

APPENDIX A

Field Methods

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FIELD METHODS

INTRODUCTION AND OBJECTIVES

This appendix summarizes the field methods employed to conduct monitoring activities for total per- and polyfluoroalkyl substances (PFAS) mass loading to the Cape Fear River at and surrounding the Chemours Fayetteville Works, North Carolina site (the Site). The effort described herein was conducted by Geosyntec and Parsons in May 2020. The monitoring program includes collecting data on flow rates and PFAS concentrations from the PFAS transport pathways to the Cape Fear River.

SCOPE OF WORK

The scope of work involves four tasks: (1) collecting surface water and groundwater seep water samples for PFAS; (2) measuring flow rates at specified surface water and seep locations; (3) collecting a synoptic round of groundwater elevations from designated monitoring wells; and (4) collecting water samples for PFAS analysis from the designated monitoring wells. Field methods for each task are described below in the Methods section. Field forms collected during implementation of this scope of work are provided in Appendix D.

The work was performed according to the project health and safety plan (HASP) prepared by Parsons (Parsons Health and Safety Plan Chemours Fayetteville Site, 2020). A Plan on Action Discussion (POAD) and Project Safety Analysis (PSA) was held prior to commencing field activities. The work was performed under Nationwide Permit 6 (United States Army Corps of Engineers, 2017).

METHODS

This section describes the field methods and procedures that were employed for collecting surface water and onsite seep samples, gauging stream flow, collection of groundwater elevations, water quality parameter assessment and sample collection.

Surface Water and Onsite Seep Sample Collection Methods

Surface Water and Onsite Seep Composite Sampling Methods

Autosamplers were used to collect 24-hour integrated samples from various surface water bodies and onsite Seeps. The autosamplers collected sample aliquots once per hour. The sample tubing from the autosampler was positioned at minimum 2 inches above the bottom of the water body flow with the open end of the sample tubing pointed in the downstream direction to minimize the potential for sediment accumulation and uptake. Autosampler materials consisted of high-density polyethylene (HDPE) tubing, silicon tubing, and an HDPE sample reservoir. Water from the

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sample reservoir was decanted into laboratory supplied bottles (e.g. 250-milliliter [mL] HDPE bottles for PFAS analysis) and then sent to an approved laboratory. Field parameters were measured twice for composite samples: once during composite sampling (collected directly from the water stream), and once after composite sampling (collected from the autosampler reservoir). The following water quality parameters were recorded:

- pH;
- Temperature (degrees Celsius [$^{\circ}\text{C}$]);
- Specific Conductivity (microsiemens per centimeter [$\mu\text{S}/\text{cm}$]);
- Dissolved Oxygen (DO) (milligrams per liter [mg/L]); and,
- Oxidation-Reduction Potential (ORP) (millivolts [mV])

Creek and Seep Water Grab Sampling Methods

Where composite sample collection was not feasible due to access and other field conditions, creek and seep water samples were collected as grab samples. Laboratory-supplied 250 mL HDPE sample bottles were lowered into the flowing water of the creek to collect the sample. The bottles were lowered into the stream either using a properly decontaminated dip rod with bottle attached with a nylon zip tie, or in shallow streams, by hand. The bottle was lowered into the stream with the cap removed, open and facing oncoming flow. Where possible, the sample was collected from the middle of the stream. Care was taken to avoid collecting suspended solids or other materials in the sample. The following water quality parameters were measured after sample collection using water from the same location in the stream:

- pH;
- Temperature ($^{\circ}\text{C}$);
- Specific Conductivity ($\mu\text{S}/\text{cm}$);
- DO (mg/L); and
- ORP (mV).

Cape Fear River Water Grab Sampling Methods

Cape Fear River water samples were collected using a peristaltic pump and new dedicated HDPE tubing and dedicated silicone tubing for the pump head at each location. The tubing was lowered to the specified sampling depth below the water surface using an anchor weight and the tubing fastened to the anchor pointing upwards. Surface water was pumped directly from the submerged tubing through the pump head to a flow-through cell. Field parameters were monitored over a 5-minute interval, then the flow-through cell was disconnected, the tubing cut to provide a new, clean end and a grab sample was collected from the discharge of the peristaltic pump in new 250 mL laboratory-supplied HDPE bottles. The following water quality parameters were measured:

- pH;
- Temperature ($^{\circ}\text{C}$);

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- Specific Conductivity ($\mu\text{S}/\text{cm}$);
- DO (mg/L); and
- ORP (mV).

Flow Gauging Methods

Flow velocity was measured after sample collection at seep and creek locations specified in Table 2. Flow velocity was measured using flumes where they exist, otherwise flow velocity was measured via flow meters.

Flumes

Flumes are currently installed in Seep A, Seep B, Seep C, Seep D, and Old Outfall 002 under Nationwide Permit 38 (United States Army Corps of Engineers, June 2019). Where present, they were used to calculate flow based on the data collected by the level logger installed in the flume.

Flow Velocity Gauging

Where flumes are not installed (i.e., Willis Creek and Georgia Branch Creek), the flow rate of the stream was measured using a submersible flow meter. The flow meter was placed beneath the flowing stream along the cross section of the stream at regular intervals (e.g. every six inches) and the height of the water was recorded along with the recorded water velocity. These measurements were then used to calculate the volumetric flow of water passing through the structure based on the regular geometry and measured flow rates. Flow was measured using two to three transects to assess variability in estimated flow. Transects were selected that have fairly uniform cross sections that could be gauged with minimal disturbance.

Synoptic Water Level Measurements

Water level measurements for monitoring wells listed in Table 3 were collected during a single synoptic event. At each location, notes on well condition, weather, date and time of collection, depth to bottom of well and depth to water level from top of casing were recorded.

Groundwater Sampling Methods

Designated monitoring wells were monitored as part of the quarterly monitoring activities. These wells are listed in Table 3 and Figure 7.

The groundwater samples were analyzed for the list of PFAS compounds listed in Table 1. Field equipment was inspected by the program on-Site supervisor and calibrated daily prior to use according to the manufacturer's recommended guidelines. Field parameters were measured with a water quality meter after sample collection and included the following:

- pH;
- Temperature ($^{\circ}\text{C}$);

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- Specific Conductivity ($\mu\text{S}/\text{cm}$);
- DO (mg/L);
- ORP (mV);
- Turbidity (nephelometric turbidity units [NTU]); and,
- Color.

Non-dedicated or non-disposable sampling equipment was decontaminated immediately before sample collection in the following manner:

1. De-ionized water rinse;
2. Scrub with de-ionized water containing non-phosphate detergent (i.e., Alconox®); and
3. De-ionized water rinse.

Disposable equipment (e.g. gloves, tubing, etc.) was not reused. New sample containers were used for each sample.

Groundwater samples were collected, where possible, using low-flow sampling techniques as discussed in detail in the *Long-term Groundwater Monitoring Plan* (Parsons, 2018) and briefly summarized here.

1. New disposable or dedicated HDPE tubing was placed at the midpoint of the well's screened interval.
2. Water was purged through a flow-through cell attached to a water quality meter capable of measuring pH, temperature, specific conductivity, dissolved oxygen, and ORP.
3. Water was pumped using a peristaltic pump, with dedicated silicone tubing for the pump head, at wells with water level less than 30 feet. A submersible pump was used for wells with water level deeper than 30 feet.
4. Groundwater was pumped directly from submerged tubing through the pump head to a flow-through cell until field parameters (pH, temperature, specific conductivity, DO, ORP) were stabilized within $\pm 10\%$ over three consecutive readings within a five-minute interval. If field parameters stabilized, but turbidity remained stable yet elevated greater than 20 NTU, field personnel purged five well volumes prior to sample collection.
5. Water levels in the designated wells were monitored during purging so that minimum draw-down of the water column was maintained.
6. Once flow-through cell readings were stable, the flow-through cell was disconnected, the tubing cut to provide a new clean end and samples were collected from the discharge of the peristaltic pump in new 250 mL laboratory-supplied HDPE bottles.
7. Sample identification information (e.g., well/sample identification number, sample time and date, samplers' names, preservative, and analytical parameters) were recorded on the bottle label with permanent ink after the sample was collected.

Sample Packing and Shipping

Upon sample collection, each containerized sample was placed into an insulated sample cooler. Wet ice was placed around the sample containers within heavy-duty plastic bags within the sample cooler.

A chain-of-custody form was completed by the field sample custodian for each sample shipment. Sample locations, sample identification numbers, description of samples, number of samples collected, and specific laboratory analyses were recorded on the chain-of-custody form.

Field QA/QC Samples

Field quality assurance/ quality control (QA/QC) samples were collected as discussed in detail in the *Long-term Groundwater Monitoring Plan* (Parsons, 2018) and summarized below:

1. For samples collected to be analyzed by Method Table 3+, three blind duplicate samples were collected; two in the February sampling event and one in the April sampling event.
2. For samples collected to be analyzed by Method Table 3+, three MS/MSD samples were collected; two in the February sampling event and one in the April sampling event.
3. For groundwater samples collected in February, equipment blanks and field blanks were collected daily.
4. For surface water samples collected in April, three equipment blanks were collected.

REFERENCES

Parsons, 2018. Long-term Groundwater Monitoring Plan. September 28, 2018.

Parsons, 2020. Fayetteville Works Health and Safety Plan.

United States Army Corps of Engineers. Nationwide Permit 6. 19 March 2017. <http://saw-reg.usace.army.mil/NWP2017/2017NWP06.pdf>. Accessed 30 January 2019.

United States Army Corps of Engineers. Nationwide Permit 36, 06 June 2019.

APPENDIX B

Supplemental Analytical Tables

**TABLE B1
SEEP AND SURFACE WATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP SW Sampling 2Q20	CAP SW SAMPLING 2Q20	CAP SW Sampling 2Q20	CAP SW Sampling 2Q20	CAP SW Sampling 2Q20	CAP SW Sampling 2Q20
Location ID	CFR-BLADEN	CFR-KINGS	CFR-MILE-76	CFR-MILE-76	GBC-1	Intake River Water at Facility
Field Sample ID	CAP2Q20-CFR-BLADEN-051320	CAP2Q20-CFR-KINGS-051920	CAP2Q20-CFR-RM-76-051320	CAP2Q20-CFR-RM-76-051320-D	CAP2Q20-GBC-1-051320	2R00513
Sample Date	5/13/2020	5/19/2020	5/13/2020	5/13/2020	5/13/2020	5/13/2020
QA/QC				Field Duplicate		
Sample Delivery Group (SDG)	320-60920-1	410-2520-1	320-60921-1	320-60921-1	320-60920-1	280-136659-1
Lab Sample ID	320-60920-6	410-2520-1	320-60921-1	320-60921-2	320-60920-5	280-136659-3
Other PFAS (ng/L)						
10:2 Fluorotelomer sulfonate	<2	<5	<2	<2	<2	--
11Cl-PF3OUdS	<2	<2	<2	<2	<2	--
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<3	<20	<20	<20	--
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<2	<20	<20	<20	--
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<3	<2	<2	<2	--
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<3	<4	<4	<4	--
6:2 Fluorotelomer sulfonate	<20	<5	<20	<20	<20	--
9Cl-PF3ONS	<2	<2	<2	<2	<2	--
ADONA	<2.1	--	<2.1	<2.1	<2.1	--
DONA	--	<2	--	--	--	--
NaDONA	<2.1	--	<2.1	<2.1	<2.1	--
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<3	<20	<20	<20	--
N-ethylperfluoro-1-octanesulfonamide	<2	<5 UJ	<2	<2	<2	--
N-methyl perfluoro-1-octanesulfonamide	<2	<3 UJ	<2	<2	<2	--
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<2	<20	<20	<20	--
Perfluorobutane Sulfonic Acid	4.7	3.4	4.7	5.3	2.4	--
Perfluorobutanoic Acid	5.6	<5	5.5	5.1	8.6	--
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	--
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	--
Perfluorododecane sulfonic acid (PFDoS)	<2	<3	<2	<2	<2	--
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	--
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	--
Perfluoroheptanoic Acid	--	--	--	--	--	--
Perfluorohexadecanoic acid (PFHxDA)	<2	<3	<2	<2	<2	--
Perfluorohexane Sulfonic Acid	5.5	4.1	5.6	5.5	<2	--
Perfluorohexanoic Acid	15	14	15	16	3.1	--
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	--
Perfluorononanoic Acid	<2	<2	<2	<2	<2	--
Perfluorooctadecanoic acid	<2	<3	<2	<2	<2	--
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	--
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	--
Perfluoropentanoic Acid	12	9.2	11	13	8.4	--
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	--
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	--
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	--
PFOA	7.7	7	8	7.8	2.8	--
PFOS	15	11	15	14	<2	--
Total Other PFAS	66	49	65	67	25	ND

**TABLE B1
SEEP AND SURFACE WATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20	CAP SW Sampling 2Q20
Location ID	OLDOF-1	OUTFALL 002	SEEP-B	SEEP-C	SEEP-D	TARHEEL
Field Sample ID	CAP2Q20-OLDOF-1-24-051420	CAP2Q20-OUTFALL 002-24-051420	CAP2Q20-SEEP-B-24-051420	CAP2Q20-SEEP-C-24-051420	CAP2Q20-SEEP-D-24-051420	CAP2Q20-CFR-TARHEEL-051420
Sample Date	5/14/2020	5/14/2020	5/14/2020	5/14/2020	5/14/2020	5/14/2020
QA/QC						
Sample Delivery Group (SDG)	410-2521-1	410-2521-1	410-2519-1	410-2519-1	410-2519-1	320-60921-1
Lab Sample ID	410-2521-2	410-2521-1	410-2519-2	410-2519-3	410-2519-4	320-60921-3
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<5	<5	<5	<5	<5	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<3	<3	<3	<3	<3	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<2	<2	<2	<2	<2	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<3	<3	<3	<3	<3	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<3	<3	<3	<3	<3	<4
6:2 Fluorotelomer sulfonate	<5	<5	<5	<5	<5	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	--	--	--	--	--	<2.1
DONA	<2	<2	<2	<2	<2	--
NaDONA	--	--	--	--	--	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<3	<3	<3	<3	<3	<20
N-ethylperfluoro-1-octanesulfonamide	<5	<5	<5	<5	<5	<2
N-methyl perfluoro-1-octanesulfonamide	<3	<3	<3	<3	<3	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<2	<2	<2	<2	<2	<20
Perfluorobutane Sulfonic Acid	<2	3.8	<2	<2	<2	4.9
Perfluorobutanoic Acid	60	5.5	310	310	160	5.2
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<3	<3	<3	<3	<3	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	--	--	--	--	--	--
Perfluorohexadecanoic acid (PFHxDA)	<3	<3	<3	<3	<3	<2
Perfluorohexane Sulfonic Acid	<2	4.2	<2	<2	<2	5.6
Perfluorohexanoic Acid	14	13	34	77	38	15
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	8.2	<2	7.8	<2	2.8	<2
Perfluorooctadecanoic acid	<3	<3	<3	<3	<3	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	120	19	980	1,400	680	12
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	30	7.1	15	17	11	7.9
PFOS	2	11	<2	<2	<2	16
Total Other PFAS	230	64	1,300	1,800	890	67

**TABLE B1
SEEP AND SURFACE WATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20	CAP SW SAMPLING 2Q20
Location ID	EB	EB	FBLK
Field Sample ID	CAP2Q20-EB-PP-051920	CAP2Q20-EB-ISCO-052120	CAP2Q20-FB-051920
Sample Date	5/19/2020	5/21/2020	5/19/2020
QA/QC	Equipment Blank	Equipment Blank	Field Blank
Sample Delivery Group (SDG)	410-2520-1	410-2520-1	410-2520-1
Lab Sample ID	410-2520-3	410-2520-4	410-2520-2
Other PFAS (ng/L)			
10:2 Fluorotelomer sulfonate	<5	<5	<5
11Cl-PF3OUdS	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<3	<3	<3
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<2	<2	<2
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<3	<3	<3
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<3	<3	<3
6:2 Fluorotelomer sulfonate	<5	<5	<5
9Cl-PF3ONS	<2	<2	<2
ADONA	--	--	--
DONA	<2	<2	<2
NaDONA	--	--	--
N-ethyl perfluorooctane sulfonamidoacetic acid	<3	<3	<3
N-ethylperfluoro-1-octanesulfonamide	<5	<5	<5
N-methyl perfluoro-1-octanesulfonamide	<3	<3	<3
N-methyl perfluorooctane sulfonamidoacetic acid	<2	<2	<2
Perfluorobutane Sulfonic Acid	<2	<2	<2
Perfluorobutanoic Acid	<5	<5	<5
Perfluorodecane Sulfonic Acid	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<3	<3	<3
Perfluorododecanoic Acid	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2
Perfluoroheptanoic Acid	--	--	--
Perfluorohexadecanoic acid (PFHxDA)	<3	<3	<3
Perfluorohexane Sulfonic Acid	<2	<2	<2
Perfluorohexanoic Acid	<2	<2	<2
Perfluorononanesulfonic acid	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2
Perfluorooctadecanoic acid	<3	<3	<3
Perfluorooctane Sulfonamide	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2
Perfluoropentanoic Acid	<2	<2	<2
Perfluorotetradecanoic Acid	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2
PFOA	<2	<2	<2
PFOS	<2	<2	<2
Total Other PFAS	ND	ND	ND

Notes:

Bold - Analyte detected above associated reporting limit

ND - no listed analytes were detected above the associated reporting limits

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SDG - Sample Delivery Group

UJ - Analyte not detected. Reporting limit may not be accurate or precise.

< - Analyte not detected above associated reporting limit.

TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	BLADEN-1D	BLADEN-1D	LTW-01	LTW-02	LTW-03	LTW-04
Field Sample ID	CAP2Q20-BLADEN-1D-050620	CAP2Q20-BLADEN-1D-050620-1	CAP2Q20-LTW-01-050720	CAP2Q20-LTW-02-051220	CAP2Q20-LTW-03-051320	CAP2Q20-LTW-04-050820
Sample Date	5/6/2020	5/6/2020	5/7/2020	5/12/2020	5/13/2020	5/8/2020
QA/QC		Field Duplicate				
Sample Delivery Group (SDG)	320-60762-1	320-60762-1	320-60761-1	320-60920-1	320-60920-1	320-60791-1
Lab Sample ID	320-60762-4	320-60762-5	320-60761-2	320-60920-1	320-60920-2	320-60791-5
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<2	<2	<2	<2	<2	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<20	<20	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<20	<20	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<2	<2	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<4	<4	<4
6:2 Fluorotelomer sulfonate	<20	<20	<20	<20	<20	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	--	--	--
NaDONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
Perfluorobutane Sulfonic Acid	<2	24 J	2.9	<2	<2	<2
Perfluorobutanoic Acid	4.4	4.5	150	54	140	410
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<2	<2	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	<2	<2	49	11	22	62
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<2	<2	<2
Perfluorohexane Sulfonic Acid	<2	<2	5.2	<2	<2	<2
Perfluorohexanoic Acid	<2	<2	27	8.6	18	41
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<2	<2	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	4.8	4.8	400	210	770	1,400
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	<2	<2	35	<2	<2	7.2
PFOS	<2	<2	10 J	<2	<2	<2
Total Other PFAS	9	33	680	280	950	1,900

**TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	LTW-05	PIW-1D	PIW-3D	PIW-7D	PIW-7S	PW-04
Field Sample ID	CAP2Q20-LTW-05-050820	CAP2Q20-PIW-1D-050720	CAP2Q20-PIW-3D-050720	CAP2Q20-PIW-7D-050820	CAP2Q20-PIW-7S-050820	CAP2Q20-PW-04-051320
Sample Date	5/8/2020	5/7/2020	5/7/2020	5/8/2020	5/8/2020	5/13/2020
QA/QC						
Sample Delivery Group (SDG)	320-60791-1	320-60761-1	320-60761-1	320-60791-1	320-60791-1	320-60920-1
Lab Sample ID	320-60791-2	320-60761-4	320-60761-1	320-60791-4	320-60791-1	320-60920-3
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<2	<2	<2	<2	<2	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<20	<20	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<20	<20	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<2	<2	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<4	<4	<4
6:2 Fluorotelomer sulfonate	<20	<20	<20	<20	<20	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	--	--	--
NaDONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
Perfluorobutane Sulfonic Acid	<2	<2	3	<2	3.9	<2
Perfluorobutanoic Acid	210	64	68	120	300	8.6
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<2	<2	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	350	16	32	61	86	7.5
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<2	<2	<2
Perfluorohexane Sulfonic Acid	<2	<2	4.4	<2	4.7	<2
Perfluorohexanoic Acid	70	10	24	18	45	3.2
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	4.3	<2	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<2	<2	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	1,700	140	130	960	880	13
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	2.6	7.4	35	<2	16	<2
PFOS	<2	<2	11	<2	7.3	<2
Total Other PFAS	2,300	240	310	1,200	1,300	32

**TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	PW-06	PW-07	PW-09	PW-11	PZ-22	SMW-10
Field Sample ID	CAP2Q20-PW-06-050620	CAP2Q20-PW-07-051420	CAP2Q20-PW-09-050720	CAP2Q20-PW-11-050720	CAP2Q20-PZ-22-050820	CAP2Q20-SMW-10-050720
Sample Date	5/6/2020	5/14/2020	5/7/2020	5/7/2020	5/8/2020	5/7/2020
QA/QC						
Sample Delivery Group (SDG)	320-60762-1	320-60920-1	320-60761-1	320-60761-1	320-60791-1	320-60761-1
Lab Sample ID	320-60762-7	320-60920-4	320-60761-5	320-60761-3	320-60791-3	320-60761-7
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<2	<2	<2	<2	<2	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<20	<20	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<20	<20	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<2	<2	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<4	<4	<4
6:2 Fluorotelomer sulfonate	<20	<20	<20	<20	<20	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	--	--	--
NaDONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
Perfluorobutane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorobutanoic Acid	12	24	<2	90	130	<2
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<2	<2	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	5.7	5.4	<2	210	32	<2
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<2	<2	<2
Perfluorohexane Sulfonic Acid	<2	<2	<2	2.5	<2	<2
Perfluorohexanoic Acid	4.1	3.7	<2	23	19	<2
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2	11	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<2	<2	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	16	16	<2	520	940	<2
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	6.8	2.1	<2	31	<2	<2
PFOS	<2	<2	<2	3.2	<2	<2
Total Other PFAS	45	51	ND	890	1,100	ND

**TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	SMW-11	SMW-12	EB	EB	EB	EB
Field Sample ID	CAP2Q20-SMW-11-050720	CAP2Q20-SMW-12-050620	CAP2Q20-EB-DV-050620	CAP2Q20-EB-PP-050620	CAP2Q20-EB-DV-050720	CAP2Q20-EB-PP-050720
Sample Date	5/7/2020	5/6/2020	5/6/2020	5/6/2020	5/7/2020	5/7/2020
QA/QC			Equipment Blank	Equipment Blank	Equipment Blank	Equipment Blank
Sample Delivery Group (SDG)	320-60761-1	320-60762-1	320-60762-1	320-60762-1	320-60761-1	320-60761-1
Lab Sample ID	320-60761-6	320-60762-6	320-60762-2	320-60762-1	320-60761-9	320-60761-8
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<2	<2	<2	<2	<2	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<20	<20	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<20	<20	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<2	<2	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<4	<4	<4
6:2 Fluorotelomer sulfonate	<20	<20	<20	<20	<20	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	--	--	--
NaDONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
Perfluorobutane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorobutanoic Acid	28	17	<2	<2	<2	<2
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<2	<2	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	14	<2	<2	<2	<2	<2
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<2	<2	<2
Perfluorohexane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorohexanoic Acid	12	<2	<2	<2	<2	<2
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<2	<2	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	37	45	<2	<2	<2	<2
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	44	<2	<2	<2	<2	<2
PFOS	<2	<2	<2	<2	<2	<2
Total Other PFAS	140	62	ND	ND	ND	ND

**TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	EB	EB	EB	EB	FBLK	FBLK
Field Sample ID	CAP2Q20-EB-PP-050820	CAP2Q20-EB-PP-051220	CAP2Q20-EB-PP-051320	CAP2Q20-EB-PP-051420	CAP2Q20-FB-050620	CAP2Q20-FB-050720
Sample Date	5/8/2020	5/12/2020	5/13/2020	5/14/2020	5/6/2020	5/7/2020
QA/QC	Equipment Blank	Equipment Blank	Equipment Blank	Equipment Blank	Field Blank	Field Blank
Sample Delivery Group (SDG)	320-60791-1	320-60920-1	320-60920-1	320-60920-1	320-60762-1	320-60761-1
Lab Sample ID	320-60791-6	320-60920-7	320-60920-8	320-60920-9	320-60762-3	320-60761-10
<i>Other PFAS (ng/L)</i>						
10:2 Fluorotelomer sulfonate	<2	<2	<2	<2	<2	<2
11Cl-PF3OUdS	<2	<2	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<20	<20	<20
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<20	<20	<20
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<2	<2	<2
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<4	<4	<4
6:2 Fluorotelomer sulfonate	<20	<20	<20	<20	<20	<20
9Cl-PF3ONS	<2	<2	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	--	--	--
NaDONA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<2	<2	<2
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<20	<20	<20
Perfluorobutane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorobutanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<2	<2	<2
Perfluorododecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2	<2	<2
Perfluoroheptanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<2	<2	<2
Perfluorohexane Sulfonic Acid	<2	<2	<2	<2	<2	<2
Perfluorohexanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorononanesulfonic acid	<2	<2	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<2	<2	<2
Perfluorooctane Sulfonamide	<2	<2	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2	<2	<2
Perfluoropentanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotetradecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2	<2	<2
PFOA	<2	<2	<2	<2	<2	<2
PFOS	<2	<2	<2	<2	<2	<2
Total Other PFAS	ND	ND	ND	ND	ND	ND

**TABLE B2
GROUNDWATER ANALYTICAL RESULTS - OTHER PFAS
Chemours Fayetteville Works, North Carolina**

Program	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20	CAP MW Sampling 2Q20
Location ID	FBLK	FBLK	FBLK	FBLK
Field Sample ID	CAP2Q20-FB-050820	CAP2Q20-FB-051220	CAP2Q20-FB-051320	CAP2Q20-FB-051420
Sample Date	5/8/2020	5/12/2020	5/13/2020	5/14/2020
QA/QC	Field Blank	Field Blank	Field Blank	Field Blank
Sample Delivery Group (SDG)	320-60791-1	320-60920-1	320-60920-1	410-2521-1
Lab Sample ID	320-60791-7	320-60920-10	320-60920-11	410-2521-3
Other PFAS (ng/L)				
10:2 Fluorotelomer sulfonate	<2	<2	<2	<5
11Cl-PF3OUdS	<2	<2	<2	<2
1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	<20	<20	<20	<3
1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	<20	<20	<20	<2
2-(N-ethyl perfluoro-1-octanesulfonamido)-ethanol	<2	<2	<2	<3
2-(N-methyl perfluoro-1-octanesulfonamido)-ethanol	<4	<4	<4	<3
6:2 Fluorotelomer sulfonate	<20	<20	<20	<5
9Cl-PF3ONS	<2	<2	<2	<2
ADONA	<2.1	<2.1	<2.1	<2.1
DONA	--	--	--	<2
NaDONA	<2.1	<2.1	<2.1	<2.1
N-ethyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<3
N-ethylperfluoro-1-octanesulfonamide	<2	<2	<2	<5
N-methyl perfluoro-1-octanesulfonamide	<2	<2	<2	<3
N-methyl perfluorooctane sulfonamidoacetic acid	<20	<20	<20	<2
Perfluorobutane Sulfonic Acid	<2	<2	<2	<2
Perfluorobutanoic Acid	<2	<2	<2	<5
Perfluorodecane Sulfonic Acid	<2	<2	<2	<2
Perfluorodecanoic Acid	<2	<2	<2	<2
Perfluorododecane sulfonic acid (PFDoS)	<2	<2	<2	<3
Perfluorododecanoic Acid	<2	<2	<2	<2
Perfluoroheptane sulfonic acid (PFHpS)	<2	<2	<2	<2
Perfluoroheptanoic Acid	<2	<2	<2	<2
Perfluorohexadecanoic acid (PFHxDA)	<2	<2	<2	<3
Perfluorohexane Sulfonic Acid	<2	<2	<2	<2
Perfluorohexanoic Acid	<2	<2	<2	<2
Perfluorononanesulfonic acid	<2	<2	<2	<2
Perfluorononanoic Acid	<2	<2	<2	<2
Perfluorooctadecanoic acid	<2	<2	<2	<3
Perfluorooctane Sulfonamide	<2	<2	<2	<2
Perfluoropentane sulfonic acid (PFPeS)	<2	<2	<2	<2
Perfluoropentanoic Acid	<2	<2	<2	<2
Perfluorotetradecanoic Acid	<2	<2	<2	<2
Perfluorotridecanoic Acid	<2	<2	<2	<2
Perfluoroundecanoic Acid	<2	<2	<2	<2
PFOA	<2	<2	<2	<2
PFOS	<2	<2	<2	<2
Total Other PFAS	ND	ND	ND	ND

Notes:

- Bold** - Analyte detected above associated reporting limit
- ND - no listed analytes were detected above the associated reporting limits
- ng/L - nanograms per liter
- QA/QC - Quality assurance/ quality control
- SDG - Sample Delivery Group
- J - Analyte detected. Reported value may not be accurate or precise
- UJ - Analyte not detected. Reporting limit may not be accurate or precise.
- < - Analyte not detected above associated reporting limit.

APPENDIX C

Supplemental Flow Data

TABLE C1
SEEP A FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:12:40 AM	1.69	0.564	155	4,640
5/13/2020	12:42:40 AM	1.66	0.557	149	4,470
5/13/2020	1:12:40 AM	1.65	0.550	145	4,340
5/13/2020	1:42:40 AM	1.68	0.562	153	4,590
5/13/2020	2:12:40 AM	1.69	0.564	154	4,630
5/13/2020	2:42:40 AM	1.71	0.571	159	4,780
5/13/2020	3:12:40 AM	1.72	0.576	163	4,890
5/13/2020	3:42:40 AM	1.70	0.570	159	4,760
5/13/2020	4:12:40 AM	1.76	0.590	174	5,210
5/13/2020	4:42:40 AM	1.71	0.573	161	4,830
5/13/2020	5:12:40 AM	1.78	0.597	179	5,360
5/13/2020	5:42:40 AM	1.71	0.572	160	4,800
5/13/2020	6:12:40 AM	1.77	0.593	176	5,290
5/13/2020	6:42:40 AM	1.72	0.574	162	4,850
5/13/2020	7:12:40 AM	1.78	0.596	178	5,350
5/13/2020	7:42:40 AM	1.72	0.574	161	4,840
5/13/2020	8:12:40 AM	1.74	0.584	169	5,060
5/13/2020	8:42:40 AM	1.71	0.573	161	4,830
5/13/2020	9:12:40 AM	1.73	0.579	165	4,960
5/13/2020	9:42:40 AM	1.72	0.577	163	4,900
5/13/2020	10:12:40 AM	1.74	0.581	167	5,000
5/13/2020	10:42:40 AM	1.73	0.580	166	4,970
5/13/2020	11:12:40 AM	1.75	0.584	169	5,080
5/13/2020	11:42:40 AM	1.77	0.591	174	5,230
5/13/2020	12:12:40 PM	1.69	0.565	155	4,660
5/13/2020	12:42:40 PM	1.78	0.597	179	5,360
5/13/2020	1:12:40 PM	1.72	0.575	162	4,870
5/13/2020	1:42:40 PM	1.78	0.595	177	5,320
5/13/2020	2:12:40 PM	1.73	0.580	166	4,970
5/13/2020	2:42:40 PM	1.74	0.582	168	5,030
5/13/2020	3:12:40 PM	1.67	0.558	150	4,510
5/13/2020	3:42:40 PM	1.72	0.574	162	4,850
5/13/2020	4:12:40 PM	1.64	0.547	142	4,270
5/13/2020	4:42:40 PM	1.74	0.582	167	5,020
5/13/2020	5:12:40 PM	1.72	0.576	163	4,890
5/13/2020	5:42:40 PM	1.71	0.573	161	4,830
5/13/2020	6:12:40 PM	1.72	0.575	162	4,870
5/13/2020	6:42:40 PM	1.73	0.579	165	4,960
5/13/2020	7:12:40 PM	1.76	0.588	172	5,150
5/13/2020	7:42:40 PM	1.72	0.575	162	2,430
5/13/2020	8:12:40 PM	1.75	0.585	170	5,090
5/13/2020	8:42:40 PM	1.72	0.576	163	4,890

TABLE C1
SEEP A FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	9:12:40 PM	1.78	0.597	179	5,360
5/13/2020	9:42:40 PM	1.73	0.578	164	4,920
5/13/2020	10:12:40 PM	1.80	0.603	184	5,510
5/13/2020	10:42:40 PM	1.72	0.575	162	4,870
5/13/2020	11:12:40 PM	1.75	0.586	170	5,110
5/13/2020	11:42:40 PM	1.70	0.570	158	4,750
5/14/2020	12:12:40 AM	1.68	0.563	153	4,600
5/14/2020	12:42:40 AM	1.70	0.569	158	4,750
5/14/2020	1:12:40 AM	1.72	0.575	162	4,870
5/14/2020	1:42:40 AM	1.70	0.568	157	4,720
5/14/2020	2:12:40 AM	1.65	0.552	146	4,370
5/14/2020	2:42:40 AM	1.70	0.569	158	4,750
5/14/2020	3:12:40 AM	1.65	0.553	147	4,400
5/14/2020	3:42:40 AM	1.71	0.571	159	4,780
5/14/2020	4:12:40 AM	1.71	0.571	159	4,780
5/14/2020	4:42:40 AM	1.71	0.573	160	4,810
5/14/2020	5:12:40 AM	1.72	0.576	163	4,890
5/14/2020	5:42:40 AM	1.72	0.575	162	4,870
5/14/2020	6:12:40 AM	1.78	0.597	179	5,370
5/14/2020	6:42:40 AM	1.71	0.571	159	4,780
5/14/2020	7:12:40 AM	1.76	0.590	173	5,200
5/14/2020	7:42:40 AM	1.72	0.575	162	4,870
5/14/2020	8:12:40 AM	1.74	0.583	168	5,050
5/14/2020	8:42:40 AM	1.74	0.583	168	5,050
5/14/2020	9:12:40 AM	1.81	0.604	185	5,550
5/14/2020	9:42:40 AM	1.72	0.577	164	4,910
5/14/2020	10:12:40 AM	1.69	0.564	155	4,640
5/14/2020	10:42:40 AM	1.72	0.575	162	4,870
5/14/2020	11:12:40 AM	1.67	0.558	150	4,490
5/14/2020	11:42:40 AM	1.72	0.576	163	4,880
5/14/2020	12:12:40 PM	1.65	0.551	145	4,360
5/14/2020	12:42:40 PM	1.72	0.575	162	4,870
5/14/2020	1:12:40 PM	1.61	0.537	136	4,070
5/14/2020	1:42:40 PM	1.71	0.574	161	4,840
5/14/2020	2:12:40 PM	1.62	0.542	139	4,180
5/14/2020	2:42:40 PM	1.71	0.573	161	4,820
5/14/2020	3:12:40 PM	1.61	0.537	136	4,070
5/14/2020	3:42:40 PM	1.72	0.576	163	4,890
5/14/2020	4:12:40 PM	1.65	0.553	147	4,400
5/14/2020	4:42:40 PM	1.72	0.577	164	4,910
5/14/2020	5:12:40 PM	1.71	0.571	159	4,780

TABLE C1
SEEP A FLUME DATA
Chemours Fayetteville Works, North Carolina

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	5:42:40 PM	1.72	0.575	162	4,870
5/14/2020	6:12:40 PM	1.69	0.565	155	4,640
5/14/2020	6:42:40 PM	1.72	0.574	161	4,840
5/14/2020	7:12:40 PM	1.73	0.580	166	4,980
5/14/2020	7:42:40 PM	1.72	0.574	161	4,840
5/14/2020	8:12:40 PM	1.79	0.600	181	5,440
5/14/2020	8:42:40 PM	1.71	0.571	159	4,780
5/14/2020	9:12:40 PM	1.76	0.588	172	5,160
5/14/2020	9:42:40 PM	1.72	0.576	163	4,880
5/14/2020	10:12:40 PM	1.79	0.599	180	5,410
5/14/2020	10:42:40 PM	1.71	0.574	161	4,840
5/14/2020	11:12:40 PM	1.73	0.579	165	4,950
5/14/2020	11:42:40 PM	1.70	0.570	159	4,760
Total					464,980

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous

TABLE C2
SEEP B-TR1 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:17:05 AM	0.913	0.305	32.6	980
5/13/2020	12:47:05 AM	0.883	0.295	29.9	900
5/13/2020	1:17:05 AM	0.863	0.289	28.2	850
5/13/2020	1:47:05 AM	0.900	0.301	31.4	940
5/13/2020	2:17:05 AM	0.907	0.303	32.1	960
5/13/2020	2:47:05 AM	0.928	0.311	34.0	1,000
5/13/2020	3:17:05 AM	0.942	0.315	35.4	1,100
5/13/2020	3:47:05 AM	0.925	0.310	33.8	1,000
5/13/2020	4:17:05 AM	0.986	0.330	39.8	1,200
5/13/2020	4:47:05 AM	0.939	0.314	35.1	1,100
5/13/2020	5:17:05 AM	1.011	0.338	42.5	1,300
5/13/2020	5:47:05 AM	0.941	0.315	35.3	1,100
5/13/2020	6:17:05 AM	1.007	0.337	42.0	1,300
5/13/2020	6:47:05 AM	0.945	0.316	35.7	1,100
5/13/2020	7:17:05 AM	1.009	0.338	42.2	1,300
5/13/2020	7:47:05 AM	0.938	0.314	35.0	1,000
5/13/2020	8:17:05 AM	0.973	0.326	38.5	1,200
5/13/2020	8:47:05 AM	0.942	0.315	35.4	1,100
5/13/2020	9:17:05 AM	0.961	0.322	37.2	1,100
5/13/2020	9:47:05 AM	0.952	0.319	36.4	1,100
5/13/2020	10:17:05 AM	0.970	0.325	38.2	1,100
5/13/2020	10:47:05 AM	0.960	0.321	37.1	1,100
5/13/2020	11:17:05 AM	0.961	0.322	37.2	1,100
5/13/2020	11:47:05 AM	0.943	0.316	35.5	1,100
5/13/2020	12:17:05 PM	0.872	0.292	29.0	870
5/13/2020	12:47:05 PM	0.977	0.327	38.9	1,200
5/13/2020	1:17:05 PM	0.919	0.307	33.2	1,000
5/13/2020	1:47:05 PM	0.989	0.331	40.1	1,200
5/13/2020	2:17:05 PM	0.943	0.316	35.5	1,100
5/13/2020	2:47:05 PM	0.943	0.316	35.5	1,100
5/13/2020	3:17:05 PM	0.888	0.297	30.4	910
5/13/2020	3:47:05 PM	0.934	0.313	34.6	1,000
5/13/2020	4:17:05 PM	0.859	0.287	27.9	840
5/13/2020	4:47:05 PM	0.958	0.321	36.9	1,100
5/13/2020	5:17:05 PM	0.947	0.317	35.9	1,100
5/13/2020	5:47:05 PM	0.942	0.315	35.4	1,100
5/13/2020	6:17:05 PM	0.946	0.317	35.8	1,100
5/13/2020	6:47:05 PM	0.958	0.321	36.9	1,100
5/13/2020	7:17:05 PM	0.983	0.329	39.5	1,200
5/13/2020	7:47:05 PM	0.948	0.317	36.0	1,100
5/13/2020	8:17:05 PM	0.974	0.326	38.6	1,200
5/13/2020	8:47:05 PM	0.952	0.319	36.4	1,100
5/13/2020	9:17:05 PM	1.006	0.337	41.9	1,300
5/13/2020	9:47:05 PM	0.951	0.318	36.3	1,100
5/13/2020	10:17:05 PM	1.031	0.345	44.7	1,300

TABLE C2
SEEP B-TR1 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	10:47:05 PM	0.949	0.318	36.1	1,100
5/13/2020	11:17:05 PM	0.972	0.325	38.4	1,200
5/13/2020	11:47:05 PM	0.919	0.307	33.2	1,000
5/14/2020	12:17:05 AM	0.907	0.303	32.1	960
5/14/2020	12:47:05 AM	0.939	0.314	35.1	1,100
5/14/2020	1:17:05 AM	0.949	0.318	36.1	1,100
5/14/2020	1:47:05 AM	0.925	0.310	33.8	1,000
5/14/2020	2:17:05 AM	0.878	0.294	29.5	890
5/14/2020	2:47:05 AM	0.923	0.309	33.6	1,000
5/14/2020	3:17:05 AM	0.885	0.296	30.1	900
5/14/2020	3:47:05 AM	0.933	0.312	34.5	1,000
5/14/2020	4:17:05 AM	0.934	0.313	34.6	1,000
5/14/2020	4:47:05 AM	0.943	0.316	35.5	1,100
5/14/2020	5:17:05 AM	0.956	0.320	36.7	1,100
5/14/2020	5:47:05 AM	0.956	0.320	36.7	1,100
5/14/2020	6:17:05 AM	1.023	0.342	43.8	1,300
5/14/2020	6:47:05 AM	0.936	0.313	34.8	1,000
5/14/2020	7:17:05 AM	0.993	0.332	40.5	1,200
5/14/2020	7:47:05 AM	0.949	0.318	36.1	1,100
5/14/2020	8:17:05 AM	0.971	0.325	38.3	1,100
5/14/2020	8:47:05 AM	0.979	0.328	39.1	1,200
5/14/2020	9:17:05 AM	1.045	0.350	46.2	1,400
5/14/2020	9:47:05 AM	0.956	0.320	36.7	1,100
5/14/2020	10:17:05 AM	0.934	0.313	34.6	1,000
5/14/2020	10:47:05 AM	0.971	0.325	38.3	1,100
5/14/2020	11:17:05 AM	0.925	0.310	33.8	1,000
5/14/2020	11:47:05 AM	1.013	0.339	42.7	1,300
5/14/2020	12:17:05 PM	0.972	0.325	38.4	1,200
5/14/2020	12:47:05 PM	1.040	0.348	45.7	1,400
5/14/2020	1:17:05 PM	0.917	0.307	33.0	990
5/14/2020	1:47:05 PM	1.000	0.335	41.3	1,200
5/14/2020	2:17:05 PM	0.898	0.300	31.3	940
5/14/2020	2:47:05 PM	0.962	0.322	37.3	1,100
5/14/2020	3:17:05 PM	0.836	0.280	26.0	780
5/14/2020	3:47:05 PM	0.954	0.319	36.5	1,100
5/14/2020	4:17:05 PM	0.890	0.298	30.6	920
5/14/2020	4:47:05 PM	0.957	0.320	36.8	1,100
5/14/2020	5:17:05 PM	0.934	0.313	34.6	1,000
5/14/2020	5:47:05 PM	0.946	0.317	35.8	1,100
5/14/2020	6:17:05 PM	0.922	0.309	33.5	1,000
5/14/2020	6:47:05 PM	0.937	0.314	34.9	1,000
5/14/2020	7:17:05 PM	0.956	0.320	36.7	1,100
5/14/2020	7:47:05 PM	0.952	0.319	36.4	1,100
5/14/2020	8:17:05 PM	1.028	0.344	44.3	1,300
5/14/2020	8:47:05 PM	0.947	0.317	35.9	1,100

TABLE C2
SEEP B-TR1 FLUME DATA
Chemours Fayetteville Works, North Carolina

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	9:17:05 PM	0.998	0.334	41.1	1,200
5/14/2020	9:47:05 PM	0.959	0.321	37.0	1,100
5/14/2020	10:17:05 PM	1.032	0.345	44.8	1,300
5/14/2020	10:47:05 PM	0.953	0.319	36.4	1,100
5/14/2020	11:17:05 PM	0.967	0.324	37.8	1,100
5/14/2020	11:47:05 PM	0.948	0.317	36.0	1,100
Total					104,730

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as

TABLE C3
SEEP B-TR2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:12:37 AM	0.852	0.285	27.3	820
5/13/2020	12:42:37 AM	0.826	0.276	25.2	760
5/13/2020	1:12:37 AM	0.806	0.270	23.7	710
5/13/2020	1:42:37 AM	0.837	0.280	26.1	780
5/13/2020	2:12:37 AM	0.837	0.280	26.1	780
5/13/2020	2:42:37 AM	0.852	0.285	27.3	820
5/13/2020	3:12:37 AM	0.877	0.293	29.4	880
5/13/2020	3:42:37 AM	0.854	0.286	27.5	820
5/13/2020	4:12:37 AM	0.907	0.303	32.1	960
5/13/2020	4:42:37 AM	0.861	0.288	28.1	840
5/13/2020	5:12:37 AM	0.929	0.311	34.1	1,000
5/13/2020	5:42:37 AM	0.863	0.289	28.2	850
5/13/2020	6:12:37 AM	0.928	0.311	34.0	1,000
5/13/2020	6:42:37 AM	0.865	0.289	28.4	850
5/13/2020	7:12:37 AM	0.944	0.316	35.6	1,100
5/13/2020	7:42:37 AM	0.875	0.293	29.2	880
5/13/2020	8:12:37 AM	0.913	0.305	32.6	980
5/13/2020	8:42:37 AM	0.89	0.298	30.6	920
5/13/2020	9:12:37 AM	0.919	0.307	33.2	1,000
5/13/2020	9:42:37 AM	0.915	0.306	32.8	980
5/13/2020	10:12:37 AM	0.927	0.310	33.9	1,000
5/13/2020	10:42:37 AM	0.932	0.312	34.4	1,000
5/13/2020	11:12:37 AM	0.931	0.312	34.3	1,000
5/13/2020	11:42:37 AM	0.925	0.310	33.8	1,000
5/13/2020	12:12:37 PM	0.854	0.286	27.5	820
5/13/2020	12:42:37 PM	0.967	0.324	37.8	1,100
5/13/2020	1:12:37 PM	0.921	0.308	33.4	1,000
5/13/2020	1:42:37 PM	1.01	0.338	42.3	1,300
5/13/2020	2:12:37 PM	0.97	0.325	38.2	1,100
5/13/2020	2:42:37 PM	0.962	0.322	37.3	1,100
5/13/2020	3:12:37 PM	0.867	0.290	28.6	860
5/13/2020	3:42:37 PM	0.903	0.302	31.7	950
5/13/2020	4:12:37 PM	0.802	0.268	23.4	700
5/13/2020	4:42:37 PM	0.89	0.298	30.6	920
5/13/2020	5:12:37 PM	0.879	0.294	29.6	890
5/13/2020	5:42:37 PM	0.884	0.296	30.0	900
5/13/2020	6:12:37 PM	0.878	0.294	29.5	890
5/13/2020	6:42:37 PM	0.892	0.298	30.7	920
5/13/2020	7:12:37 PM	0.913	0.305	32.6	980
5/13/2020	7:42:37 PM	0.873	0.292	29.1	870
5/13/2020	8:12:37 PM	0.899	0.301	31.4	940
5/13/2020	8:42:37 PM	0.867	0.290	28.6	860
5/13/2020	9:12:37 PM	0.924	0.309	33.7	1,000

TABLE C3
SEEP B-TR2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	9:42:37 PM	0.865	0.289	28.4	850
5/13/2020	10:12:37 PM	0.933	0.312	34.5	1,000
5/13/2020	10:42:37 PM	0.857	0.287	27.7	830
5/13/2020	11:12:37 PM	0.882	0.295	29.9	900
5/13/2020	11:42:37 PM	0.84	0.281	26.3	790
5/14/2020	12:12:37 AM	0.824	0.276	25.0	750
5/14/2020	12:42:37 AM	0.852	0.285	27.3	820
5/14/2020	1:12:37 AM	0.873	0.292	29.1	870
5/14/2020	1:42:37 AM	0.854	0.286	27.5	820
5/14/2020	2:12:37 AM	0.811	0.271	24.0	720
5/14/2020	2:42:37 AM	0.861	0.288	28.1	840
5/14/2020	3:12:37 AM	0.812	0.272	24.1	720
5/14/2020	3:42:37 AM	0.857	0.287	27.7	830
5/14/2020	4:12:37 AM	0.847	0.283	26.9	810
5/14/2020	4:42:37 AM	0.849	0.284	27.1	810
5/14/2020	5:12:37 AM	0.868	0.290	28.6	860
5/14/2020	5:42:37 AM	0.859	0.287	27.9	840
5/14/2020	6:12:37 AM	0.919	0.307	33.2	1,000
5/14/2020	6:42:37 AM	0.837	0.280	26.1	780
5/14/2020	7:12:37 AM	0.899	0.301	31.4	940
5/14/2020	7:42:37 AM	0.862	0.288	28.1	840
5/14/2020	8:12:37 AM	0.897	0.300	31.2	940
5/14/2020	8:42:37 AM	0.92	0.308	33.3	1,000
5/14/2020	9:12:37 AM	0.995	0.333	40.7	1,200
5/14/2020	9:42:37 AM	0.933	0.312	34.5	1,000
5/14/2020	10:12:37 AM	0.907	0.303	32.1	960
5/14/2020	10:42:37 AM	0.956	0.320	36.7	1,100
5/14/2020	11:12:37 AM	0.906	0.303	32.0	960
5/14/2020	11:42:37 AM	0.977	0.327	38.9	1,200
5/14/2020	12:12:37 PM	0.92	0.308	33.3	1,000
5/14/2020	12:42:37 PM	0.994	0.333	40.6	1,200
5/14/2020	1:12:37 PM	0.904	0.302	31.8	950
5/14/2020	1:42:37 PM	1.043	0.349	46.0	1,400
5/14/2020	2:12:37 PM	0.938	0.314	35.0	1,000
5/14/2020	2:42:37 PM	0.98	0.328	39.2	1,200
5/14/2020	3:12:37 PM	0.834	0.279	25.8	780
5/14/2020	3:42:37 PM	0.927	0.310	33.9	1,000
5/14/2020	4:12:37 PM	0.845	0.283	26.7	800
5/14/2020	4:42:37 PM	0.916	0.306	32.9	990
5/14/2020	5:12:37 PM	0.883	0.295	29.9	900
5/14/2020	5:42:37 PM	0.9	0.301	31.4	940
5/14/2020	6:12:37 PM	0.87	0.291	28.8	860
5/14/2020	6:42:37 PM	0.888	0.297	30.4	910

TABLE C3
SEEP B-TR2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	7:12:37 PM	0.907	0.303	32.1	960
5/14/2020	7:42:37 PM	0.891	0.298	30.6	920
5/14/2020	8:12:37 PM	0.956	0.320	36.7	1,100
5/14/2020	8:42:37 PM	0.86	0.288	28.0	840
5/14/2020	9:12:37 PM	0.906	0.303	32.0	960
5/14/2020	9:42:37 PM	0.871	0.291	28.9	870
5/14/2020	10:12:37 PM	0.932	0.312	34.4	1,000
5/14/2020	10:42:37 PM	0.859	0.287	27.9	840
5/14/2020	11:12:37 PM	0.883	0.295	29.9	900
5/14/2020	11:42:37 PM	0.871	0.291	28.9	870
Total					89,000

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous recording.

TABLE C4
SEEP B-2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:19:42 AM	1.26	0.423	72.203	2,170
5/13/2020	12:49:42 AM	1.23	0.412	67.490	2,020
5/13/2020	1:19:42 AM	1.21	0.404	64.084	1,920
5/13/2020	1:49:42 AM	1.25	0.418	70.265	2,110
5/13/2020	2:19:42 AM	1.25	0.419	70.412	2,110
5/13/2020	2:49:42 AM	1.28	0.427	74.174	2,230
5/13/2020	3:19:42 AM	1.30	0.433	77.114	2,310
5/13/2020	3:49:42 AM	1.27	0.424	72.957	2,190
5/13/2020	4:19:42 AM	1.33	0.444	82.064	2,460
5/13/2020	4:49:42 AM	1.29	0.431	76.022	2,280
5/13/2020	5:19:42 AM	1.35	0.453	86.700	2,600
5/13/2020	5:49:42 AM	1.29	0.432	76.489	2,290
5/13/2020	6:19:42 AM	1.35	0.452	86.028	2,580
5/13/2020	6:49:42 AM	1.29	0.431	76.022	2,280
5/13/2020	7:19:42 AM	1.35	0.453	86.532	2,600
5/13/2020	7:49:42 AM	1.28	0.428	74.633	2,240
5/13/2020	8:19:42 AM	1.32	0.442	81.091	2,430
5/13/2020	8:49:42 AM	1.27	0.425	73.412	2,200
5/13/2020	9:19:42 AM	1.29	0.433	76.801	2,300
5/13/2020	9:49:42 AM	1.28	0.430	75.403	2,260
5/13/2020	10:19:42 AM	1.32	0.440	80.446	2,410
5/13/2020	10:49:42 AM	1.29	0.433	76.957	2,310
5/13/2020	11:19:42 AM	1.30	0.434	77.585	2,330
5/13/2020	11:49:42 AM	1.27	0.424	72.655	2,180
5/13/2020	12:19:42 PM	1.20	0.400	62.422	1,870
5/13/2020	12:49:42 PM	1.29	0.432	76.645	2,300
5/13/2020	1:19:42 PM	1.24	0.415	68.796	2,060
5/13/2020	1:49:42 PM	1.31	0.439	79.805	2,390
5/13/2020	2:19:42 PM	1.28	0.427	74.021	2,220
5/13/2020	2:49:42 PM	1.28	0.428	74.480	2,230
5/13/2020	3:19:42 PM	1.23	0.413	67.779	2,030
5/13/2020	3:49:42 PM	1.28	0.427	74.174	2,230
5/13/2020	4:19:42 PM	1.22	0.407	65.208	1,960
5/13/2020	4:49:42 PM	1.32	0.441	80.768	2,420
5/13/2020	5:19:42 PM	1.32	0.443	81.739	2,450
5/13/2020	5:49:42 PM	1.32	0.440	80.446	2,410
5/13/2020	6:19:42 PM	1.30	0.436	78.373	2,350
5/13/2020	6:49:42 PM	1.33	0.444	82.227	2,470
5/13/2020	7:19:42 PM	1.355	0.453	86.869	2,610
5/13/2020	7:49:42 PM	1.32	0.442	81.091	2,430
5/13/2020	8:19:42 PM	1.347	0.451	85.526	2,570
5/13/2020	8:49:42 PM	1.33	0.446	83.044	2,490
5/13/2020	9:19:42 PM	1.38	0.461	90.627	2,720

TABLE C4
SEEP B-2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	9:49:42 PM	1.33	0.444	82.064	2,460
5/13/2020	10:19:42 PM	1.41	0.473	96.992	2,910
5/13/2020	10:49:42 PM	1.33	0.444	82.227	2,470
5/13/2020	11:19:42 PM	1.34	0.448	84.362	2,530
5/13/2020	11:49:42 PM	1.29	0.432	76.645	2,300
5/14/2020	12:19:42 AM	1.28	0.429	75.249	2,260
5/14/2020	12:49:42 AM	1.30	0.436	78.531	2,360
5/14/2020	1:19:42 AM	1.32	0.440	80.446	2,410
5/14/2020	1:49:42 AM	1.27	0.425	73.108	2,190
5/14/2020	2:19:42 AM	1.227	0.411	66.915	2,010
5/14/2020	2:49:42 AM	1.27	0.426	73.716	2,210
5/14/2020	3:19:42 AM	1.23	0.413	67.779	2,030
5/14/2020	3:49:42 AM	1.29	0.431	76.022	2,280
5/14/2020	4:19:42 AM	1.29	0.432	76.645	2,300
5/14/2020	4:49:42 AM	1.30	0.434	77.427	2,320
5/14/2020	5:19:42 AM	1.31	0.438	79.326	2,380
5/14/2020	5:49:42 AM	1.31	0.437	79.007	2,370
5/14/2020	6:19:42 AM	1.38	0.462	91.321	2,740
5/14/2020	6:49:42 AM	1.29	0.431	75.867	2,280
5/14/2020	7:19:42 AM	1.35	0.450	85.193	2,560
5/14/2020	7:49:42 AM	1.29	0.431	76.022	2,280
5/14/2020	8:19:42 AM	1.324	0.443	81.739	2,450
5/14/2020	8:49:42 AM	1.34	0.448	84.032	2,520
5/14/2020	9:19:42 AM	1.40	0.467	93.776	2,810
5/14/2020	9:49:42 AM	1.30	0.436	78.215	2,350
5/14/2020	10:19:42 AM	1.27	0.425	73.412	2,200
5/14/2020	10:49:42 AM	1.30	0.434	77.585	2,330
5/14/2020	11:19:42 AM	1.26	0.422	71.753	2,150
5/14/2020	11:49:42 AM	1.31	0.437	78.848	2,370
5/14/2020	12:19:42 PM	1.24	0.416	69.234	2,080
5/14/2020	12:49:42 PM	1.30	0.436	78.215	2,350
5/14/2020	1:19:42 PM	1.202	0.402	63.389	1,900
5/14/2020	1:49:42 PM	1.32	0.441	80.929	2,430
5/14/2020	2:19:42 PM	1.24	0.416	69.088	2,070
5/14/2020	2:49:42 PM	1.322	0.442	81.414	2,440
5/14/2020	3:19:42 PM	1.20	0.402	63.250	1,900
5/14/2020	3:49:42 PM	1.33	0.445	82.880	2,490
5/14/2020	4:19:42 PM	1.27	0.424	72.655	2,180
5/14/2020	4:49:42 PM	1.34	0.449	84.694	2,540
5/14/2020	5:19:42 PM	1.32	0.443	81.739	2,450
5/14/2020	5:49:42 PM	1.34	0.447	83.702	2,510
5/14/2020	6:19:42 PM	1.31	0.438	79.326	2,380
5/14/2020	6:49:42 PM	1.337	0.447	83.866	2,520

TABLE C4
SEEP B-2 FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	7:19:42 PM	1.36	0.454	87.375	2,620
5/14/2020	7:49:42 PM	1.33	0.446	83.372	2,500
5/14/2020	8:19:42 PM	1.42	0.474	97.716	2,930
5/14/2020	8:49:42 PM	1.32	0.442	81.414	2,440
5/14/2020	9:19:42 PM	1.38	0.460	90.282	2,710
5/14/2020	9:49:42 PM	1.33	0.444	82.390	2,470
5/14/2020	10:19:42 PM	1.41	0.471	96.272	2,890
5/14/2020	10:49:42 PM	1.32	0.443	81.577	2,450
5/14/2020	11:19:42 PM	1.34	0.447	83.537	2,510
5/14/2020	11:49:42 PM	1.32	0.442	81.253	2,440
Total					226,050

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous recording.

TABLE C5
SEEP C FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:05:26 AM	1.10	0.366	49.6	1,490
5/13/2020	12:35:26 AM	1.11	0.372	51.7	1,550
5/13/2020	1:05:26 AM	1.05	0.351	44.4	1,330
5/13/2020	1:35:26 AM	1.05	0.351	44.2	1,330
5/13/2020	2:05:26 AM	1.07	0.359	46.9	1,410
5/13/2020	2:35:26 AM	1.10	0.367	49.8	1,500
5/13/2020	3:05:26 AM	1.12	0.374	52.4	1,570
5/13/2020	3:35:26 AM	1.13	0.378	54.0	1,620
5/13/2020	4:05:26 AM	1.14	0.380	54.5	1,640
5/13/2020	4:35:26 AM	1.20	0.400	62.4	1,870
5/13/2020	5:05:26 AM	1.16	0.389	58.3	1,750
5/13/2020	5:35:26 AM	1.22	0.410	66.5	1,990
5/13/2020	6:05:26 AM	1.15	0.384	56.2	1,700
5/13/2020	6:35:26 AM	1.23	0.413	67.9	2,000
5/13/2020	7:05:26 AM	1.16	0.387	57.2	1,700
5/13/2020	7:35:26 AM	1.22	0.409	66.1	2,000
5/13/2020	8:05:26 AM	1.12	0.374	52.4	1,600
5/13/2020	8:35:26 AM	1.17	0.390	58.5	1,800
5/13/2020	9:05:26 AM	1.12	0.374	52.5	1,600
5/13/2020	9:35:26 AM	1.14	0.380	54.6	1,600
5/13/2020	10:05:26 AM	1.12	0.374	52.3	1,600
5/13/2020	10:35:26 AM	1.11	0.372	51.7	1,500
5/13/2020	11:05:26 AM	1.11	0.370	50.8	1,500
5/13/2020	11:35:26 AM	1.09	0.366	49.4	1,500
5/13/2020	12:05:26 PM	1.04	0.349	43.6	1,300
5/13/2020	12:35:26 PM	0.97	0.323	35.7	1,100
5/13/2020	1:05:26 PM	1.07	0.359	47.0	1,400
5/13/2020	1:35:26 PM	1.02	0.341	41.2	1,200
5/13/2020	2:05:26 PM	1.10	0.367	49.7	1,500
5/13/2020	2:35:26 PM	1.06	0.353	45.0	1,300
5/13/2020	3:05:26 PM	1.05	0.353	44.9	1,300
5/13/2020	3:35:26 PM	0.99	0.331	38.0	1,100
5/13/2020	4:05:26 PM	1.02	0.342	41.3	1,200
5/13/2020	4:35:26 PM	0.97	0.326	36.4	1,100
5/13/2020	5:05:26 PM	1.11	0.370	50.8	1,500
5/13/2020	5:35:26 PM	1.11	0.370	51.0	1,500
5/13/2020	6:05:26 PM	1.10	0.369	50.6	1,500
5/13/2020	6:35:26 PM	1.09	0.366	49.4	1,500
5/13/2020	7:05:26 PM	1.15	0.386	56.8	1,700
5/13/2020	7:35:26 PM	1.19	0.398	61.5	1,800
5/13/2020	8:05:26 PM	1.15	0.384	56.0	1,700
5/13/2020	8:35:26 PM	1.18	0.394	60.1	1,800

**TABLE C5
SEEP C FLUME DATA
Chemours Fayetteville Works, North Carolina**

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	9:05:26 PM	1.17	0.392	59.2	1,800
5/13/2020	9:35:26 PM	1.23	0.410	66.8	2,000
5/13/2020	10:05:26 PM	1.19	0.398	61.5	1,800
5/13/2020	10:35:26 PM	1.25	0.419	70.7	2,100
5/13/2020	11:05:26 PM	1.14	0.381	55.1	1,700
5/13/2020	11:35:26 PM	1.15	0.385	56.7	1,700
5/14/2020	12:05:26 AM	1.08	0.360	47.4	1,400
5/14/2020	12:35:26 AM	1.07	0.359	47.1	1,400
5/14/2020	1:05:26 AM	1.12	0.374	52.3	1,600
5/14/2020	1:35:26 AM	1.11	0.371	51.2	1,500
5/14/2020	2:05:26 AM	1.06	0.356	46.0	1,400
5/14/2020	2:35:26 AM	1.02	0.341	40.9	1,200
5/14/2020	3:05:26 AM	1.06	0.355	45.5	1,400
5/14/2020	3:35:26 AM	1.03	0.343	41.8	1,300
5/14/2020	4:05:26 AM	1.11	0.370	50.8	1,500
5/14/2020	4:35:26 AM	1.11	0.371	51.3	1,500
5/14/2020	5:05:26 AM	1.11	0.372	51.8	1,600
5/14/2020	5:35:26 AM	1.13	0.377	53.4	1,600
5/14/2020	6:05:26 AM	1.16	0.388	57.6	1,700
5/14/2020	6:35:26 AM	1.25	0.417	69.7	2,100
5/14/2020	7:05:26 AM	1.14	0.381	55.1	1,700
5/14/2020	7:35:26 AM	1.20	0.400	62.4	1,900
5/14/2020	8:05:26 AM	1.13	0.376	53.3	1,600
5/14/2020	8:35:26 AM	1.12	0.376	53.0	1,600
5/14/2020	9:05:26 AM	1.18	0.394	60.2	1,800
5/14/2020	9:35:26 AM	1.23	0.411	66.9	2,000
5/14/2020	10:05:26 AM	1.08	0.362	48.1	1,400
5/14/2020	10:35:26 AM	1.05	0.350	44.1	1,300
5/14/2020	11:05:26 AM	1.07	0.357	46.5	1,400
5/14/2020	11:35:26 AM	1.00	0.334	38.9	1,200
5/14/2020	12:05:26 PM	1.07	0.357	46.2	1,400
5/14/2020	12:35:26 PM	1.00	0.335	39.2	1,200
5/14/2020	1:05:26 PM	1.03	0.346	42.7	1,300
5/14/2020	1:35:26 PM	0.95	0.317	34.0	1,000
5/14/2020	2:05:26 PM	1.05	0.351	44.3	1,330
5/14/2020	2:35:26 PM	0.96	0.320	34.7	1,000
5/14/2020	3:05:26 PM	1.02	0.341	40.9	1,200
5/14/2020	3:35:26 PM	0.91	0.303	30.2	910
5/14/2020	4:05:26 PM	1.06	0.355	45.7	1,370
5/14/2020	4:35:26 PM	1.00	0.335	39.3	1,180
5/14/2020	5:05:26 PM	1.10	0.369	50.6	1,520
5/14/2020	5:35:26 PM	1.09	0.363	48.4	1,500
5/14/2020	6:05:26 PM	1.09	0.365	49.1	1,470
5/14/2020	6:35:26 PM	1.09	0.365	49.1	1,470

TABLE C5

SEEP C FLUME DATA
Chemours Fayetteville Works, North Carolina

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	7:05:26 PM	1.12	0.375	52.9	1,590
5/14/2020	7:35:26 PM	1.14	0.380	54.6	1,600
5/14/2020	8:05:26 PM	1.18	0.395	60.4	1,810
5/14/2020	8:35:26 PM	1.23	0.413	67.8	2,030
5/14/2020	9:05:26 PM	1.15	0.383	55.9	1,680
5/14/2020	9:35:26 PM	1.20	0.402	63.3	1,900
5/14/2020	10:05:26 PM	1.17	0.392	59.2	1,780
5/14/2020	10:35:26 PM	1.24	0.414	68.5	2,060
5/14/2020	11:05:26 PM	1.13	0.377	53.6	1,610
5/14/2020	11:35:26 PM	1.13	0.379	54.1	1,600
Total					148,360

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous recording.

**TABLE C6
SEEP D FLUME DATA
Chemours Fayetteville Works, North Carolina**

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)¹	Notes
5/13/2020	12:16:51 AM	1.62	0.54	139	4,162	
5/13/2020	12:46:51 AM	1.59	0.53	131	3,943	
5/13/2020	1:16:51 AM	1.57	0.52	127	3,807	
5/13/2020	1:46:51 AM	1.59	0.53	133	3,995	
5/13/2020	2:16:51 AM	1.61	0.54	136	4,081	
5/13/2020	2:46:51 AM	1.63	0.54	141	4,216	
5/13/2020	3:16:51 AM	1.64	0.55	144	4,305	
5/13/2020	3:46:51 AM	1.61	0.54	138	4,128	
5/13/2020	4:16:51 AM	1.67	0.56	151	4,523	
5/13/2020	4:46:51 AM	1.63	0.54	141	4,223	
5/13/2020	5:16:51 AM	1.69	0.57	156	4,681	
5/13/2020	5:46:51 AM	1.62	0.54	139	4,182	
5/13/2020	6:16:51 AM	1.69	0.57	155	4,659	
5/13/2020	6:46:51 AM	1.63	0.55	142	4,250	
5/13/2020	7:16:51 AM	1.69	0.57	156	4,667	
5/13/2020	7:46:51 AM	1.62	0.54	138	4,149	
5/13/2020	8:16:51 AM	1.65	0.55	146	4,368	
5/13/2020	8:46:51 AM	1.61	0.54	137	4,115	
5/13/2020	9:16:51 AM	1.64	0.55	142	4,271	
5/13/2020	9:46:51 AM	1.62	0.54	139	4,182	
5/13/2020	10:16:51 AM	1.65	0.55	145	4,347	
5/13/2020	10:46:51 AM	1.63	0.55	142	4,264	
5/13/2020	11:16:51 AM	1.64	0.55	143	4,292	
5/13/2020	11:46:51 AM	1.62	0.54	138	4,149	
5/13/2020	12:16:51 PM	1.54	0.51	121	3,643	
5/13/2020	12:46:51 PM	1.64	0.55	144	4,312	
5/13/2020	1:16:51 PM	1.60	0.53	133	4,002	
5/13/2020	1:46:51 PM	1.66	0.55	148	4,431	
5/13/2020	2:16:51 PM	1.63	0.54	140	4,203	
5/13/2020	2:46:51 PM	1.63	0.54	140	4,210	
5/13/2020	3:16:51 PM	1.58	0.53	131	3,930	
5/13/2020	3:46:51 PM	1.63	0.54	140	4,203	
5/13/2020	4:16:51 PM	1.56	0.52	126	3,788	
5/13/2020	4:46:51 PM	1.66	0.56	148	4,445	
5/13/2020	5:16:51 PM	1.66	0.56	148	4,445	
5/13/2020	5:46:51 PM	1.66	0.55	147	4,424	
5/13/2020	6:16:51 PM	1.65	0.55	147	4,396	
5/13/2020	6:46:51 PM	1.67	0.56	151	4,516	
5/13/2020	7:16:51 PM	1.70	0.57	157	4,725	
5/13/2020	7:46:51 PM	1.66	0.56	149	4,459	
5/13/2020	8:16:51 PM	1.69	0.57	155	4,659	
5/13/2020	8:46:51 PM	1.67	0.56	150	4,502	
5/13/2020	9:16:51 PM	1.72	0.58	163	4,880	
5/13/2020	9:46:51 PM	1.66	0.56	149	4,466	
5/13/2020	10:16:51 PM	1.74	0.58	168	5,038	
5/13/2020	10:46:51 PM	1.66	0.56	148	4,438	
5/13/2020	11:16:51 PM	1.68	0.56	153	4,580	
5/13/2020	11:46:51 PM	1.62	0.54	140	4,196	
5/14/2020	12:16:51 AM	1.61	0.54	137	4,115	
5/14/2020	12:46:51 AM	1.63	0.55	141	4,237	

**TABLE C6
SEEP D FLUME DATA
Chemours Fayetteville Works, North Carolina**

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)¹	Notes
5/14/2020	1:16:51 AM	1.64	0.55	142	4,271	
5/14/2020	1:46:51 AM	1.61	0.54	137	4,122	
5/14/2020	2:16:51 AM	1.57	0.52	128	3,826	
5/14/2020	2:46:51 AM	1.61	0.54	136	4,088	
5/14/2020	3:16:51 AM	1.57	0.52	127	3,813	
5/14/2020	3:46:51 AM	1.62	0.54	139	4,169	
5/14/2020	4:16:51 AM	1.62	0.54	138	4,135	
5/14/2020	4:46:51 AM	1.63	0.54	141	4,216	
5/14/2020	5:16:51 AM	1.64	0.55	143	4,292	
5/14/2020	5:46:51 AM	1.64	0.55	143	4,292	
5/14/2020	6:16:51 AM	1.71	0.57	160	4,791	
5/14/2020	6:46:51 AM	1.62	0.54	139	4,176	
5/14/2020	7:16:51 AM	1.68	0.56	152	4,566	
5/14/2020	7:46:51 AM	1.63	0.55	141	4,244	
5/14/2020	8:16:51 AM	1.65	0.55	146	4,382	
5/14/2020	8:46:51 AM	1.65	0.55	147	4,396	
5/14/2020	9:16:51 AM	1.72	0.58	163	4,888	
5/14/2020	9:46:51 AM	1.62	0.54	140	4,196	
5/14/2020	10:16:51 AM	1.60	0.53	134	4,015	
5/14/2020	10:46:51 AM	1.63	0.54	141	4,223	
5/14/2020	11:16:51 AM	1.58	0.53	130	3,903	
5/14/2020	11:46:51 AM	1.64	0.55	144	4,333	
5/14/2020	12:16:51 PM	1.58	0.53	129	3,871	
5/14/2020	12:46:51 PM	1.64	0.55	143	4,285	
5/14/2020	1:16:51 PM	1.53	0.51	120	3,599	
5/14/2020	1:46:51 PM	1.64	0.55	144	4,319	
5/14/2020	2:16:51 PM	1.56	0.52	125	3,749	
5/14/2020	2:46:51 PM	1.64	0.55	142	4,271	
5/14/2020	3:16:51 PM	1.52	0.51	118	3,544	
5/14/2020	3:46:51 PM	1.65	0.55	146	4,375	
5/14/2020	4:16:51 PM	1.59	0.53	131	3,943	
5/14/2020	4:46:51 PM	1.65	0.55	145	4,361	
5/14/2020	5:16:51 PM	1.64	0.55	143	4,292	
5/14/2020	5:46:51 PM	1.66	0.56	148	4,438	
5/14/2020	6:16:51 PM	1.63	0.55	141	4,237	
5/14/2020	6:46:51 PM	1.65	0.55	146	4,375	
5/14/2020	7:16:51 PM	1.66	0.56	149	4,473	
5/14/2020	7:46:51 PM	1.66	0.56	148	4,445	
5/14/2020	8:16:51 PM	1.74	0.58	167	5,000	
5/14/2020	8:46:51 PM	1.65	0.55	146	4,382	
5/14/2020	9:16:51 PM	1.70	0.57	158	4,732	Level logger disturbed. Water level is average of the recordings before and after.
5/14/2020	9:46:51 PM	1.66	0.55	148	4,431	
5/14/2020	10:16:51 PM	1.73	0.58	164	4,925	

TABLE C6
SEEP D FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal) ¹	Notes
5/14/2020	10:46:51 PM	1.65	0.55	145	4,361	
5/14/2020	11:16:51 PM	1.65	0.55	147	4,396	
5/14/2020	11:46:51 PM	1.64	0.55	143	4,278	
Total					411,617	

Notes:

1 - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous recording.

Acronyms:

ft - feet gpm - gallons per minute
gal - gallons kPa - kilopascals

TABLE C7
OLD OUTFALL FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	12:01:17 AM	2.853	0.95	616	18,500
5/13/2020	12:31:17 AM	2.868	0.96	624	18,700
5/13/2020	1:01:17 AM	2.802	0.94	587	17,600
5/13/2020	1:31:17 AM	2.792	0.93	582	17,400
5/13/2020	2:01:17 AM	2.83	0.95	603	18,100
5/13/2020	2:31:17 AM	2.843	0.95	610	18,300
5/13/2020	3:01:17 AM	2.858	0.96	618	18,600
5/13/2020	3:31:17 AM	2.883	0.96	633	19,000
5/13/2020	4:01:17 AM	2.883	0.96	633	19,000
5/13/2020	4:31:17 AM	2.948	0.99	671	20,100
5/13/2020	5:01:17 AM	2.895	0.97	640	19,200
5/13/2020	5:31:17 AM	2.962	0.99	679	20,400
5/13/2020	6:01:17 AM	2.886	0.97	635	19,000
5/13/2020	6:31:17 AM	2.967	0.99	682	20,500
5/13/2020	7:01:17 AM	2.885	0.97	634	19,000
5/13/2020	7:31:17 AM	2.936	0.98	664	19,900
5/13/2020	8:01:17 AM	2.847	0.95	612	18,400
5/13/2020	8:31:17 AM	2.899	0.97	642	19,300
5/13/2020	9:01:17 AM	2.866	0.96	623	18,700
5/13/2020	9:31:17 AM	2.857	0.96	618	18,500
5/13/2020	10:01:17 AM	2.858	0.96	618	18,600
5/13/2020	10:31:17 AM	2.855	0.96	617	18,500
5/13/2020	11:01:17 AM	2.849	0.95	613	18,400
5/13/2020	11:31:17 AM	2.836	0.95	606	18,200
5/13/2020	12:01:17 PM	2.795	0.94	583	17,500
5/13/2020	12:31:17 PM	2.713	0.91	539	16,200
5/13/2020	1:01:17 PM	2.81	0.94	592	17,700
5/13/2020	1:31:17 PM	2.745	0.92	556	16,700
5/13/2020	2:01:17 PM	2.815	0.94	594	17,800
5/13/2020	2:31:17 PM	2.792	0.93	582	17,400
5/13/2020	3:01:17 PM	2.806	0.94	589	17,700
5/13/2020	3:31:17 PM	2.747	0.92	557	16,700
5/13/2020	4:01:17 PM	2.786	0.93	578	17,300
5/13/2020	4:31:17 PM	2.738	0.92	552	16,600
5/13/2020	5:01:17 PM	2.866	0.96	623	18,700
5/13/2020	5:31:17 PM	2.876	0.96	629	18,900
5/13/2020	6:01:17 PM	2.872	0.96	626	18,800
5/13/2020	6:31:17 PM	2.87	0.96	625	18,800
5/13/2020	7:01:17 PM	2.922	0.98	656	19,700
5/13/2020	7:31:17 PM	2.957	0.99	676	20,300
5/13/2020	8:01:17 PM	2.903	0.97	644	19,300
5/13/2020	8:31:17 PM	2.94	0.98	666	20,000
5/13/2020	9:01:17 PM	2.937	0.98	664	19,900

TABLE C7
OLD OUTFALL FLUME DATA
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/13/2020	9:31:17 PM	2.984	1.00	693	20,800
5/13/2020	10:01:17 PM	2.935	0.98	663	19,900
5/13/2020	10:31:17 PM	2.999	1.00	702	21,100
5/13/2020	11:01:17 PM	2.895	0.97	640	19,200
5/13/2020	11:31:17 PM	2.915	0.98	651	19,500
5/14/2020	12:01:17 AM	2.833	0.95	604	18,100
5/14/2020	12:31:17 AM	2.825	0.95	600	18,000
5/14/2020	1:01:17 AM	2.861	0.96	620	18,600
5/14/2020	1:31:17 AM	2.866	0.96	623	18,700
5/14/2020	2:01:17 AM	2.811	0.94	592	17,800
5/14/2020	2:31:17 AM	2.781	0.93	576	17,300
5/14/2020	3:01:17 AM	2.828	0.95	602	18,000
5/14/2020	3:31:17 AM	2.779	0.93	574	17,200
5/14/2020	4:01:17 AM	2.856	0.96	617	18,500
5/14/2020	4:31:17 AM	2.863	0.96	621	18,600
5/14/2020	5:01:17 AM	2.866	0.96	623	18,700
5/14/2020	5:31:17 AM	2.866	0.96	623	18,700
5/14/2020	6:01:17 AM	2.882	0.96	632	19,000
5/14/2020	6:31:17 AM	2.965	0.99	681	20,400
5/14/2020	7:01:17 AM	2.881	0.96	632	18,900
5/14/2020	7:31:17 AM	2.943	0.98	668	20,000
5/14/2020	8:01:17 AM	2.861	0.96	620	18,600
5/14/2020	8:31:17 AM	2.866	0.96	623	18,700
5/14/2020	9:01:17 AM	2.903	0.97	644	19,300
5/14/2020	9:31:17 AM	2.962	0.99	679	20,400
5/14/2020	10:01:17 AM	2.83	0.95	603	18,100
5/14/2020	10:31:17 AM	2.785	0.93	578	17,300
5/14/2020	11:01:17 AM	2.806	0.94	589	17,700
5/14/2020	11:31:17 AM	2.741	0.92	554	16,600
5/14/2020	12:01:17 PM	2.794	0.93	583	17,500
5/14/2020	12:31:17 PM	2.731	0.91	549	16,500
5/14/2020	1:01:17 PM	2.777	0.93	573	17,200
5/14/2020	1:31:17 PM	2.698	0.90	531	15,900
5/14/2020	2:01:17 PM	2.796	0.94	584	17,500
5/14/2020	2:31:17 PM	2.695	0.90	530	15,900
5/14/2020	3:01:17 PM	2.769	0.93	569	17,100
5/14/2020	3:31:17 PM	2.671	0.89	518	15,500
5/14/2020	4:01:17 PM	2.818	0.94	596	17,900
5/14/2020	4:31:17 PM	2.774	0.93	572	17,200
5/14/2020	5:01:17 PM	2.87	0.96	625	18,800
5/14/2020	5:31:17 PM	2.854	0.95	616	18,500
5/14/2020	6:01:17 PM	2.879	0.96	630	18,900
5/14/2020	6:31:17 PM	2.857	0.96	618	18,500

TABLE C7
OLD OUTFALL FLUME DATA
Chemours Fayetteville Works, North Carolina

Date	Time	Water Level (kPa)	Water Level (ft)	Flow Rate (gpm)	Flow Volume (gal)*
5/14/2020	7:01:17 PM	2.9	0.97	643	19,300
5/14/2020	7:31:17 PM	2.914	0.98	651	19,500
5/14/2020	8:01:17 PM	2.954	0.99	675	20,200
5/14/2020	8:31:17 PM	3.018	1.01	714	21,400
5/14/2020	9:01:17 PM	2.926	0.98	658	19,700
5/14/2020	9:31:17 PM	2.984	1.00	693	20,800
5/14/2020	10:01:17 PM	2.951	0.99	673	20,200
5/14/2020	10:31:17 PM	3.016	1.01	712	21,400
5/14/2020	11:01:17 PM	2.891	0.97	637	19,100
5/14/2020	11:31:17 PM	2.9	0.97	643	19,300
Total					1,785,400

Acronyms:

ft - feet

gpm - gallons per minute

gal - gallons

kPa - kilopascals

* - Flow volumes are calculated as the total volume of flow passing through the flume for the duration of the interval where the interval duration is calculated as the time between the present recording and the previous recording.

TABLE C8
WILLIS CREEK VOLUMETRIC DISCHARGE CALCULATIONS
Chemours Fayetteville Works, North Carolina

Measurement Point	Distance Along Measured Cross Section	Measured Water Column Depth	Measured Water Column Depth	Calculated Creek Cell Area ²	Measured Creek Velocity	Calculated Discharge Through Creek Cell Area ¹
	(ft)	(in)	(ft)	(ft ²)	(ft/s)	(ft ³ /s)
West bank	0.00	0.00	0.0		0.00	
bottom	5.00	2.00	0.17	0.42	0.18	0.13
middle	5.00	1.00	0.08		0.32	
top	5.00	0.00	0.00		0.32	
on edge of sandbank	10.00	1.00	0.08		0.24	
top	10.00	0.00	0.00		0.28	
bottom	15.00	2.00	0.17	1.67	0.50	1.72
middle	15.00	1.00	0.08		1.03	
top	15.00	0.00	0.00		0.08	
bottom	20.00	6.00	0.50	1.67	1.02	2.10
middle	20.00	3.00	0.25		1.26	
top	20.00	0.00	0.00		0.55	
bottom	25.00	6.00	0.50	2.50	0.23	3.90
middle	25.00	3.00	0.3		1.56	
top	25.00	0.00	0.0		1.43	
Total Volumetric Discharge						
(ft ³ /s)						7.85
(gpm)						3523
(L/s)						222.29

Associated Measurement Notes
 Location: Chemours Fayetteville
 Station: Willis Creek 01 (SW-WC-01)
 Date: May 2020

Acronyms
 - - data not measured or calculated
 in - inches
 ft - feet
 ft² - square feet
 ft/s - feet per second
 ft³/s - cubic feet per second
 gpm - gallons per minute

Notes
¹ Discharge is calculated as product of creek velocity measured at the mid-depth (feet per second) times the cross sectional area of each measurement cell.
² Measurement cell areas are calculated assuming a trapezoidal geometry based on distances between Measurement points and the measured water column depths. A measurement cell is an areal section from the width of the river channel.

TABLE C9
GEORGIA BRANCH CREEK VOLUMETRIC DISCHARGE CALCULATIONS
Chemours Fayetteville Works, North Carolina

Measurement Point	Station	Distance Along Measured Cross Section	Measured Water Column Depth	Measured Water Column Depth	Calculated Creek Cell Area ²	Measured Creek Velocity	Calculated Discharge Through Creek Cell Area ¹
		(ft)	(in)	(ft)	(ft ²)	(ft/s)	(ft ³ /s)
top - sand bank	1	0	0	0	-	0	-
top	2	12	1	0		0	
bottom	3	12	1	1	6	0	5.52
mid	4	24	2	0.2		0.92	
top	5	24	2	0		0.99	
top	6	36	3	0		0.31	
bottom	7	48	4	0.4	2.1	0.65	2.0265
mid	8	48	4	0.2		1.01	
top	9	48	4	0		1.04	
bottom	10	60	5	0.5	0.45	0.86	0.387
mid	11	60	5	0.25		0.86	
top	12	60	5	0		0.96	
bottom	13	72	6	0.45	0.475	0.73	0.65075
mid	14	72	6	0.23		1.37	
top	15	72	6	0		1.46	
bottom	16	84	7	0.4	0.425	1.12	0.53125
mid	17	84	7	0.2		1.25	
top	18	84	7	0		1.34	
bottom	19	96	8	0.45	0.425	1.22	0.59075
mid	20	96	8	0.23		1.39	
top	21	96	8	0		1.48	
bottom	22	108	9	0.45	0.45	0.96	0.522
mid	23	108	9	0.23		1.16	
top	24	108	9	0		1.36	
bottom	25	120	10	0.5	0.475	0.86	0.69825
mid	26	120	10	0.25		1.47	
top	27	120	10	0		1.47	
bottom	28	132	11	0.45	0.475	0.76	0.52725
mid	29	132	11	0.23		1.11	
top	30	132	11	0		1.53	
bottom	31	144	12	0.3	0.375	0.55	0.2775

**TABLE C9
 GEORGIA BRANCH CREEK VOLUMETRIC DISCHARGE CALCULATIONS
 Chemours Fayetteville Works, North Carolina**

Measurement Point	Station	Distance Along Measured Cross Section	Measured Water Column Depth	Measured Water Column Depth	Calculated Creek Cell Area ²	Measured Creek Velocity	Calculated Discharge Through Creek Cell Area ¹	
		(ft)	(in)	(ft)	(ft ²)	(ft/s)	(ft ³ /s)	
mid	32	144	12	0.15		0.74		
top	33	144	12	0		0.77		
sand bank	34	151	13	0	0.0875	0	0.06475	
Total Volumetric Discharge								
							(ft ³ /s)	11.80
							(gpm)	5294
							(L/s)	334.03

Associated Measurement Notes

Location: Chemours Fayetteville
 Station: Georgia Branch 01 (SW-GB-01)
 Date: May 2020

Acronyms

-- data not measured or calculated
 in - inches
 ft - feet
 ft² - square feet
 ft/s - feet per second
 ft³/s - cubic feet per second

Notes

- ¹ Discharge is calculated as product of creek velocity measured at the mid-depth (feet per second) times the cross sectional area of each measurement cell.
- ² Measurement cell areas are calculated assuming a trapezoidal geometry based on distances between Measurement points and the measured water column depths. A measurement cell is an areal section from the width of the river channel.
- ³ Discharge calculations do not include values for cells where negative flows were measured.

TABLE C10
OUTFALL 002 FLOW RATE
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Outfall 002 Flow (MGD)	Total Daily Volume (gal)	Hours of Sample Collection	Approximate Total Volume during 24 hour Sample Collection (gal)
5/13/2020	22.161	22,161,000	13.75	12,696,406
5/14/2020	22.607	22,607,000	10.25	9,655,073
5/13/2020 10:17 am to 5/14/2020 10:17 am			24	22,351,479

Notes:

Daily flow rates collected from facility Discharge Monitoring Reports.

Total flow volume for 24-hour temporal composite sample collected at 10:17 am on 5/14/2020 approximated based on flow rates for 5/13/2020 and 5/14/2020

Acronyms:

gal - gallons

MGD - millions of gallons per day

TABLE C11
RIVER FLOW RATES
Chemours Fayetteville Works, North Carolina

Pathway/ Location	Sample Collection Timepoint	Flow Gauging Location ¹	Travel Time Offset (hr) ²	Adjusted Flow Gauging Timepoint	Composite Sample 24-Hour Flow Volume (MGD) ³	Grab Sample Instantaneous Flow Rate (ft ³ /s) ⁴
Upstream River Water and Groundwater	5/13/2020 8:20	William O Huske Lock and Dam	--	5/13/2020 8:20	1,091	--
Tarheel (Composite Sample)	5/14/2020 20:50	William O Huske Lock and Dam	9	5/15/2020 5:50	960	--
Tarheel (Grab Sample)	5/14/2020 8:55	William O Huske Lock and Dam	9	5/13/2020 23:55	--	1,540
Bladen Bluff	5/13/2020 18:15	William O Huske Lock and Dam	6	5/13/2020 12:15	--	1,680
Kings Bluff	5/19/2020 9:25	Cape Fear River Lock and Dam #1	--	5/19/2020 9:25	--	1,670

Notes:

1 - Flow rate measured at USGS gauging station #02105500 located at William O Huske Lock & Dam and USGS gauging station # 02105769 located at Lock and Dam #1 near Kelly, North Carolina

2 - Flow rates measured at William O Huske Lock and Dam were used for mass loading assessments at Tarheel and Bladen Bluff sample locations. Travel times between William O Huske Lock and Dam and the downstream locations were estimated based on the results of a numerical model of the Cape Fear River developed by Geosyntec which developed a regression curve between the USGS reported gage heights at William O Huske Lock and Dam and travel times.

3 - Total flow volume for composite samples is based on measurements taken over 24-hour sample collection period.

4 - Instantaneous flow rate for grab samples is the recorded flow rate at the time of grab sample collection.

Acronyms:

ft³/s - cubic feet per second

hr - hours

MGD - millions of gallons per day

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/12/2020	0:00	1810	12,186,000	1.96	0
5/12/2020	0:15	1800	12,118,000	1.95	0
5/12/2020	0:30	1800	12,118,000	1.95	0
5/12/2020	0:45	1800	12,118,000	1.95	0
5/12/2020	1:00	1800	12,118,000	1.95	0
5/12/2020	1:15	1800	12,118,000	1.95	0
5/12/2020	1:30	1800	12,118,000	1.95	0
5/12/2020	1:45	1800	12,118,000	1.95	0
5/12/2020	2:00	1800	12,118,000	1.95	0
5/12/2020	2:15	1800	12,118,000	1.95	0
5/12/2020	2:30	1800	12,118,000	1.95	0
5/12/2020	2:45	1800	12,118,000	1.95	0
5/12/2020	3:00	1790	12,051,000	1.94	0
5/12/2020	3:15	1790	12,051,000	1.94	0
5/12/2020	3:30	1790	12,051,000	1.94	0
5/12/2020	3:45	1790	12,051,000	1.94	0
5/12/2020	4:00	1790	12,051,000	1.94	0
5/12/2020	4:15	1790	12,051,000	1.94	0
5/12/2020	4:30	1790	12,051,000	1.94	0
5/12/2020	4:45	1790	12,051,000	1.94	0
5/12/2020	5:00	1790	12,051,000	1.94	0
5/12/2020	5:15	1770	11,916,000	1.93	0
5/12/2020	5:30	1790	12,051,000	1.94	0
5/12/2020	5:45	1770	11,916,000	1.93	0
5/12/2020	6:00	1770	11,916,000	1.93	0
5/12/2020	6:15	1770	11,916,000	1.93	0
5/12/2020	6:30	1770	11,916,000	1.93	0
5/12/2020	6:45	1770	11,916,000	1.93	0
5/12/2020	7:00	1770	11,916,000	1.93	0
5/12/2020	7:15	1770	11,916,000	1.93	0
5/12/2020	7:30	1760	11,849,000	1.92	0
5/12/2020	7:45	1760	11,849,000	1.92	0
5/12/2020	8:00	1760	11,849,000	1.92	0
5/12/2020	8:15	1770	11,916,000	1.93	0
5/12/2020	8:30	1770	11,916,000	1.93	0
5/12/2020	8:45	1760	11,849,000	1.92	0
5/12/2020	9:00	1770	11,916,000	1.93	0
5/12/2020	9:15	1770	11,916,000	1.93	0
5/12/2020	9:30	1770	11,916,000	1.93	0
5/12/2020	9:45	1770	11,916,000	1.93	0
5/12/2020	10:00	1790	12,051,000	1.94	0
5/12/2020	10:15	1760	11,849,000	1.92	0
5/12/2020	10:30	1760	11,849,000	1.92	0
5/12/2020	10:45	1800	12,118,000	1.95	0
5/12/2020	11:00	1770	11,916,000	1.93	0
5/12/2020	11:15	1790	12,051,000	1.94	0
5/12/2020	11:30	1790	12,051,000	1.94	0
5/12/2020	11:45	1760	11,849,000	1.92	0
5/12/2020	12:00	1760	11,849,000	1.92	0
5/12/2020	12:15	1790	12,051,000	1.94	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/12/2020	12:30	1770	11,916,000	1.93	0
5/12/2020	12:45	1770	11,916,000	1.93	0
5/12/2020	13:00	1760	11,849,000	1.92	0
5/12/2020	13:15	1770	11,916,000	1.93	0
5/12/2020	13:30	1770	11,916,000	1.93	0
5/12/2020	13:45	1760	11,849,000	1.92	0
5/12/2020	14:00	1760	11,849,000	1.92	0
5/12/2020	14:15	1760	11,849,000	1.92	0
5/12/2020	14:30	1770	11,916,000	1.93	0
5/12/2020	14:45	1760	11,849,000	1.92	0
5/12/2020	15:00	1740	11,714,000	1.91	0
5/12/2020	15:15	1740	11,714,000	1.91	0
5/12/2020	15:30	1730	11,647,000	1.9	0
5/12/2020	15:45	1740	11,714,000	1.91	0
5/12/2020	16:00	1740	11,714,000	1.91	0
5/12/2020	16:15	1740	11,714,000	1.91	0
5/12/2020	16:30	1740	11,714,000	1.91	0
5/12/2020	16:45	1730	11,647,000	1.9	0
5/12/2020	17:00	1730	11,647,000	1.9	0
5/12/2020	17:15	1720	11,580,000	1.89	0
5/12/2020	17:30	1720	11,580,000	1.89	0
5/12/2020	17:45	1720	11,580,000	1.89	0
5/12/2020	18:00	1700	11,445,000	1.88	0
5/12/2020	18:15	1690	11,378,000	1.87	0
5/12/2020	18:30	1700	11,445,000	1.88	0
5/12/2020	18:45	1700	11,445,000	1.88	0
5/12/2020	19:00	1700	11,445,000	1.88	0
5/12/2020	19:15	1700	11,445,000	1.88	0
5/12/2020	19:30	1690	11,378,000	1.87	0
5/12/2020	19:45	1690	11,378,000	1.87	0
5/12/2020	20:00	1690	11,378,000	1.87	0
5/12/2020	20:15	1690	11,378,000	1.87	0
5/12/2020	20:30	1690	11,378,000	1.87	0
5/12/2020	20:45	1690	11,378,000	1.87	0
5/12/2020	21:00	1690	11,378,000	1.87	0
5/12/2020	21:15	1680	11,311,000	1.86	0
5/12/2020	21:30	1690	11,378,000	1.87	0
5/12/2020	21:45	1680	11,311,000	1.86	0
5/12/2020	22:00	1680	11,311,000	1.86	0
5/12/2020	22:15	1680	11,311,000	1.86	0
5/12/2020	22:30	1660	11,176,000	1.85	0
5/12/2020	22:45	1660	11,176,000	1.85	0
5/12/2020	23:00	1660	11,176,000	1.85	0
5/12/2020	23:15	1660	11,176,000	1.85	0
5/12/2020	23:30	1660	11,176,000	1.85	0
5/12/2020	23:45	1660	11,176,000	1.85	0
5/13/2020	0:00	1660	11,176,000	1.85	0
5/13/2020	0:15	1660	11,176,000	1.85	0
5/13/2020	0:30	1660	11,176,000	1.85	0
5/13/2020	0:45	1660	11,176,000	1.85	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/13/2020	1:00	1660	11,176,000	1.85	0
5/13/2020	1:15	1660	11,176,000	1.85	0
5/13/2020	1:30	1660	11,176,000	1.85	0
5/13/2020	1:45	1660	11,176,000	1.85	0
5/13/2020	2:00	1660	11,176,000	1.85	0
5/13/2020	2:15	1650	11,109,000	1.84	0
5/13/2020	2:30	1650	11,109,000	1.84	0
5/13/2020	2:45	1660	11,176,000	1.85	0
5/13/2020	3:00	1660	11,176,000	1.85	0
5/13/2020	3:15	1660	11,176,000	1.85	0
5/13/2020	3:30	1660	11,176,000	1.85	0
5/13/2020	3:45	1660	11,176,000	1.85	0
5/13/2020	4:00	1660	11,176,000	1.85	0
5/13/2020	4:15	1660	11,176,000	1.85	0
5/13/2020	4:30	1660	11,176,000	1.85	0
5/13/2020	4:45	1660	11,176,000	1.85	0
5/13/2020	5:00	1660	11,176,000	1.85	0
5/13/2020	5:15	1660	11,176,000	1.85	0
5/13/2020	5:30	1660	11,176,000	1.85	0
5/13/2020	5:45	1660	11,176,000	1.85	0
5/13/2020	6:00	1660	11,176,000	1.85	0
5/13/2020	6:15	1680	11,311,000	1.86	0
5/13/2020	6:30	1680	11,311,000	1.86	0
5/13/2020	6:45	1660	11,176,000	1.85	0
5/13/2020	7:00	1680	11,311,000	1.86	0
5/13/2020	7:15	1660	11,176,000	1.85	0
5/13/2020	7:30	1660	11,176,000	1.85	0
5/13/2020	7:45	1660	11,176,000	1.85	0
5/13/2020	8:00	1680	11,311,000	1.86	0
5/13/2020	8:15	1680	11,311,000	1.86	0
5/13/2020	8:30	1660	11,176,000	1.85	0
5/13/2020	8:45	1660	11,176,000	1.85	0
5/13/2020	9:00	1680	11,311,000	1.86	0
5/13/2020	9:15	1680	11,311,000	1.86	0
5/13/2020	9:30	1680	11,311,000	1.86	0
5/13/2020	9:45	1680	11,311,000	1.86	0
5/13/2020	10:00	1680	11,311,000	1.86	0
5/13/2020	10:15	1680	11,311,000	1.86	0
5/13/2020	10:30	1680	11,311,000	1.86	0
5/13/2020	10:45	1680	11,311,000	1.86	0
5/13/2020	11:00	1680	11,311,000	1.86	0
5/13/2020	11:15	1690	11,378,000	1.87	0
5/13/2020	11:30	1680	11,311,000	1.86	0
5/13/2020	11:45	1680	11,311,000	1.86	0
5/13/2020	12:00	1680	11,311,000	1.86	0
5/13/2020	12:15	1680	11,311,000	1.86	0
5/13/2020	12:30	1680	11,311,000	1.86	0
5/13/2020	12:45	1680	11,311,000	1.86	0
5/13/2020	13:00	1680	11,311,000	1.86	0
5/13/2020	13:15	1660	11,176,000	1.85	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/13/2020	13:30	1660	11,176,000	1.85	0
5/13/2020	13:45	1680	11,311,000	1.86	0
5/13/2020	14:00	1680	11,311,000	1.86	0
5/13/2020	14:15	1660	11,176,000	1.85	0
5/13/2020	14:30	1680	11,311,000	1.86	0
5/13/2020	14:45	1660	11,176,000	1.85	0
5/13/2020	15:00	1660	11,176,000	1.85	0
5/13/2020	15:15	1660	11,176,000	1.85	0
5/13/2020	15:30	1660	11,176,000	1.85	0
5/13/2020	15:45	1650	11,109,000	1.84	0
5/13/2020	16:00	1650	11,109,000	1.84	0
5/13/2020	16:15	1660	11,176,000	1.85	0
5/13/2020	16:30	1650	11,109,000	1.84	0
5/13/2020	16:45	1650	11,109,000	1.84	0
5/13/2020	17:00	1650	11,109,000	1.84	0
5/13/2020	17:15	1640	11,041,000	1.83	0
5/13/2020	17:30	1620	10,907,000	1.82	0
5/13/2020	17:45	1620	10,907,000	1.82	0
5/13/2020	18:00	1620	10,907,000	1.82	0
5/13/2020	18:15	1620	10,907,000	1.82	0
5/13/2020	18:30	1610	10,839,000	1.81	0
5/13/2020	18:45	1610	10,839,000	1.81	0
5/13/2020	19:00	1600	10,772,000	1.8	0
5/13/2020	19:15	1600	10,772,000	1.8	0
5/13/2020	19:30	1600	10,772,000	1.8	0
5/13/2020	19:45	1580	10,637,000	1.79	0
5/13/2020	20:00	1580	10,637,000	1.79	0
5/13/2020	20:15	1580	10,637,000	1.79	0
5/13/2020	20:30	1580	10,637,000	1.79	0
5/13/2020	20:45	1570	10,570,000	1.78	0
5/13/2020	21:00	1570	10,570,000	1.78	0
5/13/2020	21:15	1560	10,503,000	1.77	0
5/13/2020	21:30	1560	10,503,000	1.77	0
5/13/2020	21:45	1540	10,368,000	1.76	0
5/13/2020	22:00	1540	10,368,000	1.76	0
5/13/2020	22:15	1540	10,368,000	1.76	0
5/13/2020	22:30	1530	10,301,000	1.75	0
5/13/2020	22:45	1540	10,368,000	1.76	0
5/13/2020	23:00	1530	10,301,000	1.75	0
5/13/2020	23:15	1530	10,301,000	1.75	0
5/13/2020	23:30	1530	10,301,000	1.75	0
5/13/2020	23:45	1520	10,233,000	1.74	0
5/14/2020	0:00	1520	10,233,000	1.74	0
5/14/2020	0:15	1510	10,166,000	1.73	0
5/14/2020	0:30	1510	10,166,000	1.73	0
5/14/2020	0:45	1510	10,166,000	1.73	0
5/14/2020	1:00	1510	10,166,000	1.73	0
5/14/2020	1:15	1510	10,166,000	1.73	0
5/14/2020	1:30	1490	10,031,000	1.72	0
5/14/2020	1:45	1490	10,031,000	1.72	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/14/2020	2:00	1490	10,031,000	1.72	0
5/14/2020	2:15	1480	9,964,000	1.71	0
5/14/2020	2:30	1480	9,964,000	1.71	0
5/14/2020	2:45	1480	9,964,000	1.71	0
5/14/2020	3:00	1480	9,964,000	1.71	0
5/14/2020	3:15	1480	9,964,000	1.71	0
5/14/2020	3:30	1480	9,964,000	1.71	0
5/14/2020	3:45	1470	9,896,700	1.7	0
5/14/2020	4:00	1470	9,896,700	1.7	0
5/14/2020	4:15	1470	9,896,700	1.7	0
5/14/2020	4:30	1470	9,896,700	1.7	0
5/14/2020	4:45	1460	9,829,400	1.69	0
5/14/2020	5:00	1460	9,829,400	1.69	0
5/14/2020	5:15	1460	9,829,400	1.69	0
5/14/2020	5:30	1460	9,829,400	1.69	0
5/14/2020	5:45	1440	9,694,700	1.68	0
5/14/2020	6:00	1440	9,694,700	1.68	0
5/14/2020	6:15	1440	9,694,700	1.68	0
5/14/2020	6:30	1440	9,694,700	1.68	0
5/14/2020	6:45	1440	9,694,700	1.68	0
5/14/2020	7:00	1440	9,694,700	1.68	0
5/14/2020	7:15	1430	9,627,400	1.67	0
5/14/2020	7:30	1430	9,627,400	1.67	0
5/14/2020	7:45	1430	9,627,400	1.67	0
5/14/2020	8:00	1430	9,627,400	1.67	0
5/14/2020	8:15	1430	9,627,400	1.67	0
5/14/2020	8:30	1420	9,560,100	1.66	0
5/14/2020	8:45	1420	9,560,100	1.66	0
5/14/2020	9:00	1420	9,560,100	1.66	0
5/14/2020	9:15	1430	9,627,400	1.67	0
5/14/2020	9:30	1420	9,560,100	1.66	0
5/14/2020	9:45	1420	9,560,100	1.66	0
5/14/2020	10:00	1420	9,560,100	1.66	0
5/14/2020	10:15	1430	9,627,400	1.67	0
5/14/2020	10:30	1420	9,560,100	1.66	0
5/14/2020	10:45	1420	9,560,100	1.66	0
5/14/2020	11:00	1420	9,560,100	1.66	0
5/14/2020	11:15	1420	9,560,100	1.66	0
5/14/2020	11:30	1410	9,492,800	1.65	0
5/14/2020	11:45	1410	9,492,800	1.65	0
5/14/2020	12:00	1410	9,492,800	1.65	0
5/14/2020	12:15	1410	9,492,800	1.65	0
5/14/2020	12:30	1390	9,358,100	1.64	0
5/14/2020	12:45	1390	9,358,100	1.64	0
5/14/2020	13:00	1390	9,358,100	1.64	0
5/14/2020	13:15	1390	9,358,100	1.64	0
5/14/2020	13:30	1380	9,290,800	1.63	0
5/14/2020	13:45	1380	9,290,800	1.63	0
5/14/2020	14:00	1390	9,358,100	1.64	0
5/14/2020	14:15	1380	9,290,800	1.63	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/14/2020	14:30	1390	9,358,100	1.64	0
5/14/2020	14:45	1390	9,358,100	1.64	0
5/14/2020	15:00	1390	9,358,100	1.64	0
5/14/2020	15:15	1380	9,290,800	1.63	0
5/14/2020	15:30	1380	9,290,800	1.63	0
5/14/2020	15:45	1390	9,358,100	1.64	0
5/14/2020	16:00	1380	9,290,800	1.63	0
5/14/2020	16:15	1390	9,358,100	1.64	0
5/14/2020	16:30	1380	9,290,800	1.63	0
5/14/2020	16:45	1380	9,290,800	1.63	0
5/14/2020	17:00	1380	9,290,800	1.63	0
5/14/2020	17:15	1380	9,290,800	1.63	0
5/14/2020	17:30	1380	9,290,800	1.63	0
5/14/2020	17:45	1380	9,290,800	1.63	0
5/14/2020	18:00	1380	9,290,800	1.63	0
5/14/2020	18:15	1380	9,290,800	1.63	0
5/14/2020	18:30	1370	9,223,500	1.62	0
5/14/2020	18:45	1380	9,290,800	1.63	0
5/14/2020	19:00	1370	9,223,500	1.62	0
5/14/2020	19:15	1370	9,223,500	1.62	0
5/14/2020	19:30	1360	9,156,100	1.61	0
5/14/2020	19:45	1350	9,088,800	1.6	0
5/14/2020	20:00	1360	9,156,100	1.61	0
5/14/2020	20:15	1360	9,156,100	1.61	0
5/14/2020	20:30	1350	9,088,800	1.6	0
5/14/2020	20:45	1350	9,088,800	1.6	0
5/14/2020	21:00	1350	9,088,800	1.6	0
5/14/2020	21:15	1350	9,088,800	1.6	0
5/14/2020	21:30	1350	9,088,800	1.6	0
5/14/2020	21:45	1330	8,954,200	1.59	0
5/14/2020	22:00	1360	9,156,100	1.61	0
5/14/2020	22:15	1350	9,088,800	1.6	0
5/14/2020	22:30	1350	9,088,800	1.6	0
5/14/2020	22:45	1350	9,088,800	1.6	0
5/14/2020	23:00	1350	9,088,800	1.6	0
5/14/2020	23:15	1350	9,088,800	1.6	0
5/14/2020	23:30	1350	9,088,800	1.6	0
5/14/2020	23:45	1350	9,088,800	1.6	0
5/15/2020	0:00	1350	9,088,800	1.6	0
5/15/2020	0:15	1350	9,088,800	1.6	0
5/15/2020	0:30	1350	9,088,800	1.6	0
5/15/2020	0:45	1350	9,088,800	1.6	0
5/15/2020	1:00	1350	9,088,800	1.6	0
5/15/2020	1:15	1350	9,088,800	1.6	0
5/15/2020	1:30	1330	8,954,200	1.59	0
5/15/2020	1:45	1350	9,088,800	1.6	0
5/15/2020	2:00	1330	8,954,200	1.59	0
5/15/2020	2:15	1330	8,954,200	1.59	0
5/15/2020	2:30	1330	8,954,200	1.59	0
5/15/2020	2:45	1330	8,954,200	1.59	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/15/2020	3:00	1330	8,954,200	1.59	0
5/15/2020	3:15	1330	8,954,200	1.59	0
5/15/2020	3:30	1320	8,886,800	1.58	0
5/15/2020	3:45	1320	8,886,800	1.58	0
5/15/2020	4:00	1320	8,886,800	1.58	0
5/15/2020	4:15	1320	8,886,800	1.58	0
5/15/2020	4:30	1320	8,886,800	1.58	0
5/15/2020	4:45	1320	8,886,800	1.58	0
5/15/2020	5:00	1310	8,819,500	1.57	0
5/15/2020	5:15	1320	8,886,800	1.58	0
5/15/2020	5:30	1310	8,819,500	1.57	0
5/15/2020	5:45	1310	8,819,500	1.57	0
5/15/2020	6:00	1320	8,886,800	1.58	0
5/15/2020	6:15	1310	8,819,500	1.57	0
5/15/2020	6:30	1310	8,819,500	1.57	0
5/15/2020	6:45	1310	8,819,500	1.57	0
5/15/2020	7:00	1310	8,819,500	1.57	0
5/15/2020	7:15	1310	8,819,500	1.57	0
5/15/2020	7:30	1310	8,819,500	1.57	0
5/15/2020	7:45	1310	8,819,500	1.57	0
5/15/2020	8:00	1300	8,752,200	1.56	0
5/15/2020	8:15	1300	8,752,200	1.56	0
5/15/2020	8:30	1310	8,819,500	1.57	0
5/15/2020	8:45	1310	8,819,500	1.57	0
5/15/2020	9:00	1310	8,819,500	1.57	0
5/15/2020	9:15	1310	8,819,500	1.57	0
5/15/2020	9:30	1310	8,819,500	1.57	0
5/15/2020	9:45	1300	8,752,200	1.56	0
5/15/2020	10:00	1300	8,752,200	1.56	0
5/15/2020	10:15	1290	8,684,900	1.55	0
5/15/2020	10:30	1300	8,752,200	1.56	0
5/15/2020	10:45	1300	8,752,200	1.56	0
5/15/2020	11:00	1300	8,752,200	1.56	0
5/15/2020	11:15	1300	8,752,200	1.56	0
5/15/2020	11:30	1300	8,752,200	1.56	0
5/15/2020	11:45	1300	8,752,200	1.56	0
5/15/2020	12:00	1290	8,684,900	1.55	0
5/15/2020	12:15	1300	8,752,200	1.56	0
5/15/2020	12:30	1300	8,752,200	1.56	0
5/15/2020	12:45	1300	8,752,200	1.56	0
5/15/2020	13:00	1300	8,752,200	1.56	0
5/15/2020	13:15	1300	8,752,200	1.56	0
5/15/2020	13:30	1300	8,752,200	1.56	0
5/15/2020	13:45	1300	8,752,200	1.56	0
5/15/2020	14:00	1300	8,752,200	1.56	0
5/15/2020	14:15	1300	8,752,200	1.56	0
5/15/2020	14:30	1290	8,684,900	1.55	0
5/15/2020	14:45	1300	8,752,200	1.56	0
5/15/2020	15:00	1290	8,684,900	1.55	0
5/15/2020	15:15	1290	8,684,900	1.55	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/15/2020	15:30	1290	8,684,900	1.55	0
5/15/2020	15:45	1290	8,684,900	1.55	0
5/15/2020	16:00	1270	8,550,200	1.54	0
5/15/2020	16:15	1290	8,684,900	1.55	0
5/15/2020	16:30	1290	8,684,900	1.55	0
5/15/2020	16:45	1290	8,684,900	1.55	0
5/15/2020	17:00	1300	8,752,200	1.56	0
5/15/2020	17:15	1300	8,752,200	1.56	0
5/15/2020	17:30	1290	8,684,900	1.55	0
5/15/2020	17:45	1300	8,752,200	1.56	0
5/15/2020	18:00	1300	8,752,200	1.56	0
5/15/2020	18:15	1300	8,752,200	1.56	0
5/15/2020	18:30	1310	8,819,500	1.57	0
5/15/2020	18:45	1310	8,819,500	1.57	0
5/15/2020	19:00	1310	8,819,500	1.57	0
5/15/2020	19:15	1310	8,819,500	1.57	0
5/15/2020	19:30	1310	8,819,500	1.57	0
5/15/2020	19:45	1310	8,819,500	1.57	0
5/15/2020	20:00	1310	8,819,500	1.57	0
5/15/2020	20:15	1310	8,819,500	1.57	0
5/15/2020	20:30	1310	8,819,500	1.57	0
5/15/2020	20:45	1310	8,819,500	1.57	0
5/15/2020	21:00	1310	8,819,500	1.57	0
5/15/2020	21:15	1310	8,819,500	1.57	0
5/15/2020	21:30	1300	8,752,200	1.56	0
5/15/2020	21:45	1300	8,752,200	1.56	0
5/15/2020	22:00	1300	8,752,200	1.56	0
5/15/2020	22:15	1300	8,752,200	1.56	0
5/15/2020	22:30	1300	8,752,200	1.56	0
5/15/2020	22:45	1300	8,752,200	1.56	0
5/15/2020	23:00	1300	8,752,200	1.56	0
5/15/2020	23:15	1300	8,752,200	1.56	0
5/15/2020	23:30	1290	8,684,900	1.55	0
5/15/2020	23:45	1310	8,819,500	1.57	0
5/16/2020	0:00	1300	8,752,200	1.56	0
5/16/2020	0:15	1300	8,752,200	1.56	0
5/16/2020	0:30	1300	8,752,200	1.56	0
5/16/2020	0:45	1300	8,752,200	1.56	0
5/16/2020	1:00	1300	8,752,200	1.56	0
5/16/2020	1:15	1300	8,752,200	1.56	0
5/16/2020	1:30	1300	8,752,200	1.56	0
5/16/2020	1:45	1300	8,752,200	1.56	0
5/16/2020	2:00	1300	8,752,200	1.56	0
5/16/2020	2:15	1290	8,684,900	1.55	0
5/16/2020	2:30	1290	8,684,900	1.55	0
5/16/2020	2:45	1300	8,752,200	1.56	0
5/16/2020	3:00	1300	8,752,200	1.56	0
5/16/2020	3:15	1290	8,684,900	1.55	0
5/16/2020	3:30	1290	8,684,900	1.55	0
5/16/2020	3:45	1270	8,550,200	1.54	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/16/2020	4:00	1290	8,684,900	1.55	0
5/16/2020	4:15	1290	8,684,900	1.55	0
5/16/2020	4:30	1290	8,684,900	1.55	0
5/16/2020	4:45	1270	8,550,200	1.54	0
5/16/2020	5:00	1270	8,550,200	1.54	0
5/16/2020	5:15	1270	8,550,200	1.54	0
5/16/2020	5:30	1270	8,550,200	1.54	0
5/16/2020	5:45	1270	8,550,200	1.54	0
5/16/2020	6:00	1270	8,550,200	1.54	0
5/16/2020	6:15	1270	8,550,200	1.54	0
5/16/2020	6:30	1290	8,684,900	1.55	0
5/16/2020	6:45	1270	8,550,200	1.54	0
5/16/2020	7:00	1270	8,550,200	1.54	0
5/16/2020	7:15	1260	8,482,900	1.53	0
5/16/2020	7:30	1270	8,550,200	1.54	0
5/16/2020	7:45	1260	8,482,900	1.53	0
5/16/2020	8:00	1260	8,482,900	1.53	0
5/16/2020	8:15	1260	8,482,900	1.53	0
5/16/2020	8:30	1260	8,482,900	1.53	0
5/16/2020	8:45	1260	8,482,900	1.53	0
5/16/2020	9:00	1270	8,550,200	1.54	0
5/16/2020	9:15	1260	8,482,900	1.53	0
5/16/2020	9:30	1270	8,550,200	1.54	0
5/16/2020	9:45	1270	8,550,200	1.54	0
5/16/2020	10:00	1270	8,550,200	1.54	0
5/16/2020	10:15	1260	8,482,900	1.53	0
5/16/2020	10:30	1270	8,550,200	1.54	0
5/16/2020	10:45	1270	8,550,200	1.54	0
5/16/2020	11:00	1290	8,684,900	1.55	0
5/16/2020	11:15	1270	8,550,200	1.54	0
5/16/2020	11:30	1290	8,684,900	1.55	0
5/16/2020	11:45	1270	8,550,200	1.54	0
5/16/2020	12:00	1290	8,684,900	1.55	0
5/16/2020	12:15	1290	8,684,900	1.55	0
5/16/2020	12:30	1290	8,684,900	1.55	0
5/16/2020	12:45	1290	8,684,900	1.55	0
5/16/2020	13:00	1290	8,684,900	1.55	0
5/16/2020	13:15	1290	8,684,900	1.55	0
5/16/2020	13:30	1270	8,550,200	1.54	0
5/16/2020	13:45	1290	8,684,900	1.55	0
5/16/2020	14:00	1290	8,684,900	1.55	0
5/16/2020	14:15	1290	8,684,900	1.55	0
5/16/2020	14:30	1290	8,684,900	1.55	0
5/16/2020	14:45	1290	8,684,900	1.55	0
5/16/2020	15:00	1290	8,684,900	1.55	0
5/16/2020	15:15	1290	8,684,900	1.55	0
5/16/2020	15:30	1300	8,752,200	1.56	0
5/16/2020	15:45	1290	8,684,900	1.55	0
5/16/2020	16:00	1290	8,684,900	1.55	0
5/16/2020	16:15	1290	8,684,900	1.55	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/16/2020	16:30	1270	8,550,200	1.54	0
5/16/2020	16:45	1290	8,684,900	1.55	0
5/16/2020	17:00	1290	8,684,900	1.55	0
5/16/2020	17:15	1290	8,684,900	1.55	0
5/16/2020	17:30	1270	8,550,200	1.54	0
5/16/2020	17:45	1290	8,684,900	1.55	0
5/16/2020	18:00	1290	8,684,900	1.55	0
5/16/2020	18:15	1290	8,684,900	1.55	0
5/16/2020	18:30	1270	8,550,200	1.54	0
5/16/2020	18:45	1270	8,550,200	1.54	0
5/16/2020	19:00	1290	8,684,900	1.55	0
5/16/2020	19:15	1270	8,550,200	1.54	0
5/16/2020	19:30	1290	8,684,900	1.55	0
5/16/2020	19:45	1270	8,550,200	1.54	0
5/16/2020	20:00	1270	8,550,200	1.54	0
5/16/2020	20:15	1270	8,550,200	1.54	0
5/16/2020	20:30	1260	8,482,900	1.53	0
5/16/2020	20:45	1270	8,550,200	1.54	0
5/16/2020	21:00	1260	8,482,900	1.53	0
5/16/2020	21:15	1260	8,482,900	1.53	0
5/16/2020	21:30	1260	8,482,900	1.53	0
5/16/2020	21:45	1260	8,482,900	1.53	0
5/16/2020	22:00	1260	8,482,900	1.53	0
5/16/2020	22:15	1250	8,415,600	1.52	0
5/16/2020	22:30	1250	8,415,600	1.52	0
5/16/2020	22:45	1250	8,415,600	1.52	0
5/16/2020	23:00	1250	8,415,600	1.52	0
5/16/2020	23:15	1250	8,415,600	1.52	0
5/16/2020	23:30	1250	8,415,600	1.52	0
5/16/2020	23:45	1250	8,415,600	1.52	0
5/17/2020	0:00	1250	8,415,600	1.52	0
5/17/2020	0:15	1250	8,415,600	1.52	0
5/17/2020	0:30	1250	8,415,600	1.52	0
5/17/2020	0:45	1250	8,415,600	1.52	0
5/17/2020	1:00	1250	8,415,600	1.52	0
5/17/2020	1:15	1240	8,348,200	1.51	0
5/17/2020	1:30	1240	8,348,200	1.51	0
5/17/2020	1:45	1250	8,415,600	1.52	0
5/17/2020	2:00	1240	8,348,200	1.51	0
5/17/2020	2:15	1240	8,348,200	1.51	0
5/17/2020	2:30	1240	8,348,200	1.51	0
5/17/2020	2:45	1240	8,348,200	1.51	0
5/17/2020	3:00	1250	8,415,600	1.52	0
5/17/2020	3:15	1240	8,348,200	1.51	0
5/17/2020	3:30	1240	8,348,200	1.51	0
5/17/2020	3:45	1240	8,348,200	1.51	0
5/17/2020	4:00	1240	8,348,200	1.51	0
5/17/2020	4:15	1240	8,348,200	1.51	0
5/17/2020	4:30	1240	8,348,200	1.51	0
5/17/2020	4:45	1230	8,280,900	1.5	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/17/2020	5:00	1230	8,280,900	1.5	0
5/17/2020	5:15	1230	8,280,900	1.5	0
5/17/2020	5:30	1230	8,280,900	1.5	0
5/17/2020	5:45	1230	8,280,900	1.5	0
5/17/2020	6:00	1230	8,280,900	1.5	0
5/17/2020	6:15	1230	8,280,900	1.5	0
5/17/2020	6:30	1230	8,280,900	1.5	0
5/17/2020	6:45	1230	8,280,900	1.5	0
5/17/2020	7:00	1230	8,280,900	1.5	0
5/17/2020	7:15	1230	8,280,900	1.5	0
5/17/2020	7:30	1230	8,280,900	1.5	0
5/17/2020	7:45	1230	8,280,900	1.5	0
5/17/2020	8:00	1230	8,280,900	1.5	0
5/17/2020	8:15	1230	8,280,900	1.5	0
5/17/2020	8:30	1230	8,280,900	1.5	0
5/17/2020	8:45	1230	8,280,900	1.5	0
5/17/2020	9:00	1230	8,280,900	1.5	0
5/17/2020	9:15	1230	8,280,900	1.5	0
5/17/2020	9:30	1230	8,280,900	1.5	0
5/17/2020	9:45	1230	8,280,900	1.5	0
5/17/2020	10:00	1230	8,280,900	1.5	0
5/17/2020	10:15	1240	8,348,200	1.51	0
5/17/2020	10:30	1230	8,280,900	1.5	0
5/17/2020	10:45	1230	8,280,900	1.5	0
5/17/2020	11:00	1230	8,280,900	1.5	0
5/17/2020	11:15	1230	8,280,900	1.5	0
5/17/2020	11:30	1230	8,280,900	1.5	0
5/17/2020	11:45	1230	8,280,900	1.5	0
5/17/2020	12:00	1230	8,280,900	1.5	0
5/17/2020	12:15	1230	8,280,900	1.5	0
5/17/2020	12:30	1220	8,213,600	1.49	0
5/17/2020	12:45	1230	8,280,900	1.5	0
5/17/2020	13:00	1230	8,280,900	1.5	0
5/17/2020	13:15	1230	8,280,900	1.5	0
5/17/2020	13:30	1220	8,213,600	1.49	0
5/17/2020	13:45	1230	8,280,900	1.5	0
5/17/2020	14:00	1230	8,280,900	1.5	0
5/17/2020	14:15	1230	8,280,900	1.5	0
5/17/2020	14:30	1240	8,348,200	1.51	0
5/17/2020	14:45	1240	8,348,200	1.51	0
5/17/2020	15:00	1230	8,280,900	1.5	0
5/17/2020	15:15	1230	8,280,900	1.5	0
5/17/2020	15:30	1240	8,348,200	1.51	0
5/17/2020	15:45	1220	8,213,600	1.49	0
5/17/2020	16:00	1240	8,348,200	1.51	0
5/17/2020	16:15	1230	8,280,900	1.5	0
5/17/2020	16:30	1240	8,348,200	1.51	0
5/17/2020	16:45	1230	8,280,900	1.5	0
5/17/2020	17:00	1220	8,213,600	1.49	0
5/17/2020	17:15	1220	8,213,600	1.49	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/17/2020	17:30	1230	8,280,900	1.5	0
5/17/2020	17:45	1220	8,213,600	1.49	0
5/17/2020	18:00	1230	8,280,900	1.5	0
5/17/2020	18:15	1220	8,213,600	1.49	0
5/17/2020	18:30	1210	8,146,300	1.48	0
5/17/2020	18:45	1220	8,213,600	1.49	0
5/17/2020	19:00	1210	8,146,300	1.48	0
5/17/2020	19:15	1220	8,213,600	1.49	0
5/17/2020	19:30	1220	8,213,600	1.49	0
5/17/2020	19:45	1220	8,213,600	1.49	0
5/17/2020	20:00	1210	8,146,300	1.48	0
5/17/2020	20:15	1210	8,146,300	1.48	0
5/17/2020	20:30	1220	8,213,600	1.49	0
5/17/2020	20:45	1220	8,213,600	1.49	0
5/17/2020	21:00	1220	8,213,600	1.49	0
5/17/2020	21:15	1220	8,213,600	1.49	0
5/17/2020	21:30	1210	8,146,300	1.48	0
5/17/2020	21:45	1210	8,146,300	1.48	0
5/17/2020	22:00	1210	8,146,300	1.48	0
5/17/2020	22:15	1210	8,146,300	1.48	0
5/17/2020	22:30	1210	8,146,300	1.48	0
5/17/2020	22:45	1210	8,146,300	1.48	0
5/17/2020	23:00	1210	8,146,300	1.48	0
5/17/2020	23:15	1210	8,146,300	1.48	0
5/17/2020	23:30	1210	8,146,300	1.48	0
5/17/2020	23:45	1210	8,146,300	1.48	0
5/18/2020	0:00	1210	8,146,300	1.48	0
5/18/2020	0:15	1210	8,146,300	1.48	0
5/18/2020	0:30	1210	8,146,300	1.48	0
5/18/2020	0:45	1210	8,146,300	1.48	0
5/18/2020	1:00	1210	8,146,300	1.48	0
5/18/2020	1:15	1210	8,146,300	1.48	0
5/18/2020	1:30	1210	8,146,300	1.48	0
5/18/2020	1:45	1210	8,146,300	1.48	0
5/18/2020	2:00	1220	8,213,600	1.49	0
5/18/2020	2:15	1220	8,213,600	1.49	0
5/18/2020	2:30	1210	8,146,300	1.48	0
5/18/2020	2:45	1210	8,146,300	1.48	0
5/18/2020	3:00	1220	8,213,600	1.49	0
5/18/2020	3:15	1200	8,078,900	1.47	0
5/18/2020	3:30	1210	8,146,300	1.48	0
5/18/2020	3:45	1210	8,146,300	1.48	0
5/18/2020	4:00	1210	8,146,300	1.48	0
5/18/2020	4:15	1210	8,146,300	1.48	0
5/18/2020	4:30	1210	8,146,300	1.48	0
5/18/2020	4:45	1200	8,078,900	1.47	0
5/18/2020	5:00	1200	8,078,900	1.47	0
5/18/2020	5:15	1200	8,078,900	1.47	0
5/18/2020	5:30	1210	8,146,300	1.48	0
5/18/2020	5:45	1200	8,078,900	1.47	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Geosyntec Consultants of NC P.C.

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/18/2020	6:00	1210	8,146,300	1.48	0
5/18/2020	6:15	1210	8,146,300	1.48	0
5/18/2020	6:30	1210	8,146,300	1.48	0
5/18/2020	6:45	1200	8,078,900	1.47	0
5/18/2020	7:00	1210	8,146,300	1.48	0
5/18/2020	7:15	1200	8,078,900	1.47	0
5/18/2020	7:30	1200	8,078,900	1.47	0
5/18/2020	7:45	1200	8,078,900	1.47	0
5/18/2020	8:00	1200	8,078,900	1.47	0
5/18/2020	8:15	1210	8,146,300	1.48	0
5/18/2020	8:30	1230	8,280,900	1.5	0
5/18/2020	8:45	1200	8,078,900	1.47	0
5/18/2020	9:00	1210	8,146,300	1.48	0
5/18/2020	9:15	1210	8,146,300	1.48	0
5/18/2020	9:30	1200	8,078,900	1.47	0
5/18/2020	9:45	1210	8,146,300	1.48	0
5/18/2020	10:00	1220	8,213,600	1.49	0
5/18/2020	10:15	1220	8,213,600	1.49	0
5/18/2020	10:30	1220	8,213,600	1.49	0
5/18/2020	10:45	1220	8,213,600	1.49	0
5/18/2020	11:00	1220	8,213,600	1.49	0
5/18/2020	11:15	1200	8,078,900	1.47	0
5/18/2020	11:30	1220	8,213,600	1.49	0
5/18/2020	11:45	1210	8,146,300	1.48	0
5/18/2020	12:00	1210	8,146,300	1.48	0
5/18/2020	12:15	1220	8,213,600	1.49	0
5/18/2020	12:30	1210	8,146,300	1.48	0
5/18/2020	12:45	1210	8,146,300	1.48	0
5/18/2020	13:00	1210	8,146,300	1.48	0
5/18/2020	13:15	1200	8,078,900	1.47	0
5/18/2020	13:30	1200	8,078,900	1.47	0
5/18/2020	13:45	1200	8,078,900	1.47	0
5/18/2020	14:00	1200	8,078,900	1.47	0
5/18/2020	14:15	1210	8,146,300	1.48	0
5/18/2020	14:30	1210	8,146,300	1.48	0
5/18/2020	14:45	1210	8,146,300	1.48	0
5/18/2020	15:00	1210	8,146,300	1.48	0
5/18/2020	15:15	1210	8,146,300	1.48	0
5/18/2020	15:30	1210	8,146,300	1.48	0
5/18/2020	15:45	1220	8,213,600	1.49	0
5/18/2020	16:00	1210	8,146,300	1.48	0
5/18/2020	16:15	1220	8,213,600	1.49	0
5/18/2020	16:30	1210	8,146,300	1.48	0
5/18/2020	16:45	1210	8,146,300	1.48	0
5/18/2020	17:00	1220	8,213,600	1.49	0
5/18/2020	17:15	1220	8,213,600	1.49	0
5/18/2020	17:30	1220	8,213,600	1.49	0
5/18/2020	17:45	1220	8,213,600	1.49	0
5/18/2020	18:00	1210	8,146,300	1.48	0
5/18/2020	18:15	1210	8,146,300	1.48	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/18/2020	18:30	1210	8,146,300	1.48	0
5/18/2020	18:45	1210	8,146,300	1.48	0
5/18/2020	19:00	1210	8,146,300	1.48	0
5/18/2020	19:15	1210	8,146,300	1.48	0
5/18/2020	19:30	1220	8,213,600	1.49	0
5/18/2020	19:45	1210	8,146,300	1.48	0
5/18/2020	20:00	1210	8,146,300	1.48	0
5/18/2020	20:15	1210	8,146,300	1.48	0
5/18/2020	20:30	1200	8,078,900	1.47	0
5/18/2020	20:45	1210	8,146,300	1.48	0
5/18/2020	21:00	1210	8,146,300	1.48	0.02
5/18/2020	21:15	1210	8,146,300	1.48	0.04
5/18/2020	21:30	1210	8,146,300	1.48	0.03
5/18/2020	21:45	1210	8,146,300	1.48	0.02
5/18/2020	22:00	1210	8,146,300	1.48	0
5/18/2020	22:15	1210	8,146,300	1.48	0
5/18/2020	22:30	1210	8,146,300	1.48	0.01
5/18/2020	22:45	1210	8,146,300	1.48	0
5/18/2020	23:00	1220	8,213,600	1.49	0.02
5/18/2020	23:15	1220	8,213,600	1.49	0.04
5/18/2020	23:30	1220	8,213,600	1.49	0.01
5/18/2020	23:45	1230	8,280,900	1.5	0
5/19/2020	0:00	1220	8,213,600	1.49	0
5/19/2020	0:15	1220	8,213,600	1.49	0
5/19/2020	0:30	1220	8,213,600	1.49	0
5/19/2020	0:45	1220	8,213,600	1.49	0
5/19/2020	1:00	1220	8,213,600	1.49	0.01
5/19/2020	1:15	1240	8,348,200	1.51	0.07
5/19/2020	1:30	1240	8,348,200	1.51	0.06
5/19/2020	1:45	1240	8,348,200	1.51	0
5/19/2020	2:00	1250	8,415,600	1.52	0
5/19/2020	2:15	1250	8,415,600	1.52	0
5/19/2020	2:30	1250	8,415,600	1.52	0
5/19/2020	2:45	1270	8,550,200	1.54	0
5/19/2020	3:00	1250	8,415,600	1.52	0
5/19/2020	3:15	1250	8,415,600	1.52	0
5/19/2020	3:30	1260	8,482,900	1.53	0
5/19/2020	3:45	1260	8,482,900	1.53	0.02
5/19/2020	4:00	1260	8,482,900	1.53	0
5/19/2020	4:15	1260	8,482,900	1.53	0
5/19/2020	4:30	1260	8,482,900	1.53	0.03
5/19/2020	4:45	1260	8,482,900	1.53	0.01
5/19/2020	5:00	1270	8,550,200	1.54	0.06
5/19/2020	5:15	1270	8,550,200	1.54	0.13
5/19/2020	5:30	1270	8,550,200	1.54	0.04
5/19/2020	5:45	1270	8,550,200	1.54	0
5/19/2020	6:00	1270	8,550,200	1.54	0
5/19/2020	6:15	1270	8,550,200	1.54	0
5/19/2020	6:30	1270	8,550,200	1.54	0
5/19/2020	6:45	1270	8,550,200	1.54	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/19/2020	7:00	1290	8,684,900	1.55	0
5/19/2020	7:15	1290	8,684,900	1.55	0
5/19/2020	7:30	1290	8,684,900	1.55	0
5/19/2020	7:45	1270	8,550,200	1.54	0
5/19/2020	8:00	1290	8,684,900	1.55	0
5/19/2020	8:15	1300	8,752,200	1.56	0
5/19/2020	8:30	1300	8,752,200	1.56	0
5/19/2020	8:45	1300	8,752,200	1.56	0
5/19/2020	9:00	1310	8,819,500	1.57	0
5/19/2020	9:15	1310	8,819,500	1.57	0
5/19/2020	9:30	1310	8,819,500	1.57	0
5/19/2020	9:45	1310	8,819,500	1.57	0
5/19/2020	10:00	1320	8,886,800	1.58	0
5/19/2020	10:15	1320	8,886,800	1.58	0
5/19/2020	10:30	1320	8,886,800	1.58	0
5/19/2020	10:45	1310	8,819,500	1.57	0
5/19/2020	11:00	1310	8,819,500	1.57	0
5/19/2020	11:15	1320	8,886,800	1.58	0
5/19/2020	11:30	1320	8,886,800	1.58	0
5/19/2020	11:45	1330	8,954,200	1.59	0
5/19/2020	12:00	1320	8,886,800	1.58	0
5/19/2020	12:15	1330	8,954,200	1.59	0
5/19/2020	12:30	1350	9,088,800	1.6	0
5/19/2020	12:45	1330	8,954,200	1.59	0
5/19/2020	13:00	1350	9,088,800	1.6	0
5/19/2020	13:15	1360	9,156,100	1.61	0
5/19/2020	13:30	1360	9,156,100	1.61	0
5/19/2020	13:45	1360	9,156,100	1.61	0
5/19/2020	14:00	1370	9,223,500	1.62	0
5/19/2020	14:15	1370	9,223,500	1.62	0
5/19/2020	14:30	1390	9,358,100	1.64	0
5/19/2020	14:45	1380	9,290,800	1.63	0
5/19/2020	15:00	1390	9,358,100	1.64	0
5/19/2020	15:15	1390	9,358,100	1.64	0
5/19/2020	15:30	1380	9,290,800	1.63	0
5/19/2020	15:45	1380	9,290,800	1.63	0
5/19/2020	16:00	1390	9,358,100	1.64	0
5/19/2020	16:15	1410	9,492,800	1.65	0
5/19/2020	16:30	1420	9,560,100	1.66	0
5/19/2020	16:45	1410	9,492,800	1.65	0
5/19/2020	17:00	1420	9,560,100	1.66	0
5/19/2020	17:15	1420	9,560,100	1.66	0
5/19/2020	17:30	1420	9,560,100	1.66	0
5/19/2020	17:45	1430	9,627,400	1.67	0
5/19/2020	18:00	1430	9,627,400	1.67	0
5/19/2020	18:15	1430	9,627,400	1.67	0
5/19/2020	18:30	1440	9,694,700	1.68	0
5/19/2020	18:45	1460	9,829,400	1.69	0
5/19/2020	19:00	1470	9,896,700	1.7	0
5/19/2020	19:15	1470	9,896,700	1.7	0

TABLE C12
FLOW DATA FOR W.O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/19/2020	19:30	1470	9,896,700	1.7	0
5/19/2020	19:45	1480	9,964,000	1.71	0
5/19/2020	20:00	1480	9,964,000	1.71	0
5/19/2020	20:15	1480	9,964,000	1.71	0
5/19/2020	20:30	1490	10,031,000	1.72	0
5/19/2020	20:45	1480	9,964,000	1.71	0
5/19/2020	21:00	1510	10,166,000	1.73	0
5/19/2020	21:15	1510	10,166,000	1.73	0
5/19/2020	21:30	1520	10,233,000	1.74	0
5/19/2020	21:45	1520	10,233,000	1.74	0
5/19/2020	22:00	1520	10,233,000	1.74	0
5/19/2020	22:15	1540	10,368,000	1.76	0
5/19/2020	22:30	1530	10,301,000	1.75	0
5/19/2020	22:45	1540	10,368,000	1.76	0.01
5/19/2020	23:00	1540	10,368,000	1.76	0.03
5/19/2020	23:15	1560	10,503,000	1.77	0.01
5/19/2020	23:30	1560	10,503,000	1.77	0.01
5/19/2020	23:45	1560	10,503,000	1.77	0

Notes

Measurements are recorded from the USGS flow gauging station at the W.O. Huske Dam, ID 02105500 (USGS, 2020)
 1 - The minimum value recorded by a USGS raingage is 0.01 inches. Anything detected below this threshold is recorded as zero inches.

ft³/sec - cubic feet per second

ft - feet

gal - gallons

in - inches

USGS - United States Geological Survey

**TABLE C13
FLOW DATA FOR LOCK #1 NR KELLY, NC
Chemours Fayetteville Works, North Carolina**

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/18/2020	0:00	1640	11,041,218	15.37	0
5/18/2020	0:15	1630	10,973,894	15.36	0
5/18/2020	0:30	1640	11,041,218	15.37	0
5/18/2020	0:45	1630	10,973,893	15.36	0
5/18/2020	1:00	1640	11,041,218	15.37	0
5/18/2020	1:15	1630	10,973,893	15.36	0
5/18/2020	1:30	1640	11,041,218	15.37	0
5/18/2020	1:45	1640	11,041,218	15.37	0
5/18/2020	2:00	1640	11,041,218	15.37	0
5/18/2020	2:15	1610	10,839,244	15.35	0
5/18/2020	2:30	1640	11,041,218	15.37	0
5/18/2020	2:45	1640	11,041,218	15.37	0
5/18/2020	3:00	1630	10,973,893	15.36	0
5/18/2020	3:15	1610	10,839,245	15.35	0
5/18/2020	3:30	1630	10,973,893	15.36	0
5/18/2020	3:45	1630	10,973,893	15.36	0
5/18/2020	4:00	1640	11,041,218	15.37	0
5/18/2020	4:15	1640	11,041,218	15.37	0
5/18/2020	4:30	1610	10,839,244	15.35	0
5/18/2020	4:45	1640	11,041,218	15.37	0
5/18/2020	5:00	1640	11,041,218	15.37	0
5/18/2020	5:15	1640	11,041,218	15.37	0
5/18/2020	5:30	1640	11,041,218	15.37	0
5/18/2020	5:45	1630	10,973,893	15.36	0
5/18/2020	6:00	1640	11,041,218	15.37	0
5/18/2020	6:15	1630	10,973,894	15.36	0
5/18/2020	6:30	1630	10,973,893	15.36	0
5/18/2020	6:45	1630	10,973,893	15.36	0
5/18/2020	7:00	1630	10,973,894	15.36	0
5/18/2020	7:15	1640	11,041,218	15.37	0
5/18/2020	7:30	1630	10,973,893	15.36	0
5/18/2020	7:45	1610	10,839,245	15.35	0
5/18/2020	8:00	1610	10,839,244	15.35	0
5/18/2020	8:15	1610	10,839,244	15.35	0
5/18/2020	8:30	1640	11,041,218	15.37	0
5/18/2020	8:45	1630	10,973,893	15.36	0
5/18/2020	9:00	1640	11,041,218	15.37	0
5/18/2020	9:15	1640	11,041,218	15.37	0
5/18/2020	9:30	1580	10,637,271	15.33	0
5/18/2020	9:45	1640	11,041,218	15.37	0
5/18/2020	10:00	1630	10,973,894	15.36	0
5/18/2020	10:15	1640	11,041,218	15.37	0
5/18/2020	10:30	1610	10,839,244	15.35	0
5/18/2020	10:45	1610	10,839,245	15.35	0
5/18/2020	11:00	1610	10,839,244	15.35	0
5/18/2020	11:15	1630	10,973,893	15.36	0
5/18/2020	11:30	1630	10,973,894	15.36	0
5/18/2020	11:45	1630	10,973,893	15.36	0
5/18/2020	12:00	1610	10,839,244	15.35	0
5/18/2020	12:15	1610	10,839,245	15.35	0

TABLE C13
FLOW DATA FOR LOCK #1 NR KELLY, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/18/2020	12:30	1610	10,839,244	15.35	0
5/18/2020	12:45	1610	10,839,244	15.35	0
5/18/2020	13:00	1610	10,839,245	15.35	0
5/18/2020	13:15	1610	10,839,244	15.35	0
5/18/2020	13:30	1610	10,839,244	15.35	0
5/18/2020	13:45	1610	10,839,245	15.35	0
5/18/2020	14:00	1600	10,771,920	15.34	0
5/18/2020	14:15	1580	10,637,271	15.33	0
5/18/2020	14:30	1600	10,771,920	15.34	0
5/18/2020	14:45	1580	10,637,271	15.33	0
5/18/2020	15:00	1580	10,637,271	15.33	0
5/18/2020	15:15	1580	10,637,271	15.33	0
5/18/2020	15:30	1580	10,637,271	15.33	0
5/18/2020	15:45	1580	10,637,271	15.33	0
5/18/2020	16:00	1570	10,569,947	15.32	0
5/18/2020	16:15	1580	10,637,271	15.33	0
5/18/2020	16:30	1580	10,637,271	15.33	0
5/18/2020	16:45	1570	10,569,947	15.32	0
5/18/2020	17:00	1570	10,569,946	15.32	0
5/18/2020	17:15	1560	10,502,622	15.31	0
5/18/2020	17:30	1570	10,569,947	15.32	0
5/18/2020	17:45	1560	10,502,622	15.31	0
5/18/2020	18:00	1560	10,502,622	15.31	0
5/18/2020	18:15	1560	10,502,622	15.31	0
5/18/2020	18:30	1560	10,502,622	15.31	0
5/18/2020	18:45	1540	10,367,973	15.3	0
5/18/2020	19:00	1540	10,367,973	15.3	0
5/18/2020	19:15	1540	10,367,973	15.3	0
5/18/2020	19:30	1540	10,367,973	15.3	0
5/18/2020	19:45	1540	10,367,973	15.3	0
5/18/2020	20:00	1540	10,367,973	15.3	0
5/18/2020	20:15	1530	10,300,648	15.29	0
5/18/2020	20:30	1530	10,300,649	15.29	0
5/18/2020	20:45	1530	10,300,648	15.29	0
5/18/2020	21:00	1530	10,300,648	15.29	0
5/18/2020	21:15	1510	10,166,000	15.28	0
5/18/2020	21:30	1510	10,165,999	15.28	0
5/18/2020	21:45	1510	10,165,999	15.28	0
5/18/2020	22:00	1540	10,367,973	15.3	0
5/18/2020	22:15	1500	10,098,675	15.27	0
5/18/2020	22:30	1710	11,512,489	15.42	0
5/18/2020	22:45	1610	10,839,245	15.35	0.17
5/18/2020	23:00	1580	10,637,271	15.33	0.01
5/18/2020	23:15	1600	10,771,920	15.34	0
5/18/2020	23:30	1580	10,637,271	15.33	0
5/18/2020	23:45	1580	10,637,271	15.33	0
5/19/2020	0:00	1580	10,637,271	15.33	0
5/19/2020	0:15	1570	10,569,947	15.32	0
5/19/2020	0:30	1580	10,637,271	15.33	0
5/19/2020	0:45	1580	10,637,271	15.33	0

**TABLE C13
FLOW DATA FOR LOCK #1 NR KELLY, NC
Chemours Fayetteville Works, North Carolina**

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/19/2020	1:00	1580	10,637,271	15.33	0
5/19/2020	1:15	1570	10,569,946	15.32	0
5/19/2020	1:30	1570	10,569,946	15.32	0
5/19/2020	1:45	1580	10,637,271	15.33	0.02
5/19/2020	2:00	1580	10,637,271	15.33	0
5/19/2020	2:15	1600	10,771,920	15.34	0
5/19/2020	2:30	1600	10,771,920	15.34	0.01
5/19/2020	2:45	1600	10,771,920	15.34	0
5/19/2020	3:00	1600	10,771,920	15.34	0.01
5/19/2020	3:15	1600	10,771,920	15.34	0.03
5/19/2020	3:30	1600	10,771,920	15.34	0.07
5/19/2020	3:45	1600	10,771,920	15.34	0.01
5/19/2020	4:00	1600	10,771,920	15.34	0.04
5/19/2020	4:15	1600	10,771,920	15.34	0.05
5/19/2020	4:30	1600	10,771,920	15.34	0.03
5/19/2020	4:45	1610	10,839,245	15.35	0
5/19/2020	5:00	1610	10,839,244	15.35	0
5/19/2020	5:15	1610	10,839,244	15.35	0.02
5/19/2020	5:30	1610	10,839,245	15.35	0.08
5/19/2020	5:45	1610	10,839,244	15.35	0.07
5/19/2020	6:00	1610	10,839,244	15.35	0.14
5/19/2020	6:15	1610	10,839,245	15.35	0.03
5/19/2020	6:30	1630	10,973,893	15.36	0.01
5/19/2020	6:45	1630	10,973,893	15.36	0
5/19/2020	7:00	1640	11,041,218	15.37	0
5/19/2020	7:15	1630	10,973,893	15.36	0.01
5/19/2020	7:30	1640	11,041,218	15.37	0
5/19/2020	7:45	1640	11,041,218	15.37	0.01
5/19/2020	8:00	1640	11,041,218	15.37	0
5/19/2020	8:15	1670	11,243,191	15.39	0
5/19/2020	8:30	1670	11,243,192	15.39	0
5/19/2020	8:45	1680	11,310,516	15.4	0
5/19/2020	9:00	1700	11,445,165	15.41	0
5/19/2020	9:15	1650	11,108,543	15.38	0
5/19/2020	9:30	1670	11,243,191	15.39	0
5/19/2020	9:45	1700	11,445,165	15.41	0
5/19/2020	10:00	1680	11,310,516	15.4	0
5/19/2020	10:15	1680	11,310,516	15.4	0
5/19/2020	10:30	1710	11,512,489	15.42	0
5/19/2020	10:45	1700	11,445,165	15.41	0
5/19/2020	11:00	1710	11,512,489	15.42	0
5/19/2020	11:15	1710	11,512,489	15.42	0
5/19/2020	11:30	1730	11,647,139	15.43	0
5/19/2020	11:45	1730	11,647,138	15.43	0
5/19/2020	12:00	1730	11,647,138	15.43	0
5/19/2020	12:15	1740	11,714,463	15.44	0
5/19/2020	12:30	1710	11,512,489	15.42	0
5/19/2020	12:45	1710	11,512,489	15.42	0
5/19/2020	13:00	1710	11,512,490	15.42	0
5/19/2020	13:15	1710	11,512,489	15.42	0

TABLE C13
FLOW DATA FOR LOCK #1 NR KELLY, NC
Chemours Fayetteville Works, North Carolina

Date	Time	Flow Rate (ft ³ /sec)	Flow Volume (gal)	Gage Height (ft)	Precipitation (in) ¹
5/19/2020	13:30	1710	11,512,489	15.42	0
5/19/2020	13:45	1730	11,647,139	15.43	0
5/19/2020	14:00	1710	11,512,489	15.42	0
5/19/2020	14:15	1730	11,647,138	15.43	0
5/19/2020	14:30	1710	11,512,490	15.42	0
5/19/2020	14:45	1730	11,647,138	15.43	0
5/19/2020	15:00	1740	11,714,463	15.44	0
5/19/2020	15:15	1730	11,647,139	15.43	0
5/19/2020	15:30	1740	11,714,463	15.44	0
5/19/2020	15:45	1760	11,849,112	15.45	0
5/19/2020	16:00	1760	11,849,112	15.45	0
5/19/2020	16:15	1760	11,849,112	15.45	0
5/19/2020	16:30	1760	11,849,112	15.45	0.02
5/19/2020	16:45	1740	11,714,463	15.44	0.01
5/19/2020	17:00	1760	11,849,112	15.45	0
5/19/2020	17:15	1770	11,916,436	15.46	0.01
5/19/2020	17:30	1760	11,849,112	15.45	0.03
5/19/2020	17:45	1770	11,916,436	15.46	0.02
5/19/2020	18:00	1760	11,849,112	15.45	0
5/19/2020	18:15	1770	11,916,437	15.46	0
5/19/2020	18:30	1770	11,916,436	15.46	0
5/19/2020	18:45	1770	11,916,436	15.46	0
5/19/2020	19:00	1770	11,916,437	15.46	0
5/19/2020	19:15	1770	11,916,436	15.46	0
5/19/2020	19:30	1790	12,051,085	15.47	0
5/19/2020	19:45	1770	11,916,437	15.46	0
5/19/2020	20:00	1790	12,051,085	15.47	0
5/19/2020	20:15	1790	12,051,085	15.47	0
5/19/2020	20:30	1790	12,051,086	15.47	0
5/19/2020	20:45	1790	12,051,085	15.47	0
5/19/2020	21:00	1790	12,051,085	15.47	0
5/19/2020	21:15	1790	12,051,086	15.47	0
5/19/2020	21:30	1790	12,051,085	15.47	0
5/19/2020	21:45	1790	12,051,085	15.47	0
5/19/2020	22:00	1800	12,118,410	15.48	0
5/19/2020	22:15	1790	12,051,085	15.47	0
5/19/2020	22:30	1790	12,051,085	15.47	0
5/19/2020	22:45	1800	12,118,410	15.48	0
5/19/2020	23:00	1790	12,051,085	15.47	0
5/19/2020	23:15	1800	12,118,410	15.48	0
5/19/2020	23:30	1820	12,253,059	15.49	0
5/19/2020	23:45	1800	12,118,410	15.48	0

Notes

Measurements are recorded from the USGS flow gauging station at Lock #1 near Kelly, ID 02105769 (USGS, 2020).

1 - The minimum value recorded by a USGS raingage is 0.01 inches. Anything detected below this threshold is recorded as zero inches.

ft³/sec - cubic feet per second

ft - feet

gal - gallons

in - inches

USGS - United States Geological Survey

APPENDIX D

Field Forms

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	-3.088		
Initial Depth to Water (ft.):	19.3	Depth to Well Bottom (ft.):	

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
12:15	19.37	250.00	0.33	6.24	0.18	22.80	7.00	0.08	20.15	Clear	None	
12:20	19.38	250.00	0.67	6.13	0.13	22.50	5.70	0.08	21.06	Clear	None	
12:25	19.37	250.00	1.00	5.99	0.11	21.40	5.37	0.07	21.03	Clear	None	
12:30	19.37	250.00	1.33	5.96	0.08	23.50	5.44	0.07	21.04	Clear	None	
12:35	19.37	250.00	1.65	5.81	0.08	24.40	5.71	0.07	21.08	Clear	None	
12:40	19.37	250.00	1.98	5.97	0.07	23.30	5.97	0.07	20.60	Clear	None	
12:45	19.37	250.00	2.31	6.04	0.07	28.40	6.45	0.07	20.76	Clear	No	
12:50	19.37	250.00	2.64	5.8	0.07	28.50	5.85	0.07	21.15	Clear	None	
12:55	19.37	250.00	2.97	5.76	0.06	27.90	5.84	0.07	21.00	Clear	None	
13:00	19.37	250.00	3.30	5.76	0.06	25.30	5.65	0.06	22.26	Clear	None	
13:05	19.37	250.00	3.63	5.8	0.06	24.60	5.33	0.07	20.98	Clear	None	
13:10	19.37	250.00	3.96	5.79	0.06	23.40	5.37	0.07	21.27	Clear	None	
13:15	19.37	250.00	4.29	5.75	0.06	23.10	6.03	0.06	21.31	Clear	None	
13:20	19.37	250.00	4.62	5.77	0.07	23.00	5.43	0.06	21.19	Clear	None	
13:25	19.37	250.00		5.75	0.07	22.80	5.45	0.06	21.42	Clear	None	
13:30	19.37	250.00	4.95	5.74	0.07	22.60	5.77	0.06	21.33	Clear	None	

Sampling Data Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	5.74
Spec. Cond.(mS/cm)	0.06
Turbidity (NTU)	5.77
Temp.(°C)	21.33
DO (mg/L)	0.07
ORP (mV)	22.60

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	8

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: LTW-01 Well Diameter: 2 Inches
 Samplers: LUKE TART Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth:
 Pump Loc: within screen
 Method: Date: 05-07-2020 Time: 13:00

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.067		
Initial Depth to Water (ft.):	15.81	Depth to Well Bottom (ft.):	28.73

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
0	16.01	250.00	0.33	3.86	0.15	136.40	41.61	0.12	18.06	Clear	None	
13:30	16.01	250.00	0.66	3.92	0.12	132.90	35.32	0.12	17.96	Clear	None	
13:35	16.01	250.00	0.99	3.96	0.13	128.90	16.38	0.12	18.02	Clear	None	
13:40	16.01	250.00	1.32	3.97	0.13	127.60	12.24	0.12	18.02	Clear	None	
13:45	16.01	250.00	1.65	3.96	0.17	125.40	5.82	0.13	17.92	Clear	None	
13:50	16.01	250.00	1.97	3.96	0.16	124.50	5.54	0.13	17.79	Clear	No	
13:55	16.01	250.00	2.31	3.96	0.15	124.60	6.62	0.13	17.77	Clear	None	
14:00	16.01	250.00	2.61	3.95	0.16	124.20	4.28	0.13	17.75	Clear	None	

Sampling Data
 Zero HS:
 Method: Peristaltic Pump Date: 05-07-2020 Time: 14:05 Total Volume Purged (gallons): 3

Field Parameters

STABILIZED PARAMETERS	
pH	3.95
Spec. Cond.(mS/cm)	0.13
Turbidity (NTU)	4.28
Temp.(°C)	17.75
DO (mg/L)	0.16
ORP (mV)	124.20

Screen Interval:
11.0-26.0

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID: CAP2Q20-LTW-01-050720
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	64.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	4.925		
Initial Depth to Water (ft.):	9.88	Depth to Well Bottom (ft.):	40.66

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
13:05	10.02	200.00	0.27	4.86	0.15	95.40	6.40	0.07	17.00	Clear	None	
13:10	10.00	200.00	0.50	4.9	0.09	91.10	3.35	0.07	17.12	Clear	None	
13:15	10.00	200.00	0.70	4.94	0.09	89.10	2.85	0.07	17.09	Clear	None	
13:20	10.00	200.00	0.95	4.93	0.09	87.10	2.03	0.07	17.05	Clear	None	
13:25	10.00	200.00	1.10	4.95	0.07	86.90	2.10	0.07	17.04	Clear	None	
13:30	10.00	200.00	1.30	4.94	0.06	84.90	2.12	0.07	17.03	Clear	None	
13:35	10.00	200.00	1.50	4.93	0.08	83.30	1.97	0.07	17.07	Clear	None	
13:40	10.00	200.00	1.70	4.94	0.08	84.10	2.08	0.07	17.10	Clear	None	
13:45	10.00	200.00	1.90	4.94	0.07	81.80	1.86	0.07	17.10	Clear	None	
13:50	10.00	200.00	2.10	4.95	0.08	80.60	2.12	0.07	17.17	Clear	None	
13:55	10.00	200.00	2.40	4.94	0.08	78.20	1.92	0.07	17.23	Clear	None	
14:00	10.00	200.00	2.70	4.95	0.11	80.30	2.39	0.07	17.18	Clear	None	
14:05	10.00	200.00	2.90	4.93	0.10	78.40	2.14	0.07	17.19	Clear	None	
14:10	10.00	200.00	3.10	4.95	0.10	78.20	2.15	0.07	17.24	Clear	None	

Sampling Data Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.95
Spec. Cond. (mS/cm)	0.07
Turbidity (NTU)	2.15
Temp. (°C)	17.24
DO (mg/L)	0.10
ORP (mV)	78.20

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	64.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	3.24		
Initial Depth to Water (ft.):	12.5	Depth to Well Bottom (ft.):	32.75

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
10:30	13.00	185.00	0.24	6.44	7.93	27.50	195.00	0.06	17.96	Clear	No	
10:35	13.04	185.00	0.24	6.43	7.86	30.50	210.01	0.06	18.03	Clear	No	
10:40	13.05	185.00	0.24	6.41	7.70	38.20	205.38	0.06	18.24	Clear	No	
10:45	13.10	185.00	0.24	6.39	7.58	45.20	196.63	0.06	18.42	Clear	No	
10:50	13.11	185.00	0.24	6.35	7.43	53.20	286.22	0.06	18.62	Clear	No	
10:55	13.12	185.00	0.24	6.31	7.34	58.00	310.58	0.06	18.71	Clear	No	
11:00	13.15	185.00	0.24	6.06	6.94	66.10	110.23	0.06	18.90	Clear	No	
11:05	13.15	185.00	0.24	6.03	6.84	68.50	57.05	0.06	19.09	Clear	No	
11:10	13.16	185.00	0.24	6.01	6.82	69.60	64.10	0.06	19.12	Clear	No	
11:15	13.15	185.00	0.24	5.86	6.78	70.40	152.34	0.06	19.03	Clear	No	
11:20	13.17	185.00	0.24	5.81	6.73	74.80	152.91	0.06	19.06	Clear	No	
11:25	13.19	185.00	0.24	5.79	6.67	74.60	143.57	0.06	19.07	Clear	No	
11:30	13.21	185.00	0.24	5.81	6.56	82.30	218.18	0.06	19.23	Clear	No	
11:35	13.23	185.00		5.79	6.46	87.10	215.78	0.06	19.39	Clear	No	The following reading will be at 10 minute intervals due to the need of
11:45	13.17	185.00	0.24	5.76	6.32	93.60	207.79	0.06	19.70			
11:55	13.18	185.00	0.24	5.7	6.15	99.70	219.74	0.06	19.90			
12:05	13.19	185.00	0.24	5.73	5.96	105.60	274.24	0.06	20.34	Clear	No	
12:15	13.18	185.00	0.24	5.95	5.67	108.70	211.44	0.06	21.36	Clear	No	
12:25	13.20	185.00	0.24	5.89	5.30	107.80	124.05	0.06	23.28	Clear	No	
12:35	13.18	185.00	0.24	5.71	5.10	112.70	67.77	0.06	24.33	Clear	No	
12:45	13.20	185.00	0.24	5.33	4.89	126.90	42.34	0.05	25.00	Clear	No	
12:55	13.21	185.00	0.24	5.23	4.63	138.00	9.05	0.05	26.36	Clear	No	
13:05	13.19	185.00	0.24	5.19	4.47	142.70	0.49	0.05	27.16	Clear	No	Switch to five minute increments
13:10	13.23	185.00	0.24	5.2	4.31	150.60	0.07	0.05	28.03	Clear	No	
13:15	13.21	185.00	0.24	5.22	4.15	153.60	0.15	0.05	28.47	Clear	No	
13:20	13.19	185.00	0.24	5.07	4.05	158.20	0.00	0.05	29.05	Clear	No	Final parameters
13:27	13.20	185.00	0.24	5.23	3.69	156.10	0.23	0.05	31.23	Clear	No	
13:30	13.23	185.00	0.24	5.24	3.66	154.13	0.25	0.05	34.07	Clear	No	
13:35	13.18	185.00	0.24	5.22	3.91	151.19	0.15	0.05	34.15	Clear	No	

Sampling Data Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	5.22
Spec. Cond.(mS/cm)	0.05
Turbidity (NTU)	0.15

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	

Temp.(°C)	34.15
DO (mg/L)	3.91
ORP (mV)	151.19

Sample ID: CAP2Q20-LTW-03-051320
DuplicateID:

PFAS	250 mL poly	NP	Table 3+	✓

WEATHER CONDITIONS	
Temperature (F):	65.00
Sky:	Partly Cloudy
Precipitation:	None
Wind (mph)	

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.987		
Initial Depth to Water (ft.):	8.33	Depth to Well Bottom (ft.):	27

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
11:25	11.81		500.00	4.44	0.19	30.90	33.78	95.14	18.14			
11:30	11.00			4.45	0.18	27.10	32.23	95.00	18.27			
11:35	11.15			4.51	0.16	25.60	34.04	94.31	18.07			
11:40	11.33			4.46	0.14	26.30	34.86	95.64	17.88			
11:45	11.51			4.54	0.15	26.10	24.59	93.20	17.86			
11:50	11.57			4.5	0.13	26.60	23.32	94.64	17.82			
11:55	11.67			4.52	0.12	46.80	23.88	96.41	17.95			
12:00	11.75			4.52	0.12	38.10	23.74	95.70	18.01			
12:05	11.83			4.52	0.12	35.30	17.35	92.97	18.08			
12:10	11.89			4.54	0.11	31.60	16.97	90.07	18.19			
12:15	11.97			4.48	0.12	29.20	10.35	92.05	18.23			
12:20	12.01			4.58	0.12	28.20	9.64	88.85	18.10			
12:25	12.97			4.54	0.12	28.70	9.90	89.78	18.16			

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.54
Spec. Cond.(mS/cm)	89.78
Turbidity (NTU)	9.90
Temp.(°C)	18.16
DO (mg/L)	0.12
ORP (mV)	28.70

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="70.00"/>
Sky:	<input type="text" value="Partly Cloudy"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="5"/>

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: LTW-05 Well Diameter: 2 Inches
 Samplers: JELANI GILL Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth: 38
 Pump Loc: within screen
 Method: Peristaltic Pump Date: 05-08-2020 Time: 14:48

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	4.912		
Initial Depth to Water (ft.):	9.3	Depth to Well Bottom (ft.):	40

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
14:53	9.41			4.22	0.11	53.50	59.98	0.12	17.78	Clear	No	
14:57	9.41			4.23	0.08	52.30	52.55	0.12	17.83	Clear	No	
15:00	9.41			4.24	0.07	50.30	38.64	0.12	17.64	Clear	No	
15:04	9.41			4.25	0.06	48.50	20.39	0.12	17.58	Clear	No	
15:08	9.41			4.25	0.06	49.40	15.94	0.12	17.70	Clear	No	
15:12	9.41			4.26	0.05	48.80	10.11	0.12	17.58	Clear	No	
15:16	9.41			4.26	0.04	47.80	10.48	0.12	17.70	Clear	No	
15:20	9.41			4.26	0.04	47.70	5.55	0.12	17.58	Clear	No	
15:23	9.41			4.27	0.04	46.90	6.95	0.12	17.73	Clear	No	

Sampling Data
 Zero HS:
 Method:
 Date: 05-08-2020 Time: 15:30 Total Volume Purged (gallons): 2.3

Field Parameters

STABILIZED PARAMETERS	
pH	4.27
Spec. Cond.(mS/cm)	0.12
Turbidity (NTU)	6.95
Temp.(°C)	17.73
DO (mg/L)	0.04
ORP (mV)	46.90

Screen Interval:
29.0-44.0

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified ✓
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+ ✓

Sample ID: CAP2Q20-LTW-05-050820
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Cloudy
Precipitation:	None
Wind (mph)	14

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.237		
Initial Depth to Water (ft.):	17.73	Depth to Well Bottom (ft.):	31.71

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
10:35	17.78	250.00	0.33	3.63	0.21	118.90	69.41	0.20	16.45	Clear	None	
10:40	17.78	250.00	0.66	3.63	0.12	121.30	40.88	0.20	16.45	Clear	None	
10:45	17.77	250.00	0.99	3.62	0.09	119.80	22.81	0.20	16.55	Clear	None	
10:50	17.77	250.00	1.32	3.62	0.07	122.20	11.95	0.20	16.42	Clear	None	
10:55	17.77	250.00	1.65	3.62	0.06	120.60	7.26	0.20	16.36	Clear	None	
11:00	17.77	250.00	1.98	3.62	0.06	120.50	5.27	0.20	16.68	Clear	None	
11:06	17.77	250.00	2.31	3.62	0.06	120.90	3.75	0.20	16.64	Cloudy	None	

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	3.62
Spec. Cond. (mS/cm)	0.20
Turbidity (NTU)	3.75
Temp. (°C)	16.64
DO (mg/L)	0.06
ORP (mV)	120.90

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	58.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	8

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	1.608		
Initial Depth to Water (ft.):	16.75	Depth to Well Bottom (ft.):	26.8

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
14:20	17.13	270.00	0.34	4.48	0.13	122.00	17.89	0.10	17.06	Cloudy	None	
14:25	17.16	270.00	0.67	5.02	0.09	122.00	18.29	0.10	17.02	Clear	None	
14:30	17.17	270.00	1.00	4.75	0.04	114.20	4.92	0.10	17.01	Clear	None	
14:35	17.72	270.00	1.35	4.76	0.04	110.00	3.07	0.10	17.04	Clear	None	
14:40	17.17	270.00	1.70	4.75	0.04	108.00	3.68	0.10	17.07	Clear	Clear	

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.75
Spec. Cond. (mS/cm)	0.10
Turbidity (NTU)	3.68
Temp. (°C)	17.07
DO (mg/L)	0.04
ORP (mV)	108.00

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	66.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	4.552		
Initial Depth to Water (ft.):	5.55	Depth to Well Bottom (ft.):	34

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
13:35	5.55			4.32	0.09	51.90	11.97	0.09	17.67	Clear	No	
13:38	5.55			4.34	0.08	50.10	12.94	0.09	17.94	Clear	No	
13:43	5.55			4.37	0.06	46.00	12.37	0.09	18.20	Clear	No	
13:47	5.55			4.35	0.06	45.20	9.20	0.09	18.13	Clear	No	
13:51	5.55			4.36	0.05	43.40	5.49	0.09	18.21	Clear	No	
13:54	5.55			4.38	0.05	42.80	4.34	0.09	18.16	Clear	No	
13:59	5.55			4.37	0.04	42.20	4.63	0.09	18.05	Clear	No	
14:02	5.55			4.36	0.04	42.00	2.51	0.09	18.08	Clear	No	
14:05	5.55			4.35	0.04	41.70	3.51	0.09	17.96	Clear	No	

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.35
Spec. Cond.(mS/cm)	0.09
Turbidity (NTU)	3.51
Temp.(°C)	17.96
DO (mg/L)	0.04
ORP (mV)	41.70

Screen Interval:

29 - 34

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified ✓
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+ ✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Cloudy
Precipitation:	None
Wind (mph)	5

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.042		
Initial Depth to Water (ft.):	5.24	Depth to Well Bottom (ft.):	18

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
13:30	5.44	200.00		5.08	0.28	34.50	14.95	0.11	17.83			
13:35	5.44	200.00		5.05	0.17	20.00	12.16	0.11	17.74			
13:40	5.44	200.00		5.06	0.14	18.30	16.26	0.11	18.10			
13:45	5.44	200.00		5.09	0.11	15.60	14.42	0.11	18.02			
13:50	5.44	200.00		5.11	0.09	12.90	9.51	0.11	18.41			
13:55	5.44	200.00		5.11	0.09	12.00	8.04	0.11	18.24			
14:00	5.44	200.00		5.11	0.08	8.40	6.02	0.11	18.11			
14:05	5.44	200.00		5.11	0.08	6.70	6.15	0.11	17.94			
14:10	5.44	200.00		5.11	0.07	3.30	3.18	0.11	17.82			
14:15	5.44	200.00		5.1	0.07	0.20	4.81	0.11	18.00			
14:20	5.44	200.00		5.1	0.07	0.00	2.09	0.11	17.80			
14:25	5.44	200.00		5.14	0.07	0.00	2.40	0.11	17.81			
14:30	5.44	200.00		5.13	0.07	0.00	2.66	0.11	17.63			

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	5.13
Spec. Cond.(mS/cm)	0.11
Turbidity (NTU)	2.66
Temp.(°C)	17.63
DO (mg/L)	0.07
ORP (mV)	

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Cloudy
Precipitation:	None
Wind (mph)	5

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.584		
Initial Depth to Water (ft.):	27.16	Depth to Well Bottom (ft.):	30.81

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
12:45	28.50	100.00	0.15	3.92	0.11	0.27	6.12	0.27	19.57	Clear	None	
12:50	28.92	100.00	0.30	3.93	0.11	47.00	18.90	0.27	19.51	Clear	None	
12:55	29.34	100.00	0.45	3.89	0.11	47.40	87.64	0.31	19.81	Cloudy	None	
13:00	29.95	100.00	0.60	3.89	0.10	48.70	69.23	0.34	19.67	Cloudy	None	
13:05	30.10	100.00	0.75	3.88	0.12	49.20	48.24	0.38	19.74	Cloudy	None	
13:10	30.81	100.00										Well went dry

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	<input type="text"/>
Spec. Cond.(mS/cm)	<input type="text"/>
Turbidity (NTU)	<input type="text"/>
Temp.(°C)	<input type="text"/>
DO (mg/L)	<input type="text"/>
ORP (mV)	<input type="text"/>

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

Well ran dry

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	8

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.573		
Initial Depth to Water (ft.):	27.23	Depth to Well Bottom (ft.):	30.81

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
11:50	28.34	125.00	0.45	3.85	0.15	90.00	8.52	0.32	18.12	Clear	None	
11:55	28.93	125.00	0.60	3.84	0.11	92.30	16.95	0.29	18.19	Clear	None	
12:00	29.45	125.00	0.75	3.85	0.12	92.10	115.23	0.29	18.31	Cloudy	None	
12:05	29.97	125.00	0.90	3.84	0.13	94.20	52.59	0.32	18.41	Cloudy	None	
12:10	30.47	125.00	1.05	3.85	0.23	95.10	25.72	0.35	18.28	Clear	None	
12:15	30.81	125.00	1.25	3.85	0.54	95.70	163.37	0.37	18.86	Cloudy	None	Well went dry

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	3.85
Spec. Cond.(mS/cm)	0.37
Turbidity (NTU)	163.37
Temp.(°C)	18.86
DO (mg/L)	0.54
ORP (mV)	95.70

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

Well ran dry

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="61.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="6"/>

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data

Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.576		
Initial Depth to Water (ft.):	27.2	Depth to Well Bottom (ft.):	30.8

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
14:25	27.20	150.00		4.65	4.57	57.30	0.30	0.05	34.81	Clear	No	
14:30	28.45	150.00		4.31	4.18	63.90	0.36	0.05	36.45			

Sampling Data

Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.31
Spec. Cond.(mS/cm)	0.05
Turbidity (NTU)	0.36
Temp.(°C)	36.45
DO (mg/L)	4.18
ORP (mV)	63.90

Screen Interval:

17 - 27

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	-3.104		
Initial Depth to Water (ft.):	19.4	Depth to Well Bottom (ft.):	

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
15:00	20.90	250.00	0.33	4.23	1.87	89.60	9.14	0.05	17.95	Clear	None	
15:05	20.92	250.00	0.66	4.17	1.80	88.30	6.99	0.05	18.46	Clear	None	
15:10	20.98	250.00	0.99	4.02	2.10	79.50	5.60	0.05	18.42	Clear	None	
15:15	20.98	250.00	1.32	4.01	2.13	77.00	5.04	0.05	18.26	Clear	None	
15:20	19.98	250.00	1.65	4.03	2.14	78.20	4.82	0.05	17.82	Clear	None	

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.03
Spec. Cond.(mS/cm)	0.05
Turbidity (NTU)	4.82
Temp.(°C)	17.82
DO (mg/L)	2.14
ORP (mV)	78.20

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="75.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="8"/>

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.811		
Initial Depth to Water (ft.):	36.71	Depth to Well Bottom (ft.):	41.78

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
14:41				5.04	7.67	59.90	349.78	0.05	21.58	Brown	No	First reading while bailing well dry

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	<input type="text"/>
Spec. Cond.(mS/cm)	<input type="text"/>
Turbidity (NTU)	<input type="text"/>
Temp.(°C)	<input type="text"/>
DO (mg/L)	<input type="text"/>
ORP (mV)	<input type="text"/>

Screen Interval:

28 - 38

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

Well ran dry

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.789		
Initial Depth to Water (ft.):	36.85	Depth to Well Bottom (ft.):	41.78

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
15:01				4.84	7.99	77.90	29.43	0.04	19.65	Clear	None	First reading while bailing well dry, well went dry at 15:12

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.84
Spec. Cond.(mS/cm)	0.04
Turbidity (NTU)	29.43
Temp.(°C)	19.65
DO (mg/L)	7.99
ORP (mV)	77.90

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

Well ran dry

WEATHER CONDITIONS	
Temperature (F):	74.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	7

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: PW-07 Well Diameter: 2 Inches
 Samplers: CHRIS LICHOROBIEC Joey Vidmar Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth:
 Pump Loc: within screen
 Method: Date: 05-14-2020 Time: 09:25

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.81		
Initial Depth to Water (ft.):	37.17	Depth to Well Bottom (ft.):	42.23

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
09:30	37.17			6.16	8.27	10.70	14.90	100.52	20.01	Cloudy	No	

Sampling Data
 Zero HS:
 Method: Date: 05-14-2020 Time: 09:35 Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	6.16
Spec. Cond.(mS/cm)	100.52
Turbidity (NTU)	14.90
Temp.(°C)	20.01
DO (mg/L)	8.27
ORP (mV)	10.70

Screen Interval:
28 - 38

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID: CAP2Q20-PW-07-051420
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	65.00
Sky:	Partly Sunny
Precipitation:	None
Wind (mph)	3

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	4.67		
Initial Depth to Water (ft.):	24.81	Depth to Well Bottom (ft.):	54

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
13:32	26.25	200.00		10.46	5.01	82.60	5.29	0.00	20.69	Clear	No	
13:37	27.20	200.00		10.32	5.10	80.50	5.43	0.00	20.10	Clear	No	
13:42	27.58	200.00		10.27	5.19	77.80	2.16	0.00	19.91	Clear	No	
13:47	27.74	200.00		10.32	5.12	75.40	1.49	0.00	19.63	Clear	No	

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	10.32
Spec. Cond.(mS/cm)	
Turbidity (NTU)	1.49
Temp.(°C)	19.63
DO (mg/L)	5.12
ORP (mV)	75.40

Screen Interval:

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	66.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	10

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: PW-11 Well Diameter: 2 Inches
 Samplers: BRANDON WEIDNER CL Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth:
 Pump Loc: within screen
 Method: Double valve pump Date: 05-07-2020 Time: 10:25

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	5.555		
Initial Depth to Water (ft.):	32.81	Depth to Well Bottom (ft.):	67.53

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
10:55	32.84	420.00	0.55	4.05	0.11	114.70	8.88	0.45	17.82	Clear	No	
11:00	32.88	420.00	0.55	4.05	0.06	115.30	5.85	0.46	17.92	Clear	No	
11:05	32.86	420.00	0.55	4.03	0.01	114.20	6.10	0.46	17.91	Clear	No	
11:10	32.88	420.00	0.55	4.04	0.00	113.70	9.96	0.46	17.93	Clear	No	
11:15	32.89	420.00	0.55	4.04	0.00	111.10	6.69	0.46	17.90	Clear	No	

Sampling Data
 Zero HS:
 Method: Other Date: 05-07-2020 Time: 11:20 Total Volume Purged (gallons): 2.75

Field Parameters

STABILIZED PARAMETERS	
pH	4.04
Spec. Cond. (mS/cm)	0.46
Turbidity (NTU)	6.69
Temp. (°C)	17.90
DO (mg/L)	
ORP (mV)	111.10

Screen Interval:
53 - 63

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID: CAP2Q20-PW-11-050720
 Duplicate ID:

WEATHER CONDITIONS	
Temperature (F):	60.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

RECORD OF WELL SAMPLING

Site Name: Well ID: Well Diameter: Inches
 Samplers: Event: Project Manager:

Purging Data
 Pump Depth:
 Pump Loc:
 Method: Date: Time:

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	0.361		
Initial Depth to Water (ft.):	7.44	Depth to Well Bottom (ft.):	47.5

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
11:25	7.44	200.00		4.43	0.22	46.60	6.29	0.11	17.65	Clear	No	
11:30		200.00		4.46	0.16	47.90	3.03	0.11	17.96	Clear	No	
11:35		200.00		4.45	0.13	46.10	2.26	0.11	17.85	Clear	No	
11:40		200.00		4.43	0.11	45.90	2.18	0.11	17.70	Clear		
11:45		200.00		4.45	0.10	44.50	1.83	0.11	17.60	Clear		
11:50		200.00		4.41	0.09	44.50	1.75	0.11	17.51	Clear		
11:55		200.00		4.42	0.09	48.10	1.81	0.11	17.63	Clear		
12:00		200.00		4.44	0.08	44.40	1.78	0.11	17.71	Clear		
12:04		200.00		4.44	0.08	43.60	1.76	0.11	17.75	Clear		
12:10		200.00		4.46	0.08	44.00	1.75	0.11	17.83	Clear		

Sampling Data
 Zero HS:
 Method: Date: Time: Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	4.46
Spec. Cond.(mS/cm)	0.11
Turbidity (NTU)	1.75
Temp.(°C)	17.83
DO (mg/L)	0.08
ORP (mV)	44.00

Screen Interval:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified ✓
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+ ✓

Sample ID:
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="63.00"/>
Sky:	<input type="text" value="Partly Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="5"/>

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: SMW-10 Well Diameter: 2 Inches
 Samplers: CHARLES PACE Joey Vidmar Event: Quarterly Project Manager: Tracy Ovbey

Purging Data

Pump Depth:
 Pump Loc: above screen

Method: Low Flow: Geo Pump Date: 05-07-2020 Time: 09:54

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.525		
Initial Depth to Water (ft.):	29.22	Depth to Well Bottom (ft.):	45

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
10:26	29.23	250.00		5.11	4.52	118.70	0.98	0.07	17.33	Clear	No	
10:31	29.24	250.00		5.02	3.16	122.70	1.05	0.07	17.31	Clear	No	
10:36	29.23	250.00		4.99	2.38	122.10	0.34	0.07	17.37	Clear	No	
10:41	29.23	250.00		4.98	1.80	120.50	0.00	0.05	17.65	Clear	No	
10:46	29.23	250.00		5.2	1.23	110.60	1.13	0.00	18.77	Clear	No	
10:51	29.23	250.00		5.33	0.53	98.60	0.61	0.00	21.18	Clear	No	
10:56	29.23	250.00		5.44	0.36	92.60	0.99	0.00	22.39	Clear	No	
11:01	23.93	250.00		5.41	0.27	87.90	1.58	0.00	22.90	Clear	No	
11:06	23.93	250.00		5.42	0.22	82.70	0.22	0.00	23.64	Clear	No	
11:10	29.23	250.00		5.46	0.18	77.00	0.01	0.00	24.39	Clear	No	
11:16	29.23	250.00		5.43	0.15	71.00	0.31	0.00	25.11	Clear	No	
11:21	29.23	250.00		5.43	0.12	65.90	1.63	0.00	25.75	Clear	No	
11:26	29.23	250.00		5.3	0.09	61.50	1.93	0.00	26.26	Clear	No	
11:31	29.23	250.00		5.07	0.08	57.00	0.37	0.00	26.76	Clear	No	
11:36	29.23	250.00		4.92	0.06	53.40	0.27	0.00	27.16	Clear	No	
11:41	29.23	250.00		5.34	0.05	51.90	0.03	0.00	27.26	Clear	No	

Sampling Data

Zero HS:
 Method: Peristaltic Pump Date: 05-07-2020 Time: 11:55 Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	5.34
Spec. Cond.(mS/cm)	
Turbidity (NTU)	0.03
Temp.(°C)	27.26
DO (mg/L)	0.05
ORP (mV)	51.90

Screen Interval:

39 to 49

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID: CAP2Q20-SMW-10-050720
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	57.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	13

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: SMW-11 Well Diameter: 2 Inches
 Samplers: CHARLES PACE Joey Vidmar Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth: 18
 Pump Loc: within screen
 Method: Low Flow: Geo Pump Date: 05-07-2020 Time: 12:32

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	1.515		
Initial Depth to Water (ft.):	13.53	Depth to Well Bottom (ft.):	23

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
12:42	13.66	400.00		4.6	4.49	115.40	29.67	0.00	23.30	Cloudy	No	
12:47	13.66	400.00		4.11	4.63	140.10	11.94	0.00	22.59	Clear	No	
12:52	13.66	400.00		3.74	4.76	150.60	7.51	0.00	22.00	Clear	No	
12:57	13.66	400.00		3.78	4.81	157.20	4.77	0.00	21.79	Clear	No	
13:02	13.68	400.00		3.85	4.86	161.10	6.56	0.00	21.49	Clear	No	

Sampling Data
 Zero HS:
 Method: Date: 05-07-2020 Time: 13:10 Total Volume Purged (gallons):

Field Parameters

STABILIZED PARAMETERS	
pH	3.85
Spec. Cond. (mS/cm)	
Turbidity (NTU)	6.56
Temp. (°C)	21.49
DO (mg/L)	4.86
ORP (mV)	161.10

Screen Interval:

13 to 23

SAMPLE SET				
Parameter	Bottle	Pres.	Method	
PFAS	2-250 mL poly	NP	EPA 537 Modified	✓
PFAS	250 mL poly	NP	Table 3	
PFAS	250 mL poly	NP	Table 3+	✓

Sample ID: CAP2Q20-SMW-11-050720
 Duplicate ID:

WEATHER CONDITIONS	
Temperature (F):	63.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	10

RECORD OF WELL SAMPLING

Site Name: Chemours Fayetteville Well ID: SMW-12 Well Diameter: 2 Inches
 Samplers: BRANDON WEIDNER Chris L. Event: Quarterly Project Manager: Tracy Ovbey

Purging Data
 Pump Depth:
 Pump Loc: within screen
 Method: Double valve pump Date: 05-06-2020 Time: 12:25

WATER VOLUME CALCULATION			
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot			
Water Volume =	2.922		
Initial Depth to Water (ft.):	83.75	Depth to Well Bottom (ft.):	102.01

Time	DTW	Pump Rate	Vol.	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	mV	NTU	mS/cm	°C			
14:00	83.75	350.00	0.92	3.67	0.43	64.00	2.39	0.20	17.91	Clear	Yes	
14:05	83.75	350.00	0.46	3.65	0.79	61.10	2.95	0.20	17.55	Clear	Yes sulfur	
14:10	83.75	350.00	0.46	3.69	0.78	56.20	2.25	0.20	17.88	Clear	Yes sulfur	
14:15	83.75	350.00	0.46	3.73	0.81	53.20	2.15	0.20	17.63	Clear	Yes, sulfur	
14:20	83.75	350.00	0.46	3.74	0.88	52.80	1.96	0.20	17.53	Clear	Yes, sulfur	
14:25	83.75	350.00	0.46	3.73	0.89	51.70	1.83	0.20	17.51	Clear	Yes, sulfur	

Sampling Data
 Zero HS:
 Method: Other Date: 05-06-2020 Time: 14:30 Total Volume Purged (gallons): 3.234

Field Parameters

STABILIZED PARAMETERS	
pH	3.73
Spec. Cond.(mS/cm)	0.20
Turbidity (NTU)	1.83
Temp.(°C)	17.51
DO (mg/L)	0.89
ORP (mV)	51.70

Screen Interval:
88 to 98

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified ✓
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+ ✓

Sample ID: CAP2Q20-SMW-12-050620
 DuplicateID:

WEATHER CONDITIONS	
Temperature (F):	67.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	13

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville Location ID: CFR-BLADEN
 Samplers: KEN STUART, Event: Quarterly CAP Project Manager: Tracy Ovbey
 Date: 05-13-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-CFR-BLADEN-051320	05-13-2020	18:15	6.71	8.24	13.00	11.77	0.09	19.84	Clear	No		

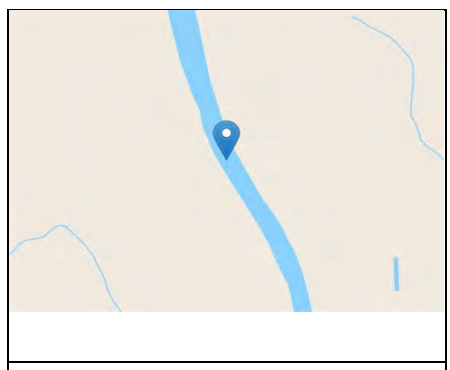
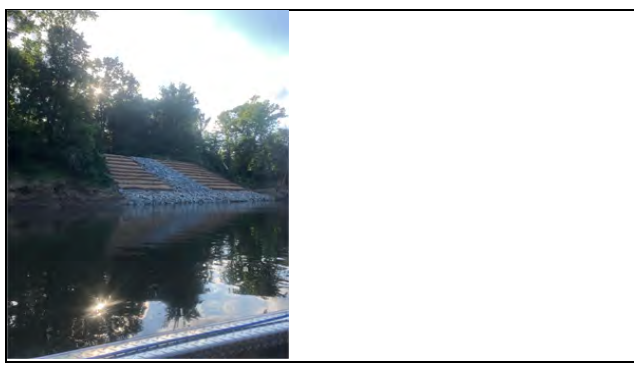
Sampling Data
 Method: Peri Pump Grab Latitude: 34.7720656358029
 Longitude: -78.7980093621451

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	75.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	5

Flow Rate:



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-CFR-KINGS-051920	05-19-2020	09:25	6.65	6.44	25.30	21.44	0.10	21.71	Clear	No		

Sampling Data
 Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="68.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="8"/>

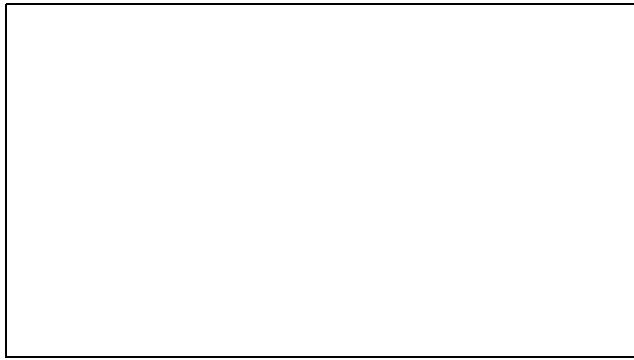
Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):



SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville Location ID: CFR-RM-76
 Samplers: KEN STUART, Luke Tart Event: Quarterly CAP Project Manager: Tracy Ovbey
 Date: 05-13-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-CFR-RM-76-051320	05-13-2020	08:20	6.99	7.58	-5.10	6.62	0.12	17.72	Clear	None	X	

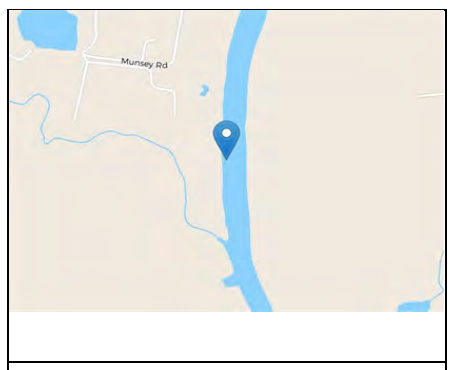
Sampling Data
 Method: Peri Pump Grab Latitude: 34.8537133355018
 Longitude: -78.8271112461377

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	52.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

Flow Rate: 0.25 liters per minute



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville Location ID: CFR-TARHEEL
 Samplers: KEN STUART, Event: Quarterly CAP Project Manager: Tracy Ovbey
 Date: 05-14-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-CFR-TARHEEL-051420	05-14-2020	08:55	6.95	8.01	-15.70	6.79	0.11	19.21	Clear	No		

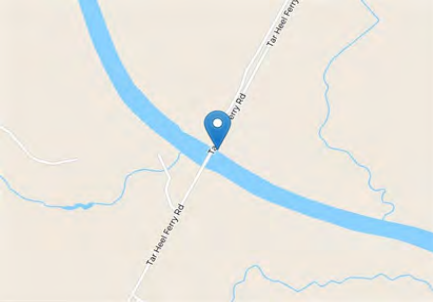
Sampling Data
 Method: Peri Pump Grab Latitude: 34.7448907513495
 Longitude: -78.7852952723194

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	61.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	5

Flow Rate:



GPS Location (if collected)

SURFACE WATER SAMPLING RECORD

Site Name: <input type="text" value="Chemours Fayetteville"/>	Location ID: <input type="text" value="CFR-TARHEEL"/>	Project Manager: <input type="text" value="Tracy Ovbey"/>
Samplers: <input type="text" value="BRANDON WEIDNER"/>	Sampling Event: <input type="text" value="Quarterly CAP"/>	Event Type: <input type="text" value="Sampling"/>
Date: <input type="text" value="05-18-2020"/>	Time: <input type="text" value="11:30"/>	General Comments: <input type="text"/>

Spl ID	Spl Date	Time	pH	DO mg/L	Redox mV	Turbidity NTU	Spec. Cond. µS/cm	Temp. °C	Color	Odor	QA/QC	Comments
CAP2Q20-TARHEEL-24-051420	05-14-2020	20:50										

Sampling Data

Sampling Method: <input type="text" value="ISCO Composite"/>	Multi Meter Used: <input type="text"/>
ISCO Start Date and Time: <input type="text" value="05-13-2020 21:50"/>	Multi Meter ID: <input type="text"/>
ISCO End Date and Time: <input type="text" value="05-14-2020 20:50"/>	

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	537 Mod Including HFPO-DA
PFAS	250 mL poly	NP	Table 3+ (19)(LL)
PFAS	250 mL poly	NP	Table 3+ (20)(LL)
PFAS	250 mL poly	NP	Table 3+ (19)(HL)
PFAS	250 mL poly	NP	Table 3+ (21)(LL) Including HPFO-DA and PFHpA
PFAS	250 mL poly	NP	Table 3+ (21)(HL) Including HPFO-DA and PFHpA
PFAS	250 mL poly	NP	537 MOD (HOLD)

ALL PARAMETERS ANALYZED
537 Mod Including HFPO-DA; Table 3+ (20)(LL)

WEATHER CONDITIONS	
Temperature (F):	<input type="text"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text"/>

Latitude:

Longitude:

<input type="text"/>
GPS Location (if collected)

<input type="text"/>
<input type="text"/>

<input type="text"/>
<input type="text"/>

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-GBC-1-051320	05-13-2020	13:55	4.53	8.52	26.50	16.22	0.10	17.46	Clear	None		

Sampling Data

Method:

Latitude:

Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	73.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Flow Rate:



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: OLDOF-2

Samplers: BRANDON WEIDNER, J. Gill

Event: Quarterly CAP

Project Manager: Tracy Ovbey

Date: 05-13-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
	05-13-2020	11:30	3.54	mg/L 8.58	mV 221.40	NTU 5.22	mS/cm 267.54	°C 18.04	Clear	None		Start parameters.
	05-14-2020	13:05	3.46	8.35	193.60	0.00	520.780	22.41	Clear	None		End parameters.

Sampling Data

Sample Date: 5/14/2020 Sample Time: 13:05

Latitude: 0

Method: 24H ISCO Composite

Longitude: 0

Sample ID: CAP2Q20-OLDOF-1-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: OUTFALL 002

Samplers: BRANDON WEIDNER, J. Gill

Event: Quarterly CAP

Project Manager: Tracy Ovbey

Date: 05-15-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
	05-13-2020	10:17	6.58	9.09	54.40	8.54	125.70	19.86	Clear	None		Start parameters.
	05-14-2020	11:50	6.26	8.06	151.40	4.21	666.000	23.84	Clear	None		End parameters.

Sampling Data

Sample Date: 5/14/2020 Sample Time: 11:50

Latitude: 0

Method: 24H ISCO Composite

Longitude: 0

Sample ID: CAP2Q20-OUTFALL 002-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	65.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	2

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: SEEP-A-1

Samplers: BRANDON WEIDNER, J.Gills

Event: Quarterly CAP

Project Manager: Tracy Ovbey

Date: 05-15-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
	5/13/2020	09:45	3.95	8.94	131.50	12.53	150.00	15.45	Clear	No		Start parameters.
	5/14/2020	10:40	3.90	8.39	134.40	2.55	229.440	23.01	Clear	No		End parameters.

Sampling Data

Sample Date: 5/14/2020 Sample Time: 10:45

Latitude: 0

Method: 24H ISCO Composite

Longitude: 0

Sample ID: CAP2Q20-SEEP-A-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	61.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	2

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: SEEP-B-1

Samplers: BRANDON WEIDNER, J. Gill

Event: Quarterly CAP

Project Manager: Tracy Ovbey

Date: 05-15-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
	05-13-2020	10:25	4.41	7.63	65.60	10.15	112.60	16.38	Clear	None		Start parameters.
	05-14-2020	11:20	4.05	8.17	148.20	1.31	313.220	23.03	Clear	None		End parameters.

Sampling Data

Sample Date: 5/14/2020 Sample Time: 11:20

Latitude: 0

Method: 24H ISCO Composite

Longitude: 0

Sample ID: CAP2Q20-SEEP-B-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	66.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: SEEP-C-1

Samplers: BRANDON WEIDNER, J. Gill

Event: Quarterly CAP

Project Manager: Tracy Ovbey

Date: 05-13-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
	05-13-2020	10:35	4.50	8.37	61.10	34.26	113.67	15.92	Clear	None		Start parameters.
	05-14-2020	11:40	4.16	8.11	131.40	3.70	239.890	23.95	Clear	None		End parameters

Sampling Data

Sample Date: 5/14/2020 Sample Time: 11:40

Latitude: 0

Method: 24H ISCO Composite

Longitude: 0

Sample ID: CAP2Q20-SEEP-C-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	67.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
	05-13-2020	10:55	3.92	8.44	77.40	23.55	157.87	16.52	Clear	None		Start parameters.
	05-14-2020	12:15	3.86	8.25	175.80	0.01	260.690	22.77	Clear	None		End parameters.

Sampling Data

Sample Date: 5/14/2020 Sample Time: 12:15

Latitude:

Method:

Longitude:

Sample ID: CAP2Q20-SEEP-D-24-051420

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
	5/13/2020	09:20	5.74	8.72	34.90	5.53	0.10	15.70	Murky	No		Start parameters.
	5/14/2020	10:15	4.59	8.17	128.20	4.54	150.510	23.58	Clear	No		End parameters.

Sampling Data Sample Date: Sample Time:
 Method: Latitude:
 Sample ID: Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="64.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="4"/>

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville

Location ID: CFR-TARHEEL

Samplers: CHARLES PACE,

Event: Weekly River

Project Manager: Tracy Ovbey

Date: 03-31-2020

Spl ID	Spl Date	Time	pH	DO mg/L	Redox mV	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	Color	Odor	Dup	Comments
CFR-TARHEEL-83-033120	03-31-2020	12:00									Yes	No parameters collected.

Sampling Data

Method: 3.5 Day Composite

Latitude: 0
Longitude: 0

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3 (Special); Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	
Sky:	Partly Sunny
Precipitation:	None
Wind (mph)	

Flow Rate: [] []

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-48-040220	04-02-2020	13:00										No parameters collected.

Sampling Data

Method:

Latitude:

Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3 (Special); Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text"/>

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO mg/L	Redox mV	Turbidity NTU	Spec. Cond. mS/cm	Temp. °C	Color	Odor	Dup	Comments
CFR-TARHEEL-83-040620	0:30											No parameters collected.

Sampling Data

Method:

Latitude:

Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
0

WEATHER CONDITIONS	
Temperature (F):	78.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	9

Staff gauge water level, ft: 1.8

Temperature, deg C: 78

Rain, mm: 0

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-040920	04-09-2020	06:30										Actual Sample ID: CFR-TARHEEL-83-040920

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	72.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	14

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-041920	04-19-2020	01:30										Actual Sample ID: CFR-TARHEEL-83-041920

Sampling Data

Method:
 Samples taken from:
 Latitude:
 Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	70.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-042220	04-22-2020	13:30										Actual Sample ID: CFR-TARHEEL-83-042220

Sampling Data
 Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	66.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	1

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-83-042620	04-26-2020	00:49										No parameters collected.

Sampling Data
 Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	72.00
Sky:	Cloudy
Precipitation:	Rain
Wind (mph)	

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-83-042920	04-29-2020	11:49										No parameters collected.

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="72.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="Rain"/>
Wind (mph)	<input type="text"/>

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-62-050220	05-02-2020	23:49										No parameters collected.

Sampling Data

Method:

Latitude:

Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	86.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	12

Staff gauge water level, ft: 7
 Temperature, deg C: 29
 Rain, mm: 0

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-83-050620	05-06-2020	11:49		mg/L	mV	NTU	mS/cm	°C				No parameters collected.

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	68.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	8

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-050920	05-09-2020	11:49										Actual Sample ID: CFR-TARHEEL-83-050920

Sampling Data
 Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	67.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	15

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:

Location ID:

Samplers:

Event:

Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-83-051320	05-13-2020	09:49										No parameters collected.

Sampling Data

Method:

Latitude:

Longitude:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	75.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	6

Staff gauge water level, ft: 0.9

Temperature, deg C: 25

Rain, mm: 0

Flow Rate:

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Chemours Fayetteville Location ID: CFR-TARHEEL
 Samplers: KEN STUART, Event: Quarterly CAP Project Manager: Tracy Ovbey
 Date: 05-14-2020

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2Q20-CFR-TARHEEL-051420	05-14-2020	08:55	6.95	8.01	-15.70	6.79	0.11	19.21	Clear	No		

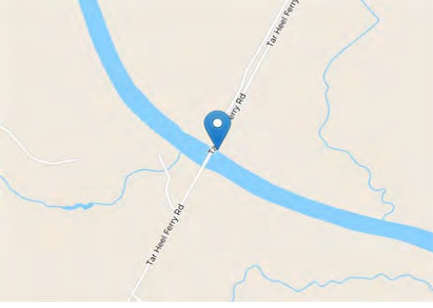
Sampling Data
 Method: Peri Pump Grab Latitude: 34.7448907513495
 Longitude: -78.7852952723194

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
EPA 537 Modified; Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	61.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	5

Flow Rate:



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-051620	05-16-2020	19:49										Actual Sample ID: CFR-TARHEEL-83-051620

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="84"/>

Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:	<input type="text"/>
Velocity Meter Used:	<input type="text" value="Marsh McBirney"/>

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:
 Location ID:
 Project Manager:

Samplers:
 Event:
 Event Type:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CAP2020-TARHEEL-24-051820				mg/L	mV	NTU	mS/cm	°C				No parameters taken
ISCO sample date/time	05-18-2020 11:30											Maintenance Comment:

Sampling Data

Method:
 Latitude:

Longitude:

Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
0

WEATHER CONDITIONS	
Temperature (F):	<input type="text"/>
Sky:	<input type="text"/>
Precipitation:	<input type="text"/>
Wind (mph)	<input type="text"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:	<input type="text"/>
Velocity Meter Used:	<input type="text" value="Marsh McBirney"/>

Multi Meter ID:
 Velocity Meter ID:

GPS Location (if collected)

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):	<input type="text"/>
Stream Velocity BOTTOM half of water column (ft/sec):	<input type="text"/>

Stream Depth TOP half of water column (ft):	<input type="text"/>
Stream Depth BOTTOM half of water column (ft):	<input type="text"/>

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-052020	05-20-2020	08:49										Actual Sample ID: CFR-TARHEEL-83-052020

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	65.00
Sky:	Partly Cloudy
Precipitation:	None
Wind (mph)	3

Temperature, deg C: 18
 Rain, mm: 20

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name:
 Location ID:
 Project Manager:

Samplers:
 Event:
 Event Type:

Date:
 ISCO Start Date and Time:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	µS/cm	°C				
CFR-TARHEEL-052520	regular sampling date	10:15	7.41	7.09	59.10	41.76	53.17	21.35	Cloudy	No		High River Sample
Maintenance Comment:												

Sampling Data

Method:
 Latitude:

Longitude:

Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	80.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	4

Staff gauge water level, ft:

Temperature, deg C:

Rain, mm:

Flow Rate:

Multi Meter Used:

Velocity Meter Used:

Multi Meter ID:

Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):

Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):

Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:

Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-052920	05-29-2020	09:10	7.80	3.39	18.80	99.24	3060.00	22.77	Cloudy	None		Grab sample

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="24.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="Rain"/>
Wind (mph)	<input type="text"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

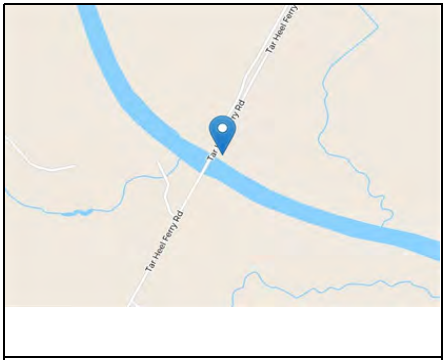
Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):



River level



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-060120	06-01-2020	14:25	8.11	6.26	-132.20	38.96	211.70	25.59	Murky	None	Yes	Sample taken from bailer on the bank of river since ISCO sampled is

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
0

WEATHER CONDITIONS	
Temperature (F):	75.00
Sky:	Sunny
Precipitation:	None
Wind (mph)	3

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-060520	06-05-2020	10:55	8.73	0.00	26.50	26.94	10.09	26.17	Very It tan	No		Grab sample, isco set and started on 060520 at 1106, for cycle 1

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="79.00"/>
Sky:	<input type="text" value="Partly Cloudy"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="8"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:	<input type="text" value="Insitu AquaTroll"/>
Velocity Meter Used:	<input type="text" value="Marsh McBirney"/>

Multi Meter ID:
 Velocity Meter ID:

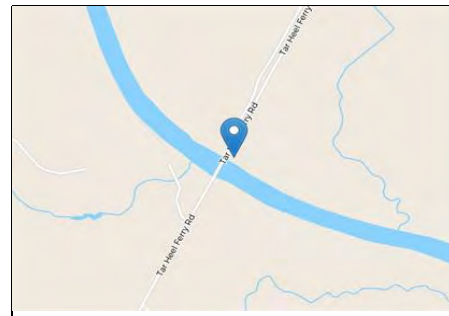
Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):



Photo after isco set



GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date: Start Date: Start Time:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-39-060820	06-08-2020	21:06	8.13	7.62	-47.00	6.12	162.47	17.93				No liquid from 6/6/20 1506 to 6/8/20 1106. Time in field notebook

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="83.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text"/>

Flow Rate:

Multi Meter Used: Multi Meter ID:
 Velocity Meter Used: Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID:
 Samplers: Event: Project Manager:
 Date: Start Date: 6/8/2020 Start Time: 22:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-83-061220	06-12-2020	08:06	7.96	8.30	27.90	6.09	0.19	14.19	Clear	None		

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="17.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="Rain"/>
Wind (mph)	<input type="text" value="7"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:	<input type="text"/>
Velocity Meter Used:	<input type="text" value="Marsh McBirney"/>

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

GPS Location (if collected)

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:

Date: Start Date: 06/12/20 Start Time: 9:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-83-061520	06/15/20	19:06	8.51	8.02	-15.80	11.25	0.11	20.92	Cloudy	None		
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="66.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="5"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:
 Date: Start Date: 06/15/20 Start Time: 20:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-83-061920	06/19/20	6:06	8.12	7.33	-10.60	29.09	0.25	22.45	Clear	No		
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	80.00
Sky:	Partly Cloudy
Precipitation:	None
Wind (mph)	3

Staff gauge water level, ft: 10.5
 Temperature, deg C: 32
 Rain, mm: 0

Flow Rate:

Multi Meter Used:	Insitu AquaTroll
Velocity Meter Used:	Marsh McBirney

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):	<input type="text"/>
Stream Velocity BOTTOM half of water column (ft/sec):	<input type="text"/>

Stream Depth TOP half of water column (ft):	<input type="text"/>
Stream Depth BOTTOM half of water column (ft):	<input type="text"/>

SW SEEP SAMPLING RECORD

Site Name:
 Location ID:
 Project Manager:

Samplers:
 Event:
 Event Type:

Date:
 Start Date: 6/19/2020 Start Time: 7:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-83-062220	06/22/20	17:06	8.39	7.23	21.10	28.25	0.07	22.58	Clear	None		
Maintenance Comment:												

Sampling Data

Method:
 Latitude:

Longitude:

Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="88.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="12"/>

Staff gauge water level, ft:

Temperature, deg C:

Rain, mm:

Flow Rate:

Multi Meter Used:	<input type="text" value="Insitu AquaTroll"/>	Multi Meter ID:	<input type="text" value="706682"/>
Velocity Meter Used:	<input type="text" value="Marsh McBirney"/>	Velocity Meter ID:	<input type="text"/>

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):

Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):

Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:

Date: Start Date: 06/22/20 Start Time: 18:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-83-062620	6/26/2020	4:06	7.64	9.29	98.80	11.41	0.07	16.79	Murky	No		
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="80.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

GPS Location (if collected)

Total Water Depth (ft):

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:
 Date: Start Date: 06/26/20 Start Time: 5:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-83-062920	6/29/2020	15:06	7.49	7.50	103.90	9.03	0.08	22.83	Murky	No		
ISCO sample date/time											Maintenance Comment:	

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="75.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="6"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name:
 Location ID:
 Project Manager:

Samplers:
 Event:
 Event Type:

Date:
 Start Date: 06/29/20 Start Time: 16:06

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-65-070220	7/2/2020	8:06	7.64	7.57	103.00	6.29	0.08	23.92	Murky	No		
ISCO sample date/time											Maintenance Comment:	

Sampling Data

Method:
 Latitude:

Longitude:

Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="75.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="6"/>

Staff gauge water level, ft:

Temperature, deg C:

Rain, mm:

Flow Rate:

Multi Meter Used:

Velocity Meter Used:

Multi Meter ID:

Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):

Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):

Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:

Date: ISCO Start Date and Time:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-24-070320	07-03-2020	07:29	6.52	7.30	111.60	3.48	0.76	25.61	Murky	No		
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="77.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="Rain"/>
Wind (mph)	<input type="text" value="4"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:

Date: ISCO Start Date and Time:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
				mg/L	mV	NTU	mS/cm	°C				
CFR-TARHEEL-24-070720	07-07-2020	07:29	7.34	7.43	85.50	13.92	0.16	25.86	Murky	No		
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="77.00"/>
Sky:	<input type="text" value="Cloudy"/>
Precipitation:	<input type="text" value="Rain"/>
Wind (mph)	<input type="text" value="4"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

SW SEEP SAMPLING RECORD

Site Name: Location ID: Project Manager:
 Samplers: Event: Event Type:

Date: ISCO Start Date and Time:

Spl ID	Spl Date	Time	pH	DO	Redox	Turbidity	Spec. Cond.	Temp.	Color	Odor	Dup	Comments
CFR-TARHEEL-24-071020	07-10-2020	11:01	6.83	7.21	163.20	58.97	0.19	26.96	Murky	No	Dup	DUP Taken of this sample
Maintenance Comment:												

Sampling Data

Method: Latitude:
 Longitude:
 Samples taken from:

SAMPLE SET			
Parameter	Bottle	Pres.	Method
PFAS	2-250 mL poly	NP	EPA 537 Modified
PFAS	250 mL poly	NP	Table 3
PFAS	250 mL poly	NP	Table 3+

ALL PARAMETERS ANALYZED
Table 3+(20)

WEATHER CONDITIONS	
Temperature (F):	<input type="text" value="92.00"/>
Sky:	<input type="text" value="Sunny"/>
Precipitation:	<input type="text" value="None"/>
Wind (mph)	<input type="text" value="4"/>

Staff gauge water level, ft:
 Temperature, deg C:
 Rain, mm:

Flow Rate:

Multi Meter Used:
 Velocity Meter Used:

Multi Meter ID:
 Velocity Meter ID:

Total Water Depth (ft):

GPS Location (if collected)

Stream Velocity TOP half of water column (ft/sec):
 Stream Velocity BOTTOM half of water column (ft/sec):

Stream Depth TOP half of water column (ft):
 Stream Depth BOTTOM half of water column (ft):

APPENDIX E

Laboratory Reports and DVM Report

**ADQM DATA REVIEW
NARRATIVE**

Site Chemours FAY – Fayetteville

Project CAP MW Sampling 2Q20

Project Reviewer Michael Aucoin, AECOM as a Chemours contractor

Sampling Dates May 6 – 8, 2020
May 12 – 14, 2020

Analytical Protocol

<u>Laboratory</u>	<u>Analytical Method</u>	<u>Parameter(s)</u>
TestAmerica - Sacramento	537 Modified	PFAS ⁽¹⁾
TestAmerica - Sacramento	Cl. Spec. Table 3 Compound SOP	Table 3+ compounds

¹ Perfluoroalkylsubstances, a list of 37 compounds including HFPO-DA.

Sample Receipt

The following items are noted for this data set:

- All samples were received in satisfactory condition and within EPA temperature guidelines on:
May 9, 2020
May 12, 2020
May 15, 2020

Data Review

Please note the following byproduct parameter names have been updated as follows:

Old CASN	New CASN	New Common Name	Previous Common Name
EVS1429	2416366-18-0	R-PSDA	Byproduct 4
EVS1430	2416366-19-1	Hydrolyzed PSDA	Byproduct 5
EVS1431	2416366-21-5	R-PSDCA	Byproduct 6
29311-67-9 (<i>unchanged</i>)	29311-67-9 (<i>unchanged</i>)	PS Acid	PFESA-BP1
749836-20-2 (<i>unchanged</i>)	749836-20-2 (<i>unchanged</i>)	Hydro-PS Acid	PFESA-BP2

The electronic data submitted for this project was reviewed via the Data Verification Module (DVM) process.

Overall the data is acceptable for use without qualification, except as noted below:

- The laboratory reported HFPO-DA from both the 537 Modified and Table 3+ analysis for several samples. The best value field was populated to report the “better” result for each sample according to the following criteria:
 - The higher concentration of two detects was reported.
 - The detected value was reported when a detect and a non-detect result were evaluated.
 - The lower reporting limit was reported when two non-detect results were evaluated.
- Some Table 3 results were qualified B and the reported results may be biased high, or false positives, due to a comparable concentration found in the associated equipment blank.
- PFBS in one sample and the associated field duplicate sample have been qualified J as estimated due to poor field duplicate precision. See the Data Verification Module (DVM) Narrative Report for which samples were qualified, the specific reasons for qualification, and potential bias in reported results.

Attachments

The DVM Narrative report is attached. The lab reports due to a large page count are stored on an AECOM network shared drive and are available to be posted on external shared drives, or on a flash drive.

Data Verification Module (DVM)

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

There are two qualifier fields in EIM:

Lab Qualifier is the qualifier assigned by the lab and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the lab qualifiers. As they are lab descriptors they are not to be used when evaluating the data.

Validation Qualifier is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the lab qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

Qualifier	Definition
B	Not detected substantially above the level reported in the laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
J	Analyte present. Reported value may not be accurate or precise.
UJ	Not detected. Reporting limit may not be accurate or precise.

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier**.

DVM Narrative Report

Site: Fayetteville

Sampling Program: CAP MW Sampling 2Q20

Validation Options: LABSTATS

Validation Reason

Contamination detected in equipment blank(s). Sample result does not differ significantly from the analyte concentration detected in the associated equipment blank(s).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-PIW-1D-050720	05/07/2020	320-60761-4	PFMOAA	17	ug/L	PQL		0.21	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-PIW-3D-050720	05/07/2020	320-60761-1	PFMOAA	5.1	ug/L	PQL		0.21	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-PW-09-050720	05/07/2020	320-60761-5	Hfpo Dimer Acid	0.0050	UG/L	PQL		0.0020	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-PW-09-050720	05/07/2020	320-60761-5	PFO2HxA	0.0048	ug/L	PQL		0.0020	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-PW-09-050720	05/07/2020	320-60761-5	PFMOAA	0.0080	ug/L	PQL		0.0050	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SMW-10-050720	05/07/2020	320-60761-7	PFMOAA	0.040	ug/L	PQL		0.0050	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SMW-11-050720	05/07/2020	320-60761-6	PFO2HxA	3.3	ug/L	PQL		0.081	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SMW-11-050720	05/07/2020	320-60761-6	PFO3OA	0.62	ug/L	PQL		0.058	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SMW-11-050720	05/07/2020	320-60761-6	PFMOAA	3.4	ug/L	PQL		0.21	B	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville

Sampling Program: CAP MW Sampling 2Q20

Validation Options: LABSTATS

Validation Reason

High relative percent difference (RPD) observed between field duplicate and parent sample. The reported result may be imprecise.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-BLADEN-1D- 050620-D	05/06/2020	320-60762-5	Perfluorobutane Sulfonic Acid	0.024	UG/L	PQL		0.0020	J	537 Modified		3535_PFC

**ADQM DATA REVIEW
NARRATIVE**

Site Chemours FAY – Fayetteville

Project CAP SW Sampling 2Q20

Project Reviewer Michael Aucoin, AECOM as a Chemours contractor

Sampling Dates May 13- 14, 2020
May 18 – 19, 2020
May 21, 2020

Analytical Protocol

<u>Laboratory</u>	<u>Analytical Method</u>	<u>Parameter(s)</u>
TestAmerica - Sacramento	537 Modified	PFAS ⁽¹⁾
Eurofins Lancaster (Lancaster)	EPA 537 Rev. 1.1 modified	PFAS ⁽¹⁾
TestAmerica - Sacramento	Cl. Spec. Table 3 Compound SOP	Table 3+ compounds
Lancaster	Cl. Spec. Table 3 Compound SOP	Table 3+ compounds

¹ Perfluoroalkylsubstances, a list of 36 or 37 compounds including HFPO-DA; TestAmerica reported NaDONA and ADONA while Lancaster reported DONA.

Sample Receipt

The following items are noted for this data set:

- All samples were received in satisfactory condition and within EPA temperature guidelines on:
May 15, 2020
May 22, 2020

Data Review

Please note the following byproduct parameter names have been updated as follows:

Old CASN	New CASN	New Common Name	Previous Common Name
EVS1429	2416366-18-0	R-PSDA	Byproduct 4
EVS1430	2416366-19-1	Hydrolyzed PSDA	Byproduct 5

EVS1431	2416366-21-5	R-PSDCA	Byproduct 6
29311-67-9 (<i>unchanged</i>)	29311-67-9 (<i>unchanged</i>)	PS Acid	PFESA-BP1
749836-20-2 (<i>unchanged</i>)	749836-20-2 (<i>unchanged</i>)	Hydro-PS Acid	PFESA-BP2

The electronic data submitted for this project was reviewed via the Data Verification Module (DVM) process.

Overall the data is acceptable for use without qualification, except as noted below:

- The laboratory reported HFPO-DA from both the 537 Modified and Table 3+ analysis for several samples. The best value field was populated to report the “better” result for each sample according to the following criteria:
 - The higher concentration of two detects was reported.
 - The detected value was reported when a detect and a non-detect result were evaluated.
 - The lower reporting limit was reported when two non-detect results were evaluated.
- Professional judgement was used to overwrite R qualifiers, indicating an unusable result, that were assigned by the DVM to non-detect results due to a very poor surrogate (isotope dilution analyte or IDA) recovery, for N-methyl perfluoro-1-octanesulfonamide and N-ethyl perfluoro-1-octanesulfonamide in two samples. Data quality is not considered affected by the laboratory if the IDA signal-to-noise ratio is greater than 10:1, which was achieved for all IDA in the samples.
- Some analytical results have been qualified J as estimated, and non-detect results qualified UJ indicating an estimated reporting limit, due to a poor recovery of a lab control spike or matrix spike; and poor lab replicate precision. See the Data Verification Module (DVM) Narrative Report for which samples were qualified, the specific reasons for qualification, and potential bias in reported results.

Attachments

The DVM Narrative report is attached. The lab reports due to a large page count are stored on an AECOM network shared drive and are available to be posted on external shared drives, or on a flash drive.

Data Verification Module (DVM)

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

There are two qualifier fields in EIM:

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If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier**.

DVM Narrative Report

Site: Fayetteville

Sampling Program: CAP SW SAMPLING 2Q20

Validation Options: LABSTATS

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit but above 10%. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-EB-PP-051920	05/19/2020	410-2520-3	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-EB-PP-051920	05/19/2020	410-2520-3	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-EB-PP-051920	05/19/2020	410-2520-3	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-EB-PP-051920	05/19/2020	410-2520-3	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	Hfpo Dimer Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	Hfpo Dimer Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	PFO4DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	PFO4DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051420	05/14/2020	410-2521-3	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051920	05/19/2020	410-2520-2	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051920	05/19/2020	410-2520-2	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051920	05/19/2020	410-2520-2	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-FB-051920	05/19/2020	410-2520-2	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit but above 10%. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	PFO4DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	PFO4DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	R-PSDCA	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	R-PSDCA	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	PS Acid	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	PS Acid	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	PS Acid	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	PS Acid	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hydro-PS Acid	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-PSDCA	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Site: Fayetteville

Sampling Program: CAP SW SAMPLING 2Q20

Validation Options: LABSTATS

Validation Reason

Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit but above 10%. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-PSDCA	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PS Acid	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PEPA	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PEPA	0.020	UG/L	PQL		0.020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PFO5DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PFO5DA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

One or more surrogates had relative percent recovery (RPR) values less than the data rejection level. The reported result is considered to be an estimated value.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	N-methyl perfluoro-1-octanesulfonamide	0.0030	ug/L	PQL		0.0030	UJ	537 Modified		3535_PFC
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	N-ethylperfluoro-1-octanesulfonamide	0.0050	UG/L	PQL		0.0050	UJ	537 Modified		3535_PFC
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	N-methyl perfluoro-1-octanesulfonamide	0.0030	ug/L	PQL		0.0030	UJ	EPA 537 Rev. 1.1 modified		3535_PFC
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	N-ethylperfluoro-1-octanesulfonamide	0.0050	UG/L	PQL		0.0050	UJ	EPA 537 Rev. 1.1 modified		3535_PFC

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values higher than the upper control limit. The reported result may be biased high.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-EVE	0.047	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-EVE	0.046	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-PSDA	0.073	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	R-PSDA	0.072	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	R-PSDA	0.016	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hydrolyzed PSDA	0.046	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hydrolyzed PSDA	0.045	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	R-EVE	0.0049	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	R-EVE	0.0055	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-RM-76-051320	05/13/2020	320-60921-1	R-PSDA	0.023	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-RM-76-051320	05/13/2020	320-60921-1	Hydrolyzed PSDA	0.0020	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-RM-76-051320	05/13/2020	320-60921-1	Hydrolyzed PSDA	0.0020	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	R-PSDA	0.017	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hydrolyzed PSDA	0.031	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hydrolyzed PSDA	0.031	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	R-EVE	0.010	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values higher than the upper control limit. The reported result may be biased high.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	R-PSDA	0.020	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	R-PSDA	0.021	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	R-EVE	0.0059	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	R-EVE	0.0056	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Quality review criteria exceeded between the REP (laboratory replicate) and parent sample. The reported result may be imprecise.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	R-PSDA	0.013	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	Hfpo Dimer Acid	17	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-RM-76-051320	05/13/2020	320-60921-1	R-PSDA	0.023	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hfpo Dimer Acid	0.014	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	Hfpo Dimer Acid	0.012	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	R-PSDA	0.017	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	R-EVE	0.0091	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PFO5DA	0.60	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PFO5DA	0.43	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	Hydro-PS Acid	0.0094	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	Hydro-PS Acid	0.0091	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PFO3OA	0.059	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	PFO3OA	0.062	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	Hfpo Dimer Acid	0.41	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-WC-1-24-051420	05/14/2020	410-2519-5	Hfpo Dimer Acid	0.39	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	PFO4DA	0.0025	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	PFO4DA	0.0024	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	PFO3OA	16	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	PFO3OA	14	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	Hydro-PS Acid	0.45	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	Hydro-PS Acid	0.43	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	Hfpo Dimer Acid	26	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	Hfpo Dimer Acid	26	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	PFO3OA	7.0	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	PFO3OA	7.2	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	Hydro-PS Acid	0.28	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-D-24-051420	05/14/2020	410-2519-4	Hydro-PS Acid	0.29	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hfpo Dimer Acid	0.018	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-TARHEEL-24-051820	05/18/2020	410-2521-4	Hfpo Dimer Acid	0.018	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	Hydro-PS Acid	0.0034	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	Hydro-PS Acid	0.0035	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	Hfpo Dimer Acid	32	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	Hfpo Dimer Acid	31	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	R-PSDCA	0.061	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	R-PSDCA	0.055	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	PS Acid	6.3	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	PS Acid	6.6	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	PFO3OA	16	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	PFO3OA	17	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	Hydro-PS Acid	1.6	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-A-24-051420	05/14/2020	410-2519-1	Hydro-PS Acid	1.6	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	Hfpo Dimer Acid	22	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method SOP	Pre-prep	Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	R-PSDCA	0.041	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	R-PSDCA	0.041	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	PS Acid	1.1	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	PS Acid	1.2	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	PFO3OA	8.5	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	PFO3OA	8.5	ug/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	Hydro-PS Acid	0.51	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-B-24-051420	05/14/2020	410-2519-2	Hydro-PS Acid	0.52	ug/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	Hfpo Dimer Acid	38	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	Hfpo Dimer Acid	39	UG/L	PQL		2.0	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	R-PSDCA	0.026	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-SEEP-C-24-051420	05/14/2020	410-2519-3	R-PSDCA	0.026	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	Hfpo Dimer Acid	9.3	UG/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	Hfpo Dimer Acid	9.6	UG/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PS Acid	0.52	UG/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PS Acid	0.45	UG/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PFO4DA	1.7	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	PFO4DA	1.6	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	Hydro-PS Acid	0.39	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OLDOF-1-24-051420	05/14/2020	410-2521-2	Hydro-PS Acid	0.32	ug/L	PQL		0.20	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	Hfpo Dimer Acid	0.089	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	Hfpo Dimer Acid	0.090	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	PS Acid	0.0095	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-OUTFALL 002-24-051420	05/14/2020	410-2521-1	PS Acid	0.0088	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Validation Reason

Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit but above the rejection limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PFO4DA	0.0021	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CAP2Q20-CFR-KINGS-051920	05/19/2020	410-2520-1	PFO4DA	0.0021	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

APPENDIX F

Supporting Calculations – Onsite Groundwater Pathway

APPENDIX F

SUPPORTING CALCULATIONS – ONSITE GROUNDWATER PATHWAY

INTRODUCTION AND OBJECTIVE

Based on the conceptual site model, the Black Creek Aquifer and the Flood Plain deposits at the river bank are the primary hydrogeologic units that are potentially in hydraulic connection with the Cape Fear River. The Cape Fear River stage is lower than the top of the Black Creek Aquifer, except during peak rainfall or flooding, indicating that the Cape Fear River is a discharge boundary for the aquifer. Onsite groundwater from the Black Creek Aquifer discharging to the Cape Fear River is therefore a potential pathway for per- and polyfluoroalkyl substances (PFAS) mass loading to the Cape Fear River. This pathway was identified as Transport Pathway Number 5 in the PFAS mass loading design in the. The objective of the supporting calculations presented in this appendix is to estimate PFAS mass loading from onsite groundwater discharge based on calculated PFAS mass flux for segments of the Black Creek Aquifer along the river frontage.

APPROACH

The PFAS mass loading from onsite groundwater discharge was estimated as follows. Supporting data are provided in Table F1:

1. The Cape Fear River frontage was divided into 8 segments (Figure F1). Each segment includes at least one groundwater monitoring well that is considered representative of the Black Creek Aquifer and that is included in the Corrective Action Plan (Geosyntec, 2019b).
2. The thickness of the Black Creek Aquifer (h) was estimated for each segment based on the segment length and the cross-sectional area of the Black Creek Aquifer, as determined by the three-dimensional hydrostratigraphic model of the Site, constructed using CTech's Earth Volumetric Studio (EVS) software (Geosyntec, 2019b):

$$h = \frac{A}{l}$$

where h is the Black Creek Aquifer thickness [ft];

A is the cross-sectional area of the Black Creek Aquifer [ft²]; and

l is the segment length [ft].

The EVS model output for each segment is presented in Figure F2.

3. The hydraulic gradient (i) was derived based on the groundwater level contour map. For each segment, the gradient was estimated based on the distance between contour lines in the vicinity of the river frontage (Figure F3):

$$i = \frac{\Delta h}{d}$$

where i is the hydraulic gradient [ft/ft];

Δh is the head difference between two contour lines [ft]; and

d is the estimated distance between the contour lines [ft]

This approach is considered to best represent the likely groundwater fluxes discharging from the Black Creek Aquifer to the Cape Fear River. Based on hydrographs from wells along the river presented in Figure F4 hydraulic gradients in the aquifer are relatively constant over time. With the exception of large changes in the river level (over ten feet), these wells respond to river level fluctuation in a subdued manner.

4. The hydraulic conductivity (K) was estimated for each segment using the results of slug tests conducted for select monitoring wells representative of the Black Creek Aquifer. The range of slug test results for LTW-02, LTW-03, and LTW-05 were used to determine the hydraulic conductivity of segments 3, 4, and 7, respectively since these wells are located in the corresponding segments. For other segments where no slug tests were performed, the range of slug test results for the entire Black Creek Aquifer were used to determine the hydraulic conductivity. In both cases, the minimum hydraulic conductivity and the geometric mean hydraulic conductivity were used to calculate a range of mass flux values. Table F2 provides the results of the slug tests and the minimum and geometric mean hydraulic conductivities for each segment.
5. The total PFAS concentration for each segment was determined based on grab samples collected from monitoring wells. For segments with two wells, the average total PFAS concentration was used. PFAS analytical results for these groundwater samples are presented in Appendix B of this report.
6. Mass flux for each segment, representing the PFAS mass loading to the river from groundwater, was determined as follows:

$$Q = lhKiCf$$

where Q is the mass flux [mg/sec];

l is the segment length [ft];

h is the Black Creek Aquifer thickness [ft];

K is the hydraulic conductivity of the aquifer [ft/sec];

i is the hydraulic gradient [ft/ft];

C is the total PFAS concentration [ng/L]; and

f is the conversion factor between cubic feet and liters and between ng and mg.

7. The total mass flux for the groundwater pathway was calculated as the sum of the individual mass flux results for the 8 segments.

POTENTIAL FUTURE METHODOLOGY MODIFCATIONS

Periodically, adjustments to this calculation methodology may be required based on changes in conditions or refinement of Site knowledge.

REFERENCES

Geosyntec, 2019. Corrective Action Plan. Chemours Fayetteville Works. December 2019.

**TABLE F1
ONSITE GROUNDWATER PATHWAY SUPPORTING DATA
Chemours Fayetteville Works, North Carolina**

Segment	Well	Sample Date	Segment Length (ft)	Cross-sectional Area of Black Creek Aquifer (ft ²) ¹	Average Thickness of Black Creek Aquifer (ft)	Groundwater Contour Elevation Difference (ft) ²	Horizontal Distance Between Contours (ft) ²	Hydraulic Gradient (ft/ft)	Minimum Hydraulic Conductivity (ft/sec) ³	Geometric Mean Hydraulic Conductivity (ft/sec) ³	Total Table 3+ (17 Compounds)			
											Total Table 3+ Concentration ⁴ (ng/L)	Average Total Table 3+ Concentration for Segment (ng/L)	Minimum Mass Discharge (mg/sec)	Geometric Mean Mass Discharge (mg/sec)
1	PIW-1S	--	1,150	13,400	11.7	20	450.7	0.044	1.8E-05	3.2E-04	--	52,000	0.016	0.28
	PIW-1D	5/7/2020									52,000			
2	PIW-3D	5/7/2020	873	11,010	12.6	20	451.5	0.044	1.8E-05	3.2E-04	42,000	42,000	0.010	0.19
3	LTW-02	5/12/2020	875	5,560	6.35	20	663.1	0.030	3.0E-04	4.0E-04	59,000	59,000	0.084	0.11
4	LTW-03	5/13/2020	729	8,340	11.4	20	663.1	0.030	2.0E-05	4.6E-05	250,000	250,000	0.036	0.082
5	PZ-22	5/8/2020	656	15,200	23.2	20	926.5	0.022	1.8E-05	3.2E-04	270,000	270,000	0.045	0.81
6	PIW-7S	5/8/2020	524	16,000	30.5	20	926.5	0.022	1.8E-05	3.2E-04	130,000	175,000	0.031	0.55
	PIW-7D	5/8/2020									220,000			
7	LTW-05	5/8/2020	887	17,200	19.4	20	1,074.5	0.019	1.8E-05	4.8E-05	290,000	290,000	0.047	0.13
8	PW-11	5/7/2020	1,990	56,300	28.3	20	1,074.5	0.019	1.8E-05	3.2E-04	190,000	190,000	0.10	1.8
Total												0.37	4.0	

Notes
 1 - Cross sectional areas were determined using the three-dimensional hydrostratigraphic model of the Site, constructed using CTech's Earth Volumetric Studio (EVS) software (Figure H2)
 2 - Vertical and horizontal distances for hydraulic gradient determined from groundwater level contour map for the May 2020 synoptic well gauging round (Figure F3).
 3 - Hydraulic conductivity values are based on slug test results presented in Table F2.
 4 - Attachment C does not include Perfluorheptanoic acid (PFHpA).
 5 - Detailed PFAS Concentrations provided in Table 10.
 ft - feet
 ft/sec - feet per second
 ft² - square feet
 NAVD 88 - North American Vertical Gradient of 1988
 ng/L - nanograms per liter
 -- - well not sampled

**TABLE F1
ONSITE GROUNDWATER PATHWAY SUPPORTING DATA
Chemours Fayetteville Works, North Carolina**

Segment	Well	Sample Date	Segment Length (ft)	Cross-sectional Area of Black Creek Aquifer (ft ²) ¹	Average Thickness of Black Creek Aquifer (ft)	Groundwater Contour Elevation Difference (ft) ²	Horizontal Distance Between Contours (ft) ²	Hydraulic Gradient (ft/ft)	Minimum Hydraulic Conductivity (ft/sec) ³	Geometric Mean Hydraulic Conductivity (ft/sec) ³	Total Table 3+ (20 Compounds)			
											Total Table 3+ Concentration ⁴ (ng/L)	Average Total Table 3+ Concentration for Segment (ng/L)	Minimum Mass Discharge (mg/sec)	Geometric Mean Mass Discharge (mg/sec)
1	PIW-1S	--	1,150	13,400	11.7	20	450.7	0.044	1.8E-05	3.2E-04	--	52,000	0.016	0.28
	PIW-1D	5/7/2020									52,000			
2	PIW-3D	5/7/2020	873	11,010	12.6	20	451.5	0.044	1.8E-05	3.2E-04	42,000	42,000	0.010	0.19
3	LTW-02	5/12/2020	875	5,560	6.35	20	663.1	0.030	3.0E-04	4.0E-04	60,000	60,000	0.085	0.11
4	LTW-03	5/13/2020	729	8,340	11.4	20	663.1	0.030	2.0E-05	4.6E-05	260,000	260,000	0.037	0.086
5	PZ-22	5/8/2020	656	15,200	23.2	20	926.5	0.022	1.8E-05	3.2E-04	270,000	270,000	0.045	0.81
6	PIW-7S	5/8/2020	524	16,000	30.5	20	926.5	0.022	1.8E-05	3.2E-04	140,000	180,000	0.032	0.56
	PIW-7D	5/8/2020									220,000			
7	LTW-05	5/8/2020	887	17,200	19.4	20	1,074.5	0.019	1.8E-05	4.8E-05	290,000	290,000	0.047	0.13
8	PW-11	5/7/2020	1,990	56,300	28.3	20	1,074.5	0.019	1.8E-05	3.2E-04	190,000	190,000	0.10	1.8
Total												0.37	4.0	

Notes
 1 - Cross sectional areas were determined using the three-dimensional hydrostratigraphic model of the Site, constructed using CTech's Earth Volumetric Studio (EVS) software (Figure H2)
 2 - Vertical and horizontal distances for hydraulic gradient determined from groundwater level contour map for the May 2020 synoptic well gauging round (Figure F3).
 3 - Hydraulic conductivity values are based on slug test results presented in Table F2.
 4 - Attachment C does not include Perfluoroheptanoic acid (PFHpA).
 5 - Detailed PFAS Concentrations provided in Table 10.
 ft - feet
 ft/sec - feet per second
 ft² - square feet
 NAVD 88 - North American Vertical Gradient of 1988
 ng/L - nanograms per liter
 -- - well not sampled

**TABLE F2
HYDRAULIC CONDUCTIVITY RESULTS
Chemours Fayetteville Works, North Carolina**

Segment	Well	Slug Test	Observed Hydraulic Conductivity (ft/sec)	Minimum Hydraulic Conductivity (ft/sec)	Geometric Mean Hydraulic Conductivity (ft/sec)
--	BCA-01	T1	2.1E-04	2.1E-04	2.8E-04
		T1*	3.7E-04		
		T2	2.2E-04		
		T2*	3.7E-04		
		T3	2.1E-04		
		T3*	3.6E-04		
		T4	2.2E-04		
T4*	3.9E-04				
--	BCA-02	T1	4.6E-04	3.1E-04	5.4E-04
		T1*	1.0E-03		
		T2	4.2E-04		
		T2*	9.1E-04		
		T3	3.4E-04		
		T3*	7.4E-04		
		T4	3.3E-04		
		T4*	7.4E-04		
		T5	3.1E-04		
T5*	6.8E-04				
--	BCA-04	T1	1.1E-03	1.1E-03	1.4E-03
		T1*	1.6E-03		
		T2	1.1E-03		
		T2*	1.7E-03		
		T3	1.1E-03		
		T3*	1.6E-03		
		T4	1.1E-03		
		T4*	1.7E-03		
		T5	1.2E-03		
T5*	2.3E-03				
3	LTW-02	T1	3.0E-04	3.0E-04	4.0E-04
		T1*	4.8E-04		
		T2	3.2E-04		
		T2*	4.9E-04		
		T3	3.1E-04		
		T3*	4.7E-04		
		T4	3.9E-04		
		T4*	5.5E-04		
		T5	3.0E-04		
T5*	4.5E-04				
4	LTW-03	T1	6.5E-05	2.00E-05	4.6E-05
		T2	2.4E-05		
		T3	2.6E-05		
		T4	2.6E-04		
		T5	2.0E-05		
7	LTW-05	T1	2.4E-05	1.8E-05	4.8E-05
		T1*	8.0E-05		
		T2	1.8E-05		
		T2*	3.5E-05		
		T4	7.4E-05		
T4*	1.3E-04				
Remaining Segments (1, 2, 5, 6, and 8)	All BCA Wells	--	--	1.8E-05	3.2E-04

Notes

* - Screen length used for aquifer thickness

BCA - Black Creek Aquifer

ft/sec - feet per second

**TABLE F3
ONSITE GROUNDWATER FLOW RATE
Chemours Fayetteville Works, North Carolina**

Segment	Cross-sectional Area of Black Creek Aquifer (ft ²)	Hydraulic Gradient (ft/ft)	Minimum Hydraulic Conductivity (ft/sec)	Geometric Mean Hydraulic Conductivity (ft/sec)	Minimum Flow Rate (L/sec)	Geometric Mean Flow Rate (L/sec)
1	13,400	0.044	1.8E-05	3.2E-04	0.30	5.40
2	11,010	0.044	1.8E-05	3.2E-04	0.25	4.43
3	5,560	0.030	3.0E-04	4.0E-04	1.42	1.88
4	8,340	0.030	2.0E-05	4.6E-05	0.14	0.33
5	15,200	0.022	1.8E-05	3.2E-04	0.17	2.98
6	16,000	0.022	1.8E-05	3.2E-04	0.18	3.14
7	17,200	0.019	1.8E-05	4.8E-05	0.16	0.43
8	56,300	0.019	1.8E-05	3.2E-04	0.53	9.5
Total					3.2	28

Notes

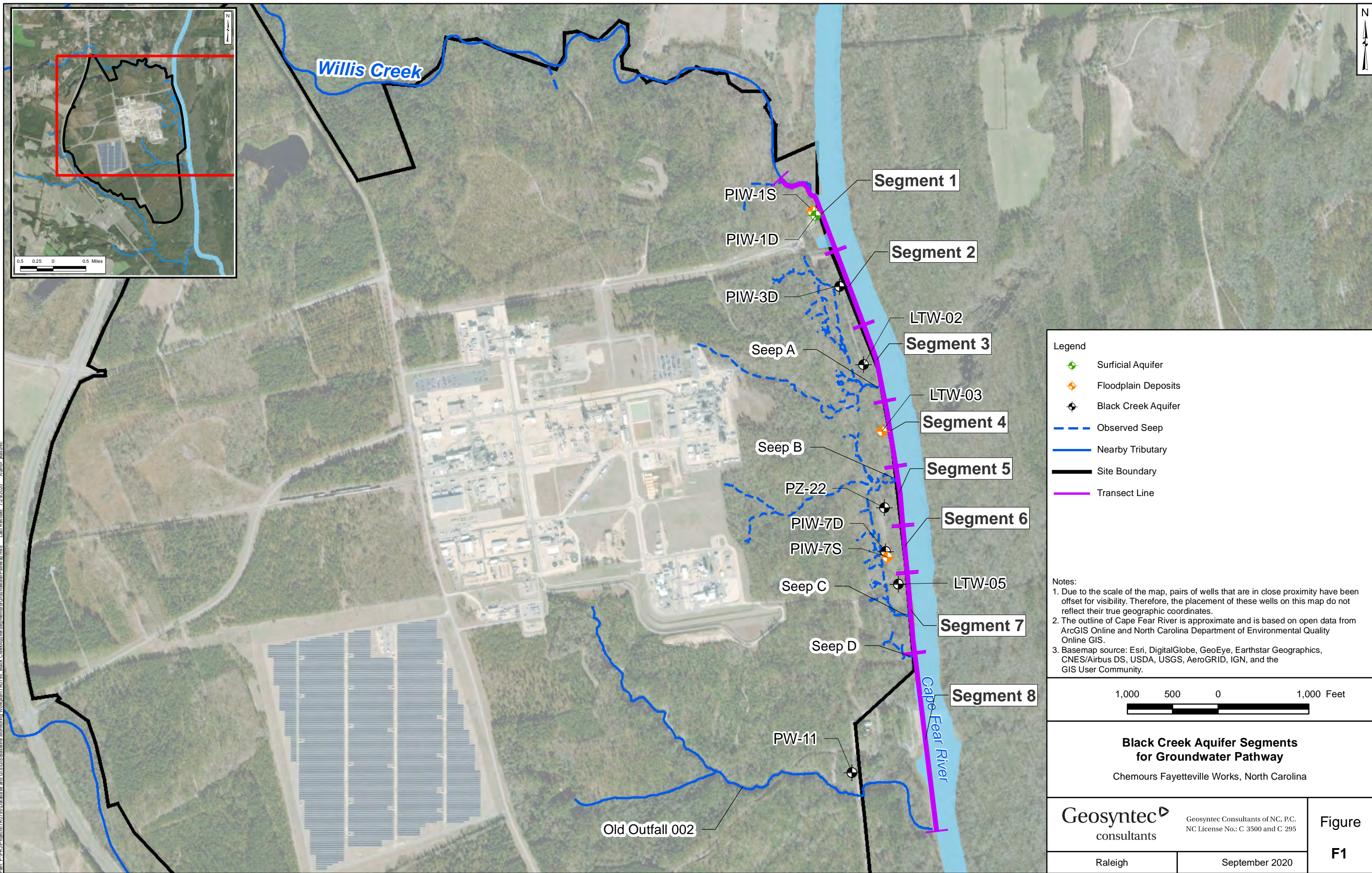
Supporting data for cross-sectional area, hydraulic gradient, and hydraulic conductivity provided in Table F1.

ft - feet

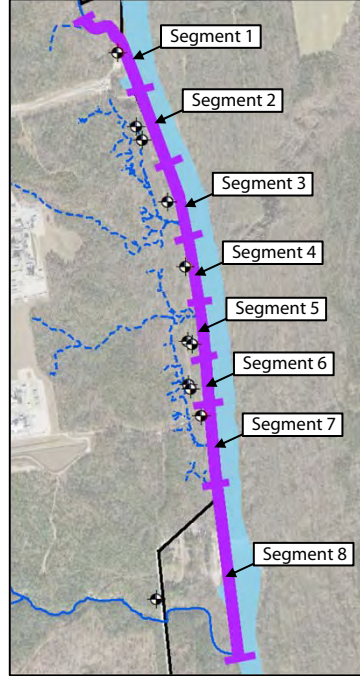
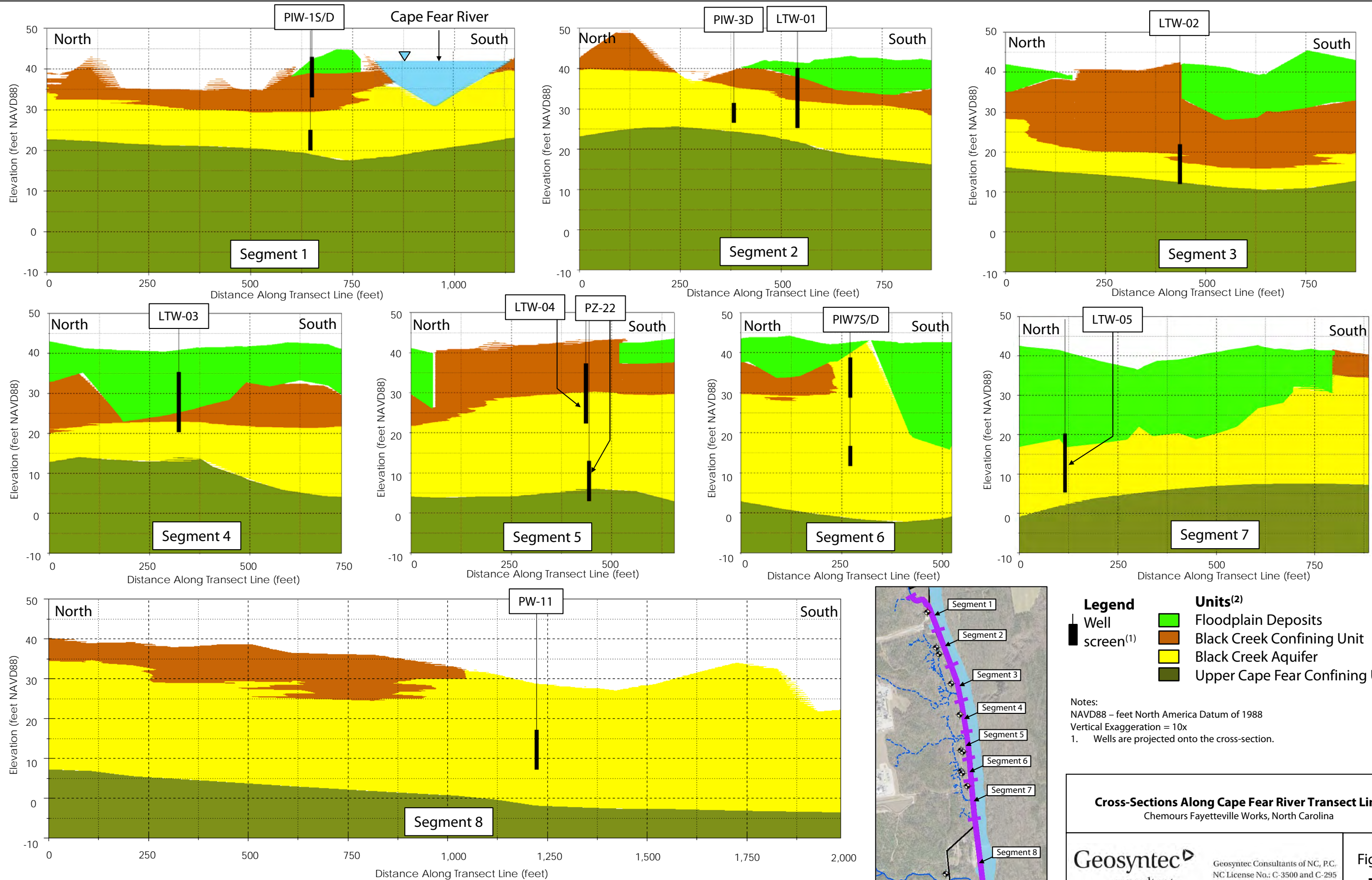
ft/sec - feet per second

ft² - square feet

L/sec - liters per second



File: P:\P\Projects\TR0725\Drawings and GIS\GIS\Baseline Monitor\Work\dm\TR0725-BlackCreekAquiferSegmentsForGroundwaterPathway.mxd Last Revised: 7/29/2020 Author: jkauric
 Projection: NAD 1983 StatePlane North Carolina FIPS 3200 Feet Units in Foot US



Legend

- Well screen⁽¹⁾

Units⁽²⁾

- Floodplain Deposits
- Black Creek Confining Unit
- Black Creek Aquifer
- Upper Cape Fear Confining Unit

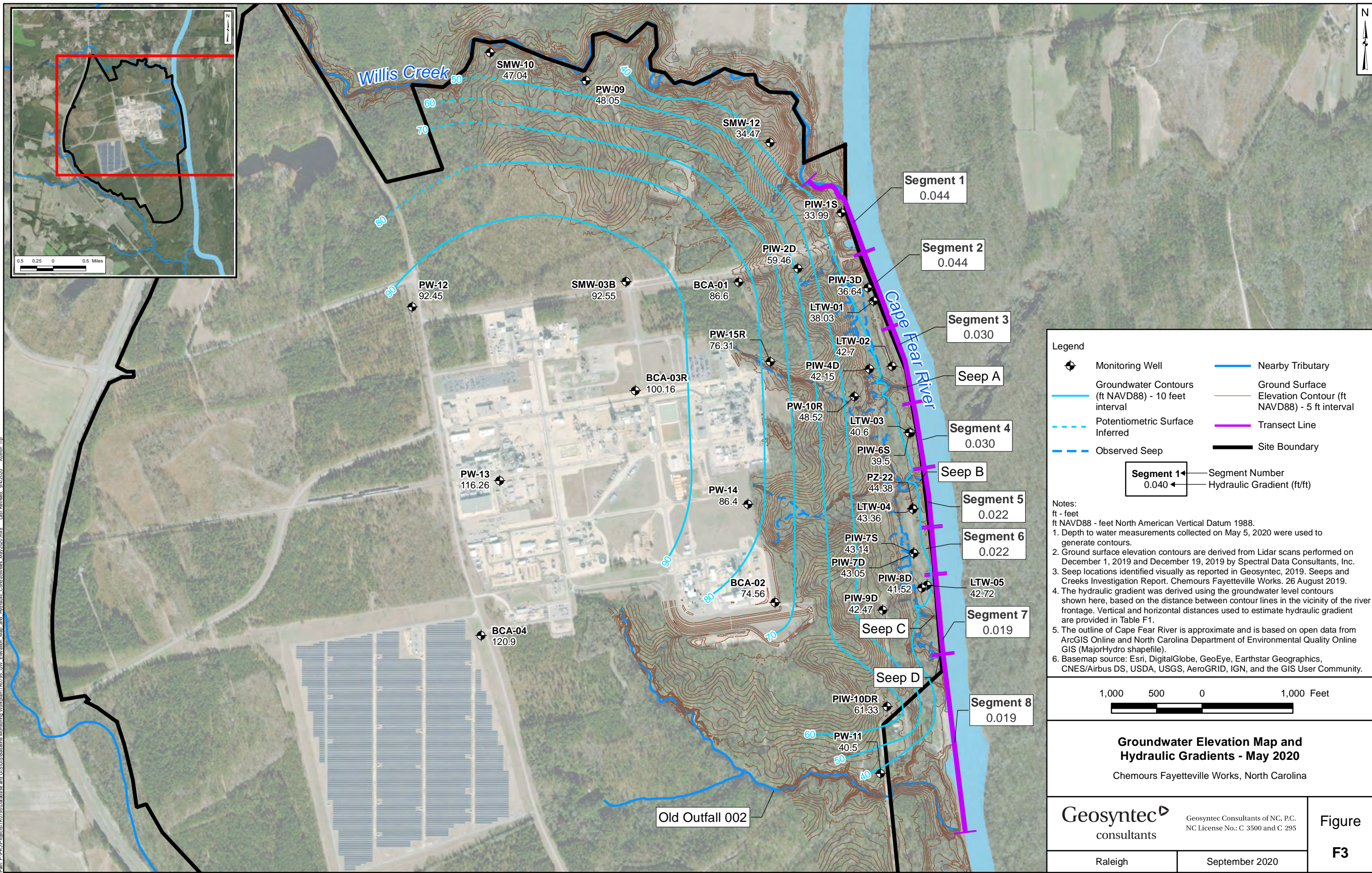
Notes:
 NAVD88 – feet North America Datum of 1988
 Vertical Exaggeration = 10x
 1. Wells are projected onto the cross-section.

Cross-Sections Along Cape Fear River Transect Line
 Chemours Fayetteville Works, North Carolina

Geosyntec consultants
 Geosyntec Consultants of NC, P.C.
 NC License No.: C-3500 and C-295

Raleigh September 2020

Figure F2

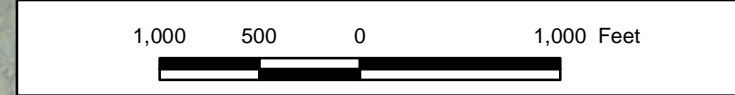


Legend

	Monitoring Well		Nearby Tributary
	Groundwater Contours (ft NAVD88) - 10 feet interval		Ground Surface Elevation Contour (ft NAVD88) - 5 ft interval
	Potentiometric Surface Inferred		Transect Line
	Observed Seep		Site Boundary

Segment 1
0.044 ← Segment Number
0.040 ← Hydraulic Gradient (ft/ft)

Notes:
 ft - feet
 ft NAVD88 - feet North American Vertical Datum 1988.
 1. Depth to water measurements collected on May 5, 2020 were used to generate contours.
 2. Ground surface elevation contours are derived from Lidar scans performed on December 1, 2019 and December 19, 2019 by Spectral Data Consultants, Inc.
 3. Seep locations identified visually as reported in Geosyntec, 2019. Seeps and Creeks Investigation Report. Chemours Fayetteville Works. 26 August 2019.
 4. The hydraulic gradient was derived using the groundwater level contours shown here, based on the distance between contour lines in the vicinity of the river frontage. Vertical and horizontal distances used to estimate hydraulic gradient are provided in Table F1.
 5. The outline of Cape Fear River is approximate and is based on open data from ArcGIS Online and North Carolina Department of Environmental Quality Online GIS (MajorHydro shapefile).
 6. Basemap source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

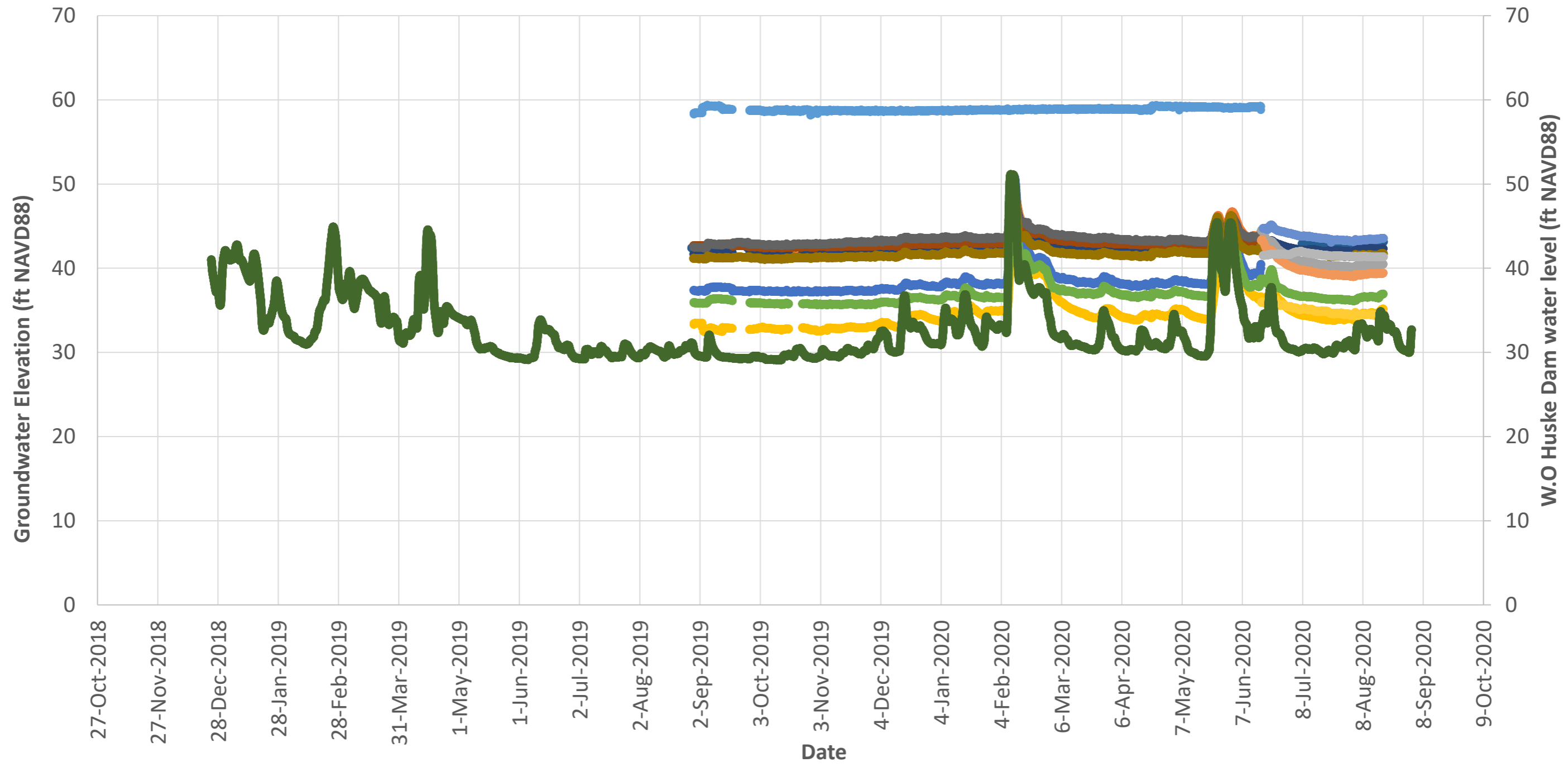


Groundwater Elevation Map and Hydraulic Gradients - May 2020
 Chemours Fayetteville Works, North Carolina

 Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295	Figure F3
	Raleigh September 2020

File: P:\P\Projects\TR0725\Database and GIS\GIS\Baseline Monitorion\Work\dm1780725_GW_Elevation_Map_and_Hydraulic_Gradients_May2020.mxd Last Revised: 9/2/2020 Author: TP
 Projection: NAD 1983 StatePlane North Carolina FIPS 3200 Feet, Units in Foot US

\\project\aleb\geosyntec.com\SS\Draw\WWW\Reel\CV\FW\Comment\34 - P16 Quarterly Reports\01 - Quarterly Reports\2020 Q2\Report\Appendices\Appendix F\Figure F4 - Hydrograph.xls\Figure F4



- LTW-01
- LTW-02
- LTW-05
- PIW-1D
- PIW-2D
- PIW-3D
- PIW-4D
- PIW-7D
- PIW-7S
- PIW-8D
- LTW-03
- LTW-04
- PIW-6S
- PW-11
- SMW-12
- W.O. Huske Dam

Notes:
 ft - feet
 NAVD88 - North American Vertical Datum of 1988

Hydrograph for Select Onsite Groundwater Monitoring Wells and W.O Huske Dam	
Chemours Fayetteville Works, North Carolina	
 Geosyntec consultants	Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295
Raleigh	September 2020
Figure F4	

APPENDIX G

Cape Fear River Mass Loading Calculations

APPENDIX G

CAPE FEAR RIVER MASS LOADING CALCULATIONS

This appendix presents the methodology for calculating three types of mass loads:

1. The total measured in-river PFAS mass load based on time-weighted concentration measurements of PFAS primarily from composite samples of Cape Fear River water and measured Cape Fear River flow volumes at the W.O. Huske Dam that are adjusted for travel times to the downstream monitoring location at the CFR-TARHEEL;
2. The total measured and estimated PFAS mass load captured by remedies implemented by Chemours; this is the load fraction that was prevented from reaching the Cape Fear River; and
3. The total measured Total PFAS mass load to the Cape Fear River defined as the sum of the measured in-river loads and the remedy prevented loads.

The following sections detailed calculation methods for each type of mass load: Total, River and Captured Mass Loads.

Total Mass Load Calculation Methodology

The Total Mass Load is calculated following Equation 1 below:

Equation 1: Total PFAS Mass Load

$$M_{CFR} = m_{CFR} + m_{Remedies}$$

where,

M_{CFR} = is the Baseline Mass Load of PFAS compounds in the Cape Fear River, including the mass load prevented from reaching the Cape Fear River by implemented remedies, measured in kg;

m_{CFR} = is the River Mass Load estimated using PFAS concentrations in samples taken in the Cape Fear River downstream of the Site where the river is well mixed and using measured river flow volumes; and

$m_{Remedies}$ = is the Captured Mass Load prevented from reaching the Cape Fear River by remedies implemented by Chemours.

The following subsections describe how the River and Captured Mass Loads are calculated.

River Mass Load Calculation Methodology

The River Mass Load is the estimated mass, in kilograms, that has reached the Cape Fear River over a period of time. The River Mass Load, m_{CFR} , is calculated using primarily composite

Appendix G

samples from the Cape Fear River and corresponding river flow volumes. The River Mass Load is calculated for a given time period following Equation 2 below:

Equation 2: River Mass Load

$$m_{CFR} = \sum_{n=1}^N \sum_{i=1}^I C_{CFR,n,i} \times V_{CFR,n}$$

where,

m_{CFR} = is the Total PFAS mass load estimated from PFAS concentrations in samples taken in the Cape Fear River downstream of the Site where the river is well mixed and measured river flow volumes;

n = represents individual time intervals during a monitoring period;

N = is the total number of time intervals in a monitoring period;

i = represents each of the PFAS constituents being evaluated;

I = represents total number of PFAS constituents included in the summation;

$C_{CFR,n,i}$ = is the measured or estimated concentration of PFAS for each baseline mass loading time interval based on samples collected from the Cape Fear River; and

$V_{CFR,n}$ = is the volume of Cape Fear River water that flowed passed the sampling point during the baseline mass loading time interval.

Calculation of Time-Weighted Average Concentrations

During a time period, multiple samples will be collected, most of them being composite samples and some potentially being grab samples. The calculation methodology outlined here considers all collected samples in the time period, including cases where samples are collected contemporaneously with each other and cases where composite sample collection events do not occur successively, as is the case with twice weekly 24 hour composite samples. To facilitate this calculation the overall time period is separated into discrete time intervals with corresponding time-weighted concentrations calculated for each interval. The time intervals are defined as the duration in time between two sampling events, where sampling events consist of:

- Beginning of a composite sample collection;
- End of a composite sample collection; or
- Collection of a grab sample.

Equation 3 shows the formula used to calculate the total flow volume for each interval.

Equation 3: Mass Load Time Interval Concentration

$$C_{CFR,n,i} = \sum_{k=1}^K C_{CFR,n,i,k} \times w_k$$

$$= \sum_{k=1}^K C_{CFR,n,i,k} \frac{\frac{t_n}{t_k}}{\sum_{k=1}^K \frac{t_n}{t_k}}$$

where,

$C_{CFR,n,i}$ = is the measured or estimated concentration of PFAS for each baseline mass loading time interval based on samples collected from the Cape Fear River;

n = represents individual time intervals during a monitoring period;

i = represents each of the PFAS constituents being evaluated;

k = represents a concentration sample considered in the mass load time interval;

K = is the total number of concentration samples considered in the mass load time interval;

$C_{CFR,n,i,k}$ = is the measured concentration of PFAS for each sample result considered in calculating the time-weighted average concentration for a mass load time interval; and

w_k = is the weighting factor calculated for and applied individually to each concentration, where,

t_n = the length of time of the mass load time interval; and

t_k = the length of time of the collected sample. For composite samples, t_k is the total length of the composite sample collection period. If $t_k < t_n$, i.e., the composite sample collection time is less than the interval time, or a grab sample was collected, then t_k is set to equal the interval time for the purposes of concentration weighting.

Calculation of Travel Time Adjusted Flow Volumes

To calculate the mass load, river flow volumes are calculated for each time interval using United States Geological Survey (USGS) reported flows at the W.O. Huske Dam. A time offset is applied to the flow data to account for travel time for the flow passing the W.O. Huske Dam to reach the CFR-TARHEEL location. River flow passing the W.O. Huske is estimated to have a travel time between 2 and 12 hours to reach CFR-TARHEEL depending on river flow (e.g., the flow rate passing W.O. Huske Dam at 8 am will arrive at CFR-TARHEEL at 11 am for a 3 hour travel time). Travel times are estimated based on the results of a numerical model of the Cape Fear River which developed a regression curve between the USGS reported gage heights at W.O. Huske Dam and travel times. Equation 4 shows the formula used to calculate the time offset. The total volume of

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flow for each mass loading interval is calculated as the sum of all individual flow measurements for an interval where each measurement multiplied by its corresponding 15-minute time duration. Equation 5 shows the formula used to calculate the total flow volume for each interval.

Equation 4: Travel time offset W.O. Huske Dam to Tar Heel Ferry Road Bridge

$$t_{offset} = 13,422 \cdot Q_{WOHD}^{-1} + 2.019$$

where,

t_{offset} = is the travel time flow in the Cape Fear River takes in hours to pass from the W.O. Huske Dam to CFR-TARHEEL based on the measured flow in the Cape Fear River at the W.O. Huske Dam;

Q_{WOHD}^{-1} = is the inverse of the measured flow rate of the Cape Fear River at W.O. Huske Dam for a given point in time in cubic feet per second (ft³/s); and

13,422 and 2.019 = are constant values, which correspond to the slope and intercept of the regression line, respectively.

Equation 5: Cape Fear River Flow Volume per Interval

$$V_{CFR,n} = \sum_{m=1}^M Q_{WOHD,n,m+t_{offset}} \times (t_{n,m} - t_{n,m-1})$$

where,

$V_{CFR,n}$ = is the volume of Cape Fear River water that flowed past the sampling point during the baseline mass loading time interval;

n = represents the baseline mass loading time intervals number for which the volume is being calculated;

m = represents a 15-minute flow measurement recorded by the USGS station at W.O. Huske Dam during a baseline mass loading time interval “ n ”;

M = the total number of 15-minute flow measurements recorded by the USGS station at W.O. Huske Dam during a baseline mass loading time interval “ n ”;

$Q_{WOHD,n,m+t_{offset}}$ = is the Cape Fear River flow rate (units of volume per time) at Tar Heel Ferry Road bridge based on the recorded values at W.O.Huske Dam and adjusted for travel time as described in Equation 4; and

$(t_{n,m} - t_{n,m-1})$ = is the length of time for the flow measurement durations (units of time reported typically in 15-minute intervals by USGS).

Complete Calculation of River Mass Load

Based on all the calculation details described above, the full expanded version of the River Mass Load calculation is shown below in Equation 6.

Equation 6: Expanded River Mass Load Calculation

$$m_{CFR} = \sum_n \sum_{i=1}^{i=1} \sum_k c_{CFR,n,i,k} \frac{t_n}{t_k} \sum_m Q_{CFRWOHD,n,m+t_{offset}} \cdot (t_{n,m} - t_{n,m-1})$$

Captured Mass Load Calculation Methodology

Remedies to be implemented by Chemours (e.g. onsite seeps interim remedies, Outfall 002 remedy) will prevent PFAS mass loads from reaching the Cape Fear River. The specific methodology for estimating the prevented mass per remedy will be developed on a per remedy basis. The goal of such calculations will be to estimate for a given time period (i.e. one quarter) the PFAS mass diverted from reaching the Cape Fear River by the remedy that would have otherwise reached the Cape Fear River.

Mass Discharge at Bladen Bluffs and Kings Bluff Intakes

This subsection presents the methodology used to calculate mass discharge at Bladen Bluffs and Kings Bluff Intakes. Total PFAS mass discharge is calculated as:

Equation 7: Mass Discharge at Bladen Bluffs and Kings Bluff Intakes

$$M_{BB/KB} = \sum_{i=1}^I M_i = \sum_{i=1}^I C_i \times Q$$

where,

$M_{BB/KB}$ = Total PFAS mass in the downstream river locations (Bladen Bluffs or Kings Bluff Intakes) measured in mass per unit time [MT⁻¹], typically mg/s;

i = represents each of the PFAS constituents being evaluated;

I = represents total number of PFAS constituents included in the summation of Total PFAS concentrations;

M_i = mass load of each PFAS constituent i with measured units in mass per unit time [MT⁻¹], typically mg/s;

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C_i = concentration of each PFAS constituent i with measured units typically in nanograms per liter; and

Q = volumetric flow rate with measured units in volume per time [L^3T^{-1}], typically liters per second (L/s). For Bladen Bluffs, the volumetric flow recorded at W.O. Huske Dam is adjusted for travel time using Equation 7.

Equation 8: Travel time offset W.O. Huske Dam to Bladen Bluffs Intake

$$t_{offset} = 8,826 \cdot Q_{WOHD}^{-1} + 1.530$$

where,

t_{offset} = is the travel time flow in the Cape Fear River takes in hours to pass from the W.O. Huske Dam to Bladen Bluffs Intake location based on the measured flow in the Cape Fear River at the W.O. Huske Dam;

Q_{WOHD}^{-1} = is the inverse of the measured flow rate of the Cape Fear River at W.O. Huske Dam for a given point in time in cubic feet per second; and

8,826 and 1.530 = are constant values, which correspond to the slope and intercept of the regression line, respectively.

* * * * *

APPENDIX H

Supporting Calculations – Direct Aerial Deposition on Cape Fear River

APPENDIX H

SUPPORTING CALCULATIONS – DIRECT AERIAL DEPOSITION ON CAPE FEAR RIVER

INTRODUCTION AND OBJECTIVE

Nine pathways (main report Table 14) were identified as potentially contributing to observed Cape Fear River per- and polyfluoroalkyl substances (PFAS) concentrations. These pathways include direct PFAS aerial deposition to the Cape Fear River. This pathway was identified as Transport Pathway Number 3 in the PFAS mass loading model. The mass discharge (mass per unit time measured in milligrams per second [mg/s]) from direct aerial deposition of PFAS to the Cape Fear River was estimated by scaling air deposition modeling results for Hexafluoropropylene oxide dimer acid (HFPO-DA; ERM, 2018). The objective of the supporting calculations presented in this appendix is to estimate aerially deposited PFAS directly on the Cape Fear River during a mass loading event.

APPROACH

HFPO-DA mass loading directly to the Cape Fear River was estimated using the reported aerial extent and deposition contours modeled for October 2018 (ERM, 2018). As depicted in (Table H1), the HFPO-DA air loading data (micrograms per meters squared [$\mu\text{g}/\text{m}^2$]) provided from ERM (2018) was used to calculate the net hourly deposition rate (nanograms per meters squared per hour [$\text{ng}/\text{m}^2/\text{hr}$]) using the Equation 1 below:

Equation 1: Net Hourly Deposition Rate

$$DR_{NET} = \frac{ML_{AIR}}{t_{AIR}}$$

where:

DR_{NET} = Net hourly deposition rate with units of mass per area per time ($\text{M L}^{-2} \text{T}^{-1}$), typically in $\text{ng}/\text{m}^2/\text{hr}$;

ML_{AIR} = Air mass loading of HFPO-DA with units of mass per area (M L^{-2}), typically $\mu\text{g}/\text{m}^2$;
and

t_{AIR} = time that air mass loading was modeled (T), typically hours.

Depositional area along the river was calculated using available data for river width and computed river lengths where deposition contours were modeled. Eighteen (18) sections (Figure H1) provided from FEMA (2007) were selected along the Cape Fear River to measure the average river width (m). As depicted in Figures H2 through H6, sections along the Cape Fear River with HFPO-DA concentrations contours ranging from 40 to 640 $\mu\text{g}/\text{m}^2$ were selected, and the length of the Cape Fear River along each of the sections was measured. The average river width calculated in Table H2 and section lengths from Figures H2 through H6 were used to calculate section areas (m^2) as described in Equation 2 below:

Equation 2: Cape Fear River Surface Area for Each Section

$$A_s = L_s \times W_s$$

where,

A_s = total spatial area over which deposition occurs between contours (L^2) in section “s”, typically in m^2 ;

s = section along the Cape Fear River with HFPO-DA concentrations contours ranging from 40 to $640 \mu\text{g}/\text{m}^2$ (five sections in total);

L = total length of river within section “s”, typically in m; and

W_s = average river width in section “s”, typically in m.

Start and end deposition rates ($\text{ng}/\text{m}^2/\text{hr}$) for each section along the Cape Fear River will be estimated based on the deposition contours and corresponding net hourly deposition rate (Table B1); a combined deposition rate for each section will be calculated as the average of the start and end deposition rates. River velocity (meters per hour [m/hr]) will be estimated from measured flow rates from USGS (2020) and the calculated river cross sectional area. Section lengths will be used to calculate HFPO-DA travel time based on the river velocities in Table B3. The combined deposition rate ($\text{ng}/\text{m}^2/\text{hr}$) from Table B1, section area (m^2), and travel time (hr) will be used to calculate mass HFPO-DA deposited (ng) as follows in **Equation 3** below.

Equation 3: Total HFPO-DA Mass Discharge to Cape Fear River

$$MD_{HFPO-DA} = \sum_{s=1}^S DR_{AVG,s} \times A_s \times t_s$$

where,

$MD_{HFPO-DA}$ = total mass discharge of HFPO-DA into the river across all sections, with units of mass per time (M T^{-1}), typically mg/s ;

s = section along the Cape Fear River with HFPO-DA concentrations contours ranging from 40 to $640 \mu\text{g}/\text{m}^2$;

S = total number of sections along the Cape Fear River with HFPO-DA concentrations contours ranging from 40 to $640 \mu\text{g}/\text{m}^2$, five in total;

$DR_{AVG,s}$ = average deposition rate based from the ERM model (2018) in section “s”, typically in $\text{ng}/\text{m}^2/\text{hr}$;

A_s = spatial area over which deposition occurs in section “s”, typically in m^2 ; and

t_s = travel time through the river length in section “s”, typically in hr.

As reported in the Corrective Action Plan (Geosyntec 2019), ten offsite groundwater seeps south of Old Outfall 002 (Seeps E to M) were identified on the west bank of the Cape Fear River south of the Site. Seeps E to M were sampled in October 2019 and Seeps E to K were sampled in March

2020 and analyzed for PFAS. The results of both sampling events indicate that Seeps E to M show an aerial deposition PFAS signature (concentrations decrease in seeps more distant from the Site). Accordingly, the offsite seep data were used to build a relationship between HFPO-DA and other PFAS compounds (Figure H7). A scaling factor (Table H4) was used to estimate mass discharge of Total PFAS compounds to the Cape Fear River as shown in Equation 4. Table H5 shows the estimated mass discharges of HFPO-DA and Total PFAS compounds to the Cape Fear River.

Equation 4: Total PFAS Mass Discharge to Cape Fear River

$$MD_{PFAS} = MD_{HFPO-DA} \times R$$

where,

MD_{PFAS} = total mass discharge of PFAS compounds into the river, typically in mg/s;

$MD_{HFPO-DA}$ = total mass discharge of HFPO-DA into the river, typically in mg/s; and

R = average ratio of measured HFPO-DA to PFAS compounds across the nine offsite seeps.

REFERENCES

ERM, 2018. Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

Federal Emergency Management Agency (FEMA), 2007. "A Report of Flood Hazards in Bladen County, North Carolina and Incorporated Areas." (2007) Flood Insurance Study, Federal Emergency Management Agency. North Carolina Flood Risk Information System Engineering Model. Cape Fear River ADJ. HEC-RAS 5.0.7.

Geosyntec, 2019. Corrective Action Plan. Chemours Fayetteville Works. December 31, 2019.

USGS, 2020. USGS 02105500 Cape Fear River at Wilm O Huske Lock near Tarheel, NC. Available at: https://waterdata.usgs.gov/nwis/uv?site_no=02105500

TABLE H1
NET HOURLY HFPO-DA DEPOSITION RATE
Chemours Fayetteville Works, North Carolina

Air Loading ($\mu\text{g}/\text{m}^2$)	Air Loading (ng/m^2)	Time (year)	Time (hour)	Net Hourly Deposition Rate ($\text{ng}/\text{m}^2/\text{hr}$)
40	40,000	1	8,760	4.6
80	80,000	1	8,760	9.1
160	160,000	1	8,760	18.3
320	320,000	1	8,760	36.5
640	640,000	1	8,760	73.1

Notes:

1. HFPO-DA model values are from ERM (2018). Modeling Report: HFPO-DA Atmospheric Deposition and Screening

Groundwater Effects. 27 April 2018.

2. Air deposition contours are shown in Figures J-2 through J-6.

3. Net hourly deposition rates are used in the mass discharge calculations, Table J5.

Abbreviations:

HFPO-DA: Hexafluoropropylene oxide dimer acid; or dimer acid.

$\mu\text{g}/\text{m}^2$: micrograms per meter square.

ng/L : nanograms per liter.

$\text{ng}/\text{m}^2/\text{hr}$: nanograms per meter square per hour.

TABLE H2
ESTIMATION OF CAPE FEAR RIVER AVERAGE WIDTH
Chemours Fayetteville Works, North Carolina

Cross section ID*	HEC-RAS Model Point ID**	Easting (ft)	Northing (ft)	Cape Fear River Width at Cross Section (m)
619506	0	2,052,368	399,949	84
	1	2,052,366	399,949	
	2	2,052,334	399,946	
	3	2,052,254	399,938	
	4	2,052,155	399,928	
	5	2,052,095	399,922	
614224	6	2,052,093	399,922	163
	18	2,053,460	394,655	
	19	2,053,436	394,649	
	20	2,053,281	394,613	
	21	2,053,277	394,612	
	22	2,053,180	394,590	
	23	2,053,079	394,566	
	24	2,052,977	394,543	
616535	25	2,052,949	394,536	91
	26	2,052,924	394,531	
	7	2,053,113	396,901	
	8	2,053,070	396,895	
	9	2,052,990	396,886	
613542	10	2,052,891	396,874	89
	11	2,052,831	396,867	
	12	2,052,815	396,865	
	21	2,053,373	393,937	
	22	2,053,349	393,931	
	23	2,053,271	393,913	
614517	24	2,053,174	393,891	76***
	25	2,053,115	393,877	
	26	2,053,081	393,869	
	13	2,053,209	394,897	
610240	14	2,053,130	394,878	60***
	15	2,053,032	394,854	
	16	2,052,974	394,840	
	17	2,052,961	394,837	
612082	31	2,053,769	390,652	72
	32	2,053,729	390,645	
	33	2,053,643	390,630	
	34	2,053,602	390,623	
	35	2,053,572	390,618	
606667	27	2,053,560	392,482	101
	28	2,053,430	392,455	
	29	2,053,370	392,443	
	30	2,053,322	392,433	
	1271	2,054,059	387,249	
	1272	2,054,022	387,215	
	1273	2,053,995	387,190	
1274	2,053,946	387,145		
1275	2,053,861	387,067		
1276	2,053,812	387,023		
1277	2,053,801	387,012		
1278	2,053,727	386,945		

TABLE H2
ESTIMATION OF CAPE FEAR RIVER AVERAGE WIDTH
Chemours Fayetteville Works, North Carolina

Cross section ID*	HEC-RAS Model Point ID**	Easting (ft)	Northing (ft)	Cape Fear River Width at Cross Section (m)
608468	1193	2,053,950	388,876	107
	1194	2,053,902	388,874	
	1195	2,053,843	388,871	
	1196	2,053,717	388,866	
	1197	2,053,659	388,864	
	1198	2,053,650	388,863	
	1199	2,053,600	388,861	
606667	1271	2,054,059	387,249	101
	1272	2,054,022	387,215	
	1273	2,053,995	387,190	
	1274	2,053,946	387,145	
	1275	2,053,861	387,067	
	1276	2,053,812	387,023	
	1277	2,053,801	387,012	
1278	2,053,727	386,945		
600052	1498	2,057,643	382,269	87
	1499	2,057,610	382,246	
	1500	2,057,556	382,208	
	1501	2,057,461	382,141	
	1502	2,057,408	382,103	
	1503	2,057,398	382,096	
604474	1331	2,055,879	386,154	95
	1332	2,055,812	386,120	
	1333	2,055,753	386,090	
	1334	2,055,647	386,037	
	1335	2,055,588	386,007	
	1336	2,055,566	385,996	
597968	1565	2,058,901	380,593	116
	1566	2,058,830	380,549	
	1567	2,058,774	380,515	
	1568	2,058,675	380,453	
	1569	2,058,619	380,418	
602061	1406	2,056,453	383,857	104
	1407	2,056,356	383,798	
	1408	2,056,301	383,763	
	1409	2,056,202	383,702	
	1410	2,056,146	383,667	
	1411	2,056,113	383,647	
594185	1717	2,060,560	377,186	100
	1718	2,060,482	377,157	
	1719	2,060,421	377,134	
	1720	2,060,312	377,094	
	1721	2,060,250	377,071	
596259	1644	2,059,549	379,003	84
	1645	2,059,534	378,996	
	1646	2,059,474	378,970	
	1647	2,059,368	378,923	
	1648	2,059,308	378,896	
	1649	2,059,275	378,881	
587968	2042	2,061,270	371,304	93
	2043	2,061,246	371,290	
	2044	2,061,179	371,252	
	2045	2,061,092	371,203	
	2046	2,061,042	371,174	
2047	2,060,966	371,131		

**TABLE H2
ESTIMATION OF CAPE FEAR RIVER AVERAGE WIDTH
Chemours Fayetteville Works, North Carolina**

Cross section ID*	HEC-RAS Model Point ID**	Easting (ft)	Northing (ft)	Cape Fear River Width at Cross Section (m)
591595	1825	2,060,295	374,663	91
	1826	2,060,270	374,661	
	1827	2,060,201	374,658	
	1828	2,060,079	374,653	
	1829	2,060,010	374,650	
	1830	2,059,995	374,649	
590322	1931	2,060,424	373,459	100
	1932	2,060,378	373,442	
	1933	2,060,372	373,439	
	1934	2,060,311	373,416	
	1935	2,060,202	373,376	
	1936	2,060,140	373,353	
	1937	2,060,097	373,336	
Average River Cross Section Width (m) =				99

Notes:

*Cross sections locations are shown in Figure J-1.

**Model point ID: are locations with northing, easting, and river depths provided in the HEC-RAS model.

1. Data provided from: "A Report of Flood Hazards in Bladen County, North Carolina and Incorporated Areas." RiverADJ. HEC-RAS 5.0.7. (2007) Flood Insurance Study, Federal Emergency Management Agency. North Carolina Flood Risk Information System Engineering Model. Cape Fear RiverADJ. HEC-RAS 5.0.7.

2. The horizontal datum is North American Datum 1983 projected into North Carolina East State Plane (3200).

3. The vertical datum is North American Datum 1988 projected into North Carolina East State Plane (3200).

Abbreviations:

ft: feet

m: meter

**SUMMARY OF FLOW IN CAPE FEAR RIVER AT WILM O'HUSKE LOCK NR TARHEEL, NC
Chemours Fayetteville Works, North Carolina**

Date	USGS Reported Average Discharge ¹ (cfs)	USGS Reported Average Gage Height ¹ (ft)	USGS Reported Total Precipitation ^{1,2} (inches)	USGS Reported Average Discharge (L/s)	Measured River Width (ft)	Estimated River Depth (ft)	Z Value ³	Calculated Total Cross Sectional Area (ft ²)	Calculated River Velocity (ft/s)
5/13/2020	1,639	1.83	0.00	46,416	323	18	2	5,258	0.3
5/14/2020	1,412	1.65	0.00	39,997	323	18	2	5,213	0.3
Average River Velocity:									0.3

Notes:

- 1) Measurements are recorded from the USGS flow gauging station at the W.O. Huske Dam, ID 02105500 (USGS, 2020).
- 2) The minimum value recorded by a USGS raingage is 0.01 inches. Anything detected below this threshold is recorded as 0 inches.
- 3) Z value is an estimated factor used to compute total cross sectional area from river depth.

cfs: cubic feet per second.

ft: feet.

ft²: feet squared.

ft/s: feet per second

L/s: Liter per second.

mph: miles per hour.

USGS - United States Geological Survey.

**TABLE H4
RATIO OF OTHER PFAS COMPOUNDS TO HFPO-DA
Chemours Fayetteville Works, North Carolina**

Location ID	SEEP-E	SEEP-E	SEEP-F	SEEP-F	SEEP-G	SEEP-G	SEEP-H
Field Sample ID	SEEP-E-0930	Seep E-030420	SEEP-F-0923	Seep F-030420	SEEP-G-0911	Seep G-030420	SEEP-H-0905
Sample Date	10/22/2019	3/4/2020	10/22/2019	3/4/2020	10/22/2019	3/4/2020	10/22/2019
QA/QC	--	--	--	--	--	--	--
Sample Delivery Group (SDG)	320-55576-1	2091227	320-55576-1	2091227	320-55576-1	2091227	320-55576-1
Lab Sample ID	320-55576-1	1274949	320-55576-2	1274953	320-55576-3	1274957	320-55576-4
Table 3+ SOP (ng/L)							
Hfpo Dimer Acid	1,200	950	1,100	1,100	700	730	550
PFMOAA	480 J	390	900	730	190	220	140
PFO2HxA	800	470	810	640	470	410	350
PFO3OA	170	83	130	110	57	56	28
PFO4DA	83	17	7.3	9.1	9	7.9	<2
PFO5DA	46	<2	<2	<2	<2	<2	<2
PMPA	2,300	1,800	2,800	2,100	1,500	1,500	1,200
PEPA	710	600	870	710	490	520	360
PS Acid (Formerly PFESA-BP1)	<2	<2	<2	<2	<2	<2	<2
Hydro-PS Acid (Formerly PFESA-BP2)	90	24	9.6	10	22	11	16
R-PSDA (Formerly Byproduct 4)	220 J	53 J	92	68 J	79 J	44 J	39 J
Hydrolyzed PSDA (Formerly Byproduct 5)	2.1 J	<2	<2.9	<2	<2	<2	<2
R-PSDCA (Formerly Byproduct 6)	<2	<2	<2	<2	<2	<2	<2
NVHOS	15	6	12	8	5.4	5	4.3
EVE Acid	<2	<2	<2	<2	<2	<2	<2
Hydro-EVE Acid	7.7	2.3	2	<2	<2	<2	<2
R-EVE	76	20	60	40	39	28	21 J
PES	<2	<2	<2.3	<2	<2	<2	<2
PFECA B	<2	<2	<3	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 Compounds) (ng/L)	5,900	4,300	6,600	5,400	3,400	3,500	2,600
Total Table 3+ (20 Compounds) (ng/L)	6,200	4,400	6,800	5,500	3,600	3,500	2,700
Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.9	4.5	6.0	4.9	4.9	4.8	4.7
Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	5.2	4.6	6.2	5.0	5.1	4.8	4.9
Average Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.87						
Average Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	5.03						

**TABLE H4
RATIO OF OTHER PFAS COMPOUNDS TO HFPO-DA
Chemours Fayetteville Works, North Carolina**

Location ID	SEEP-H	SEEP-I	SEEP-I	SEEP-J	SEEP-J	SEEP-K	SEEP-K
Field Sample ID	Seep H-030420	SEEP-I-0856	Seep I-030420	SEEP-J-0843	Seep J-030420	SEEP-K-0835	Seep K-030420
Sample Date	3/4/2020	10/22/2019	3/4/2020	10/22/2019	3/4/2020	10/22/2019	3/4/2020
QA/QC	--	--	--	--	--	--	--
Sample Delivery Group (SDG)	2091227	320-55576-1	2091227	320-55576-1	2091227	320-55576-1	2091227
Lab Sample ID	1274961	320-55576-5	1274965	320-55576-6	1274969	320-55576-7	1274973
Table 3+ SOP (ng/L)							
Hfpo Dimer Acid	540	570	470	580	250	640	490
PFMOAA	180	130	200	180 J	140	160	210
PFO2HxA	330	300	280	350 J	130	320	230
PFO3OA	30	17	18	120 J	16	41	28
PFO4DA	<2	<2	<2	58	4.7	11	5
PFO5DA	<2	<2	<2	20 J	2.2	4.8	<2
PMPA	1,100	1,200	1,100	810 J	660	1,300	1,000
PEPA	360	390	390	260	200	400	350
PS Acid (Formerly PFESA-BP1)	<2	<2	<2	<2	<2	<2	<2
Hydro-PS Acid (Formerly PFESA-BP2)	9.3	12	12	37	6.9	70	16
R-PSDA (Formerly Byproduct 4)	30 J	53 J	36	110 J	23	130 J	49
Hydrolyzed PSDA (Formerly Byproduct 5)	<2	<2	<2	<2	<2	<2	<2
R-PSDCA (Formerly Byproduct 6)	<2	<2	<2	<2	<2	<2	<2
NVHOS	3.7	4.4	4.5	8.1 J	2.8	5.2	4.7
EVE Acid	<2	<2	<2	<2	<2	<2	<2
Hydro-EVE Acid	<2	<2	<2	2.7	<2	3.5	<2
R-EVE	20	23 J	17	16	13	46 J	25
PES	<2	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 Compounds) (ng/L)	2,600	2,600	2,500	2,400	1,400	3,000	2,300
Total Table 3+ (20 Compounds) (ng/L)	2,600	2,700	2,500	2,600	1,400	3,100	2,400
Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.8	4.6	5.3	4.1	5.6	4.7	4.7
Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	4.8	4.7	5.3	4.5	5.6	4.8	4.9
Average Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.87						
Average Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	5.03						

TABLE H4
RATIO OF OTHER PFAS COMPOUNDS TO HFPO-DA
Chemours Fayetteville Works, North Carolina

Location ID	SEEP-L	SEEP-M
Field Sample ID	SEEP-L-0825	SEEP-M-0818
Sample Date	10/22/2019	10/22/2019
QA/QC	--	--
Sample Delivery Group (SDG)	320-55576-1	320-55576-1
Lab Sample ID	320-55576-8	320-55576-9
Table 3+ SOP (ng/L)		
Hfpo Dimer Acid	520	570
PFMOAA	130	100
PFO2HxA	220	190
PFO3OA	18	15
PFO4DA	2.7	<2
PFO5DA	<2	<2
PMPA	1,200	1,300
PEPA	350	410
PS Acid (Formerly PFESA-BP1)	<2	<2
Hydro-PS Acid (Formerly PFESA-BP2)	44	28
R-PSDA (Formerly Byproduct 4)	120 J	78 J
Hydrolyzed PSDA (Formerly Byproduct 5)	<2	<2
R-PSDCA (Formerly Byproduct 6)	<2	<2
NVHOS	5.9	5.6
EVE Acid	<2	<2
Hydro-EVE Acid	<2	<2
R-EVE	44 J	26 J
PES	<2	<2
PFECA B	<2	<2
PFECA-G	<2	<2
Total Table 3+ (17 Compounds) (ng/L)	2,500	2,600
Total Table 3+ (20 Compounds) (ng/L)	2,700	2,700
Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.8	4.6
Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	5.2	4.7
Average Ratio of Total Table 3+ (17 Compounds) to HFPO-DA	4.87	
Average Ratio of Total Table 3+ (20 Compounds) to HFPO-DA	5.03	

Notes:**Bold** - Analyte detected above associated reporting limit

J - Analyte detected. Reported value may not be accurate or precise

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SOP - standard operating procedure

< - Analyte not detected above associated reporting limit.

**TABLE H5
CALCULATION OF HFPO-DA DEPOSITED MASS AND MASS FLUX
Chemours Fayetteville Works, North Carolina**

Section ¹	Depositon Rate at Section Start (µg/m ² /yr)	Depositon Rate at Section End (µg/m ² /yr)	Start Deposition Rate ² (ng/m ² /hr)	End Deposition Rate ² (ng/m ² /hr)	Average Deposition Rate (ng/m ² /hr)	Section Distance ³ (m)	Average River Width ⁴ (m)	Section Area (m ²)	Estimated River Velocity ⁵ (ft/s)	Estimated River Velocity (m/hr)	Estimated Travel Time (hr)	Calculated Mass Deposited (mg)	Calculated Mass Discharge (mg/s)
Center	160	160	18.3	18.3	18	903	98.6	89,028	0.3	319.7	2.8	4.6	0.00045
Up River Section 1	160	80	18.3	9.1	14	490	98.6	48,300	0.3	319.7	1.5	1.0	0.00018
Up River Section 2	80	40	9.1	4.6	6.8	909	98.6	89,570	0.3	319.7	2.8	1.7	0.00017
Down River Section 1	160	80	18.3	9.1	14	586	98.6	57,813	0.3	319.7	1.8	1.5	0.00022
Down River Section 2	80	40	9.1	4.6	6.8	565	98.6	55,672	0.3	319.7	1.8	0.7	0.00011
Total HFPO-DA:												0.0011	
Total Table 3+ (17 Compounds):												0.01	
Total Table 3+ (20 Compounds):												0.01	

Notes:

¹River sections for air deposition calculations are shown in Figures H2 through H6.

²Based on model deposition rate, Table H1.

³Section distances are measured in GIS, presented in Figures H2 through H6.

⁴Calculations for the average river width are presented in Table H2.

⁵River velocity is calculated as an average from USGS discharge data between May 13 to 14, 2020, Table H3.

HFPO-DA: Hexafluoropropylene oxide dimer acid; or dimer acid

µg/m²/yr: micrograms per meter square per year

ft/s: feet per second

hr: hours

m/hr: meters per hour

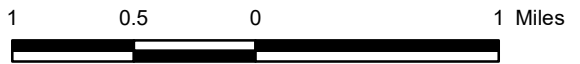
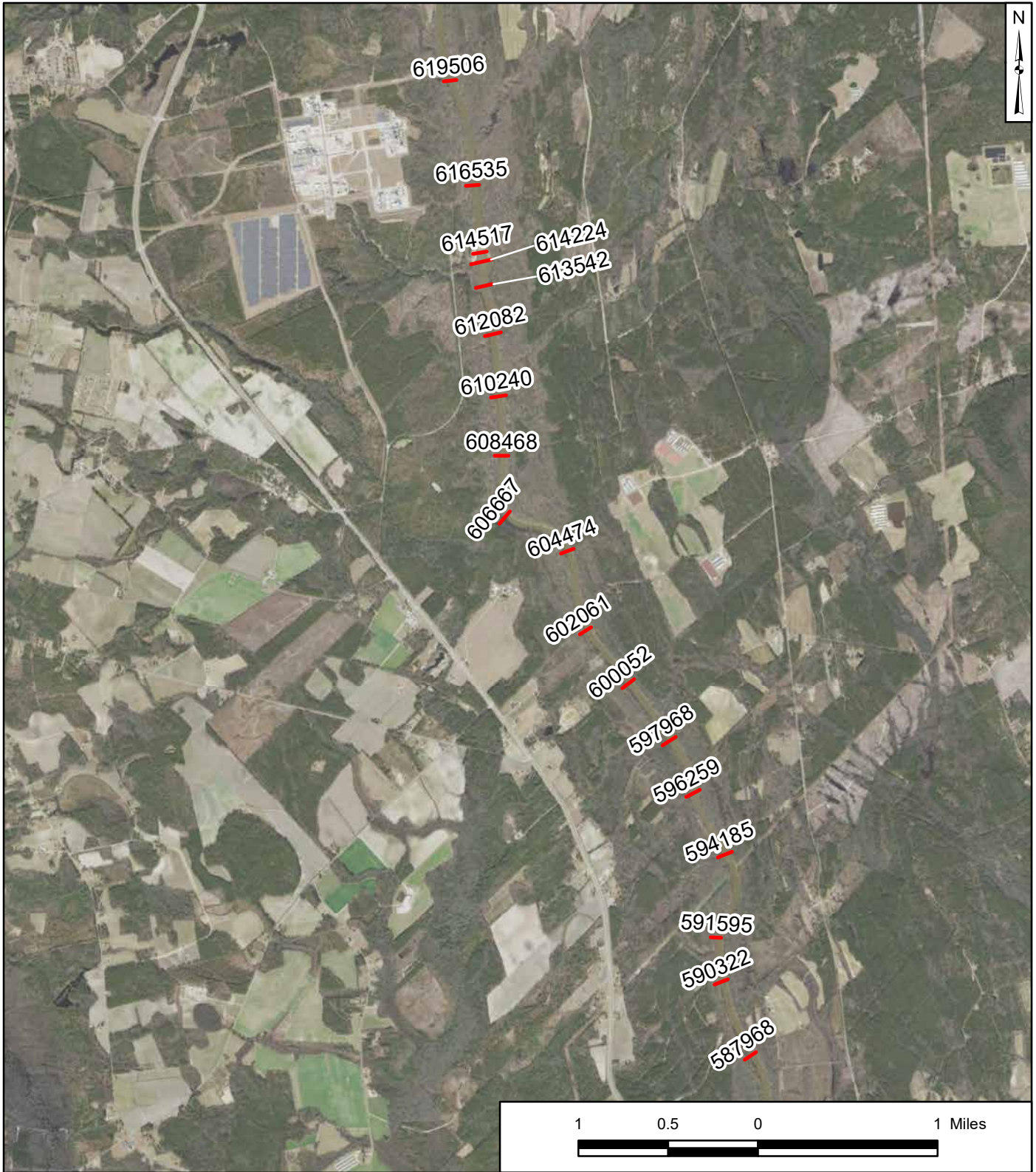
m: meter

m²: meter square

mg/s: milligrams per second

mg: milligrams

ng/m²/hr: nanograms per meter square per hour



Legend

Cross Section

Notes:

1. Cape Fear River cross section locations obtained from "A Report of Flood Hazards in Bladen County, North Carolina and Incorporated Areas." (2007) Flood Insurance Study, Federal Emergency Management Agency. North Carolina Flood Risk Information System Engineering Model. Cape Fear RiverADJ. HEC-RAS 5.0.7.
2. Cross sections used for calculation of average river widths for calculation of aerial mass loading.

Cape Fear River Cross Sections Locations

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

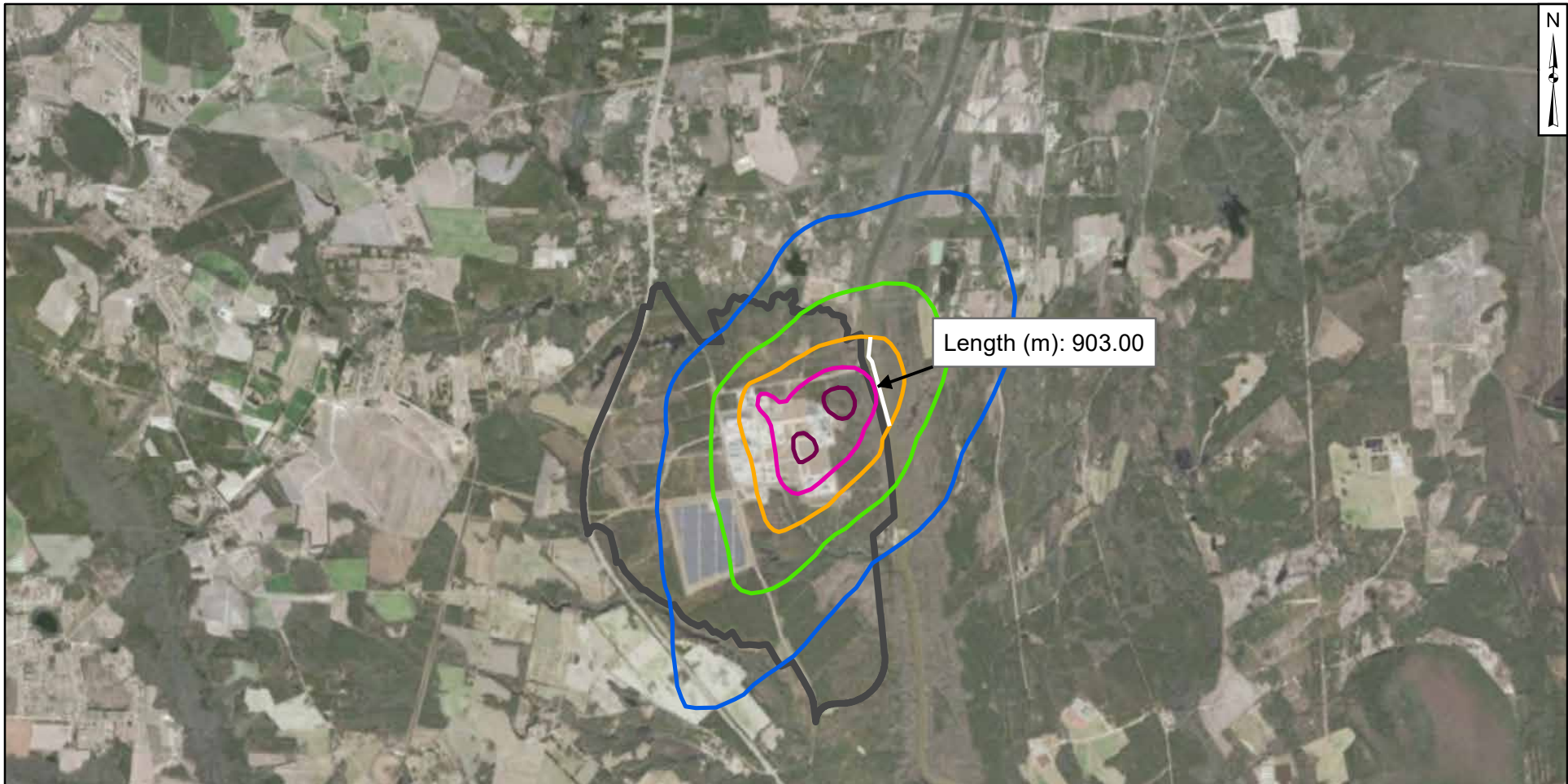
Geosyntec Consultants of NC, P.C.
NC License No.: C 3500 and C 295

Figure

H1

Raleigh, NC

September 2020



Legend

— Site Boundary

Modeled Deposition Contours, October 2018 Scenario

- 40 µg/m²/yr
- 80 µg/m²/yr
- 160 µg/m²/yr
- 320 µg/m²/yr
- 640 µg/m²/yr

Notes:

HFPO-DA - Hexafluoropropylene oxide dimer acid; or dimer acid; or GenX

µg / m²/yr - micrograms per square meter per year

HFPO-DA deposition model contours for October 2018 from ERM, 2018, Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

1 0.5 0 1 Miles



Measurement of Cape Fear River Length at Center Section

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

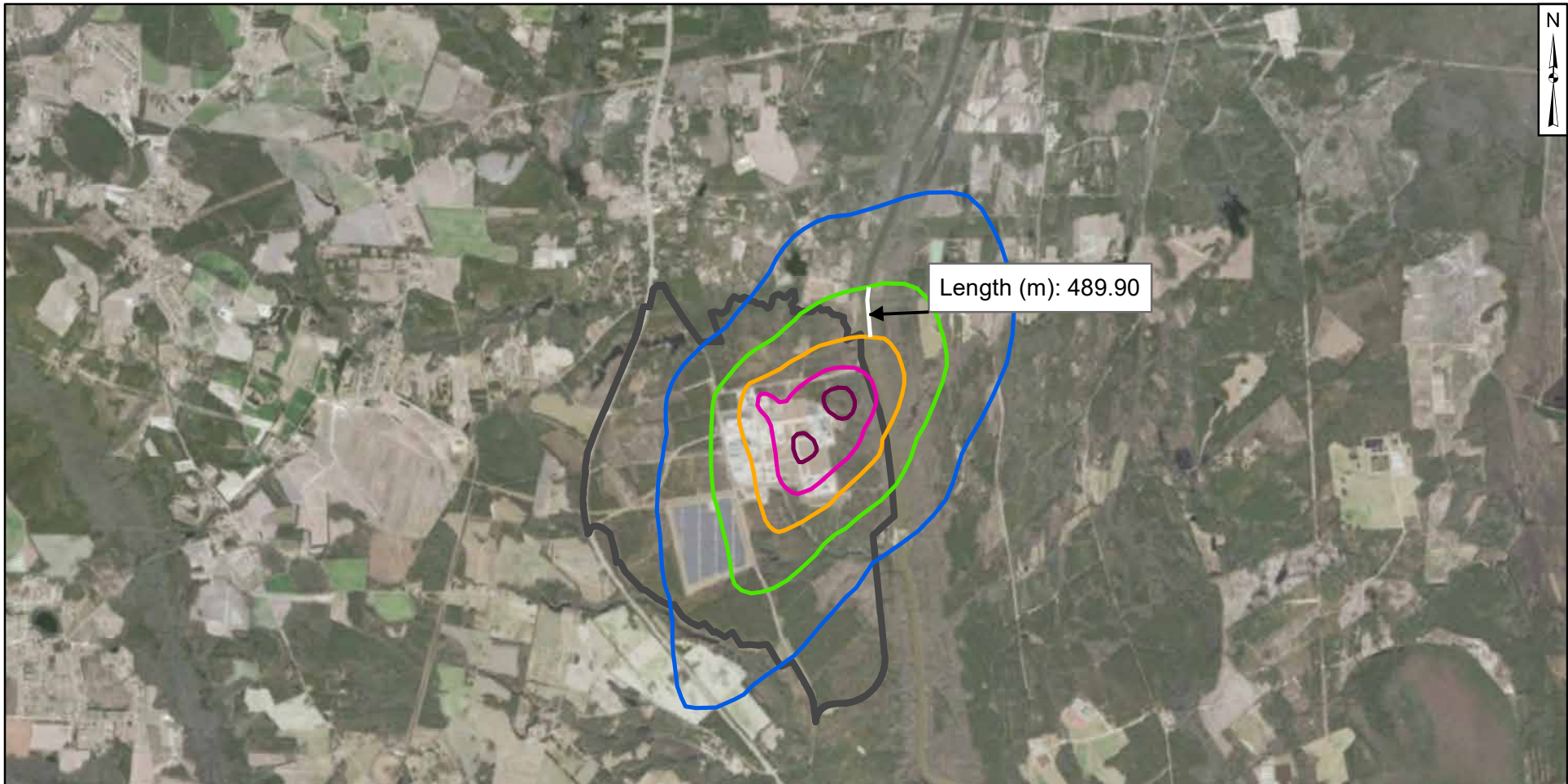
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Figure

H2

Raleigh, NC

September 2020



Legend

— Site Boundary

Modeled Deposition Contours, October 2018 Scenario

- 40 µg/m²/yr
- 80 µg/m²/yr
- 160 µg/m²/yr
- 320 µg/m²/yr
- 640 µg/m²/yr

Notes:

HFPO-DA - Hexafluoropropylene oxide dimer acid; or dimer acid; or GenX

µg /m²/yr - micrograms per square meter per year

HFPO-DA deposition model contours for October 2018 from ERM, 2018, Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

1 0.5 0 1 Miles



Measurement of Cape Fear River Length at Up-River Section 1

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

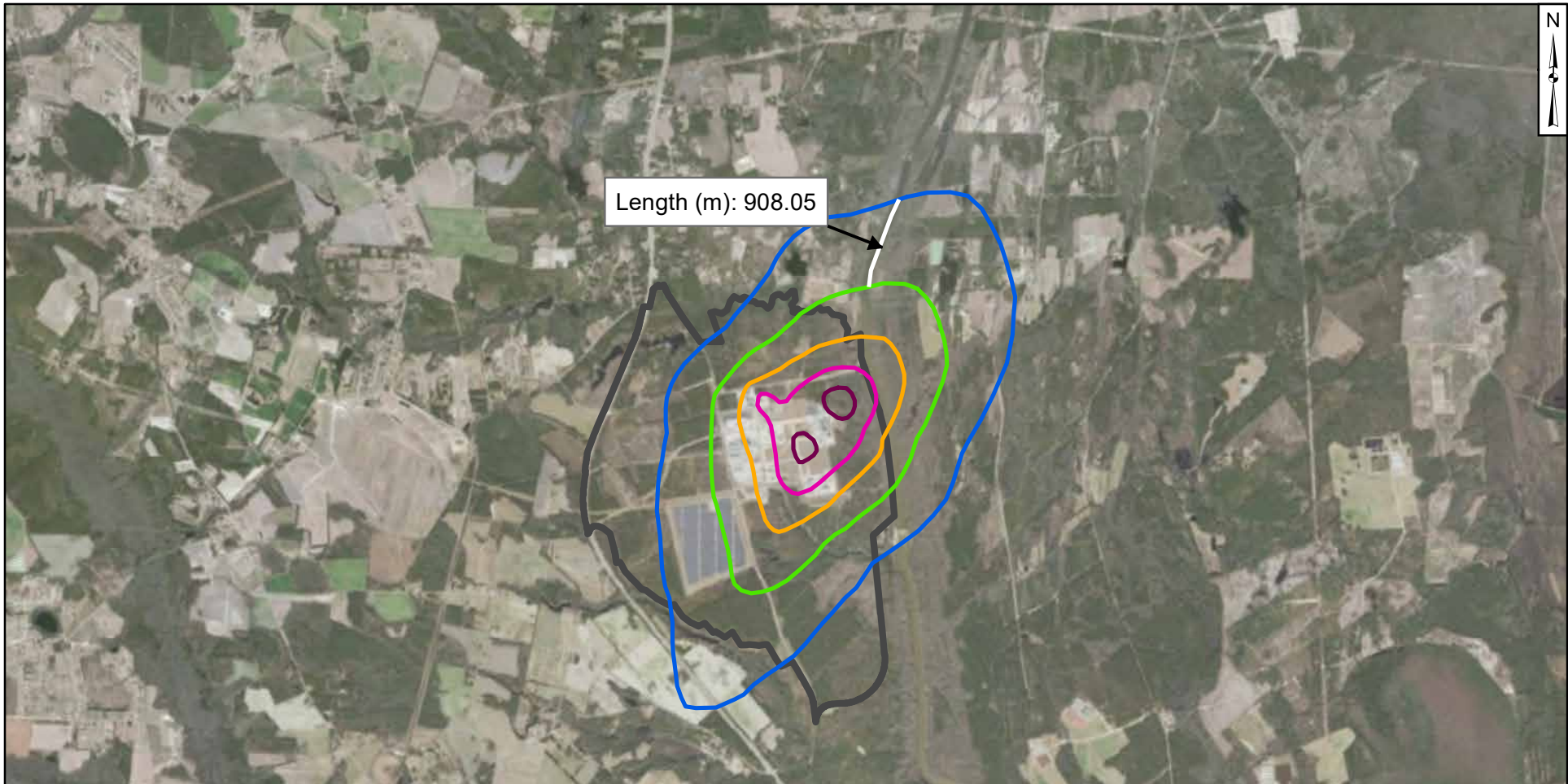
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Figure

H3

Raleigh, NC

September 2020



Length (m): 908.05

Legend

— Site Boundary

Modeled Deposition Contours, October 2018 Scenario

- 40 $\mu\text{g}/\text{m}^2/\text{yr}$
- 80 $\mu\text{g}/\text{m}^2/\text{yr}$
- 160 $\mu\text{g}/\text{m}^2/\text{yr}$
- 320 $\mu\text{g}/\text{m}^2/\text{yr}$
- 640 $\mu\text{g}/\text{m}^2/\text{yr}$

Notes:

HFPO-DA - Hexafluoropropylene oxide dimer acid; or dimer acid; or GenX

$\mu\text{g} / \text{m}^2/\text{yr}$ - micrograms per square meter per year

HFPO-DA deposition model contours for October 2018 from ERM, 2018, Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

1 0.5 0 1 Miles



Measurement of Cape Fear River Length at Up-River Section 2

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

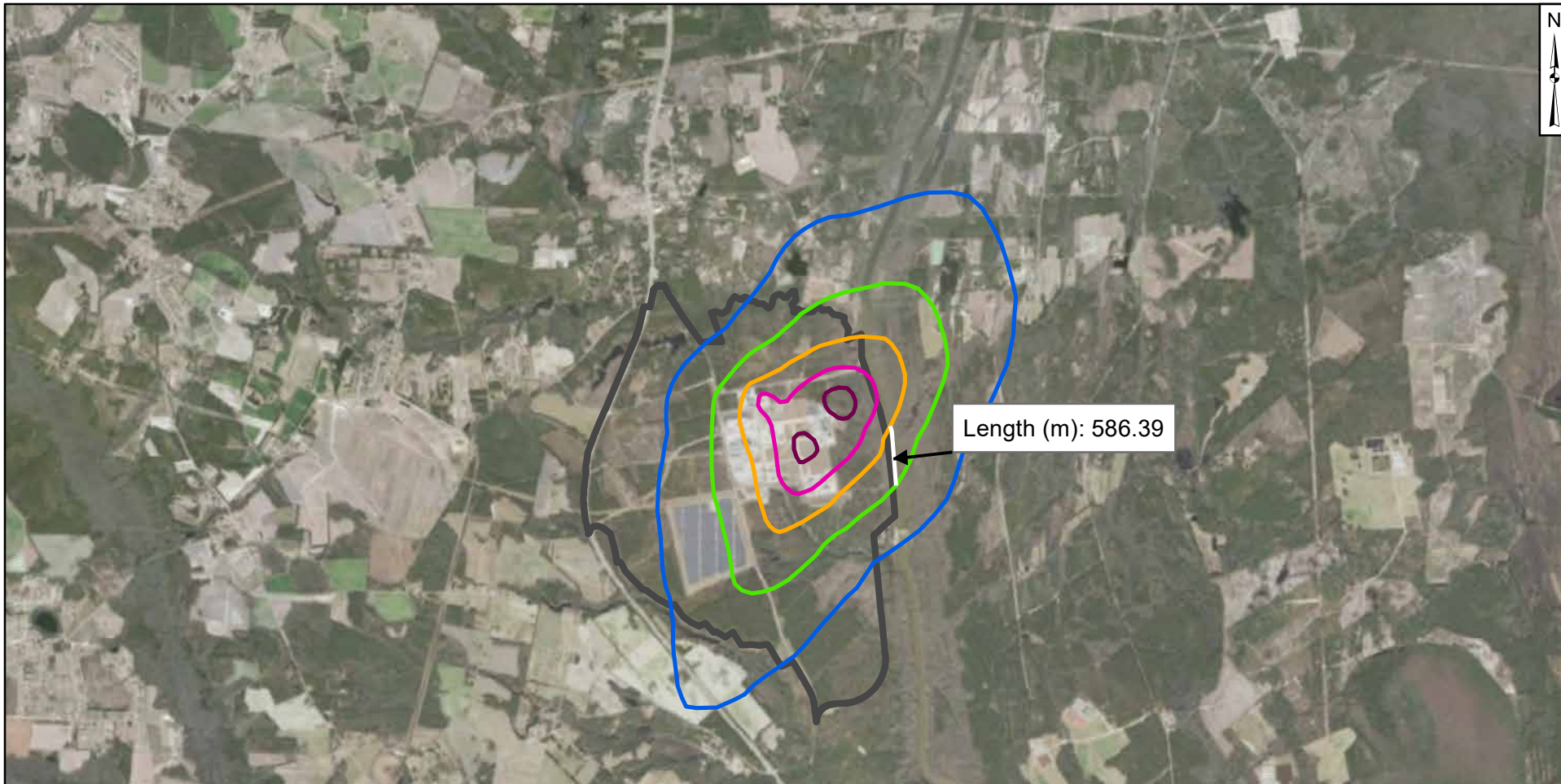
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Figure

H4

Raleigh, NC

September 2020



Legend

— Site Boundary

Modeled Deposition Contours, October 2018 Scenario

- 40 µg/m²/yr
- 80 µg/m²/yr
- 160 µg/m²/yr
- 320 µg/m²/yr
- 640 µg/m²/yr

Notes:

HFPO-DA - Hexafluoropropylene oxide dimer acid; or dimer acid; or GenX

µg /m²/yr - micrograms per square meter per year

HFPO-DA deposition model contours for October 2018 from ERM, 2018, Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

1 0.5 0 1 Miles



Measurement of Cape Fear River Length at Down-River Section 1

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

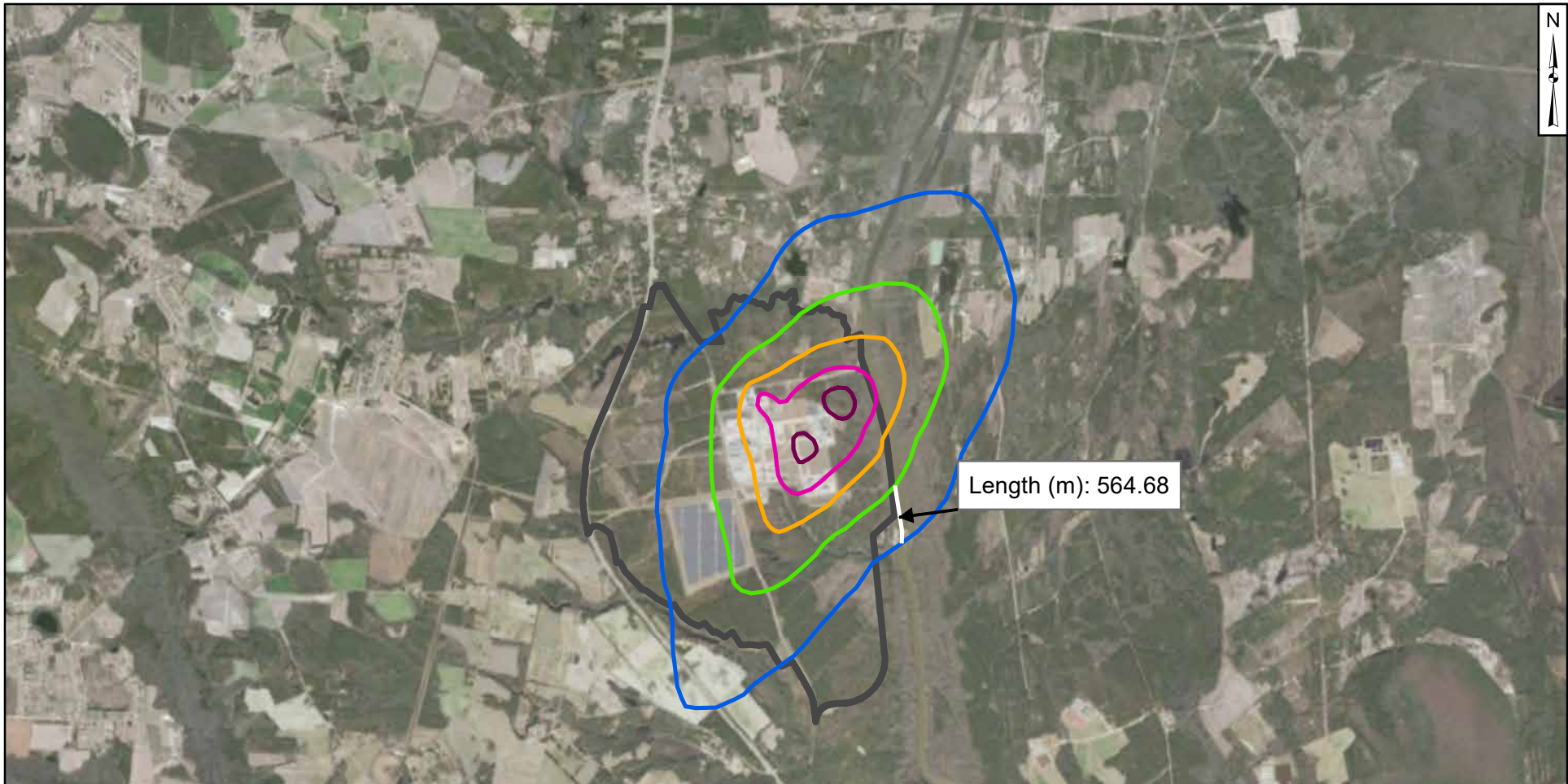
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Figure

H5

Raleigh, NC

September 2020



Legend

— Site Boundary

Modeled Deposition Contours, October 2018 Scenario

- 40 µg/m²/yr
- 80 µg/m²/yr
- 160 µg/m²/yr
- 320 µg/m²/yr
- 640 µg/m²/yr

Notes:

HFPO-DA - Hexafluoropropylene oxide dimer acid; or dimer acid; or GenX

µg /m²/yr - micrograms per square meter per year

HFPO-DA deposition model contours for October 2018 from ERM, 2018, Modeling Report: HFPO-DA Atmospheric Deposition and Screening Groundwater Effects. 27 April 2018.

1 0.5 0 1 Miles



Measurement of Cape Fear River Length at Down-River Section 2

Chemours Fayetteville Works, North Carolina

Geosyntec
consultants

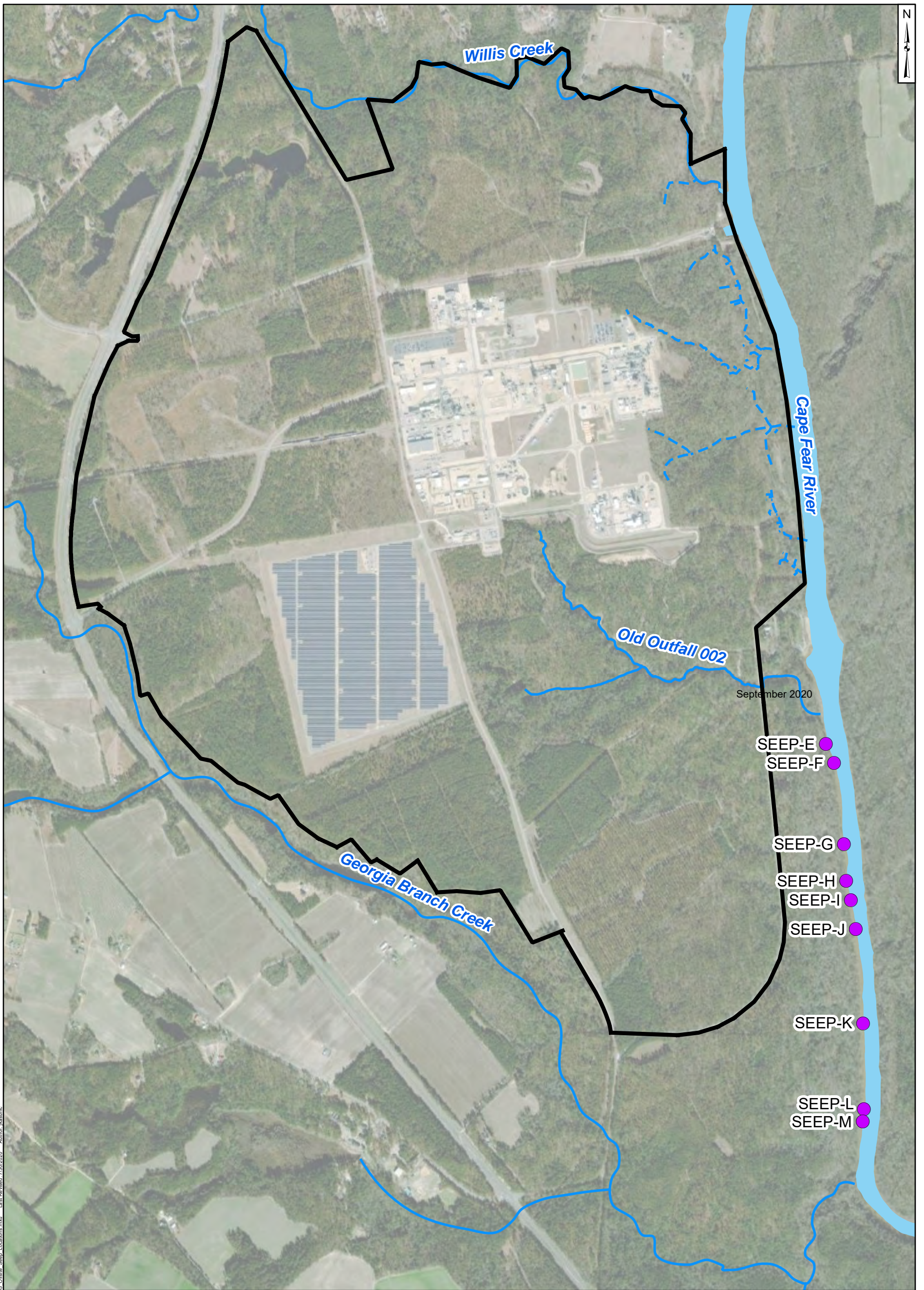
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Figure

H6

Raleigh, NC

September 2020



Path: P:\PRU\Projects\TR07\GIS\Baseline Monitoring\Workshop\TR0705 - Offsite Seep Locations.mxd Last Revised: 7/30/2020 Author: kasumi
 Projection: NAD 1983 StatePlane North Carolina FIPS 3200 Feet, Units in Foot US

- Legend**
- Observed Seep
 - Nearby Tributary
 - Site Boundary

Notes:

1. Seep E to M samples were collected where the seeps entered the Cape Fear River. Their locations on this figure have been slightly adjusted to facilitate interpretation so that they do not appear to be in the Cape Fear River.
2. The outline of Cape Fear River is approximate and is based on open data from ArcGIS Online and North Carolina Department of Environmental Quality Online GIS (MajorHydro shapefile).
3. Basemap Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

<p>1,000 500 0 1,000 Feet</p>	
<p>Southwestern Offsite Seeps Locations</p> <p>Chemours Fayetteville Works, North Carolina</p>	
<p>Geosyntec consultants</p>	<p>Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295</p>
<p>Raleigh</p>	<p>September 2020</p>
<p>Figure H7</p>	

APPENDIX I

Supporting Calculations –Adjacent and Downstream Offsite Groundwater

APPENDIX I

ADJACENT AND DOWNSTREAM OFFSITE GROUNDWATER

This appendix presents the methodology for calculating the PFAS mass discharge from adjacent and downstream offsite groundwater to the Cape Fear River. PFAS detected in offsite groundwater originate from aerial deposition which has occurred in all directions from the Site (CAP Geosyntec, 2019g). These aerially deposited PFAS have subsequently infiltrated to groundwater and migrate towards the Cape Fear River where they lead to upstream, adjacent and downstream offsite groundwater PFAS mass. The upstream offsite groundwater PFAS mass discharge is estimated relatively simply by using measured river flows and concentrations at River Mile 76 upstream of the Site. Here only the upstream offsite groundwater PFAS mass discharge is present in the river at this location. Conversely, the adjacent and downstream offsite groundwater PFAS mass discharge is difficult to measure directly since many PFAS mass discharges from all other pathways are present in the river where these offsite groundwater contributions join the river. Additionally, downstream offsite groundwater has a relatively small component of the Total PFAS mass discharge making its additional contributions to the total discharge difficult to distinguish from other discharges already present.

Therefore, since PFAS mass discharge from offsite groundwater upstream, adjacent, and downstream of the Site follow the same dynamics (deposition, infiltration, migration, discharge) the adjacent and downstream PFAS mass discharge is scaled from the upstream offsite groundwater mass discharge estimate. The downstream offsite groundwater loadings are scaled to the upstream offsite groundwater loadings based on the length of river adjacent and downstream of the Site known to be in contact with offsite groundwater containing PFAS compared to the length of the river upstream also in contact with offsite groundwater containing PFAS. The volume of river flow is assumed to be constant immediately upstream and downstream of the Site for the purposes of this calculation. This adjacent and downstream offsite mass discharge is calculated using Equation 1 below:

Equation 1: Total Mass Discharge Adjacent and Downstream Offsite Groundwater

$$MD_{adj-d-gw} = \sum_{i=1}^I (C_{up-gw,i} \times Q_{CFR}) \times f_{adj-d}$$

where,

$MD_{adj-d-gw}$ = represents the Total PFAS discharge from adjacent and downstream offsite groundwater to the Cape Fear River, units in mass per unit volume [ML⁻³], typically milligram per second;

i = represents each of the PFAS constituents listed in Table II;

Appendix I

I = represents total number of PFAS constituents included in the summation of Total PFAS concentrations;

$C_{up-gw,i}$ = represents the upstream concentration of each PFAS constituent i from measured units in mass per unit volume [ML^{-3}], typically nanograms per liter;

Q_{CFR} = represents the volumetric flow in the Cape Fear River as reported by the United States Geological Survey gage at the W.O. Huske Dam, station ID 02105500 with units used in the equation expressed as volume per time [L^3T^{-1}], typically liters per second; and

f_{adj-d} = represents the unitless scaling factor to adjust offsite upstream groundwater mass discharge to offsite adjacent and downstream mass discharge. Where $f_{up-adj-d}$ is calculated following Equation 2 below:

Equation 2: Offsite Upstream Groundwater to Adjacent and Downstream Offsite Groundwater Mass Discharge Scaling Factor

$$f_{adj-d} = \frac{l_{CFR-adj} + 2l_{CFR-d}}{2l_{CFR-up}}$$

where,

$l_{CFR-adj}$ = represents the length of the Cape Fear River adjacent to the Site (i.e., the east bank of the Cape Fear River opposite the Site) where PFAS have been detected in offsite groundwater within one mile of the river.

$2l_{CFR-d}$ = represents the length of the Cape Fear River downstream of the Site where PFAS have been detected in offsite groundwater within one mile of the river. This quantity is multiplied by two (2) as the river has two downstream sides (east and west) from which groundwater discharge can reach the Cape Fear River (adjacent only has one side, east).

$2l_{CFR-up}$ = represents the length of the Cape Fear River upstream of the Site where PFAS have been detected in offsite groundwater within one mile of the river. This quantity is multiplied by two (2) as the river has two upstream sides (east and west) from which groundwater discharge can reach the Cape Fear River (adjacent only has one side, east).

Figure I1 displays the quantities used in calculating the scaling factor f_{adj-d} on a map of the Cape Fear River and Table I-1 provides a calculation of f_{adj-d} .

TABLE II
OFFSITE AND ADJACENT DOWNSTREAM GROUNDWATER MASS DISCHARGE SCALING FACTOR
Chemours Fayetteville Works, North Carolina

Item	Value	Unit
l_{CFR-up}	14.2	miles
$l_{CFR-adj}$	1.7	miles
l_{CFR-d}	4.5	miles
f_{adj-d}	0.38	--

Calculation Notes for Offsite Upstream Groundwater to Offsite Adjacent and Downstream Groundwater Mass Discharge Scaling Factor

$$f_{adj-d} = \frac{l_{CFR-adj} + 2l_{CFR-d}}{2l_{CFR-up}}$$

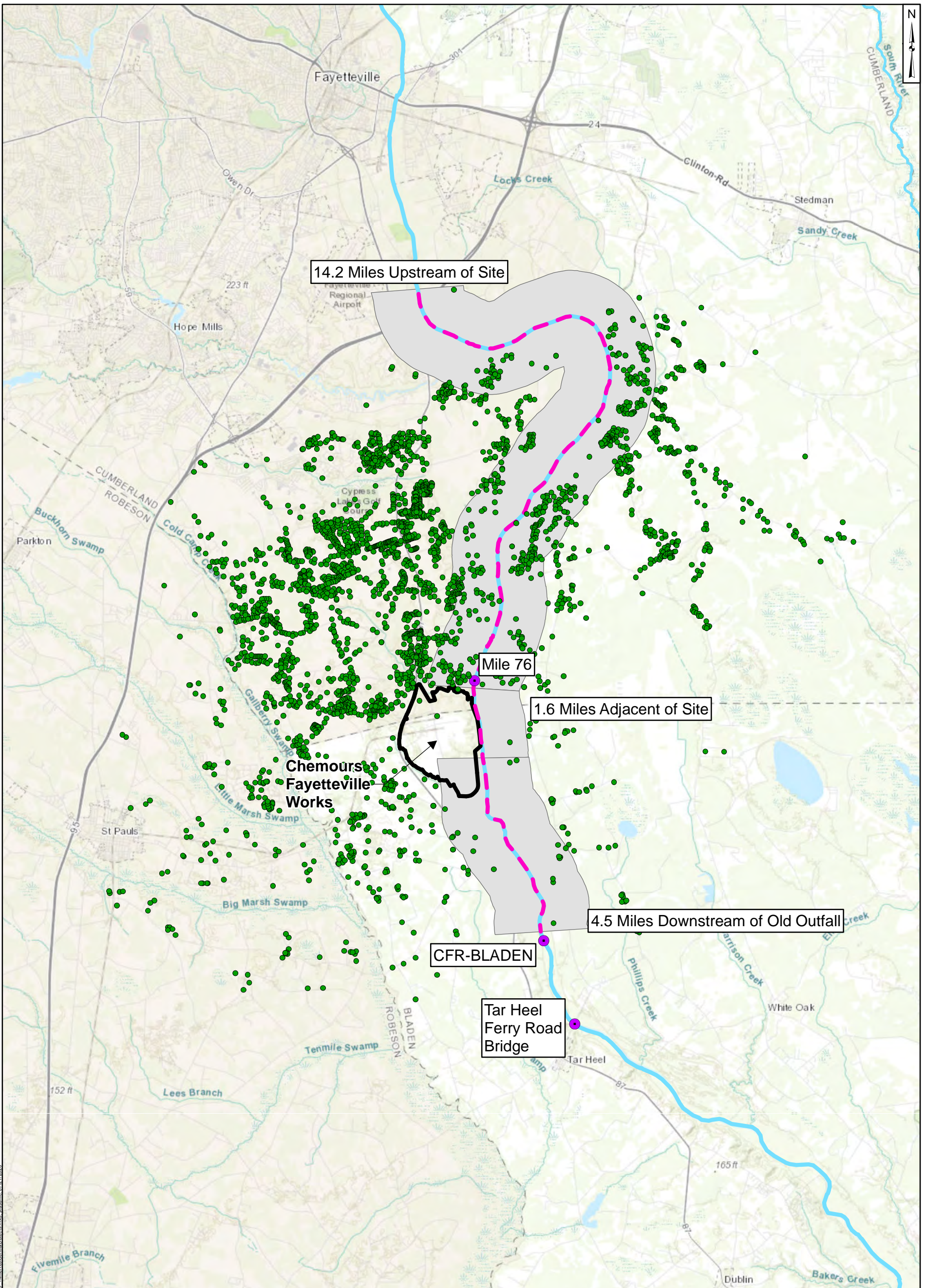
where,

f_{adj-d} = represents the unitless scaling factor to adjust offsite upstream groundwater mass discharge to offsite adjacent and downstream mass discharge.

$l_{CFR-adj}$ = represents the length of the Cape Fear River adjacent to the Site (i.e. the east bank of the Cape Fear River opposite the Site) where PFAS have been detected in offsite groundwater within one mile of the river.

$2l_{CFR-d}$ = represents the length of the Cape Fear River downstream of the Site where PFAS have been detected in offsite groundwater within one mile of the river. This quantity is multiplied by two (2) as the river has two downstream sides (east and west) from which groundwater discharge can reach the Cape Fear River (adjacent only has one side, east).

$2l_{CFR-up}$ = represents the length of the Cape Fear River upstream of the Site where PFAS have been detected in offsite groundwater within one mile of the river. This quantity is multiplied by two (2) as the river has two upstream sides (east and west) from which groundwater discharge can reach the Cape Fear River (adjacent only has one side, east).



John P. IRP, Project Manager, and GIS/ESRI Database Administrator, Monrovia, North Carolina, 07/27/2020

Legend

- Offsite Groundwater Sampling Location with Detected Result
- Selected Prior Cape Fear River Sampling Locations
- Detected Results within 1 mile of Cape Fear River
- Chemours Fayetteville Works
- Cape Fear River

Notes:
 Basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Projection: WGS 1984 Web Mercator Auxiliary Sphere; Units in Meter

2 1 0 2 Miles

**Estimated Extents of
 Offsite Groundwater Contributions to Cape
 Fear River Attachment C PFAS Mass Loads**
 Chemours Fayetteville Works, North Carolina

<p>Geosyntec consultants</p> <p style="font-size: small;">Geosyntec Consultants of NC, P.C. NC License No.: C 3500 and C 295</p> <p style="font-size: x-small;">Raleigh</p>	<p>Figure</p> <p style="font-size: large;">11</p> <p style="font-size: small;">September 2020</p>
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