



Submissions to the State of North Carolina and Cape Fear River Watch

The following table identifies submissions made by Chemours pursuant to the Consent Order for the period of April 1, 2020 through the end of the second quarter on June 30, 2020.<sup>1</sup>

CO Section	Submitted To	Title	Submitted Date
7 & 8	NCDEQ	Clarification Letter regarding Thermal Oxidizer Emission Test Reports	4/03/2020
11	NCDEQ	PFAS Characterization Quarterly Report	4/30/2020
11	NCDEQ	Updates to Laboratory Analytical Test Methods	6/10/2020
11	NCDEQ	PFAS Non-Targeted Analysis and Methods Interim Report	6/30/2020
19 & 21 (25)	NCDEQ	Request for Extension of Deadlines	5/19/2020
26	NCDEQ	Request for Extension of Deadline	6/08/2020
28	NCDEQ	Quarterly Progress Report	4/24/2020

<sup>1</sup> Consent Order submissions by Chemours from lodging of the Proposed Consent Order in November 2018 through March 31, 2019 were presented in the 2019 1<sup>st</sup> quarter report, April 1, 2019 through June 30, 2019 in the 2019 2<sup>nd</sup> quarter report, July 1, 2019 through September 30, 2019 in the 2019 3<sup>rd</sup> quarter report, October 1, 2019 through December 31, 2019 in the 2019 4<sup>th</sup> quarter report, and January 1, 2020 through March 31, 2020 in the 2020 1<sup>st</sup> quarter report.



2020 Second Quarter Residential Summary

Item	Cumberland County (East of River)	Cumberland County (West of River)	Bladen County (East of River)	Bladen County (West of River)	Robeson County	Total
Total Number of Residences Sampled	118	224	2	2	6	352
Residences Exceeding GAC Criteria (GenX >= 140 ng/L)	0	2	0	0	0	2
Residences Exceeding RO Criteria ( $\Sigma$ PFAS >= 70 ng/L)	41	34	0	0	1	76
Residences Exceeding RO Criteria (PFAS >= 10 ng/L)	14	39	0	0	1	54
Residences Drinking Water Well Detections (Results < 10 ng/L)	2	14	0	0	1	17
Residences Drinking Water Well Non-Detections	62	135	2	2	3	204

Note:

The total number of residences sampled may not equal the sum of the values in each column because (1) the residences sampled may share drinking water wells; therefore there may be more than one filtration system or bottled water delivery per well sampled, (2) the residence's lab results are pending because the sample is still being analyzed at the lab, (3) counts are only included for the timeframe 4/1/2020 through 6/30/2020, and (4) quarterly data is based on sample date.



## Replacement Drinking Water Actions

(Replacement drinking water actions from November 2018<sup>2</sup> - June 30, 2020)

Summary		Number of residents on bottled water	GAC Systems On-line & Confirmation Sampling Complete	Number of Homes Where RO Systems Installed
	Total		2293	82

Bottled Water		Residences Eligible for Bottled Water	Already connected to Public Water	Eligible Residences Receiving Bottled Water
	Q2 2020	102	Data Not Available	102
	Total	2414	5513	2293

GAC		Residences Eligible for GAC	Already connected to Public Water	Public Water Readily Available	Public Water Feasible	Residents Declined GAC System	GAC Systems to Install	Number of Residences Responded to GAC Offer (Interview Conducted or Declined Offer)
	Q2 2020	6	Data Not Available	0	0	3	6	3
	Total	243	25	12	36	5	237	109
		Number of GAC Systems to Install but Resident has Not Responded to Offer	System On-line	Confirmation Sampling Complete	GAC Offer Letters Sent to Residents	Call Log Interactions with GAC Residents	GAC Residence Response Rate	
	Q2 2020	Not Applicable	4	4	6	358	Not Applicable	
Total	137	82	82	227	2203	44%		

RO		Residences Eligible for RO (includes homes with shared wells)	Number of Residences Responded to RO Offer	Residents Declined RO	Homes/Buildings where RO Systems to be Installed but Resident has Not Responded	RO Residence Response Rate
	Q2 2020	125	337	31	122	Not Applicable
	Total	3199	1664	55	1535	52%
		Number of Homes where RO Systems Installed	Homes/Buildings where RO Systems are to be Installed	Number of RO Offer Letters Sent to Residences	Call Log Interactions with RO Residents	
	Q2 2020	18	123	125	1545	
Total	753	2278	3199	8434		

<sup>2</sup> The date the proposed Consent Order was lodged.

## Consent Order Progress Details

This section summarizes the activities that have been undertaken by Chemours pursuant to the Consent Order Compliance Measures for the period from April 1, 2020 through the end of the second quarter of 2020 (June 30, 2020).

### Section 7 Control Technology Improvements

The thermal oxidizer (see photo at right) continues to control process emissions at an average PFAS destruction efficiency exceeding 99.99%.

On June 2, 2020, Chemours identified vents on three vessels located in the Polymers Process area as not routing to the thermal oxidizer. Chemours promptly shut down the Polymers Process to make modifications to the vents and promptly contacted DEQ. The Polymers Process remained down until all of the vent modifications were completed on July 4, 2020. The modifications were as follows:

- Two of the vessels had conservation vents, which relieved when the vessel was over-pressurized and could occur during normal operations. The conservation vents on these two vessels were modified to pressure relief valves, which relieve only in emergency conditions.
- The third vessel has a pressure relief valve (which relieves only in emergency conditions) and a process control valve. The venting of the process control valve was modified to direct it to the IXM waste gas compressor, which then routes to the thermal oxidizer.



### Section 8 GenX Emissions Reduction Milestones

On April 3, 2020, Chemours submitted a letter to NCDEQ clarifying that its March 30, 2020 submittal of the Thermal Oxidizer Performance Test Report satisfies both Paragraphs 7.c and 8.c.i of the Consent Order.

### Section 10 No Discharge of Process Wastewater from Chemours' Manufacturing Areas

Chemours continues to not discharge its process wastewater and to ship its process wastewater offsite for disposal. Chemours is recycling treated water internally within several

manufacturing processes.

### Section 11 Characterization of PFAS in Process and Non-Process Wastewater and Stormwater at the Facility

During the second quarter of 2020, Chemours' consultant Geosyntec prepared the 2020 first quarter report describing and analyzing characterization sampling of process water, non-process wastewater and stormwater that occurred in January 2020. Chemours submitted the report to NCDEQ on April 30, 2020. Additional sampling under Paragraph 11 was conducted on April 28, 2020, May 20 and 21, 2020, and June 3 and 5, 2020. Geosyntec is preparing the 2020 second quarter report for submission under separate cover by July 31, 2020 to include data from these sampling events.

On June 10, 2020, Chemours submitted to NCDEQ updates to laboratory analytical test methods for PFAS in aqueous samples collected by Chemours pursuant to the Consent Order.

On June 30, 2020, Chemours submitted to NCDEQ the *PFAS Non-Targeted Analysis and Methods Interim Report* describing results to date and next steps in the non-targeted analysis program pursuant to Paragraph 11(a) of the Consent Order.

### Section 11.2 Characterization of PFAS Contamination in River Sediment

During the second quarter of 2020, Chemours' contractors performed field sampling of Cape Fear River surface water and sediment pursuant to the Sediment Characterization Plan. Sampling events were completed on June 30, 2020. Samples collected from the last three river transects were collected in duplicate and split with NCDEQ. Samples are presently undergoing laboratory analysis and will be subsequently reported in a Sediment Characterization Report to be submitted to NCDEQ.

### Section 12 Accelerated Reduction of PFAS Contamination in the Cape Fear River and Downstream Water Intakes

During the second quarter of 2020, Chemours continued significant work to reduce the remaining PFAS loadings from surface water and groundwater to the Cape Fear River, including continued design of proposed corrective actions and mass loading sampling.

### Section 14 Toxicity Studies

Chemours has now provided four of the five test substances to the contract laboratory and the fifth is going through final purification. The arrival of the test substances will be followed by the generation of the Phase 1 testing schedule. Phase 1 includes the analytical method development and initial range finding studies necessary to set appropriate dose levels for the Consent Order studies.

### Section 16 Groundwater Remediation

Chemours conducted a baseline mass loading monitoring event described in the Corrective Action Plan (CAP) by collecting groundwater, surface water, and river samples and measuring flows in surface water bodies at and around the Site in May 2020. These results will be described in the second quarterly mass loading report.

### Sections 19 and 20 Provision of Public Water Supplies, Whole Building Filtration Systems, and Reverse Osmosis Drinking Water Systems

Chemours continues work to meet the Consent Order requirements. Statistics are provided in the “Replacement Drinking Water Actions” section above.

In response to the coronavirus (COVID-19) pandemic, and in alignment with federal and state guidelines limiting personal contact, the installation of new RO and GAC systems was temporarily suspended on March 26, 2020. During the postponement period, Chemours contractors continued to provide bottled water, collect quarterly performance samples at GAC installations and provide necessary operation and maintenance on existing systems. After a review of updated health and safety guidance from the local, state, and federal governments, Chemours’ contractors resumed residential installation of RO drinking water systems on June 22, 2020 and GAC whole building filtration systems on July 7, 2020.

### Section 21 Private Well Testing

In response to the coronavirus (COVID-19) pandemic, and in alignment with federal and state guidelines limiting personal contact, Chemours temporarily suspended private well testing on March 26, 2020. Chemours resumed private well testing on May 26, 2020. The method of seeking permission from residences for private well testing has changed due to COVID-19 protocols. Specifically, Chemours is no longer making cold calls by walking up to the residence for private well testing, and instead a letter seeking permission for sampling with a return post card is mailed out to all eligible residences.

Other than during the COVID-19 postponement period noted above, the Adaptive Step Out and Infill Sampling Program has been ongoing since the 3rd quarter of 2019. Two to seven stages of step out sampling have occurred across the sectors and the current step out distance intervals range from 5.5-6.5 miles to 12.5-13.5 miles from the Site. Results for some of the current stage of Step Out sampling are still pending. Two of the sectors have been delineated (i.e., no further step outs for these two sectors are needed) and an additional four are near delineated (results pending). Distance intervals for current infill sampling for all sectors range from 2.5-6.5 miles to 5.5 to 13.5 miles from the Site. Statistics for sampling during the second quarter of 2020 are provided in the “2020 Second Quarter Residential Summary” table above.

### Section 22 Provision of Sampling Results

Chemours provided (and continues to provide) sampling results to NCDEQ and residences as required under the Consent Order. Chemours has provided sampling results to NCDEQ by



sending a courtesy email notification and by uploading sampling results to the State Equis database. Chemours has also provided final lab reports to NCDEQ. Chemours has provided sampling results to residences by including preliminary results with water filtration system initial offer letters and sending the final lab reports to residences within the following 30 days. Chemours has also provided non-detect sampling results to residences. These practices were continued during the private well testing postponement period caused by the coronavirus (COVID-19) pandemic as results from previous testing became available.

### Section 23 Interim Replacement of Private Drinking Water Supplies

All residences eligible to receive the interim replacement drinking water supplies have received the supplies (i.e., bottled water). As of June 30, 2020, there are 2,293 residences receiving bottled water.

### Section 25 Extension of Deadlines

On May 19, 2020, pursuant to Paragraph 25 of the Consent Order, Chemours submitted to NCDEQ a request for extension of deadlines under Paragraphs 19 and 21. Specifically, Chemours requested: 1) an extension to August 25, 2020 to meet the Paragraph 19 requirements in Bladen and Cumberland Counties west of the Cape Fear River, and 2) an extension to November 25, 2020 to complete the Adaptive Step Out and Infill Sampling Program pursuant to Paragraph 21. On May 22, 2020, NCDEQ granted the requested extensions.

### Section 26 Total Organic Fluorine

Please see Appendix A for the quarterly progress report from Dr. Susan D. Richardson. On June 8, 2020, Chemours submitted to NCDEQ a request for an extension of the deadline for submission of the Total Organic Fluorine (TOF) methodology by Dr. Richardson to June 30, 2021. On June 17, 2020, NCDEQ granted the requested extension.

### Section 28 Reporting

Chemours submitted the Consent Order 1<sup>st</sup> quarter 2020 progress report on April 24, 2020.

### Sections 29 and 30 Public Information

Chemours has continued to post its Consent Order submissions at <https://www.chemours.com/Fayetteville-Works/en-us/c3-dimer-acid/compliance-testing/>.

# **Appendix A**



**3rd Progress Report**  
**Development of a Total Organic Fluorine (TOF) Method for the Analysis of Process**  
**Wastewater Streams and Air from Fayetteville Works (NC)**  
**Susan D. Richardson and Ying Zhang, University of South Carolina**  
**June 22, 2020**

Since the last progress report (April 4, 2020), we have mainly focused on the repair and update of the instruments, including a new TOF adsorption unit and a new ion chromatograph (IC). While we wait for the purchase and installation of a new IC (see below), we are shifting our focus to liquid chromatography (LC)-mass spectrometry (MS)/MS analyses for target and non-target PFASs (which is also part of our proposal). For most of this quarter, the University of South Carolina was partially shut down due to the Covid-19 situation, so that our progress was significantly delayed. Below is a summary of the TOF method development work up-to-date.

**1. Update of the TOF adsorption unit**

In order to improve the efficiency of the TOF adsorption unit, we purchased two new lines for this instrument, which brings the total lines to four, doubling the pretreatment capacity of our system. Also, we washed the new lines with Milli Q water to decrease the fluorine background.

**2. Update of the ion chromatograph**

The type of the ion chromatograph we used before is a Dionex 1600 with a sodium carbonate eluent. During the partial shutdown of the University caused by Covid-19, this IC started leaking, and we contacted the company (ThermoFisher) to get it fixed. The instrument has since been successfully repaired and the leak eliminated, but the sensitivity of fluoride is decreased. In order to improve its sensitivity and stability (and also better separate the fluoride signal from the “water dip”), we decided to update the IC to enable a potassium hydroxide eluent (which requires a new instrument with an eluent generator). Thus, we are purchasing a whole new IC with an eluent generation system that will allow potassium hydroxide eluents. I just received word today that the purchase order has been issued to ThermoFisher, and we expect delivery and installation of the new instrument in the next 1-2 months.