Division of Air Quality

December 1, 2020

MEMORANDUM

To: Heather Carter, Fayetteville Regional Supervisor

From: Gary L. Saunders, Stationary Source Compliance Branch

Subject: The Chemours Company – Fayetteville Works
Fayetteville, Bladen County, North Carolina
Facility ID. No. 0900009, Permit No. 03735T48
Performance Testing for HFPO Dimer Acid Conducted on September 3, 2020
at Vinyl Ethers North (VEN) Carbon Bed by Ramboll (formerly O'Brien & Gere, Inc.)
Tracking No. 2020-309ST

# Summary of HFPO Dimer Acid Test Program

## Sources Tested

The VEN carbon bed adsorber was sampled on September 3, 2020. The carbon bed adsorber was returned to service for controlling fugitive emissions from "room air" at the VEN production area after the thermal oxidizer became operational. Testing was conducted to determine removal efficiency and emission rates from the VEN fugitive emissions and controls.

## Sampling Method

Testing was conducted using a modified EPA Method 0010 found in the SW-846 compendium of *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. This sampling train is a variation of the EPA Reference Method 5 found in 40 CFR 60, Appendix A. The Method 0010 train extracts a sample isokinetically from the gas stream, passes the sample through a temperature-controlled filter, through a temperature-controlled condenser and into a series of XAD-2 resin "traps" and impingers to capture and collect the materials that passed through the filter. The test method is designed to capture certain particulate and condensable materials for later recovery and analysis.

After sample recovery, the samples were sent to Chemours' contractor, Test America's laboratory in Denver, Colorado. HFPO Dimer Acid was extracted from the resin traps. This summary of results only addresses the results provided by Test America for Chemours. No split sample analysis is included in this review. Laboratory analysis and quantification was performed using a liquid chromatography column and a dual mass spectrometer (LC/MS/MS).

# Test Results

The reported HFPO Dimer Acid test results reflect corrected emission rates accounting for dilution and spike recovery values.

## Vinyl Ethers North Area Test Results

Inlet and outlet emissions from the VEN carbon bed adsorber were measured on September 3, 2020 to determine the removal efficiency of HFPO Dimer Acid from the process and room air emissions. Each test run was nominally 90 minutes in length. The process was operating normally and was producing PPVE. As noted in Table 1, the Run 1 removal efficiency was negative. Although not mentioned the test results discussion, a review of the analytical data also indicated that there was possible contamination of the XAD-2 breakthrough resin trap. The quantity of HFPO Dimer Acid found in the resin trap results was approximately an order of magnitude greater than the analytical results for the composite of the impingers indicating either glassware and/or resin contamination. Normally, the analytical results for second XAD-2 resin trap are either less than or approximately equal to the quantity captured in the condensate impingers.

**Table 1. Summary of Stack Test Results for VEN Carbon Bed and DWG Stack on September 3, 2020**

| Run Number | HFPO Dimer Acid Emission Rate | | | |
|---|---|---|---|---|
| | DWG Stack (lb/hr) | Inlet (lb/hr) | Outlet (lb/hr) | % Removal Efficiency |
| 1 | Not Sampled | 1.57E-03 | 2.11E-03 | **NA*** |
| 2 | Not Sampled | 1.37E-02 | 3.75E-03 | 72.63 |
| 3 | Not Sampled | 6.47E-03 | 2.27E-03 | 64.91 |
| Average | Not Sampled | 7.42E-03 | 2.71E-03 | 63.48 |

*Outlet emission rate was greater than the inlet producing a negative efficiency

## Summary and Conclusions

NC DAQ personnel were not on-site to observe this test due to COVID-19 considerations. NC DAQ concludes that the testing was conducted in accordance to the modified testing protocol submitted by Chemours and that the analytical results appear representative of the stack conditions and process operations during the testing with the exceptions noted above.

Cc: Central Files – Bladen County
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