.026 in. WC	104.1	0.036	2.1

Appendix C

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Michael Aucoin
The Chemours Company FC, LLC
c/o AECOM
248 Chapman Rd.
Suite 101
Newark, Delaware 19702

Generated 11/19/2023 5:09:09 PM

JOB DESCRIPTION

VES Carbon Bed Inlet - OTM-45

JOB NUMBER

140-33987-1

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville TN 37921

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by
Courtney Adkins, Project Manager II
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Table of Contents

Definitions/Glossary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Job ID: 140-33987-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative
140-33987-1

Receipt
The samples were received on 10/13/2023 3:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0º C.

LCMS
Method 537 (modified): Results for samples M-1101,1102 VES CB INLET R1 OTM-45 FH (140-33987-1), M-1103,1104,1106 VES CB INLET R1 OTM-45 BH (140-33987-2), M-1108,1109 VES CB INLET R2 OTM-45 FH (140-33987-5), M-1110,1111,1113 VES CB INLET R2 OTM-45 BH (140-33987-6), M-1115,1116 VES CB INLET R3 OTM-45 FH (140-33987-9) and M-1117,1118,1120 VES CB INLET R3 OTM-45 BH (140-33987-10) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): The following samples was reported with elevated reporting limits for all analytes: M-1101,1102 VES CB INLET R1 OTM-45 FH (140-33987-1), M-1103,1104,1106 VES CB INLET R1 OTM-45 BH (140-33987-2), M-1108,1109 VES CB INLET R2 OTM-45 FH (140-33987-5), M-1110,1111,1113 VES CB INLET R2 OTM-45 BH (140-33987-6), M-1115,1116 VES CB INLET R3 OTM-45 FH (140-33987-9) and M-1117,1118,1120 VES CB INLET R3 OTM-45 BH (140-33987-10). The sample was analyzed at a dilution based on screening results.

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

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

Client Sample ID: M-1101,1102 VES CB INLET R1 OTM-45 FH

Lab Sample ID: 140-33987-1

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.68		0.100	0.0940	ug/Sample		11/01/23 08:50	11/15/23 16:27	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*25 - 150*	*11/01/23 08:50*	*11/15/23 16:27*	*20*

Client Sample ID: M-1103,1104,1106 VES CB INLET R1 OTM-45 BH

Lab Sample ID: 140-33987-2

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.403		0.200	0.110	ug/Sample		10/31/23 09:21	11/15/23 19:06	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*25 - 150*	*10/31/23 09:21*	*11/15/23 19:06*	*10*

Client Sample ID: M-1105 VES CB INLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-3

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0746	0.0299	ug/Sample		10/31/23 13:01	11/15/23 13:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*97*		*25 - 150*	*10/31/23 13:01*	*11/15/23 13:57*	*1*

Client Sample ID: M-1107 VES CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-4

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 19:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*105*		*25 - 150*	*10/31/23 09:21*	*11/15/23 19:15*	*1*

Client Sample ID: M-1108,1109 VES CB INLET R2 OTM-45 FH

Lab Sample ID: 140-33987-5

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.69		0.100	0.0940	ug/Sample		11/01/23 08:50	11/15/23 16:36	20

Client Sample ID: M-1108,1109 VES CB INLET R2 OTM-45 FH

Lab Sample ID: 140-33987-5

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		25 - 150	11/01/23 08:50	11/15/23 16:36	20

Client Sample ID: M-1110,1111,1113 VES CB INLET R2 OTM-45 BH

Lab Sample ID: 140-33987-6

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.523		0.200	0.110	ug/Sample		10/31/23 09:21	11/15/23 19:23	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		25 - 150	10/31/23 09:21	11/15/23 19:23	10

Client Sample ID: M-1112 VES CB INLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-7

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0746	0.0299	ug/Sample		10/31/23 13:01	11/15/23 14:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		25 - 150	10/31/23 13:01	11/15/23 14:06	1

Client Sample ID: M-1114 VES CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-8

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 19:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		25 - 150	10/31/23 09:21	11/15/23 19:32	1

Client Sample ID: M-1115,1116 VES CB INLET R3 OTM-45 FH

Lab Sample ID: 140-33987-9

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	2.08		0.100	0.0940	ug/Sample		11/01/23 08:50	11/15/23 16:45	20

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		25 - 150	11/01/23 08:50	11/15/23 16:45	20

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Client Sample ID: M-1117,1118,1120 VES CB INLET R3 OTM-45 BH

Lab Sample ID: 140-33987-10

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.443		0.200	0.110	ug/Sample		10/31/23 09:21	11/15/23 19:41	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*103*		*25 - 150*	*10/31/23 09:21*	*11/15/23 19:41*	*10*

Client Sample ID: M-1119 VES CB INLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-11

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0746	0.0299	ug/Sample		10/31/23 13:01	11/15/23 14:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*25 - 150*	*10/31/23 13:01*	*11/15/23 14:15*	*1*

Client Sample ID: M-1121 VES CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-12

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 19:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*85*		*25 - 150*	*10/31/23 09:21*	*11/15/23 19:50*	*1*

Default Detection Limits

Client: The Chemours Company FC, LLC
Job ID: 140-33987-1
Project/Site: VES Carbon Bed Inlet - OTM-45

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: None

Analyte	RL	MDL	Units
HFPO-DA	0.00500	0.00470	ug/Sample
HFPO-DA	0.0200	0.0110	ug/Sample

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: PFAS Prep

Analyte	RL	MDL	Units
HFPO-DA	0.000500	0.000200	ug/Sample

Isotope Dilution Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Air

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HFPODA (25-150)						
140-33987-1	M-1101,1102 VES CB INLET R1	91						
140-33987-2	M-1103,1104,1106 VES CB INLET R1 OTM-45 BH	98						
140-33987-3	M-1105 VES CB INLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE	97						
140-33987-4	M-1107 VES CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	105						
140-33987-5	M-1108,1109 VES CB INLET R2 OTM-45 FH	93						
140-33987-6	M-1110,1111,1113 VES CB INLET R2 OTM-45 BH	102						
140-33987-7	M-1112 VES CB INLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE	102						
140-33987-8	M-1114 VES CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	102						
140-33987-9	M-1115,1116 VES CB INLET R3 OTM-45 FH	87						
140-33987-10	M-1117,1118,1120 VES CB INLET R3 OTM-45 BH	103						
140-33987-11	M-1119 VES CB INLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE	98						
140-33987-12	M-1121 VES CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	85						
LCS 140-79675/2-B	Lab Control Sample	95						
LCS 140-79697/2-A	Lab Control Sample	98						
LCS 140-79722/2-B	Lab Control Sample	75						
LCSD 140-79675/3-B	Lab Control Sample Dup	90						
LCSD 140-79697/3-A	Lab Control Sample Dup	96						
LCSD 140-79722/3-B	Lab Control Sample Dup	72						
MB 140-79675/1-B	Method Blank	98						
MB 140-79697/1-A	Method Blank	93						
MB 140-79722/1-B	Method Blank	72						

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 140-79675/1-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 18:22	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*25 - 150*	*10/31/23 09:21*	*11/15/23 18:22*	*1*

Lab Sample ID: LCS 140-79675/2-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79675

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0200	0.01846	J	ug/Sample		92	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*95*		*25 - 150*

Lab Sample ID: LCSD 140-79675/3-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79675

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0200	0.01730	J	ug/Sample		86	60 - 140	7	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*90*		*25 - 150*

Lab Sample ID: MB 140-79697/1-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/31/23 13:01	11/15/23 13:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*93*		*25 - 150*	*10/31/23 13:01*	*11/15/23 13:29*	*1*

Lab Sample ID: LCS 140-79697/2-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79697

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0100	0.008908		ug/Sample		89	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*98*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 140-79697/3-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79697

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0100	0.009581		ug/Sample		96	60 - 140	7	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*25 - 150*

Lab Sample ID: MB 140-79722/1-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		11/01/23 08:50	11/15/23 16:01	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*25 - 150*	*11/01/23 08:50*	*11/15/23 16:01*	*1*

Lab Sample ID: LCS 140-79722/2-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79722

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0200	0.01958		ug/Sample		98	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*75*		*25 - 150*

Lab Sample ID: LCSD 140-79722/3-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79722

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0200	0.01921		ug/Sample		96	60 - 140	2	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*72*		*25 - 150*

QC Association Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

LCMS

Prep Batch: 79675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-2	M-1103,1104,1106 VES CB INLET R1 OTM-45 BI	Total/NA	Air	None	
140-33987-4	M-1107 VES CB INLET R1 OTM-45 BREAKTHR(	Total/NA	Air	None	
140-33987-6	M-1110,1111,1113 VES CB INLET R2 OTM-45 BH	Total/NA	Air	None	
140-33987-8	M-1114 VES CB INLET R2 OTM-45 BREAKTHR(	Total/NA	Air	None	
140-33987-10	M-1117,1118,1120 VES CB INLET R3 OTM-45 BH	Total/NA	Air	None	
140-33987-12	M-1121 VES CB INLET R3 OTM-45 BREAKTHR(	Total/NA	Air	None	
MB 140-79675/1-B	Method Blank	Total/NA	Air	None	
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 79697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-3	M-1105 VES CB INLET R1 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
140-33987-7	M-1112 VES CB INLET R2 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
140-33987-11	M-1119 VES CB INLET R3 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
MB 140-79697/1-A	Method Blank	Total/NA	Air	PFAS Prep	
LCS 140-79697/2-A	Lab Control Sample	Total/NA	Air	PFAS Prep	
LCSD 140-79697/3-A	Lab Control Sample Dup	Total/NA	Air	PFAS Prep	

Prep Batch: 79722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-1	M-1101,1102 VES CB INLET R1 OTM-45 FH	Total/NA	Air	None	
140-33987-5	M-1108,1109 VES CB INLET R2 OTM-45 FH	Total/NA	Air	None	
140-33987-9	M-1115,1116 VES CB INLET R3 OTM-45 FH	Total/NA	Air	None	
MB 140-79722/1-B	Method Blank	Total/NA	Air	None	
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Cleanup Batch: 79802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-1	M-1101,1102 VES CB INLET R1 OTM-45 FH	Total/NA	Air	Split	79722
140-33987-5	M-1108,1109 VES CB INLET R2 OTM-45 FH	Total/NA	Air	Split	79722
140-33987-9	M-1115,1116 VES CB INLET R3 OTM-45 FH	Total/NA	Air	Split	79722
MB 140-79722/1-B	Method Blank	Total/NA	Air	Split	79722
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	Split	79722
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	Split	79722

Cleanup Batch: 79849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-2	M-1103,1104,1106 VES CB INLET R1 OTM-45 BI	Total/NA	Air	Split	79675
140-33987-4	M-1107 VES CB INLET R1 OTM-45 BREAKTHR(	Total/NA	Air	Split	79675
140-33987-6	M-1110,1111,1113 VES CB INLET R2 OTM-45 BH	Total/NA	Air	Split	79675
140-33987-8	M-1114 VES CB INLET R2 OTM-45 BREAKTHR(	Total/NA	Air	Split	79675
140-33987-10	M-1117,1118,1120 VES CB INLET R3 OTM-45 BH	Total/NA	Air	Split	79675
140-33987-12	M-1121 VES CB INLET R3 OTM-45 BREAKTHR(	Total/NA	Air	Split	79675
MB 140-79675/1-B	Method Blank	Total/NA	Air	Split	79675
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	Split	79675
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	Split	79675

QC Association Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

LCMS

Analysis Batch: 80290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33987-1	M-1101,1102 VES CB INLET R1 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33987-2	M-1103,1104,1106 VES CB INLET R1 OTM-45 BI	Total/NA	Air	537 (modified)	79849
140-33987-3	M-1105 VES CB INLET R1 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	79697
140-33987-4	M-1107 VES CB INLET R1 OTM-45 BREAKTHR(	Total/NA	Air	537 (modified)	79849
140-33987-5	M-1108,1109 VES CB INLET R2 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33987-6	M-1110,1111,1113 VES CB INLET R2 OTM-45 BH	Total/NA	Air	537 (modified)	79849
140-33987-7	M-1112 VES CB INLET R2 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	79697
140-33987-8	M-1114 VES CB INLET R2 OTM-45 BREAKTHR(	Total/NA	Air	537 (modified)	79849
140-33987-9	M-1115,1116 VES CB INLET R3 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33987-10	M-1117,1118,1120 VES CB INLET R3 OTM-45 BH	Total/NA	Air	537 (modified)	79849
140-33987-11	M-1119 VES CB INLET R3 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	79697
140-33987-12	M-1121 VES CB INLET R3 OTM-45 BREAKTHR(	Total/NA	Air	537 (modified)	79849
MB 140-79675/1-B	Method Blank	Total/NA	Air	537 (modified)	79849
MB 140-79697/1-A	Method Blank	Total/NA	Air	537 (modified)	79697
MB 140-79722/1-B	Method Blank	Total/NA	Air	537 (modified)	79802
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	79849
LCS 140-79697/2-A	Lab Control Sample	Total/NA	Air	537 (modified)	79697
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	79802
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79849
LCSD 140-79697/3-A	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79697
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79802

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Client Sample ID: M-1101,1102 VES CB INLET R1 OTM-45 FH

Lab Sample ID: 140-33987-1
Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	62 mL	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			31 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	80290	11/15/23 16:27	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1103,1104,1106 VES CB INLET R1 OTM-45 BH

Lab Sample ID: 140-33987-2
Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	80290	11/15/23 19:06	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1105 VES CB INLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-3
Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:57	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1107 VES CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-4
Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 19:15	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1108,1109 VES CB INLET R2 OTM-45 FH

Lab Sample ID: 140-33987-5
Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	68 mL	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			34 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	80290	11/15/23 16:36	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1110,1111,1113 VES CB INLET R2 OTM-45 BH

Lab Sample ID: 140-33987-6

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	80290	11/15/23 19:23	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1112 VES CB INLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-7

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 14:06	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1114 VES CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-8

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 19:32	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1115,1116 VES CB INLET R3 OTM-45 FH

Lab Sample ID: 140-33987-9

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	80290	11/15/23 16:45	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1117,1118,1120 VES CB INLET R3 OTM-45 BH

Lab Sample ID: 140-33987-10

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	80290	11/15/23 19:41	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1119 VES CB INLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33987-11

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 14:15	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1121 VES CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33987-12

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 19:50	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-79675/1-B

Date Collected: N/A
Date Received: N/A

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:22	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-79697/1-A

Date Collected: N/A
Date Received: N/A

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:29	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-79722/1-B

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:01	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-79675/2-B

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:31	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-79697/2-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	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:39	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-79722/2-B

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:09	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample Dup
Lab Sample ID: LCSD 140-79675/3-B

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:39	CAC	EET KNX
	Instrument ID: LCA									

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Client Sample ID: Lab Control Sample Dup
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCSD 140-79697/3-A
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:48	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample Dup
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCSD 140-79722/3-B
Matrix: Air

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:18	CAC	EET KNX
	Instrument ID: LCA									

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: The Chemours Company FC, LLC
Job ID: 140-33987-1
Project/Site: VES Carbon Bed Inlet - OTM-45

Laboratory: Eurofins Knoxville

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

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-24
Colorado	State	TN00009	02-29-24
Connecticut	State	PH-0223	09-30-25
Florida	NELAP	E87177	06-30-24
Georgia (DW)	State	906	07-27-25
Hawaii	State	NA	07-27-24
Kansas	NELAP	E-10349	10-31-24
Kentucky (DW)	State	90101	12-31-23
Louisiana (All)	NELAP	83979	06-30-24
Louisiana (DW)	State	LA019	12-31-23
Maryland	State	277	03-31-24
Michigan	State	9933	07-27-25
Nevada	State	TN00009	07-31-24
New Hampshire	NELAP	2999	01-17-24
New Jersey	NELAP	TN001	07-01-24
New York	NELAP	10781	03-31-24
North Carolina (DW)	State	21705	07-31-24
North Carolina (WW/SW)	State	64	12-31-23
Oklahoma	State	9415	12-31-23
Oregon	NELAP	TNI0189	01-01-24
Pennsylvania	NELAP	68-00576	12-01-23
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-23-18	08-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	525-22-279-18762	10-06-25
Utah	NELAP	TN00009	07-31-24
Virginia	NELAP	460176	09-14-24
Washington	State	C593	01-19-24
West Virginia (DW)	State	9955C	12-31-23
West Virginia DEP	State	345	04-30-24
Wisconsin	State	998044300	08-31-24

Method Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET KNX
None	Leaching Procedure	TAL SOP	EET KNX
None	Leaching Procedure for Filter	TAL SOP	EET KNX
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	EET KNX
Split	Source Air Split	None	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

TAL-SAC = Eurofins Sacramento, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Inlet - OTM-45

Job ID: 140-33987-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-33987-1	M-1101,1102 VES CB INLET R1 OTM-45 FH	Air	10/09/23 00:00	10/13/23 15:15
140-33987-2	M-1103,1104,1106 VES CB INLET R1 OTM-45 BI	Air	10/09/23 00:00	10/13/23 15:15
140-33987-3	M-1105 VES CB INLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE	Air	10/09/23 00:00	10/13/23 15:15
140-33987-4	M-1107 VES CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/09/23 00:00	10/13/23 15:15
140-33987-5	M-1108,1109 VES CB INLET R2 OTM-45 FH	Air	10/10/23 00:00	10/13/23 15:15
140-33987-6	M-1110,1111,1113 VES CB INLET R2 OTM-45 BH	Air	10/10/23 00:00	10/13/23 15:15
140-33987-7	M-1112 VES CB INLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE	Air	10/10/23 00:00	10/13/23 15:15
140-33987-8	M-1114 VES CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/10/23 00:00	10/13/23 15:15
140-33987-9	M-1115,1116 VES CB INLET R3 OTM-45 FH	Air	10/10/23 00:00	10/13/23 15:15
140-33987-10	M-1117,1118,1120 VES CB INLET R3 OTM-45 BH	Air	10/10/23 00:00	10/13/23 15:15
140-33987-11	M-1119 VES CB INLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE	Air	10/10/23 00:00	10/13/23 15:15
140-33987-12	M-1121 VES CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/10/23 00:00	10/13/23 15:15

Request for Analysis/Chain-of-Custody – RFA/COC #001
The Chemours Company – Fayetteville NC
VES Carbon Bed Inlet

eurofins
Environment Testing
TestAmerica

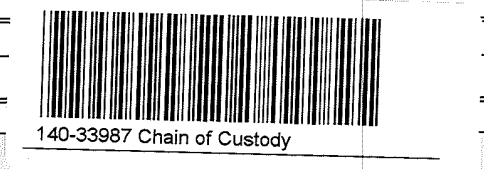
Project Identification:	Chemours Emissions Test
Client Name:	Chemours Company
Client Contact:	Eddie Vega (910) 678-1938
TestAmerica Contact:	Courtney Adkins (865) 291-3019
TestAmerica Project Manager:	Billy Anderson (865) 291-3080

Analytical Testing QC Requirements:
The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows: "BT" = Blank Train, "RB" = Reagent Blank, "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PB" = Proof Blank, "TB" = Trip Blank

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt
Laboratory Destination:	TestAmerica Laboratories, Inc. 5815 Middlebrook Pike Knoxville, TN 37921
Lab Phone Number:	865.291.3000
Courier:	Hand Deliver

Project Deliverables:
Report analytical results on TALS Reports and in data packages. Include "Field Sample Number", "Sample Type", and "Run Number" on all TALS Reports.

Analytical Parameter:	Holding Time Requirements:
HFPO-DA (CAS No. 13252-13-6)	14 Days to Extraction; 40 Days to Analysis



Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1101 VES CB INLET R1 OTM-45 Particulate Filter (Combine with *M-1102*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using method 8321A-HFPO.
M-1102 VES CB INLET R1 OTM-45 FH of Filter Holder & Probe Methanol Rinse (Combine with *M-1101*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.
M-1103 VES CB INLET R1 OTM-45 XAD-2 Resin Tube	1	10/9/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using method 8321A-HFPO.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1104 VES CB INLET R1 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1103*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction.
M-1105 VES CB INLET R1 OTM-45 Impingers 1,2 & 3 Condensate	1	10/9/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1106 VES CB INLET R1 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1103*)	1	10/9/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.
M-1107 VES CB INLET R1 OTM-45 Breakthrough XAD-2 Resin Tube	1	10/9/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using method 8321A-HFPO.
M-1108 VES CB INLET R2 OTM-45 Particulate Filter (Combine with *M-1109*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using method 8321A-HFPO.
M-1109 VES CB INLET R2 OTM-45 Front Half of Filter Holder & Probe Methanol Rinse (Combine with *M-1108*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1110 VES CB INLET R2 OTM-45 XAD-2 Resin Tube	2	10/10/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using method 8321A-HFPO. Analyze.
M-1111 VES CB INLET R2 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1110*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction.
M-1112 VES CB INLET R2 OTM-45 Impingers 1,2 & 3 Condensate	2	10/10/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1113 VES CB INLET R2 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1110*)	2	10/10/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.
M-1114 VES CB INLET R2 OTM-45 Breakthrough XAD-2 Resin Tube	2	10/10/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using method 8321A-HFPO.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1115 VES CB INLET R3 OTM-45 Particulate Filter (Combine with *M-1116*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using method 8321A-HFPO.
M-1116 VES CB INLET R3 OTM-45 Front Half of Filter Holder & Probe Methanol Rinse (Combine with *M-1115*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.
M-1117 VES CB INLET R3 OTM-45 XAD-2 Resin Tube	3	10/10/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using method 8321A-HFPO.
M-1118 VES CB INLET R3 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1117*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA using method 8321A-HFPO.
M-1119 VES CB INLET R3 OTM-45 Impingers 1,2 & 3 Condensate	3	10/10/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1120 VES CB INLET R3 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1117*)	3	10/10/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1121 VES CB INLET R3 OTM-45 Breakthrough XAD-2 Resin Tube	3	10/10/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using method 8321A-HFPO.

Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:	Comments (Please write "NONE" if no comment applicable)
(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.	NONE
(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:	RT 1.1 / CT 1.0°C
(3) Record any apparent sample loss/breakage.	NONE
(4) Record any unidentified samples transported with this shipment of samples:	NONE
(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformance):	HAND DELIVERED, NO CUSTODY SEALS

Custody Transfer:

	Name	Company	Date/Time
Relinquished By:	Patrick Gray	Alliance	10/11/23 1715
Accepted By:	Dony Colvin	ETA KNOX	10/12/23 1430
Relinquished By:	Dony Colvin	ETA KNOX	10/13/23 1515
Accepted By:	Ryan Lamon	ETA-KNX	10-13-23 15:15
Relinquished By:			
Accepted By:			
Relinquished By:			
Accepted By:			

Loc: 140
33987

11/19/2023

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?			✓	☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC76 Correction factor: -0.1°C	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: _____ Date: 10-14-23

QA026R32.doc, 062719

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Michael Aucoin
The Chemours Company FC, LLC
c/o AECOM
248 Chapman Rd.
Suite 101
Newark, Delaware 19702

Generated 11/19/2023 5:31:06 PM

JOB DESCRIPTION

VES Carbon Bed Outlet - OTM-45

JOB NUMBER

140-33988-1

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville TN 37921

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

Generated
11/19/2023 5:31:06 PM

Authorized for release by
Courtney Adkins, Project Manager II
Courtney.Adkins@et.eurofinsus.com
(865)291-3019

Table of Contents

Definitions/Glossary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Job ID: 140-33988-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative
140-33988-1

Receipt
The samples were received on 10/13/2023 3:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.6º C.

LCMS
Method 537 (modified): Results for samples M-1129,1130 VES CB OUTLET R1 OTM-45 FH (140-33988-1), M-1136,1137 VES CB OUTLET R2 OTM-45 FH (140-33988-5) and M-1143,1144 VES CB OUTLET R3 OTM-45 FH (140-33988-9) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): The following samples was reported with elevated reporting limits for all analytes: M-1129,1130 VES CB OUTLET R1 OTM-45 FH (140-33988-1), M-1136,1137 VES CB OUTLET R2 OTM-45 FH (140-33988-5) and M-1143,1144 VES CB OUTLET R3 OTM-45 FH (140-33988-9). The sample was analyzed at a dilution based on screening results.

Method 537 (modified): Results for samples M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH (140-33988-2) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): The following samples was reported with elevated reporting limits for all analytes: M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH (140-33988-2). The sample was analyzed at a dilution based on screening results.

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

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

Client: The Chemours Company FC, LLC
Job ID: 140-33988-1
Project/Site: VES Carbon Bed Outlet - OTM-45

Client Sample ID: M-1129,1130 VES CB OUTLET R1 OTM-45 FH

Lab Sample ID: 140-33988-1

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.380		0.0100	0.00940	ug/Sample		11/01/23 08:50	11/15/23 17:11	2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		25 - 150	11/01/23 08:50	11/15/23 17:11	2

Client Sample ID: M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH

Lab Sample ID: 140-33988-2

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.252		0.0400	0.0220	ug/Sample		10/31/23 09:21	11/16/23 13:24	2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		25 - 150	10/31/23 09:21	11/16/23 13:24	2

Client Sample ID: M-1133 VES CB OUTLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-3

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0746	0.0299	ug/Sample		10/31/23 13:01	11/15/23 14:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		25 - 150	10/31/23 13:01	11/15/23 14:23	1

Client Sample ID: M-1135 VES CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-4

Date Collected: 10/09/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 20:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	106		25 - 150	10/31/23 09:21	11/15/23 20:08	1

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Client Sample ID: M-1136,1137 VES CB OUTLET R2 OTM-45 FH

Lab Sample ID: 140-33988-5

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.236		0.0102	0.00955	ug/Sample		11/01/23 08:50	11/15/23 17:20	2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		25 - 150	11/01/23 08:50	11/15/23 17:20	2

Client Sample ID: M-1138,1139,1141 VES CB OUTLET R2 OTM-45 BH

Lab Sample ID: 140-33988-6

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0301		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 20:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	106		25 - 150	10/31/23 09:21	11/15/23 20:16	1

Client Sample ID: M-1140 VES CB OUTLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-7

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0735	0.0294	ug/Sample		10/31/23 13:01	11/15/23 14:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		25 - 150	10/31/23 13:01	11/15/23 14:32	1

Client Sample ID: M-1142 VES CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-8

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15
Sample Container: Air Train

Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 20:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		25 - 150	10/31/23 09:21	11/15/23 20:25	1

Client Sample ID: M-1143,1144 VES CB OUTLET R3 OTM-45 FH

Lab Sample ID: 140-33988-9

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.300		0.0100	0.00940	ug/Sample		11/01/23 08:50	11/15/23 17:29	2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		25 - 150	11/01/23 08:50	11/15/23 17:29	2

Client Sample ID: M-1145,1146,1148 VES CB OUTLET R3 OTM-45 BH

Lab Sample ID: 140-33988-10

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0212		0.0200	0.0110	ug/Sample		11/02/23 09:06	11/15/23 21:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	115		25 - 150	11/02/23 09:06	11/15/23 21:18	1

Client Sample ID: M-1147 VES CB OUTLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-11

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0781	0.0313	ug/Sample		10/31/23 13:01	11/15/23 14:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		25 - 150	10/31/23 13:01	11/15/23 14:41	1

Client Sample ID: M-1149 VES CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-12

Date Collected: 10/10/23 00:00
Matrix: Air
Date Received: 10/13/23 15:15
Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		11/02/23 09:06	11/16/23 13:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	147		25 - 150	11/02/23 09:06	11/16/23 13:32	1

Default Detection Limits

Client: The Chemours Company FC, LLC
Job ID: 140-33988-1
Project/Site: VES Carbon Bed Outlet - OTM-45

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: None

Analyte	RL	MDL	Units
HFPO-DA	0.00500	0.00470	ug/Sample
HFPO-DA	0.0200	0.0110	ug/Sample

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: PFAS Prep

Analyte	RL	MDL	Units
HFPO-DA	0.000500	0.000200	ug/Sample

Isotope Dilution Summary

Client: The Chemours Company FC, LLC
Job ID: 140-33988-1
Project/Site: VES Carbon Bed Outlet - OTM-45

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Air **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	HFPODA (25-150)
140-33988-1	M-1129,1130 VES CB OUTLET	85
140-33988-2	M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH	97
140-33988-3	M-1133 VES CB OUTLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE	97
140-33988-4	M-1135 VES CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	106
140-33988-5	M-1136,1137 VES CB OUTLET R2 OTM-45 FH	82
140-33988-6	M-1138,1139,1141 VES CB OUTLET R2 OTM-45 BH	106
140-33988-7	M-1140 VES CB OUTLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE	102
140-33988-8	M-1142 VES CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	79
140-33988-9	M-1143,1144 VES CB OUTLET R3 OTM-45 FH	74
140-33988-10	M-1145,1146,1148 VES CB OUTLET R3 OTM-45 BH	115
140-33988-11	M-1147 VES CB OUTLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE	99
140-33988-12	M-1149 VES CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	147
LCS 140-79675/2-B	Lab Control Sample	95
LCS 140-79697/2-A	Lab Control Sample	98
LCS 140-79722/2-B	Lab Control Sample	75
LCS 140-79779/2-B	Lab Control Sample	75
LCSD 140-79675/3-B	Lab Control Sample Dup	90
LCSD 140-79697/3-A	Lab Control Sample Dup	96
LCSD 140-79722/3-B	Lab Control Sample Dup	72
LCSD 140-79779/3-B	Lab Control Sample Dup	96
MB 140-79675/1-B	Method Blank	98
MB 140-79697/1-A	Method Blank	93
MB 140-79722/1-B	Method Blank	72
MB 140-79779/1-B	Method Blank	87

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 140-79675/1-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/31/23 09:21	11/15/23 18:22	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*25 - 150*	*10/31/23 09:21*	*11/15/23 18:22*	*1*

Lab Sample ID: LCS 140-79675/2-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79675

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0200	0.01846	J	ug/Sample		92	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*95*		*25 - 150*

Lab Sample ID: LCSD 140-79675/3-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79675

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0200	0.01730	J	ug/Sample		86	60 - 140	7	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*90*		*25 - 150*

Lab Sample ID: MB 140-79697/1-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/31/23 13:01	11/15/23 13:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*93*		*25 - 150*	*10/31/23 13:01*	*11/15/23 13:29*	*1*

Lab Sample ID: LCS 140-79697/2-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79697

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0100	0.008908		ug/Sample		89	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*98*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 140-79697/3-A
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79697

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0100	0.009581		ug/Sample		96	60 - 140	7	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*25 - 150*

Lab Sample ID: MB 140-79722/1-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		11/01/23 08:50	11/15/23 16:01	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*25 - 150*	*11/01/23 08:50*	*11/15/23 16:01*	*1*

Lab Sample ID: LCS 140-79722/2-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79722

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0200	0.01958		ug/Sample		98	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*75*		*25 - 150*

Lab Sample ID: LCSD 140-79722/3-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79722

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0200	0.01921		ug/Sample		96	60 - 140	2	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*72*		*25 - 150*

Lab Sample ID: MB 140-79779/1-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79779

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		11/02/23 09:06	11/15/23 20:52	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*87*		*25 - 150*	*11/02/23 09:06*	*11/15/23 20:52*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 140-79779/2-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79779

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA			0.0200	0.01899	J	ug/Sample		95	60 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*75*		*25 - 150*

Lab Sample ID: LCSD 140-79779/3-B
Matrix: Air
Analysis Batch: 80290

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79779

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA			0.0200	0.01790	J	ug/Sample		90	60 - 140	6	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*25 - 150*

LCMS

Prep Batch: 79675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-2	M-1131,1132,1134 VES CB OUTLET R1 OTM-45	Total/NA	Air	None	
140-33988-4	M-1135 VES CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	None	
140-33988-6	M-1138,1139,1141 VES CB OUTLET R2 OTM-45	Total/NA	Air	None	
140-33988-8	M-1142 VES CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	None	
MB 140-79675/1-B	Method Blank	Total/NA	Air	None	
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 79697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-3	M-1133 VES CB OUTLET R1 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
140-33988-7	M-1140 VES CB OUTLET R2 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
140-33988-11	M-1147 VES CB OUTLET R3 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
MB 140-79697/1-A	Method Blank	Total/NA	Air	PFAS Prep	
LCS 140-79697/2-A	Lab Control Sample	Total/NA	Air	PFAS Prep	
LCSD 140-79697/3-A	Lab Control Sample Dup	Total/NA	Air	PFAS Prep	

Prep Batch: 79722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-1	M-1129,1130 VES CB OUTLET R1 OTM-45 FH	Total/NA	Air	None	
140-33988-5	M-1136,1137 VES CB OUTLET R2 OTM-45 FH	Total/NA	Air	None	
140-33988-9	M-1143,1144 VES CB OUTLET R3 OTM-45 FH	Total/NA	Air	None	
MB 140-79722/1-B	Method Blank	Total/NA	Air	None	
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 79779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-10	M-1145,1146,1148 VES CB OUTLET R3 OTM-45	Total/NA	Air	None	
140-33988-12	M-1149 VES CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	None	
MB 140-79779/1-B	Method Blank	Total/NA	Air	None	
LCS 140-79779/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-79779/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Cleanup Batch: 79802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-1	M-1129,1130 VES CB OUTLET R1 OTM-45 FH	Total/NA	Air	Split	79722
140-33988-5	M-1136,1137 VES CB OUTLET R2 OTM-45 FH	Total/NA	Air	Split	79722
140-33988-9	M-1143,1144 VES CB OUTLET R3 OTM-45 FH	Total/NA	Air	Split	79722
MB 140-79722/1-B	Method Blank	Total/NA	Air	Split	79722
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	Split	79722
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	Split	79722

Cleanup Batch: 79849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-2	M-1131,1132,1134 VES CB OUTLET R1 OTM-45	Total/NA	Air	Split	79675
140-33988-4	M-1135 VES CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	Split	79675
140-33988-6	M-1138,1139,1141 VES CB OUTLET R2 OTM-45	Total/NA	Air	Split	79675
140-33988-8	M-1142 VES CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	Split	79675
MB 140-79675/1-B	Method Blank	Total/NA	Air	Split	79675
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	Split	79675

LCMS (Continued)

Cleanup Batch: 79849 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	Split	79675

Cleanup Batch: 79917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-10	M-1145,1146,1148 VES CB OUTLET R3 OTM-45	Total/NA	Air	Split	79779
140-33988-12	M-1149 VES CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	Split	79779
MB 140-79779/1-B	Method Blank	Total/NA	Air	Split	79779
LCS 140-79779/2-B	Lab Control Sample	Total/NA	Air	Split	79779
LCSD 140-79779/3-B	Lab Control Sample Dup	Total/NA	Air	Split	79779

Analysis Batch: 80290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-1	M-1129,1130 VES CB OUTLET R1 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33988-3	M-1133 VES CB OUTLET R1 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	79697
140-33988-4	M-1135 VES CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	79849
140-33988-5	M-1136,1137 VES CB OUTLET R2 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33988-6	M-1138,1139,1141 VES CB OUTLET R2 OTM-45	Total/NA	Air	537 (modified)	79849
140-33988-7	M-1140 VES CB OUTLET R2 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	79697
140-33988-8	M-1142 VES CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	79849
140-33988-9	M-1143,1144 VES CB OUTLET R3 OTM-45 FH	Total/NA	Air	537 (modified)	79802
140-33988-10	M-1145,1146,1148 VES CB OUTLET R3 OTM-45	Total/NA	Air	537 (modified)	79917
140-33988-11	M-1147 VES CB OUTLET R3 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	79697
MB 140-79675/1-B	Method Blank	Total/NA	Air	537 (modified)	79849
MB 140-79697/1-A	Method Blank	Total/NA	Air	537 (modified)	79697
MB 140-79722/1-B	Method Blank	Total/NA	Air	537 (modified)	79802
MB 140-79779/1-B	Method Blank	Total/NA	Air	537 (modified)	79917
LCS 140-79675/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	79849
LCS 140-79697/2-A	Lab Control Sample	Total/NA	Air	537 (modified)	79697
LCS 140-79722/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	79802
LCS 140-79779/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	79917
LCSD 140-79675/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79849
LCSD 140-79697/3-A	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79697
LCSD 140-79722/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79802
LCSD 140-79779/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	79917

Analysis Batch: 80336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33988-2	M-1131,1132,1134 VES CB OUTLET R1 OTM-45	Total/NA	Air	537 (modified)	79849
140-33988-12	M-1149 VES CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	79917

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Client Sample ID: M-1129,1130 VES CB OUTLET R1 OTM-45 FH

Lab Sample ID: 140-33988-1

Date Collected: 10/09/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	110 mL	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			55 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		2	1 mL	1 mL	80290	11/15/23 17:11	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH

Lab Sample ID: 140-33988-2

Date Collected: 10/09/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		2	1 mL	1 mL	80336	11/16/23 13:24	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1133 VES CB OUTLET R1 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-3

Date Collected: 10/09/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 14:23	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1135 VES CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-4

Date Collected: 10/09/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 20:08	CAC	EET KNX
	Instrument ID: LCA									

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Client Sample ID: M-1136,1137 VES CB OUTLET R2 OTM-45 FH

Lab Sample ID: 140-33988-5

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	65 mL	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			32 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		2	1 mL	1 mL	80290	11/15/23 17:20	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1138,1139,1141 VES CB OUTLET R2 OTM-45 BH

Lab Sample ID: 140-33988-6

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 20:16	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1140 VES CB OUTLET R2 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-7

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0068 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 14:32	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1142 VES CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-8

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 20:25	CAC	EET KNX
	Instrument ID: LCA									

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Client Sample ID: M-1143,1144 VES CB OUTLET R3 OTM-45 FH

Lab Sample ID: 140-33988-9

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	76 mL	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			38 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		2	1 mL	1 mL	80290	11/15/23 17:29	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1145,1146,1148 VES CB OUTLET R3 OTM-45 BH

Lab Sample ID: 140-33988-10

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79779	11/02/23 09:06	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79917	11/06/23 10:59	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 21:18	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1147 VES CB OUTLET R3 OTM-45 IMPINGERS 1,2&3 CONDENSATE

Lab Sample ID: 140-33988-11

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0064 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 14:41	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: M-1149 VES CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-33988-12

Date Collected: 10/10/23 00:00
Date Received: 10/13/23 15:15

Matrix: Air

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	360 mL	79779	11/02/23 09:06	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79917	11/06/23 10:59	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80336	11/16/23 13:32	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-79675/1-B

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:22	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-79697/1-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	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:29	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-79722/1-B

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:01	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-79779/1-B

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	360 mL	79779	11/02/23 09:06	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79917	11/06/23 10:59	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 20:52	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-79675/2-B

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:31	CAC	EET KNX
	Instrument ID: LCA									

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 140-79697/2-A
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:39	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 140-79722/2-B
Matrix: Air

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:09	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 140-79779/2-B
Matrix: Air

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	360 mL	79779	11/02/23 09:06	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79917	11/06/23 10:59	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 21:00	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample Dup
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCSD 140-79675/3-B
Matrix: Air

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	360 mL	79675	10/31/23 09:21	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79849	11/03/23 11:53	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 18:39	CAC	EET KNX
	Instrument ID: LCA									

Client Sample ID: Lab Control Sample Dup
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCSD 140-79697/3-A
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	79697	10/31/23 13:01	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 13:48	CAC	EET KNX
	Instrument ID: LCA									

Lab Chronicle

Client: The Chemours Company FC, LLC
Job ID: 140-33988-1
Project/Site: VES Carbon Bed Outlet - OTM-45

Client Sample ID: Lab Control Sample Dup
Lab Sample ID: LCSD 140-79722/3-B

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	79722	11/01/23 08:50	PRR	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	79802	11/02/23 13:57	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 16:18	CAC	EET KNX

Instrument ID: LCA

Client Sample ID: Lab Control Sample Dup
Lab Sample ID: LCSD 140-79779/3-B

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	360 mL	79779	11/02/23 09:06	PRR	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	79917	11/06/23 10:59	PRR	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	80290	11/15/23 21:09	CAC	EET KNX

Instrument ID: LCA

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: The Chemours Company FC, LLC
Job ID: 140-33988-1
Project/Site: VES Carbon Bed Outlet - OTM-45

Laboratory: Eurofins Knoxville

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

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-24
Colorado	State	TN00009	02-29-24
Connecticut	State	PH-0223	09-30-25
Florida	NELAP	E87177	06-30-24
Georgia (DW)	State	906	07-27-25
Hawaii	State	NA	07-27-24
Kansas	NELAP	E-10349	10-31-24
Kentucky (DW)	State	90101	12-31-23
Louisiana (All)	NELAP	83979	06-30-24
Louisiana (DW)	State	LA019	12-31-23
Maryland	State	277	03-31-24
Michigan	State	9933	07-27-25
Nevada	State	TN00009	07-31-24
New Hampshire	NELAP	2999	01-17-24
New Jersey	NELAP	TN001	07-01-24
New York	NELAP	10781	03-31-24
North Carolina (DW)	State	21705	07-31-24
North Carolina (WW/SW)	State	64	12-31-23
Oklahoma	State	9415	12-31-23
Oregon	NELAP	TNI0189	01-01-24
Pennsylvania	NELAP	68-00576	12-01-23
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-23-18	08-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	525-22-279-18762	10-06-25
Utah	NELAP	TN00009	07-31-24
Virginia	NELAP	460176	09-14-24
Washington	State	C593	01-19-24
West Virginia (DW)	State	9955C	12-31-23
West Virginia DEP	State	345	04-30-24
Wisconsin	State	998044300	08-31-24

Method Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET KNX
None	Leaching Procedure	TAL SOP	EET KNX
None	Leaching Procedure for Filter	TAL SOP	EET KNX
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	EET KNX
Split	Source Air Split	None	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

TAL-SAC = Eurofins Sacramento, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: The Chemours Company FC, LLC
Project/Site: VES Carbon Bed Outlet - OTM-45

Job ID: 140-33988-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-33988-1	M-1129,1130 VES CB OUTLET R1 OTM-45 FH	Air	10/09/23 00:00	10/13/23 15:15
140-33988-2	M-1131,1132,1134 VES CB OUTLET R1 OTM-45 BH	Air	10/09/23 00:00	10/13/23 15:15
140-33988-3	M-1133 VES CB OUTLET R1 OTM-45 IMPINGEF 1,2&3 CONDENSATE	Air	10/09/23 00:00	10/13/23 15:15
140-33988-4	M-1135 VES CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/09/23 00:00	10/13/23 15:15
140-33988-5	M-1136,1137 VES CB OUTLET R2 OTM-45 FH	Air	10/10/23 00:00	10/13/23 15:15
140-33988-6	M-1138,1139,1141 VES CB OUTLET R2 OTM-45 BH	Air	10/10/23 00:00	10/13/23 15:15
140-33988-7	M-1140 VES CB OUTLET R2 OTM-45 IMPINGEF 1,2&3 CONDENSATE	Air	10/10/23 00:00	10/13/23 15:15
140-33988-8	M-1142 VES CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/10/23 00:00	10/13/23 15:15
140-33988-9	M-1143,1144 VES CB OUTLET R3 OTM-45 FH	Air	10/10/23 00:00	10/13/23 15:15
140-33988-10	M-1145,1146,1148 VES CB OUTLET R3 OTM-45 BH	Air	10/10/23 00:00	10/13/23 15:15
140-33988-11	M-1147 VES CB OUTLET R3 OTM-45 IMPINGEF 1,2&3 CONDENSATE	Air	10/10/23 00:00	10/13/23 15:15
140-33988-12	M-1149 VES CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	10/10/23 00:00	10/13/23 15:15

Request for Analysis/Chain-of-Custody – RFA/COC #002
The Chemours Company – Fayetteville NC
VES Carbon Bed Outlet

eurofins
Environment Testing
TestAmerica

Project Identification:	Chemours Emissions Test
Client Name:	The Chemours Company FC, LLC
Client Contact:	Eddie Vega (910) 678-1938
TestAmerica Project Manager:	Ms. Courtney Adkins Office: (865) 291-3019
TestAmerica Program Manager:	Mr. Billy Anderson Office: (865) 291-3080 Cell: (865) 206-9004

Analytical Testing QC Requirements:
The Legend for ProjecV-Specific Quality Control Testing is designated in the "QC" column as follows: "BT" = Blank Train, "RB" = Reagent Blank, "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PB" = Proof Blank, "TB" = Trip Blank

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt
Laboratory Destination:	Eurofins TestAmerica 5815 Middlebrook Pike Knoxville, TN
Lab Phone Number:	(865) 291-3000
Courier:	Hand Deliver

Project Deliverables:
Report analytical results on TALS Report form Std_Tal_L4. Include "Field Sample Number", "Sample Type", and "Run Number" on all TALS Reports.

Analytical Parameter:	Holding Time Requirements:
HFPO-DA (CAS No. 13252-13-6)	14 Days to Extraction; 40 Days to Analysis

140-33988 Chain of Custody

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require-ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1129 VES CB OUTLET R1 OTM-45 Filter (Combine with *M-1130*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1130 VES CB OUTLET R1 OTM-45 FH of Filter Holder & Probe Methanol Rinse (Combine with *M-1129*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.
M-1131 VES CB OUTLET R1 OTM-45 XAD-2 Resin Tube	1	10/9/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using Method 8321A-HFPO.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1132 VES CB OUTLET R1 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1131*)	1	10/9/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1133 VES CB OUTLET R1 OTM-45 Impingers 1,2 & 3 Condensate	1	10/9/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1134 VES CB OUTLET R1 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1131*)	1	10/9/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.
M-1135 VES CB OUTLET R1 OTM-45 Breakthrough XAD-2 Resin Tube	1	10/9/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1136 VES CB OUTLET R2 OTM-45 Filter (Combine with *M-1137*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1137 VES CB OUTLET R2 OTM-45 Front Half of Filter Holder & Probe Methanol Rinse (Combine with *M-1136*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1138 VES CB OUTLET R2 OTM-45 XAD-2 Resin Tube	2	10/10/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1139 VES CB OUTLET R2 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1138*)	2	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1140 VES CB OUTLET R2 OTM-45 Impingers 1,2 & 3 Condensate	2	10/10/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1141 VES CB OUTLET R2 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1138*)	2	10/10/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.
M-1142 VES CB OUTLET R2 OTM-45 Breakthrough XAD-2 Resin Tube	2	10/10/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1143 VES CB OUTLET R3 OTM-45 Filter (Combine with *M-1144*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Particulate Filter (82.6 mm Whatman Glass Microfiber)** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Particulate Filter sample. Analyze for HFPO-DA using Method 8321A-HFPO.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Require -ments	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
M-1144 VES CB OUTLET R3 OTM-45 Front Half of Filter Holder & Probe Methanol Rinse (Combine with *M-1143*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the Particulate Filter extraction.
M-1145 VES CB OUTLET R3 OTM-45 XAD-2 Resin Tube	3	10/10/23		XAD-2 Resin Tube	**XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1146 VES CB OUTLET R3 OTM-45 BH of Filter Holder & Coil Condenser Methanol Rinse (Combine with *M-1145*)	3	10/10/23		125 mL HDPE Wide-Mouth Bottle	**Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA using Method 8321A-HFPO.
M-1147 VES CB OUTLET R3 OTM-45 Impingers 1,2 & 3 Condensate	3	10/10/23		500 mL HDPE Wide-Mouth Bottle	**Impinger #1, #2 & #3 Condensate** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Analyze the sample for HFPO-DA.
M-1148 VES CB OUTLET R3 OTM-45 Impinger Glassware MeOH Rinse (Combine with *M-1145*)	3	10/10/23		250 mL HDPE Wide-Mouth Bottle	**Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Use this solvent sample in the XAD-2 Resin Extraction.
M-1149 VES CB OUTLET R3 OTM-45 Breakthrough XAD-2 Resin Tube	3	10/10/23		XAD-2 Resin Tube	**Breakthrough XAD-2 Resin Tube** OTM-45 Train HFPO-DA Analysis	**Knoxville**: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA using Method 8321A-HFPO.

Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:	Comments (Please write "NONE" if no comment applicable)
(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.	NONE
(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:	AT 0.7 / CT 0.6
(3) Record any apparent sample loss/breakage.	NONE
(4) Record any unidentified samples transported with this shipment of samples:	NONE
(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances):	HAND DELIVERED, NO CUSTODY SEALS

Custody Transfer:

	Name	Company	Date/Time
Relinquished By:	Patrick Gray	Alliance	10/11/23 1715
Accepted By:	Doug Cahill	ETA KNOX	10/12/23 1430
Relinquished By:	Doug Cahill	ETA KNOX	10/13/23 1515
Accepted By:	Ryan Jarman	ETA KNX	10-13-23 15:15
Relinquished By:			
Accepted By:			
Relinquished By:			
Accepted By:			

Loc: 140
33988

11/19/2023

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**
2. Were ambient air containers received intact?			✓	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?			✓	☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC76 Correction factor: -0.1°C	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			✓	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info

Comments/Actions Taken

Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: Ryan Lamon Date: 10.14.23

QA026R32.doc, 062719

Appendix D

QA/QC Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Inlet
Project No. AST-2023-4327
Parameter HFPO-DA

Date	Nozzle ID	Nozzle Diameter (in.) #1	#2	#3	Dn (Average)	Difference	Criteria	Material
10/9/23	G-4	0.230	0.230	0.230	0.230	0.000	≤ 0.004 in.	glass

Date	Pitot ID	Evidence of damage?	Evidence of mis-alignment?	Calibration or Repair required?
10/9/23	P4-1	no	no	no

Date	Probe or Thermocouple ID	Reference Temp. (°F)	Indicated Temp. (°F)	Difference	Criteria	Probe Length
10/9/23	P4-1	68.0	68.0	0.0%	± 1.5 % (absolute)	5'

Field Balance Check

Date	**10/09/23**					
Balance ID:	**Balance 5500**					
Test Weight ID:	**SYR-1000**					
Certified Weight (g):	**1000.0**					
Measured Weight (g):	**999.8**					
Weight Difference (g):	**0.2**	--	--	--	--	--

Date	Barometric Pressure	Evidence of damage?	Reading Verified	Calibration or Repair required?	Weather Station Location
10/9/23	Weather Station	NA	NA	NA	Fayetteville, NC

Date	Meter Box ID	Positive Pressure Leak Check
10/9/23	5	Pass

Reagent	Lot#	Field Prep performed	Field Lot	Date	By
Ammonia/MeOH	Eurofins				
DIUF	Eurofins				

Balance Check must be conducted each day

Acceptable Balance Tolerance is measurement within +/- 0.5g of certified weight

Equipment Detail - Dry Gas Meter

Console ID: 5
Meter S/N: 20035532
Critical Orifice S/N: co-1393

Calibration Detail

Initial Barometric Pressure, in. Hg	(Pb_I)	29.85					
Final Barometric Pressure, in. Hg	(Pb_F)	29.10					
Average Barometric Pressure, in. Hg	(Pb)	29.48					
Critifcal Orifice ID	(Y)	18	18	16	16	26	26
K' Factor, $ft^3 \cdot R^{1/2}$ / in. WC·min	(K')	0.5023	0.5023	0.4273	0.4273	0.7060	0.7060
Vacuum Pressure, in. Hg	(V_P)	22.0	20.0	19.5	19.5	16.0	16.0
Initial DGM Volume, ft^3	(Vm_I)	729.819	739.881	749.835	758.361	766.722	780.623
Final DGM Volume, ft^3	(Vm_F)	739.881	749.835	758.361	766.722	780.623	794.518
Total DGM Volume, ft^3	(Vm)	10.062	9.954	8.526	8.361	13.901	13.895
Ambient Temperature, °F	(Ta)	72	72	72	73	73	73
Initial DGM Temperature, °F	(Tm_I)	72	72	73	74	74	74
Final DGM Temperature, °F	(Tm_F)	72	73	74	74	74	75
Average DGM Temperature, °F	(Tm)	72	73	74	74	74	75
Elapsed Time	(Θ)	15.00	15.00	15.00	15.00	15.00	15.00
Meter Orifice Pressure, in. WC	(ΔH)	1.40	1.30	1.00	1.00	2.80	2.80
Standard Meter volume, ft^3	(Vmstd)	9.8740	9.7564	8.3348	8.1659	13.6374	13.6188
Standard Critical Orifice Volume, ft^3	(Vcr)	9.6312	9.6312	8.1931	8.1854	13.5242	13.5242
Meter Correction Factor	(Y)	0.975	0.987	0.983	1.002	0.992	0.993
Tolerance	--	0.013	0.002	0.006	0.014	0.003	0.004
Orifice Calibration Value	(ΔH @)	1.874	1.739	1.843	1.845	1.901	1.899
Tolerance	--	0.024	0.112	0.007	0.005	0.051	0.049
Orifice Cal Check	--	1.15		1.16		1.13	
Meter Correction Factor	**(Y)**	**0.989**					
Orifice Calibration Value	**(ΔH @)**	**1.850**					
Positive Pressure Leak Check		**Yes**					

Equipment Detail - Thermocouple Sensor

Reference Calibrator Make: Altek
Reference Calibrator Model: Series 22
Reference Calibrator S/N: 845031

Calibration Detail

Reference Temp.		Display Temp.		Accuracy	Difference
°F	°R	°F	°R	%	°F
0	460	0	460	0.0	0
100	560	99	559	0.2	1
200	660	199	659	0.2	1
300	760	298	758	0.3	2
400	860	398	858	0.2	2
500	960	497	957	0.3	3
600	1,060	596	1,056	0.4	4
700	1,160	699	1,159	0.1	1
800	1,260	797	1,257	0.2	3
900	1,360	898	1,358	0.1	2
1,000	1,460	999	1,459	0.1	1
1,100	1,560	1,097	1,557	0.2	3
1,200	1,660	1,195	1,655	0.3	5
1,300	1,760	1,299	1,759	0.1	1
1,400	1,860	1,398	1,858	0.1	2
1,500	1,960	1,497	1,957	0.2	3

Personnel

Calibration By: Jeffrey Sheldon
Calibration Date: 6/27/2023
Expiration Date: 12/27/2023

QA/QC Data

Location Chemours Company - Fayetteville Works Facility, NC
Source VES Carbon Bed Outlet
Project No. AST-2023-4327
Parameter HFPO-DA

Date	Nozzle ID	Nozzle Diameter (in.) #1	#2	#3	Dn (Average)	Difference	Criteria	Material
10/9/23	GS-7	0.250	0.250	0.250	0.250	0.000	≤ 0.004 in.	glass

Date	Pitot ID	Evidence of damage?	Evidence of mis-alignment?	Calibration or Repair required?
10/9/23	P4-2	no	no	no

Date	Probe or Thermocouple ID	Reference Temp. (°F)	Indicated Temp. (°F)	Difference	Criteria	Probe Length
10/9/23	P4-2	69.0	69.0	0.0%	± 1.5 % (absolute)	5'

Field Balance Check

Date	**10/09/23**					
Balance ID:	**Balance 5500**					
Test Weight ID:	**SYR-1000**					
Certified Weight (g):	**1000.0**					
Measured Weight (g):	**999.8**					
Weight Difference (g):	**0.2**	--	--	--	--	--

Date	Barometric Pressure	Evidence of damage?	Reading Verified	Calibration or Repair required?	Weather Station Location
10/9/23	Weather Station	NA	NA	NA	Fayetteville, NC

Date	Meter Box ID	Positive Pressure Leak Check
10/9/23	8	Pass

Reagent	Lot#	Field Prep performed	Field Lot	Date	By
DIH2O	Eurofins				
Ammonia/MeOH	Eurofins				

Balance Check must be conducted each day

Acceptable Balance Tolerance is measurement within +/- 0.5g of certified weight

Alliance TECHNICAL GROUP	DGM Calibration-Orifices	Document ID	620.004
		Revision	23.0
		Effective Date	1/25/23
Issuing Department	Tech Services	Page	1 of 1

Equipment Detail - Dry Gas Meter

Console ID: MB 8
Meter S/N: 2603
Critical Orifice S/N: CO-1393

Calibration Detail

Initial Barometric Pressure, in. Hg	(Pb_I)	29.86					
Final Barometric Pressure, in. Hg	(Pb_F)	29.83					
Average Barometric Pressure, in. Hg	(Pb)	29.85					
Critifcal Orifice ID	(Y)	11	11	18	18	31	31
K' Factor, $ft^3 \cdot R^{1/2}$ / in. WC·min	(K')	0.3060	0.306	0.4961	0.496	0.8358	0.836
Vacuum Pressure, in. Hg	(V_P)	24.0	24.0	21.0	21.0	17.5	17.5
Initial DGM Volume, ft^3	(Vm_I)	687.902	620.094	628.236	641.582	654.986	671.426
Final DGM Volume, ft^3	(Vm_F)	696.161	628.236	641.582	654.952	671.426	687.902
Total DGM Volume, ft^3	(Vm)	8.259	8.142	13.346	13.370	16.440	16.476
Ambient Temperature, °F	(Ta)	64	64	64	64	64	64
Initial DGM Temperature, °F	(Tm_I)	64	65	66	67	68	69
Final DGM Temperature, °F	(Tm_F)	64	66	67	68	69	70
Average DGM Temperature, °F	(Tm)	64	66	67	68	69	70
Elapsed Time	(Θ)	20.00	20.00	20.00	20.00	15.00	15.00
Meter Orifice Pressure, in. WC	(ΔH)	0.45	0.45	1.20	1.20	3.45	3.45
Standard Meter volume, ft^3	(Vmstd)	8.3120	8.1708	13.3925	13.3911	16.5256	16.5305
Standard Critical Orifice Volume, ft^3	(Vcr)	7.9815	7.9815	12.940	12.940	16.3504	16.3504
Meter Correction Factor	(Y)	0.960	0.977	0.966	0.966	0.989	0.989
Tolerance	--	0.014	0.002	0.008	0.008	0.015	0.014
Orifice Calibration Value	(ΔH @)	1.600	1.595	1.618	1.615	1.642	1.639
Tolerance	--	0.018	0.023	0.000	0.003	0.024	0.021
Meter Correction Factor	**(Y)**	**0.975**					
Orifice Calibration Value	**(ΔH @)**	**1.618**					
Positive Pressure Leak Check		**Yes**					

Equipment Detail - Thermocouple Sensor

Reference Calibrator Make: CalSource
Reference Calibrator Model: Series 22 TC Source
Reference Calibrator S/N: 8475031

Calibration Detail

Reference Temp.		Display Temp.		Accuracy	Difference
°F	°R	°F	°R	%	°F
0	460	0	460	0.0	0
68	528	68	528	0.0	0
100	560	101	561	-0.2	1
223	683	226	686	-0.4	3
248	708	252	712	-0.6	4
273	733	276	736	-0.4	3
300	760	304	764	-0.5	4
400	860	401	861	-0.1	1
500	960	504	964	-0.4	4
600	1,060	606	1,066	-0.6	6
700	1,160	707	1,167	-0.6	7
800	1,260	808	1,268	-0.6	8
900	1,360	909	1,369	-0.7	9
1,000	1,460	1,010	1,470	-0.7	10
1,100	1,560	1,111	1,571	-0.7	11
1,200	1,660	1,210	1,670	-0.6	10

Personnel

Calibration By: STP
Calibration Date: 9/21/2023
Reviewed By: Stacey Cunningham

Appendix E

Vinyl Ethers South Operations Data

Date **Run 1** 10/9/2023

Time	1600				1700				1800				1900			
Stack Testing					Run 1 17:20-19:24											
VES Product					PM/PE											
VES Precursor																
VES Condensation (HFPO)																
VES ABR (East)																
VES ABR (West)																
VES Refining																

Date **Run 2-3** 10/10/2023

Time	800				900				1000				1100				1200				1300				1400			
Stack Testing					Run 2 9:09-11:08												Run 3 12:00-13:50											
VES Produ	PM/PE																											
VES Precur																												
VES Conde																												
VES ABR (E																												
VES ABR (West)																												
VES Refinir																												

Last Page of Report