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NC License No.: C-3500 and C-295

OUTFALL 002 CHANNEL NEAR DUPONT

Groundwater Upwelling Investigation

Chemours Fayetteville Works

Prepared for

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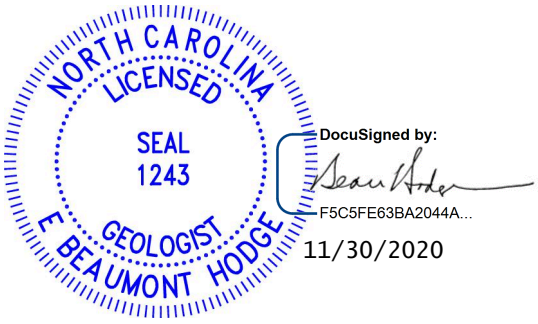

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November 2020

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ACRONYMS AND ABBREVIATIONS

CO Addendum	Addendum to Consent Order Paragraph 12
DVM	Data Verification Module
DQO	Data Quality Objectives
EIM	Environmental Information Management
ft	feet
ft bgs	feet below the ground surface
GPM	gallons per minute
HDPE	high-density polyethylene
HFPO-DA	hexafluoropropylene oxide dimer acid
MGD	millions of gallons per day
ng/kg	nanograms per kilogram
ng/L	nanograms per liter
NCCW	non-contact cooling water
PEPA	perfluoroethoxypropyl carboxylic acid
PFMOAA	perfluoro-2-methoxyacetic acid
PFAS	per- and polyfluoroalkyl substances
PMPA	perfluoromethoxypropyl carboxylic acid
RPD	relative percent differences
QA/QC	quality assurance/quality control
TAR	turn-around
µg/s	micrograms per second

EXECUTIVE SUMMARY

This report has been prepared by Geosyntec Consultants of NC, P.C. (Geosyntec) for the Chemours Company FC, LLC (Chemours) pursuant to paragraph 4(d) of the Addendum to Consent Order[1] Paragraph 12 (CO Addendum) of the Consent Order[2] (CO) amongst Chemours, the North Carolina Department of Environmental Quality (NCDEQ) and Cape Fear River Watch (CFRW). Paragraph 4(d) requires Chemours to "Complete investigation to determine whether DuPont non-contact cooling water is causing groundwater containing PFAS to infiltrate into the outfall channel"

During normal operations between January and November 2020, the operations from Chemours and its tenants, DuPont and Kuraray, resulted in facility discharges at Outfall 002 of primarily non-contact cooling water (NCCW) at flow rates between 7.2 to 36.5 million gallons per day (MGD) with a median flow of 21.9 MGD. These flows pass through the Outfall Channel near DuPont. DuPont uses approximately 100,000 gallons per day of NCCW some of which infiltrates to groundwater and contributes to increasing water levels in the nearby area on top of naturally occurring water level elevations from rainfall recharge.

Between July and November 2020 a series of investigations were performed to evaluate if additional loadings of Table 3+ per- and polyfluoroalkyl substances (PFAS)[3] entered the Outfall Channel near the DuPont Area at the Chemours Fayetteville Works Facility (the Facility), and degree to which groundwater was potentially upwelling into the Outfall Channel and contributing to these loadings. The scope and findings of each investigation are summarized in the list below:

- Round 1 July 2020: Collection of temporal composite surface water samples upstream and downstream along the outfall channel near DuPont demonstrated a consistent increase in Table 3+ PFAS mass load between the two locations;
- Round 2 September 2020: Additional surface water sample collection with additional locations between the upstream and downstream locations which demonstrated continuous increases in PFAS loads as water travels down the channel;
- Round 3 October 2020: During TAR, after sediment removal from the Outfall Channel, a thermal survey was completed and identified areas of groundwater upwelling into the channel. These additional flows were measured using flumes in the Outfall Channel and samples were collected to calculate mass loading

[1] The CO Addendum was entered into court on August 13, 2020.
[2] The CO was entered into court on February 25, 2019.
[3] Table 3+ Method PFAS compounds are often related to operations at the Facility

increases from groundwater upwelling. Piezometers were installed to measure groundwater gradients and groundwater Table 3+ PFAS concentrations; and

- Round 4 November 2020: After TAR, surface water samples were collected upstream and downstream in the Outfall Channel to quantify mass discharge increases associated with groundwater upwelling.

Overall, the results of the investigation demonstrated that Table 3+ PFAS mass loads were increasing in the Outfall Channel near DuPont, and that groundwater containing Table 3+ PFAS was upwelling into the Outfall Channel near DuPont. While the infiltrating DuPont NCCW does contribute to the upwelling in the Outfall Channel, this upwelling may also occur from existing water levels caused by rainfall recharge.

Both the groundwater upwelling rates and mass discharge increases associated with the groundwater upwelling were very small compared to Outfall flows and Cape Fear River mass loads respectively. The groundwater upwelling rate in the Outfall Channel near the DuPont area was measured and calculated to be between 7 and 17 gpm equivalent to approximately 0.05% to 0.11% of the median Outfall 002 flow. Meanwhile, the Table 3+ PFAS mass discharge values of 7 to 15 µg/s where equivalent to between 0.05% and 0.19% of the measured first and second quarter Table 3+ Cape Fear River PFAS mass discharge values as shown in the figure below for PFAS mass discharge increases from the Outfall channel on October 18, 2020 and November 4 and 5, 2020.

1. INTRODUCTION AND BACKGROUND

This report was prepared by Geosyntec Consultants of NC, P.C. (Geosyntec) for the Chemours Company FC, LLC (Chemours) pursuant to the requirements of paragraph 4(d) of the Addendum to Consent Order Paragraph 12 (CO Addendum). A series of investigations were completed to assess if there were additional loadings of Table 3+ per- and polyfluoroalkyl substances (PFAS)[4] along the Outfall Channel near the DuPont (DuPont de Nemours, Inc) Area at the Chemours Fayetteville Works, North Carolina site (the Facility, Figure 1), and if DuPont non-contact cooling water (NCCW) use at the Facility was contributing to these increases. The purpose of this report is to describe the investigation program conducted, the results of the investigation program and provide a summary of these results.

The Site conveyance network at the Facility transmits flows of NCCW, treated non-Chemours process and sanitary waters, and stormwater to Outfall 002 where these flows discharge to the Cape Fear River. In 2020, during facility operations these flows have ranged from 7.2 to 36.5 million of gallons per day (MGD), with a median flow of 21.9 MGD[5]. These flows converge together in the Channel to Outfall 002 near the DuPont Area (Figure 1). After the last DuPont water addition of NCCW, no additional surface water flows enter the channel before discharging at Outfall 002.

The DuPont Area is adjacent to this section of the Outfall Channel. DuPont utilizes approximately 100,000 gallons per day (i.e. 0.1 MGD) of NCCW (Chemours, 2019). DuPont releases this NCCW to a series of ditches where some the water infiltrates into the sub-surface, becoming groundwater. These water additions result in water levels increases adjacent to the channel and are a contributing factor to groundwater upwelling into the channel.

The investigations described in this report were performed over successive rounds starting in July 2020 through November 2020 to assess if loading increases were occurring and the magnitude of increases associated with groundwater upwelling. The investigation first collected data to determine if the loading increases were indeed occurring and were not potential artifacts of sampling biases or potential randomness in the data set. Then subsequent scopes were implemented to assess the degree to which groundwater could be and was contributing PFAS to the observed loading increases. The investigation scopes were implemented before, during and after the facility turn-around (TAR) period in October 2020. During TAR 2020, the facility paused production

[4] Table 3+ Method PFAS compounds are often related to operations at the Chemours Fayetteville Works Site (the Site).
[5] 7.2 to 36.5 MGD is equivalent to 5,000 to 25,300 gallons per minute

activities, including discharge of NCCW water through the outfall channel, to perform routine annual maintenance and removed sediment from the Outfall channel.

The remainder of this document is organized as follows:

- Section 2 – Scope and Methods which describes the investigations conducted and the methods used to implement the investigation;
- Section 3 – Results which describes the results of the investigation;
- Section 4 – Groundwater Upwelling Assessment which evaluates the degree of groundwater upwelling and associated mass loading;
- Section 5 – Summary which describes this investigation and its findings.

2. SCOPE AND METHODS

The sequence, scope and purpose of the investigations are shown in the table below and described in the following subsections. Parsons of NC conducted the field work and sampling activities described in this document.

Round	Period	Scope	Purpose
1	Jul. 2020	Composite surface water sampling upstream and downstream in channel	Assess if loadings occur in Outfall Channel near DuPont
2	Sep. 2020	Higher resolution composite sampling in upstream and downstream channel	Refine understanding of loadings occurring in Outfall Channel near DuPont
3	Oct. 2020	Install piezometers near channel, during facility TAR: - measure flow in channel - collect water samples, - conduct thermal survey of channel, - collect sediment samples	Assess potential for loadings from groundwater based on TAR and post-TAR conditions
4	Nov. 2020	Composite surface water sampling upstream and downstream in channel	Assess potential loadings from groundwater after TAR

2.1 Analytical Methods

Surface water samples collected for analysis during Rounds 1, 2, 3 and 4 were sent to external laboratories for analysis by the Table 3+ Method. Groundwater samples collected during Round 3 were sent to the onsite laboratory for analysis by the Table 3+ method.

2.1.1 Sample Packing, Shipping, and Field QA/QC Samples

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 will be recorded on the chain-of-custody form.

QA/QC activities were performed in the field and in the laboratories to document the data quality. Field QA/QC samples were collected and analyzed along with the investigative samples to determine the potential bias and variability introduced in sample collection, storage, handling and shipping. Field QA/QC samples were collected including equipment blanks, field blanks and field duplicates.

2.2 Investigation Round 1

Investigation Round 1 was completed in July 2020 in the Outfall Channel near the DuPont Area. Five sets of paired 24-hour composite samples were collected at Locations 7C and 20 (Figure 2) on July 16, 23, 27, 28, and 31, 2020, respectively. The samples were taken at these locations to assess the potential for increases in loading from channel conditions between the upstream and downstream locations. Samples were sent to an external laboratory for analysis by the Table 3+ method.

2.2.1 Surface Water Composite Sampling

During Rounds 1, 2 and 4 autosamplers were used to collect 24-hour integrated samples from the Outfall channel near the DuPont Area. During Round 3 autosamplers were used with 4-hour integrated samples. The autosamplers collected sample aliquots every hour for the 24-hour composite samples and every 15 minutes for the 4-hour samples.

The autosampler sample tubing was positioned at a minimum of 2 inches above the bottom of the channel 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 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 was measured during sample collection by collecting water directly from the water stream at the beginning of sample collection. The following water quality parameters were recorded:

- pH;
- Temperature (°C);
- Specific Conductivity (microSiemens per second – µS/cm);
- DO (milligrams per liter – mg/L);
- ORP (milliVolts – mV);
- Turbidity (nephelometric turbidity units – NTU)

- Odor; and,
- Color.

2.2.2 Channel Water Level Measurements

Water depth was measured at locations across the Outfall Channel using a survey rod and confirmed based on existing staff gauges. This procedure was also performed during other investigative rounds.

2.3 Investigation Round 2

Investigation Round 2 was conducted on September 16 and 24, 2020 in the Outfall Channel near DuPont. Surface water sampling and analysis was conducted to further assess findings from Round 1 and to further evaluate the spatial nature of the increase in PFAS loading. Figure 2 shows the locations sampled during Round 2. The details of each sample are provided below.

- At Location 7C, three 24-hour composite samples were collected to evaluate the distribution of PFAS concentrations across a sampling transect (i.e., East side, middle, West side).
- 24-hour composite samples were collected from three (7E, 7D, 7F) points along the Outfall Channel between Location 7C and Location 20 (Figure 2).
- Location 20 was replaced by Location 20A, approximately 40 feet (ft) upstream of Location 20 to assess if samples collected at Location 20 are affected by increased velocity near where the flows discharge to Outfall 002 where the Outfall Channel enters a sump to a set of buried piping to the Cape Fear River.

2.4 Investigation Round 3

Investigation Round 3 was conducted before and during the TAR in the Outfall Channel near the DuPont Area to assess the potential contributions from groundwater upwelling to increased PFAS loads along the Outfall Channel after sediment was removed from the channel. During TAR, a de minimis amount of non-contact cooling water or process water is transported in the conveyance network. The investigations took place along the Outfall Channel between Location 7C and 20 from October 5 through October 19, 2020. Details for the scope of work conducted in Round 3 are outlined below.

2.4.1 Piezometer Installation and Sampling

Piezometers were installed at ten locations directly north and south of the Outfall Channel to evaluate the groundwater elevation at the Outfall Channel between October 6 and

November 5, 2020. The new piezometers, PZ-36 through PZ-45, were used to assess groundwater elevations and concentrations immediately adjacent to the channel.

Continuous soil cores were collected during well installation for logging. Piezometers were installed following well construction standards outlined in 15A NCAC 2C. Wells were developed to remove materials that may be introduced into the subsurface during drilling. Well development continued until turbidity readings were less than 50 NTUs or had stabilized following development for an extended period (e.g., turbidity readings that have not improved for an hour and 3 or more consecutive measurements are within 10% of each other). Ten one-inch PVC piezometers were installed in total. The piezometers were installed at depths ranging from 7 to 17 ft bgs and screened lengths of the wells ranged from 3 to 10 ft bgs with typical intervals between 5 to 9 ft bgs.

2.4.2 Piezometer Water Level Measurement

Water level measurements for piezometers and other nearby monitoring wells were collected in multiple investigation rounds. 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 was recorded.

Pressure transducers were installed to monitor water levels in site piezometers. The pressure transducers were installed at a depth of 4-10 feet below the ground surface (ft bgs), approximately 1 foot above the bottom of the well, upon deployment. Barometric correction on the logged data was conducted to be able to interpret the continuous data set.

2.4.3 Piezometer Groundwater Sampling

Groundwater sampling was completed on October 5, 2020 at the newly installed piezometers, except PZ-38 and PZ-43 which did not produce sufficient water for sampling. Field equipment was inspected by the program onsite 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 (degrees Celsius [°C]);
- Specific Conductivity (microsiemens per centimeter [µS/cm]);
- Dissolved Oxygen (DO) (milligrams per liter [mg/L]);
- Oxidation-Reduction Potential (ORP) (millivolts [mV];
- Turbidity (nephelometric turbidity units [NTU]);

- Odor; 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.) were not be reused. New sample containers were used for each sample.

Groundwater samples were collected using low-flow sampling techniques as summarized below:

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, DO, and ORP.
3. Water was pumped using a peristaltic pump, with dedicated silicone tubing for the pump head.
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) and was stabilized within ±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.

2.4.4 Thermal Survey

A thermal survey was conducted to identify areas of potential groundwater upwelling. Groundwater temperatures usually reflect the mean annual temperature of a location. For example, at the Fayetteville Works Site perched zone groundwater temperatures in the newly installed piezometers near the Outfall Channel were between 23.7 to 30°C (Table 1), while surface water temperatures are close to seasonal average temperature, ranging from 11.2 to 34.4°C (Table 1) depending on the month the sample was collected (i.e. warm temperatures in July versus cooler temperatures in November. Forecasted ambient temperatures for the area were monitored ahead of the survey. The survey was conducted on October 17, 2020 between 07:30 and 09:30 where ambient air temperatures ranged between 11 to 18°C.

A thermal imaging camera was used to identify areas of upwelling. Infrared photographs and corresponding visible light photographs were taken of the bottom and sides of the Outfall Channel, at least every ten feet, or more frequently if a temperature contrast was observed. If a temperature contrast was identified through the infrared camera, the location in the Outfall Channel transect was described in the field notes, and the coordinates of the location were documented. The observations for this program are described later in the results section.

2.4.5 TAR Flow Measurement

Flow was measured entering and leaving the Outfall Channel by installing flumes at Location 7C and Location 20A during TAR. Extra-large 60^{o} trapezoidal flumes were installed using a pond liner and bentonite to create a seal with the Outfall Channel bottom. Sandbags were used to funnel water towards the flumes. Data loggers were installed to measure water elevations in the flumes. The water elevations were then used to calculate flow rates after the data was barometrically corrected. Flow readings were collected once every five minutes and data was downloaded before the flumes were removed at the end of TAR. The measured water flow at both locations was used to calculate the difference in flow entering and leaving the Outfall Channel to quantify the flow from groundwater into the Outfall Channel. Flow measurements were recorded between October 15 to 19, 2020.

2.4.6 Outfall Channel Near DuPont Surface Water Samples

Two 4-hour composite surface water samples were collected from the flume installed at Location 7C and 20A during the TAR on October 18, 2020. Samples were analyzed for Table 3+ PFAS at the onsite laboratory.

2.4.7 Outfall Channel Sediment Sampling

During the TAR when the Facility was releasing de minimis water to the Outfall Channel, sediment samples were collected from nine sample locations along the Outfall Channel (Figure 3) and analyzed by the Table 3+ solids standard operating procedure. The sediment sampling was completed on October 12, 2020. All equipment was inspected prior to use. A location-specific field form and a picture of the sample location was used to document field conditions.

Sediment samples were collected as spatial composites from at least three locations across the transect at each location. Samples were collected from approximately the top 2 inches of sediment. Collected sediment was homogenized before being placed in the sample jars. Any overlying water in the sample jar after collection was decanted.

The sample bottles for sediment PFAS analysis were 4-ounce HDPE soil jars. For all samples, jars were pre-cleaned by the vendor to minimize the risk of unplanned sample contamination from the sample container (i.e., blank contamination).

Sample jars were filled, and the caps were securely fastened after sample collection. For each sample, at least 11 grams of sediment was collected into each jar. Each sample was labeled with a unique sample identification number, date, time and location of sampling, and the initials of the individual collecting the sample. A field form was used to record information regarding additional items such as quality assurance/quality control (QA/QC), sample identification, and field observations.

2.5 Investigation Round 4

Surface water sampling and water level evaluation was conducted on November 4 and 5, 2020 after TAR was completed. At four surface water locations (7C-2, 7C, 7E and 20A) 24-hour composite samples for were collected. These locations corresponded to the surface water sample collection completed in Rounds 1 and 2 and an additional location (7C-2) upstream of Location 7C, to evaluate PFAS increases in the Outfall Channel related to observed groundwater upwelling during TAR.

Depth to water was measured for monitoring wells in the vicinity of the Outfall Channel and the piezometers. Surface water depth was measured at locations in the Outfall Channel corresponding to these wells.

3. RESULTS

The results of the four rounds of investigation are presented in the sub-sections below. Data is summarized in figures and tables, as follows:

- The field parameter measurements recorded from the investigations are provided in Table 1.
- The measured groundwater and surface water elevations are provided in Table 2.
- Surface water Table 3+ PFAS analytical results from samples collected for Rounds 1, 2, and 3 are provided in Table 3, Table 4, and Table 5, respectively.
- Groundwater Table 3+ PFAS analytical results from Round 3 are provided in Table 6.
- Sediment Table3+ PFAS analytical results are provided in Table 7.
- The surface water Table 3+ PFAS analytical results from Round 4 are provided in Table 8.

The remainder of this section describes the data quality of the results, which Table 3+ PFAS analytes are reported in this results section, and then the results of each investigation round.

3.1 Data Quality

The analytical data were reviewed using the Data Verification Module (DVM) within the Locus™ Environmental Information Management (EIM) system, a commercial software program used to manage data. Following the DVM process, a manual review of the data was conducted. The DVM and the manual review results were combined in a data review narrative report for each set of sample results, which were consistent with Stage 2b of the USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (USEPA-540-R-08-005, 2009). The narrative report summarizes which samples were qualified (if any), the specific reasons for the qualification, and any potential bias in reported results. The data usability, in view of the project's data quality objectives (DQOs), was assessed, and the data were entered into the EIM system.

The data were evaluated by the DVM against the following data usability checks:

- Hold time criteria;
- Field and laboratory blank contamination;
- Completeness of quality assurance/quality control samples;
- Matrix spike/matrix spike duplicate recoveries and the relative percent differences (RPDs) between these spikes;
- Laboratory control sample/control sample duplicate recoveries and the RPD between these spikes;

- Surrogate spike recoveries for organic analyses; and
- RPD between field duplicate sample pairs.

A manual review of the data was also conducted and includes instrument-related quality control results for calibration standards, blanks, and recoveries, and manual review of all chromatographic peaks for Table 3+ compounds. The data review process (DVM plus manual review) applied the following data evaluation qualifiers to the analytical results as required:

- J Analyte present, reported value may not be accurate or precise;
- UJ Analyte not present below the reporting limit, reporting limit may not be accurate or precise; and
- B Analyte present in a blank sample, reported value may have a high bias.

The data review process described above was performed for all laboratory chemical analytical data generated for the sampling event. The DQOs were met for the analytical results for accuracy and precision. The data collected are believed to be complete, representative and comparable, with the exception of R-PSDA, Hydrolyzed PSDA, and R-EVE.

3.1.1 Table 3+ 17 Compounds

As reported in the *Matrix Interference During Analysis of Table 3+ Compounds* memorandum (Geosyntec, 2020a), matrix interference studies conducted by the analytical laboratory (TestAmerica, Sacramento) have shown that the quantitation of three compounds (R-PSDA [formerly Byproduct 4], Hydrolyzed PSDA [formerly Byproduct 5], and R-EVE) is inaccurate due to interferences by the sample matrix in both groundwater and surface water. Given the matrix interference issues, Total Table 3+ PFAS concentrations are calculated and presented in the tables of this report in two ways: (i) summing over 17 of the 20 Table 3+ compounds "Total Table 3+ (sum of 17 compounds)", i.e., excluding results of R-PSDA, Hydrolyzed PSDA, and R-EVE, and (ii) summing over 20 of the Table 3+ compounds "Total Table 3+ (sum of 20 compounds)". Expressing these data as a range represents possible values of what these results might be without matrix interferences. In other words, the sum of all 17 compounds is an underestimate of the actual value while the sum of the 20 compounds is likely an overestimate of the actual value.

For clarity the text and figures of this report describe the Table 3+ 17 compound sums while both Table 3+ and Table 20 compounds sums are included in the tables.

3.2 Investigation Round 1

Five sets of paired 24-hour composite samples were collected at Locations 7C and 20. The results for these samples are provided in Table 3 and plotted in Figure 4. The results indicate that PFAS concentrations were consistently higher at Location 20 than Location 7C at each of the five sample times. The total Table 3+ PFAS (17 compounds) concentrations at the downstream location 20A ranged from 30 - 80 nanograms per liter (ng/L) greater than the upstream location 7C. The compound (of the Table 3+ 17 compounds set) with the greatest concentration change between the two locations was HFPO-DA[6] with maximum observed increases of 46 ng/L and 50 ng/L, respectively.

3.3 Investigation Round 2

Composite surface water samples (24-hr) were collected along a transect at Location 7C (east, west, and middle). Individual composite samples from the middle of the channel were also collected at downstream locations 7D, 7E, 7F, and 20A on two different sampling days (September 16 and 24, 2020). The results from this surface water sampling event are provided in Table 4. The results from the channel transect samples at location 7C are shown in Figure 5 and the other samples in Figure 6 and Figure 7.

The Location 7C channel transect samples indicate that PFAS concentrations in the center of the channel were the highest for both sampling days. Additionally, concentrations on the West side of the channel were the lowest on both sampling days. Concentrations in the middle of the channel compared to the West side of the channel were greater by approximately a factor of 3 showing heterogeneity in channel concentrations.

The analytical results from surface water samples collected from locations in the channel between 7C and 20A are shown in Figure 6 and Figure 7. Figure 6 shows the concentrations for all Table 3+ PFAS, while Figure 7 shows only the analytes with higher concentrations at Location 20A than at Location 7C. On September 16, 2020, concentrations of PMPA[7] and PFMOAA[8] were higher at Location 7C than at Location 20A, and on September 24, 2020, concentrations of PMPA and PEPA[9] were higher at Location 7C than Location 20A. These observations may be related to the heterogeneity observed in the transect samples collected at Location 7C, described above. Removing these analytes from plots in Figure 7, the remaining Table 3+ PFAS concentrations are observed to increase along the length of the Outfall Channel. Excluding PMPA and

[6] HFPO-DA - hexafluoropropylene oxide dimer acid
[7] PMPA - perfluoromethoxypropyl carboxylic acid
[8] PFMOAA - perfluoro-2-methoxyacetic acid
[9] PEPA - perfluoroethoxypropyl carboxylic acid

PFMOAA on September 16, 2020, Table 3+ PFAS mass loading increased by 78 ng/L, and excluding PMPA and PEPA on September 24, 2020, Table 3+ PFAS mass loading increased by 18 ng/L. The compound with the greatest loading increase between the two locations was Hydro-PS Acid with a maximum observed mass discharge increase of 22 ng/L.

3.4 Investigation Round 3

Investigation Round 3 was conducted before and during the October 2020 TAR and aimed to assess if groundwater was upwelling into the channel and evaluate the relative potential contribution of PFAS loading increases from groundwater upwelling. The results of the Round 3 are described below.

3.4.1 Sediment Sampling

Sediment samples were collected at nine locations within the Outfall Channel on October 12, 2020 (Figure 3). The results of the sediment sampling are provided in Table 7. The total Table 3+ PFAS concentrations in the sediments ranged from non-detect to9,900 nanograms per kilogram (µg/kg). Sediment concentrations were highest where cooling water channel loadings from the Monomers IXM area had joined the Outfall Channel with the highest concentration observed at location 7D. The sediment results did exhibit some spatial variability as is common in soil and sediment samples. For instance, the parent and duplicate samples at Location 3 had total Table 3+ values of 84 and 6.1 µg/kg, respectively. Across all the sampling locations, the compound with the highest recorded concentration was PS-Acid at 9,600 µg/kg at Location 7D.

3.4.2 Piezometer Installation and Sampling

Ten new piezometers (PZ-36 through PZ-45) were installed directly north and south of the Outfall Channel (Figure 2) to evaluate groundwater elevations directly adjacent to the channel. Water levels were taken in each of the new piezometers and surface water elevations were collected adjacent to the piezometers in the channel, provided in Table 2.

The results of the water level measurements are presented in the cross sections shown in Figure 8. In four (4) of the five (5) cross-sections, hydraulic gradients between the northern piezometer and the channel water level ranged between 0.02 and 0.17 (Table 9) suggesting upwelling of groundwater into the channel could potentially occur (water levels were higher in the piezometer than the Outfall Channel). At Transect 3 piezometer pair PZ-38 and PZ-43 had groundwater levels below the level of the Outfall Channel surface water both before, during and after the facility TAR indicating that groundwater recharge from the channel to the sub-surface was potentially possible here.

Dataloggers were used to monitor water levels in the piezometers for a period of 31 days (October 5 to November 6, 2020) during this investigation. Figure 9 shows the groundwater levels over the monitoring period. Piezometer water levels stay relatively consistent during normal operations, however after TAR began when both DuPont no longer discharges NCCW and water flow through the Outfall channel is ceased, groundwater levels decreased 0.2 – 1.3 ft in elevation. The correlation between the groundwater levels and TAR suggests a potential hydraulic connection between surface water flows (DuPont NCCW and Outfall Channel) and groundwater.

Groundwater samples were collected from the eight piezometers in which there was sufficient water to collect a sample; samples were not collected from PZ-38 and PZ-48 as these wells were dry or did not produce sufficient water for sampling. The results from these samples are presented in Table 6. The highest Table 3+ groundwater concentrations were in PZ-36, PZ-37, PZ-44 and PZ-45 located in transects 4 and 5 nearest Location 20/20A. The concentration of Table 3+ PFAS in these wells ranged from 12,000 to 20,000 ng/L. For the two upgradient piezometers, PZ-44 and PZ-45, HFPO-DA was the highest concentration compound with concentrations ranging between 6,000 and 7,500 ng/L. For the two downgradient piezometers, PZ-36 and PZ-37, PFMOAA was the highest concentration compound with concentrations ranging between 9,300 to 13,000 ng/L. The concentration of Table 3+ PFAS in the other piezometers were comparatively lower with total Table 3+ PFAS concentrations ranging between 340 ng/L in a duplicate sample from PZ-41 to 3,000 ng/L in a sample from PZ-40.

3.4.3 Thermal Survey

Areas of potential groundwater upwelling into the Outfall Channel were assessed during TAR by monitoring temperature differentials using a thermal camera. A photo log of locations with observable temperature gradients indicating areas of groundwater upwelling into the Outfall Channel is shown in Figure 10. Areas of upwelling were observed along the channel from upstream of Location 7C to Location 20A. Upwelling was evidenced by the increased temperature flows of water entering the channel.

3.4.4 TAR Flow Measurement and Surface Water Samples

Flow was measured entering and leaving the Outfall Channel by installing flumes at Locations 7C and Location 20A during TAR. The results of the measurements from the flumes is shown in Figure 11. Precipitation recorded in a rate of inches of precipitation per 15-minute interval (in_{rain}/15 min) is indicated on a secondary vertical axis in Figure 11. There were only two rain events on October 16, 2020 (3:15 am and 10:30 am), resulting in a cumulative 0.01 in_{rain} and 0.02 in_{rain}, respectively.

Figure 11 shows that Location 20A had an average flowrate of approximately 17 gallons per minute (gpm) greater than the flowrate at Location 7C. At times the flow rate at 20A reached up to 50 gpm greater than location 7C flow rates. There was a 70 minute period on October 17, 2020 where Location 7C had a greater flow rate then Location 20A. This difference in flow is attributed to a volume of water moving through the channel with the delay in flow increases due to travel time resulting in higher apparent flow differences.

Surface water samples were collected once from the flumes installed at Location 7C and 20A during TAR and submitted for Table 3+ PFAS analysis. The results from this sampling event are provided in Table 5. The concentration of Table 3+ PFAS at Location 7C was 21,000 ng/L compared to 14,000 ng/L at Location 20A (Table 5).

3.5 Investigation Round 4

Surface water sampling and water level measurements were conducted from November 3 to November 5, 2020. Table 3+ PFAS results of the 24-hour composite samples for two surface water locations (7C and 20A) are provided in Table 8. An increase in Table 3+ PFAS (17 compounds) of 19-37 ng/L was measured during sampling events on November 4 and 5, 2020. The compounds with the greatest observed concentration increases were PMPA and HFPO-DA at 30 ng/L and 16 ng/L, respectively.

Depth to water was measured at site piezometers and surface water depth was measured at locations in the Outfall Channel adjacent to these wells. The measurements of these water elevations are provided in Table 2. The water levels demonstrated that groundwater discharge was potentially possible after TAR similar to during TAR conditions (Table 9).

4. GROUNDWATER UPWELLING ASSESSMENT

The results of the investigations demonstrated that groundwater containing Table 3+ PFAS is upwelling into portions of the Outfall Channel near DuPont. This section assesses the magnitude of groundwater upwelling rates and associated mass discharge increases in the Outfall Channel and then compares these quantities to Outfall 002 flows and Cape Fear River Table 3+ PFAS mass loads.

4.1 Groundwater Upwelling Rates

During TAR the increase in flow of 17 gpm between locations upstream and downstream study are locations, 7C and 20A, were interpreted to originate from groundwater upwelling based on the lack of other surface water inflows and the results of the thermal survey. Using this measured upwelling rate, Darcy's law was used to calculate a combined hydraulic conductivity "*K*" and area "*A*" parameter "*KA*" to use in an application of Darcy's law described below in Equation 1. This "*KA*" parameter was then used to estimate the magnitude of groundwater upwelling during non-TAR conditions

when the Outfall Channel was also transmitting regular site water use flows by applying Equation 1 with the "KA" parameter and the gradients calculated from measured Outfall Channel and groundwater elevations. The results of these calculations are provided in Table 9.

Using the gradient scaling method for groundwater upwelling rate estimations the pre-TAR upwelling rate was calculated to be 11 gpm and the post-TAR upwelling rate was calculated to be 7 gpm. Both of these values are lower than the 17 gpm upwelling rate measured during TAR due to the lower gradients that exist when the channel is full of NCCW, but do indicate that groundwater upwelling conditions are expected during non-TAR conditions when the Outfall Channel is transmitting NCCW flows.

While infiltrating DuPont NCCW contributes upwelling groundwater, this upwelling may potentially occur even if no DuPont NCCW was infiltrating. During TAR, even at the end of TAR when no DuPont NCCW had been infiltrating for a period of at least two weeks there was measurable flow upwelling into the Outfall Channel.

Equation 1: Groundwater Discharge Rate Calculation

$$Q = iKA$$

where,

Q = is the calculated (or measured) groundwater flow rate;

K = is the hydraulic conductivity of the material groundwater is flowing through;

A = is the area groundwater is flowing through; and

i = is the calculated hydraulic gradient calculated per Equation 2 below.

Equation 2: Hydraulic Gradient Calculation

$$i = \frac{h_1 - h_2}{d_{1-2}}$$

where,

i = is the calculated hydraulic gradient;

h_1 = is the hydraulic head at location 1;

h_2 = is the hydraulic head at location 2; and

d_{1-2} = is the distance between locations 1 and 2 in the same length units as hydraulic head.

4.2 Groundwater Upwelling Mass Discharge

Table 3+ PFAS mass discharge increases were calculated for Outfall Channel between the upstream and downstream locations (7C to 20A) for surface water samples collected on October 18, 2020 and November 4 and 5, 2020. These dates correspond to Outfall Channel conditions after sediment had been removed enabling the assumption that any mass discharge increases were associated with Table 3+ PFAS present in upwelling groundwater. The results of this calculation are shown below in the table below and in Figure 13 and in Table 10. Groundwater upwelling into the Outfall Channel is associated with between a 7 to 15 µg/s Table 3+ PFAS mass discharge increase.

Date	Mass Discharge Increase (µg/s)
October 18, 2020	14
November 4, 2020	7
November 5, 2020	15

4.3 Comparison to Outfall 002 flows and Cape Fear River Mass Loads

The groundwater upwelling rate and associated Table 3+ PFAS mass discharge are very small compared to Outfall Channel flows and Cape Fear River Mass loads. As shown in the first table below, the groundwater upwelling rates during the post-TAR conditions were equivalent to between 0.11% to 0.12% of the total flow. These percentages remain similar as well when considering the minimum and maximum estimated groundwater upwelling rates compared to median 2020 Outfall 002 flows of 15,200-gpm (i.e. 21.9 MGD) producing a range of 0.05% to 0.11% of flows originating from groundwater upwelling.

Scenario	Outfall Flow (gpm)	Groundwater Upwelling (gpm)	Groundwater as Percentage of Total Flow (%)
October 18, 2020 (TAR)	19	17	89 %
November 4, 2020	5,800	7	0.12 %
November 5, 2020	6,300	7	0.11 %
Med. Outfall – Min Groundwater	15,200	7	0.05%
Med. Outfall – Max Groundwater	15,200	17	0.11%

Similarly, as shown in the table below and in Figure 14 and Figure 15, groundwater upwelling Table 3+ PFAS mass discharge into the channel is very small compared to

Cape Fear River measured mass discharge values. Groundwater upwelling in the Outfall Channel, which then reaches the Cape Fear River, is equivalent to between 0.05% and 0.19% of the measured mass discharge from the first and second quarter 2020 mass loading models results (Geosyntec, 2020b).

Date	Outfall Channel Mass Discharge Increase (µg/s)	Percentage of 1Q 2020* River Mass Discharge (%)	Percentage of 2Q 2020* River Mass Discharge (%)
October 18, 2020	14	0.10 %	0.18 %
November 4, 2020	7	0.05 %	0.09 %
November 5, 2020	15	0.11 %	0.19 %

* The Cape Fear River mass discharge values reported for the first and second quarter 2020 mass loading assessment were 13,400 and 8,000 µg/s.

5. SUMMARY

Pursuant to CO Addendum Paragraph 4(d), Chemours assessed the potential for the infiltration of DuPont NCCW to cause Table 3+ PFAS mass discharge increases in the Outfall Channel near DuPont. During normal operations the facility discharges at Outfall 002 between 7.2 to 36.5 MGD with a median flow of 21.9 MGD. All these flows pass through the Outfall Channel near DuPont. DuPont uses approximately 100,000 gallons per day of NCCW some of which infiltrates to groundwater and contributes to increasing water levels in the nearby area on top of naturally occurring water level elevations from rainfall recharge.

A series of investigations were conducted between July and November 2020. The investigations demonstrated that Table 3+ PFAS mass discharge was increasing along this section of the Outfall Channel and that groundwater containing Table 3+ PFAS was upwelling into the Outfall Channel. While the infiltrating DuPont NCCW does contribute to the upwelling in the Outfall Channel, this upwelling may also occur from existing water levels caused by rainfall recharge.

Both the groundwater upwelling rates and mass discharge increases associated with the groundwater upwelling were very small compared to Outfall flows and Cape Fear River mass loads respectively. The groundwater upwelling rate in the Outfall Channel near the DuPont area was measured and calculated to be between 7 and 17 gpm, equivalent to approximately 0.05% to 0.11% of the median Outfall 002 flow. Meanwhile, the Table 3+ PFAS mass discharge values of 7 to 15 µg/s where equivalent to between 0.05% and 0.19% of the measured first and second quarter Table 3+ Cape Fear River PFAS mass discharge values.

6. REFERENCES

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Geosyntec consultants

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

TABLES

TABLE 1
FIELD PARAMETER MEASUREMENTS
Chemours Fayetteville Works, North Carolina

Location Type	Location	Date	pH (S.U.)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Specific Conductance (µS/cm)	Temperature (°C)
Groundwater	PZ-36	10/5/2020	5.7	6.3	131	6.82	50.2	24.3
	PZ-37	10/5/2020	5.5	5.6	148	129	52.2	24.5
	PZ-38	10/5/2020	6.0	5.8	142	885	129	26.2
	PZ-39	10/5/2020	5.7	0.4	-107	1060	332	25.4
	PZ-40	10/5/2020	5.0	0.3	153	1510	80.9	24.4
		10/21/2020	5.5	1.6	150	16.4	60.2	23.7
	PZ-41	10/5/2020	5.6	3.0	184	218	331	25.7
		10/21/2020	5.7	3.7	129	2.76	265	24.6
	PZ-42	10/5/2020	5.2	5.5	165	4760	92.4	26.0
		10/21/2020	5.8	1.6	-10.2	5.80	350	30.0
	PZ-43	10/5/2020	6.1	4.9	165	4830	261	30.0
	PZ-44	10/5/2020	4.9	2.7	198	1520	68.3	24.7
		10/21/2020	4.8	5.2	102	15.1	78.7	25.5
	PZ-45	10/5/2020	5.7	4.0	79.8	1070	147	25.2
		10/21/2020	4.3	3.8	210	6.01	42.6	24.6
Surface Water	7C	07/16/20	7.7	6.8	-17.0	13.9	190	32.7
		07/23/20	7.9	3.8	128	12.4	189	34.4
		07/27/20	7.6	7.0	123	13.9	190	33.7
		07/28/20	7.5	6.7	89.0	39.6	381	32.8
		07/31/20	6.9	8.4	193	8.01	339	11.2
	7C East	09/16/20	7.6	7.4	52.7	10.4	190	28.9
		09/24/20	8.0	7.77	-48.2	15.4	216	25.1
		11/04/20	8.3	9.0	32.6	10.0	300	20.3
		11/05/20	7.8	8.6	126	20.1	265	24.4
	7C Mid	09/16/20	7.6	7.2	51.1	8.42	182	29.7
		09/24/20	7.9	8.0	-35.5	18.4	205	24.6
		11/04/20	8.6	8.6	-25.9	8.35	691	20.0
		11/05/20	7.8	8.7	147	19.7	265	22.7
	7C West	09/16/20	7.6	7.2	54.0	10.5	167	29.2
		09/24/20	7.8	8.1	-21.1	22.2	208	24.3
		11/04/20	8.3	8.9	18.2	10.4	266	19.6
		11/05/20	7.8	8.3	171	10.3	253	23.3
	7C-2 Mid	11/04/20	8.3	8.6	11.2	12.1	404	20.2
		11/05/20	7.8	8.7	151	17.1	301	24.6
	7C-2 East	11/04/20	8.3	8.9	18.2	10.4	266	19.6
		11/05/20	7.7	8.5	92.9	18.1	289	24.9
	7C-2 West	11/04/20	8.3	8.8	8.10	11.6	310	19.3
		11/05/20	7.8	8.5	153	16.5	257	22.8
	7D	09/16/20	7.8	7.4	42.0	10.5	201	28.9
		09/24/20	7.8	7.9	-0.900	19.7	194	24.7
	7E	09/16/20	7.9	7.3	13.9	7.66	225	28.5
		09/24/20	7.8	8.1	9.40	13.5	192	24.7
	7E Mid	11/04/20	8.6	8.6	-32.2	7.72	369	20.8
		11/05/20	7.7	9.0	134	12.8	244	21.5
	7E North	11/04/20	8.5	9.0	-25.2	8.33	422	19.7
		11/05/20	7.9	8.9	120	17.5	235	21.0
	7E South	11/04/20	8.6	8.7	-28.8	6.99	772	21.1
		11/05/20	7.8	8.9	8.90	9.73	237	20.8
	7F	09/16/20	8.4	6.9	-18.8	9.38	396	28.7
		09/24/20	7.9	8.9	25.4	14.9	189	24.7

TABLE 1
FIELD PARAMETER MEASUREMENTS
Chemours Fayetteville Works, North Carolina

Location Type	Location	Date	pH (S.U.)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Specific Conductance (µS/cm)	Temperature (°C)
Surface Water	20	07/16/20	7.9	6.8	-14.4	13.8	180	32.8
		07/23/20	7.3	7.0	220	12.4	182	34.2
		07/27/20	7.4	7.0	145	13.7	289	32.2
		07/28/20	7.4	7.2	134	14.1	247	32.4
		07/31/20	6.5	8.2	214	9.34	1390	12.6
	20A	09/16/20	8.6	5.6	-19.5	7.32	922	28.1
		09/24/20	7.8	8.3	19.9	14.3	196	24.7
	20A Mid	11/04/20	8.5	8.7	0.900	16.3	356	19.2
		11/05/20	8.1	9.2	77.8	15.3	253	20.9
	20A North	11/04/20	8.4	9.0	4.40	31.1	347	19.6
		11/05/20	8.2	9.2	67.8	25.1	274	21.1
	20A South	11/04/20	8.6	9.3	-6.80	5.72	381	19.8
		11/05/20	8.1	9.6	81.8	9.32	249	20.7

Notes:
°C - degrees Celsius
mg/L - milligrams per liter
mS/cm - millisiemens per centimeter
mV- millivolts
NTU - nephelometric Turbidity Unit
S.U. - Standard Units
For spatial composite samples collected in November, field parameters were collected at individual sample locations before water was composited together.

TABLE 2
GROUNDWATER AND SURFACE WATER ELEVATIONS
Chemours Fayetteville Works, North Carolina

Program	Aquifer[1]	Well ID	Northing (ft, SPCS NAD83)[2]	Easting (ft, SPCS NAD83)[2]	Gauging Date	Screened Interval (ft)	TOC Elevation (NAVD 88)[3]	Depth to Water (from TOC)	Water Level (ft NAVD88)
2020.10 Open Channel	Perched Zone	PZ-36 (Transect 5)	396086.17	2051331.44	10/8/2020	5 - 8.5	135.2	2.44	132.76
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 8.5	135.2	2.90	132.30
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 8.5	135.2	2.84	132.36
2020.10 Open Channel	Perched Zone	PZ-37 (Transect 4)	396042.4	2051050.05	10/8/2020	5 - 8	135.56	2.44	133.12
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 8	135.56	3.16	132.40
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 8	135.56	2.89	132.67
2020.10 Open Channel	Perched Zone	PZ-38 (Transect 3)	395970.01	2050569.66	10/8/2020	5 -9	137.34	4.18	133.16
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 9	137.34	4.80	132.54
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 9	137.34	4.80	132.54
2020.10 Open Channel	Perched Zone	PZ-39 (Transect 2)	395921.87	2050238.18	10/8/2020	5 - 10	137.93	3.37	134.56
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 10	137.93	4.37	133.56
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 10	137.93	3.84	134.09
2020.10 Open Channel	Perched Zone	PZ-40 (Transect 1)	395943.02	2050031.9	10/8/2020	5 - 9	138.51	3.70	134.81
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 9	138.51	4.52	133.99
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 9	138.51	4.15	134.36
2020.10 Open Channel	Perched Zone	PZ-41 (Transect 1)	395979.29	2050048.97	10/8/2020	5 - 8.5	138.13	2.89	135.24
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 8.5	138.13	3.82	134.31
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 8.5	138.13	3.50	134.63
2020.10 Open Channel	Perched Zone	PZ-42 (Transect 2)	395961.73	2050230.23	10/8/2020	5 - 7	138.17	2.81	135.36
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 7	138.17	4.35	133.82
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 7	138.17	3.80	134.37
2020.10 Open Channel	Perched Zone	PZ-43 (Transect 3)	396011.61	2050567.89	10/8/2020	5 - 9	137.06	4.39	132.67
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 9	137.06	5.80	131.26
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 9	137.06	7.69	129.37
2020.10 Open Channel	Perched Zone	PZ-44 (Transect 4)	396082.75	2051045.25	10/8/2020	5 - 7	136.26	2.84	133.42
2020.10 Open Channel	Perched Zone				10/18/2020	5 - 7	136.26	3.47	132.79
2020.10 Open Channel	Perched Zone				11/3/2020	5 - 7	136.26	3.24	133.02
2020.10 Open Channel	Perched Zone	PZ-45 (Transect 5)	396124.41	2051323.03	10/8/2020	2 - 4	135.69	2.50	133.19
2020.10 Open Channel	Perched Zone				10/18/2020	2 - 4	135.69	2.67	133.02
2020.10 Open Channel	Perched Zone				11/3/2020	2 - 4	135.69	2.87	132.82
2020.10 Open Channel	--	Surface Water Transect 1	395961.1551	2050040.435	10/8/2020	--	--	--	134.90
2020.10 Open Channel	--				10/18/2020	--	--	--	134.26
2020.10 Open Channel	--				11/3/2020	--	--	--	134.87
2020.10 Open Channel	--	Surface Water Transect 2	395941.8002	2050234.205	10/8/2020	--	--	--	134.40
2020.10 Open Channel	--				10/18/2020	--	--	--	133.17
2020.10 Open Channel	--				11/3/2020	--	--	--	133.85
2020.10 Open Channel	--	Surface Water Transect 3	395990.8102	2050568.775	10/8/2020	--	--	--	133.70
2020.10 Open Channel	--				10/18/2020	--	--	--	133.13
2020.10 Open Channel	--				11/3/2020	--	--	--	133.75
2020.10 Open Channel	--	Surface Water Transect 4	396062.5752	2051047.65	10/8/2020	--	--	--	133.10
2020.10 Open Channel	--				10/18/2020	--	--	--	132.21
2020.10 Open Channel	--				11/3/2020	--	--	--	132.83
2020.10 Open Channel	--	Surface Water Transect 5	396105.29	2051327.235	10/8/2020	--	--	--	132.80
2020.10 Open Channel	--				10/18/2020	--	--	--	131.17
2020.10 Open Channel	--				11/3/2020	--	--	--	132.07

Notes:
1 - Aquifer - refers to primary aquifer unit well screen is estimated to be screened within.
2 - Northing and Easting provided in North Carolina State Plane System (zone 3200), North American Datum 1983.
3 - Vertical datum is North American Vertical Datum of 1988.
ft - feet ; TOC - top of casing
NAVD88 - North American Vertical Datum of 1988
SPCS NAD83 - State Plane Coordinate System North American Datum 1983

TABLE 3
SURFACE WATER ANALYTICAL RESULTS - ROUND 1
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	Loc7C	Loc7C	Loc7C	Loc7C	Loc7C	Loc7C
Field Sample ID	LOC-7C-24-071620	LOC-7C-24-071620-D	LOC-7C-24-072320	LOC-7C-24-072720	LOC-7C-24-072820	LOC-7C-24-073120
Sample Date	7/16/2020	7/16/2020	7/23/2020	7/27/2020	7/28/2020	7/31/2020
QA/QC		Duplicate				
Sample Type	Composite	Composite	Composite	Composite	Composite	Composite
Sample Delivery Group (SDG)	320-62878-1	320-62878-1	320-63032-1	320-63286-1	320-63295-1	320-63455-1
Lab Sample ID	320-62878-1	320-62878-2	320-63032-2	320-63286-2	320-63295-2	320-63455-2
Table 3+ SOP (ng/L)						
HFPO-DA	**32**	**32**	**21**	**15**	**22**	**55**
PFMOAA	**26**	**28**	**21**	<2	<2	<2
PFO2HxA	**22**	**21**	**18**	**12**	**15**	**15**
PFO3OA	**4.6**	**4.5**	**4.4**	**2.4**	**2.4**	**3.1**
PFO4DA	**2.1**	<2	**2.6**	<2	<2	<2
PFO5DA	<2	<2	<2	<2	<2	<2
PMPA	**55**	**59**	**33**	**31**	**37**	**37**
PEPA	<10	<10	<10	<10	<10	<10
PS Acid	**13**	**13**	**3.9**	**3.2**	**12**	**25**
Hydro-PS Acid	**7.2**	**7.3**	**7.2**	**5.4**	**6.7**	**6.8**
R-PSDA	**28 J**	**30 J**	<2	<2	<2	<2
Hydrolyzed PSDA	**98 J**	**100 J**	**73 J**	**55 J**	**100 J**	**80 J**
R-PSDCA	<2	<2	<2	<2	<2	<2
NVHOS	**8.5 J**	**4.6 J**	**2.8**	**2.8**	**3.7**	<2
EVE Acid	**3.9**	**3.6**	<2	<2	**3.7**	**10**
Hydro-EVE Acid	<2	<2	<2	<2	<2	<2
R-EVE	**5.9 J**	**6.5 J**	<2	<2	<2	<2
PES	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**170**	**170**	**110**	**72**	**100**	**150**
Total Table 3+ (20 compounds)	**310**	**310**	**190**	**130**	**200**	**230**

TABLE 3
SURFACE WATER ANALYTICAL RESULTS - ROUND 1
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	**LOC20**	**LOC20**	**LOC20**	**LOC20**	**LOC20**	**LOC20**
Field Sample ID	**LOC-20-24-071620**	**LOC-20-24-071620-D**	**LOC-20-24-072320**	**LOC-20-24-072720**	**LOC-20-24-072820**	**LOC-20-24-073120**
Sample Date	**7/16/2020**	**7/16/2020**	**7/23/2020**	**7/27/2020**	**7/28/2020**	**7/31/2020**
QA/QC		**Duplicate**				
Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**
Sample Delivery Group (SDG)	**320-62878-1**	**320-62878-1**	**320-63032-1**	**320-63286-1**	**320-63295-1**	**320-63455-1**
Lab Sample ID	**320-62878-3**	**320-62878-4**	**320-63032-1**	**320-63286-1**	**320-63295-1**	**320-63455-1**
Table 3+ SOP (ng/L)						
HFPO-DA	**78**	**77**	**54**	**46**	**53**	**55**
PFMOAA	**25**	**25**	**17**	<2	<2	<2
PFO2HxA	**25**	**25**	**24**	**17**	**17**	**18**
PFO3OA	**5.4 J**	**4.6**	**7.5**	**2.7**	**3.2**	**3.2**
PFO4DA	**2.7**	**2.2**	**3.4**	**2.5**	**2**	**2.2**
PFO5DA	<2	<2	<2	<2	<2	<2
PMPA	**69**	**64**	**28**	**41**	**43**	**38**
PEPA	<10	<10	<10	<10	<10	<10
PS Acid	**30**	**27**	**20**	**14**	**35**	**40**
Hydro-PS Acid	**7.6**	**7.4**	**7.4**	**5.5**	**7.5**	**6.8**
R-PSDA	**41 J**	**36 J**	<2	<2	**27 J**	<2
Hydrolyzed PSDA	**140 J**	**130 J**	**82 J**	**77 J**	**150 J**	**96 J**
R-PSDCA	<2	<2	<2	<2	<2	<2
NVHOS	**4.2**	**4.4**	**3.4**	**4.1**	**4.1**	<2
EVE Acid	**6.8**	**7.3**	**3.8**	<2	**12**	**16**
Hydro-EVE Acid	<2	<2	<2	<2	<2	<2
R-EVE	**10 J**	**8.8 J**	<2	<2	**3.4 J**	<2
PES	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**250**	**240**	**170**	**130**	**180**	**180**
Total Table 3+ (20 compounds)	**440**	**420**	**250**	**210**	**360**	**280**

TABLE 3
SURFACE WATER ANALYTICAL RESULTS - ROUND 1
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	**EB**	**EB**	**EB**	**EB**	**FBLK**	**FBLK**
Field Sample ID	**EQBLK-20-071720**	**EQBLK-7C-071720**	**LOC-20-EB-072820**	**LOC-7C-EB-072820**	**FBLK-20-071720**	**FBLK-7C-071720**
Sample Date	**7/17/2020**	**7/17/2020**	**7/28/2020**	**7/28/2020**	**7/17/2020**	**7/17/2020**
QA/QC	**Grab**	**Grab**	**Equipment Blank**	**Equipment Blank**	**Field Blank**	**Field Blank**
Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
Sample Delivery Group (SDG)	**320-62878-1**	**320-62878-1**	**320-63295-1**	**320-63295-1**	**320-62878-1**	**320-62878-1**
Lab Sample ID	**320-62878-7**	**320-62878-5**	**320-63295-5**	**320-63295-3**	**320-62878-8**	**320-62878-6**
Table 3+ SOP (ng/L)						
HFPO-DA	<2	<2	<2	<2	<2	<2
PFMOAA	<2	<2	<2	<2	<2	<2
PFO2HxA	<2	<2	<2	<2	<2	<2
PFO3OA	<2	<2	<2	<2	<2	<2
PFO4DA	<2	<2	<2	<2	<2	<2
PFO5DA	<2	<2	<2	<2	<2	<2
PMPA	<20	<20	<20	<20	<20	<20
PEPA	<10	<10	<10	<10	<10	<10
PS Acid	<2	<2	<2	<2	<2	<2
Hydro-PS Acid	<2	<2	<2	<2	<2	<2
R-PSDA	<2	<2	<2	<2	<2	<2
Hydrolyzed PSDA	<2	<2	<2	<2	<2	<2
R-PSDCA	<2	<2	<2	<2	<2	<2
NVHOS	<2	<2	<2	<2	<2	<2
EVE Acid	<2	<2	<2	<2	<2	<2
Hydro-EVE Acid	<2	<2	<2	<2	<2	<2
R-EVE	<2	<2	<2	<2	<2	<2
PES	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	ND	ND	ND	ND	ND	ND
Total Table 3+ (20 compounds)	ND	ND	ND	ND	ND	ND

TABLE 3
SURFACE WATER ANALYTICAL RESULTS - ROUND 1
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling
Location ID	**FBLK**	**FBLK**
Field Sample ID	**LOC-20-FB-072820**	**LOC-7C-FB-072820**
Sample Date	**7/28/2020**	**7/28/2020**
QA/QC	**Field Blank**	**Field Blank**
Sample Type	**Grab**	**Grab**
Sample Delivery Group (SDG)	**320-63295-1**	**320-63295-1**
Lab Sample ID	**320-63295-6**	**320-63295-4**
Table 3+ SOP (ng/L)		
HFPO-DA	<2	<2
PFMOAA	<2	<2
PFO2HxA	<2	<2
PFO3OA	<2	<2
PFO4DA	<2	<2
PFO5DA	<2	<2
PMPA	<20	<20
PEPA	<10	<10
PS Acid	<2	<2
Hydro-PS Acid	<2	<2
R-PSDA	<2	<2
Hydrolyzed PSDA	<2	<2
R-PSDCA	<2	<2
NVHOS	<2	<2
EVE Acid	<2	<2
Hydro-EVE Acid	<2	<2
R-EVE	<2	<2
PES	<2	<2
PFECA B	<2	<2
PFECA-G	<2	<2
Total Table 3+ (17 compounds)	ND	ND
Total Table 3+ (20 compounds)	ND	ND

Notes:
Bold - Analyte detected above associated reporting limit
J - Analyte detected. Reported value may not be accurate or precise
ND - no Table 3+ analytes were detected above the associated reporting limits
ng/L - nanograms per liter
QA/QC - Quality assurance/ quality control
SDG - Sample Delivery Group
SOP - standard operating procedure
UJ - Analyte not detected. Reporting limit may not be accurate or precise.
< - Analyte not detected above associated reporting limit.

TABLE 4
SURFACE WATER ANALYTICAL RESULTS - ROUND 2
Chemours Fayetteville Works, North Carolina

Sampling Program	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling
Location ID	**LOC7C**	**Loc7C**	**LOC7C**	**LOC7D**	**LOC7E**
Field Sample ID	**LOC-7C-EAST-24-091620**	**LOC-7C-MID-24-SPLIT-A-091620**	**LOC-7C-WEST-24-091620**	**LOC-7D-24-091620**	**LOC-7E-24-091620**
Sample Date	**9/16/2020**	**9/16/2020**	**9/16/2020**	**9/16/2020**	**9/16/2020**
QA/QC					
Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**
Sample Delivery Group (SDG)	**320-64773-1**	**320-64771-1**	**320-64773-1**	**320-64773-1**	**320-64773-1**
Lab Sample ID	**320-64773-2**	**320-64771-1**	**320-64773-1**	**320-64773-3**	**320-64773-4**
Table 3+ (ng/L)					
HFPO-DA	**39**	**30**	**23**	**31**	**32**
PFMOAA	<2	**13 J**	<2	<2	<2
PFO2HxA	**10**	**9.5**	**9.8**	**9.9**	**10**
PFO3OA	<2	<2	<2	<2	<2
PFO4DA	<2	<2	<2	<2	<2
PFO5DA	<2	<2	<2	<2	<2
PMPA	<20	**66**	<20	<20	<20
PEPA	<10	<10	<10	<10	<10
PS Acid	**50**	**22**	**15**	**30**	**30**
Hydro-PS Acid	**32**	**14**	**11**	**21**	**22**
R-PSDA	**41 J**	**32 J**	**5.7 J**	**16 J**	**30 J**
Hydrolyzed PSDA	**100 J**	**82 J**	**54 J**	**80 J**	**84 J**
R-PSDCA	**5.5**	**2.3**	<2	**3.2**	**3.7**
NVHOS	**7.1**	**10**	**3.4**	**5.9**	**6**
EVE Acid	**19**	**8.8**	**5.7**	**12**	**12**
Hydro-EVE Acid	**5.9**	**2.6**	<2	**3.6**	**4**
R-EVE	**16 J**	**29 J**	**2 J**	**18 J**	**21 J**
PES	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**170**	**180**	**68**	**120**	**120**
Total Table 3+ (20 compounds)	**330**	**320**	**130**	**230**	**250**

TABLE 4
SURFACE WATER ANALYTICAL RESULTS - ROUND 2
Chemours Fayetteville Works, North Carolina

Sampling Program	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling
Location ID	**LOC7F**	**LOC20A**	**LOC7C**	**LOC7C**	**LOC7C**
Field Sample ID	**LOC-7F-24-091620**	**LOC-20A-21-SPLIT-A-091620**	**LOC-7C-EAST-24-092420**	**LOC-7C-MID-24-SPLIT-A-092420**	**LOC-7C-WEST-24-092420**
Sample Date	**9/16/2020**	**9/16/2020**	**9/24/2020**	**9/24/2020**	**9/24/2020**
QA/QC					
Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**
Sample Delivery Group (SDG)	**320-64773-1**	**320-64782-1**	**320-65182-1**	**320-65175-1**	**320-65182-1**
Lab Sample ID	**320-64773-5**	**320-64782-1**	**320-65182-2**	**320-65175-1**	**320-65182-1**
Table 3+ (ng/L)					
HFPO-DA	**34**	**44**	**33**	**27**	**25**
PFMOAA	<2	<2 UJ	**7.9**	**8.7 J**	**10**
PFO2HxA	**10**	**11 J**	**14**	**13**	**12**
PFO3OA	<2	**2.5**	**3.1**	**2.3**	**2.7**
PFO4DA	<2	<2	<2	<2	<2
PFO5DA	<2	<2	<2	<2	<2
PMPA	<20	**35**	**37**	**190 J**	**46**
PEPA	<10	<10	<10	**80**	<10
PS Acid	**35**	**38**	**43**	**16**	**10**
Hydro-PS Acid	**27**	**36**	**30**	**16**	**11**
R-PSDA	**18 J**	**77 J**	**100 J**	**22 J**	**46 J**
Hydrolyzed PSDA	**76 J**	**96 J**	**71 J**	**49 J**	**56 J**
R-PSDCA	**4.4**	**6.1**	**2.9**	<2	<2
NVHOS	**6**	**14**	**4.2**	**4.2**	<2
EVE Acid	**14**	**19**	**5.5**	**2.6**	<2
Hydro-EVE Acid	**4.8**	**6.5**	**2**	<2	<2
R-EVE	**11 J**	**52 J**	**16 J**	**6.8 J**	**5.2 J**
PES	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**140**	**210**	**180**	**360**	**120**
Total Table 3+ (20 compounds)	**240**	**440**	**370**	**440**	**220**

TABLE 4
SURFACE WATER ANALYTICAL RESULTS - ROUND 2
Chemours Fayetteville Works, North Carolina

Sampling Program	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling
Location ID	**LOC7D**	**LOC7E**	**LOC7F**	**LOC20A**	**EB**
Field Sample ID	**LOC-7D-24-092420**	**LOC-7E-24-092420**	**LOC-7F-24-092420**	**LOC-20A-24-SPLIT-A-092420**	**EB-SPLIT-A-091620**
Sample Date	**9/24/2020**	**9/24/2020**	**9/24/2020**	**9/24/2020**	**9/16/2020**
QA/QC					**Equipment Blank**
Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Grab**
Sample Delivery Group (SDG)	**320-65182-1**	**320-65182-1**	**320-65182-1**	**320-65177-1**	**320-64799-1**
Lab Sample ID	**320-65182-3**	**320-65182-4**	**320-65182-5**	**320-65177-1**	**320-64799-1**
Table 3+ (ng/L)					
HFPO-DA	**27**	**29**	**28**	**30**	<2
PFMOAA	**8.4**	**9.5**	**8.7**	**18 J**	<2
PFO2HxA	**13**	**12**	**13**	**14**	<2
PFO3OA	**2.9**	**2.8**	**3**	**2.7**	<2
PFO4DA	<2	<2	<2	<2	<2
PFO5DA	<2	<2	<2	<2	<2
PMPA	**33**	**28**	**52**	**28**	<20
PEPA	<10	<10	<10	<10	<10
PS Acid	**17**	**19**	**20**	**23**	<2
Hydro-PS Acid	**17**	**16**	**17**	**19**	<2
R-PSDA	**62 J**	**54 J**	**67 J**	**56 J**	<2
Hydrolyzed PSDA	**54 J**	**51 J**	**58 J**	**58 J**	<2
R-PSDCA	<2	<2	<2	**2**	<2
NVHOS	**3.9**	**2.8**	**2.6**	**3.5**	<2
EVE Acid	**3**	**2.9**	**3**	**3.4**	<2
Hydro-EVE Acid	<2	<2	<2	<2	<2
R-EVE	**12 J**	**6.3 J**	**8.3 J**	**7.1 J**	<2
PES	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**130**	**120**	**150**	**140**	ND
Total Table 3+ (20 compounds)	**250**	**230**	**280**	**260**	ND

TABLE 4
SURFACE WATER ANALYTICAL RESULTS - ROUND 2
Chemours Fayetteville Works, North Carolina

Sampling Program	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling
Location ID	**EB**	**FBLK**	**FBLK**
Field Sample ID	**EB-SPLIT-A-092420**	**FB-SPLIT-A-091620**	**FB-SPLIT-A-092420**
Sample Date	**9/24/2020**	**9/16/2020**	**9/24/2020**
QA/QC	**Equipment Blank**	**Field Blank**	**Field Blank**
Sample Type	**Grab**	**Grab**	**Grab**
Sample Delivery Group (SDG)	**320-65186-1**	**320-64799-1**	**320-65186-1**
Lab Sample ID	**320-65186-1**	**320-64799-5**	**320-65186-5**
Table 3+ (ng/L)			
HFPO-DA	<2	<2	<2
PFMOAA	<2	<2	<2
PFO2HxA	<2	<2	<2
PFO3OA	<2	<2	<2
PFO4DA	<2	<2	<2
PFO5DA	<2	<2	<2
PMPA	<20	<20	<20
PEPA	<10	<10	<10
PS Acid	<2	<2	<2
Hydro-PS Acid	<2	<2	<2
R-PSDA	<2	<2	<2
Hydrolyzed PSDA	<2	<2	<2
R-PSDCA	<2	<2	<2
NVHOS	<2	<2	<2
EVE Acid	<2	<2	<2
Hydro-EVE Acid	<2	<2	<2
R-EVE	<2	<2	<2
PES	<2	<2	<2
PFECA B	<2	<2	<2
PFECA-G	<2	<2	<2
Total Table 3+ (17 compounds)	ND	ND	ND
Total Table 3+ (20 compounds)	ND	ND	ND

Notes:
Bold - Analyte detected above associated reporting limit
J - Analyte detected. Reported value may not be accurate or precise
ND - no Table 3+ analytes were detected above the associated reporting limits
ng/L - nanograms per liter
QA/QC - Quality assurance/ quality control
SDG - Sample Delivery Group
SOP - standard operating procedure
UJ - Analyte not detected. Reporting limit may not be accurate or precise.
< - Analyte not detected above associated reporting limit.

TABLE 5
SURFACE WATER ANALYTICAL RESULTS - ROUND 3
Chemours Fayetteville Works, North Carolina

Sampling Program	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling	Supplemental Open Channel Sampling
Location ID	**Loc7C**	**Loc7C**	**LOC20A**	**EB**	**FBLK**
Field Sample ID	**LOC-7C-4-101820**	**LOC-7C-4-101820-D**	**LOC-20A-4-101820**	**LOC-EB-102020**	**LOC-FB-102020**
Sample Date	**10/18/2020**	**10/18/2020**	**10/18/2020**	**10/20/2020**	**10/20/2020**
QA/QC		**Duplicate**		**Equipment Blank**	**Field Blank**
Sample Type	**Composite**	**Composite**	**Composite**	**Grab**	**Grab**
Sample Delivery Group (SDG)	**320-65801-1**	**320-65801-1**	**320-65801-1**	**320-65801-1**	**320-65801-1**
Lab Sample ID	**320-65801-2**	**320-65801-3**	**320-65801-1**	**320-65801-4**	**320-65801-5**
Table 3+ SOP (ng/L)					
HFPO-DA	**8,400**	**8,600**	**7,000**	<2	<2
PFMOAA	**690**	**670**	**1,600**	<2	<2
PFO2HxA	**1,100**	**1,100**	**1,200**	<2	<2
PFO3OA	**460**	**470**	**240**	<2	<2
PFO4DA	**370**	**370**	**210**	<2	<2
PFO5DA	**290**	**290**	**130**	<2	<2
PMPA	<620	**660**	**1,700**	<20	<20
PEPA	**520**	**540**	**760**	<10	<10
PS Acid	**5,400**	**5,300**	**920**	<2	<2
Hydro-PS Acid	**970**	**950**	**220**	<2	<2
R-PSDA	**1700 J**	**1900 J**	**360 J**	<2	<2
Hydrolyzed PSDA	**5200 J**	**5600 J**	**960 J**	<2	<2
R-PSDCA	**110**	**110**	**16**	<2	<2
NVHOS	**490**	**510**	**76**	<2	<2
EVE Acid	**1,900**	**1,900**	**270**	<2	<2
Hydro-EVE Acid	**470**	**480**	**72**	<2	<2
R-EVE	**680 J**	**720 J**	**170 J**	<2	<2
PES	**58**	**55**	**4.7**	<2	<2
PFECA B	<27	<13	<2.7	<2	<2
PFECA-G	<48	<24	<4.8	<2	<2
Total Table 3+ (17 Compounds)	**21,000**	**22,000**	**14,000**	ND	ND
Total Table 3+ (20 Compounds)	**21,000**	**22,000**	**14,000**	ND	ND

Notes:

Bold - Analyte detected above associated reporting limit

EPA - Environmental Protection Agency

ND - no Table 3+ analytes were detected above the associated reporting limits

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SDG - Sample Delivery Group

SOP - standard operating procedure

< - Analyte not detected above associated reporting limit.

TABLE 6
GROUNDWATER ANALYTICAL RESULTS - ROUND 3
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	**PZ 36**	**PZ 37**	**PZ 39**	**PZ 40**	**PZ 41**		**PZ 42**
Field Sample ID	**PZ_36_102120**	**PZ_37_102120**	**PZ_39_102120**	**PZ_40_102120**	**PZ_41_102120**	**PZ_41_102120_D**	**PZ_42_102120**
Sample Date	**10/21/2020**	**10/21/2020**	**10/21/2020**	**10/21/2020**	**10/21/2020**	**10/21/2020**	**10/21/2020**
QA/QC						**Field Duplicate**	
Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
Sample Delivery Group (SDG)	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Lab Sample ID	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Table 3+ SOP (ng/L)							
HFPO-DA	**410**	**680**	**100**	**300**	**120**	< 100	**250**
PFMOAA	**9,300**	**13,000**	**160**	**1,200**	< 100	< 100	< 100
PFO2HxA	**2,000**	**3,200**	**200**	**640**	**180**	**160**	**280**
PFO3OA	**500**	**880**	< 100	**100**	< 100	< 100	< 100
PFO4DA	<100	**240**	< 100	< 100	< 100	< 100	< 100
PFO5DoA	<100	**170**	< 100	**170**	< 100	< 100	< 100
PMPA	**330**	**840**	**250**	**500**	**200**	**180**	**440**
PEPA	<500	< 500	< 500	< 500	< 500	< 500	< 500
PS Acid	<100	< 100	< 100	< 100	< 100	< 100	< 100
Hydro-PS Acid	<100	**250**	< 100	< 100	< 100	< 100	< 100
R-PSDA	**150 J**	**230 J**	< 100	**170 J**	**100 J**	**110 J**	**130 J**
Hydrolyzed PSDA	**130 J**	**320 J**	< 100	< 100	< 100	< 100	< 100
R-PSDCA	< 100	< 100	< 100	< 100	< 100	< 100	< 100
NVHOS	< 500	< 500	< 500	< 500	< 500	< 500	< 500
EVE	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Hydro-EVE	< 100	< 100	< 100	< 100	< 100	< 100	< 100
R-EVE	< 100	< 100	< 100	< 100	< 100	< 100	< 100
PES	< 100	< 100	< 100	< 100	< 100	< 100	< 100
PFECA_B	< 100	< 100	< 100	< 100	< 100	< 100	< 100
PFECA_G	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Total Table 3+ (17 Compounds)	**13,000**	**19,000**	**710**	**2,900**	**500**	**340**	**970**
Total Table 3+ (20 Compounds)	**13,000**	**19,000**	**710**	**2,900**	**500**	**340**	**970**

TABLE 6
GROUNDWATER ANALYTICAL RESULTS - ROUND 3
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	**PZ 44**	**PZ 45**	**EQBLK**	**FBLK**
Field Sample ID	**PZ_44_102120**	**PZ_45_102120**	**EB_PP_102120**	**FB_102120**
Sample Date	**10/21/2020**	**10/21/2020**	**10/21/2020**	**10/21/2020**
QA/QC			**Equipment Blank**	**Field Blank**
Sample Type	**Grab**	**Grab**	**Grab**	**Grab**
Sample Delivery Group (SDG)	**--**	**--**	**--**	**--**
Lab Sample ID	**--**	**--**	**--**	**--**
Table 3+ SOP (ng/L)				
HFPO-DA	**6,000**	**7,500**	< 100	< 100
PFMOAA	**500**	**650**	< 100	< 100
PFO2HxA	**1,600**	**1,200**	< 100	< 100
PFO3OA	**160**	**210**	< 100	< 100
PFO4DA	**180**	**170**	< 100	< 100
PFO5DoA	< 100	< 100	< 100	< 100
PMPA	**2,500**	**2,600**	< 100	< 100
PEPA	**770**	**810**	< 500	< 500
PS Acid	< 100	< 100	< 100	< 100
Hydro-PS Acid	**120**	< 100	< 100	< 100
R-PSDA	**250 J**	**270 J**	< 100	< 100
Hydrolyzed PSDA	< 100	< 100	< 100	< 100
R-PSDCA	< 100	< 100	< 100	< 100
NVHOS	< 500	< 500	< 500	< 500
EVE	< 100	< 100	< 100	< 100
Hydro-EVE	< 100	< 100	< 100	< 100
R-EVE	**180**	**170**	< 100	< 100
PES	< 100	< 100	< 100	< 100
PFECA_B	< 100	< 100	< 100	< 100
PFECA_G	< 100	< 100	< 100	< 100
Total Table 3+ (17 Compounds)	**12,000**	**13,000**	ND	ND
Total Table 3+ (20 Compounds)	**12,000**	**13,000**	ND	ND

Notes:

Bold - Analyte detected above associated reporting limit

Data reported in this table was provided by the Chemours Onsite Laboratory.

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SDG - Sample Delivery Group

SOP - standard operating procedure

< - Analyte not detected above associated reporting limit.

TABLE 7
SEDIMENT ANALYTICAL RESULTS - ROUND 3
Chemours Fayetteville Works, North Carolina

LocID	LOC1	LOC3	LOC3	LOC4	LOC5	LOC7C	LOC7D
Field Sample ID	**SED1-101220**	**SED3-101220**	**SED3-101220-D**	**SED4-101220**	**SED5-101220**	**SED7C-101220**	**SED7D-101220**
Sample Date	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**
QA/QC			**Duplicate**				
Sample Matrix	**Solid**	**Solid**	**Solid**	**Solid**	**Solid**	**Solid**	**Solid**
Sample Delivery Group (SDG)	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**
Lab Sample ID	**320-65553-1**	**320-65553-2**	**320-65553-3**	**320-65553-4**	**320-65553-5**	**320-65553-6**	**320-65553-10**
Table 3+ SOP	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Hfpo Dimer Acid	<1	<1	<1	**2**	<4.1	<4.1	<17
PFMOAA	<1	**46 J**	**3.6 J**	**14**	<3.6	<3.6	<15
PFO2HxA	<1	**16 J**	**1.4 J**	**8**	<3.4	<3.4	<14
PFO3OA	<1	**9.1 J**	<1	**7**	<5.3	<5.3	<22
PFO4DA	<1	**5.3 J**	<1	**4**	<11	<11	<45
PFO5DA	<1	**3.2 J**	<1	**2**	<10	<10	<41
PMPA	<1	<1	<1	<1	<7	<7	<28
PEPA	<1	<1	<1	<1	<4.4	<4.3	<18
PS Acid	<1	<1	<1	<1	**2,100**	**1,400**	**9,600**
Hydro-PS Acid	<1	**4.4 J**	**1.1 J**	**6**	**82**	**41**	**320**
R-PSDA	<1	<1	<1	<1	<9.2	<9.1	<37
Hydrolyzed PSDA	<2	<2	<2	**4.2 J**	<15	<15	<62
R-PSDCA	<1	<1	<1	<1	<3.9	<3.8	<16
NVHOS	<1	**2.2**	<1	**1.8**	<4.6	<4.6	<19
EVE Acid	<1	<1	<1	<1	<3.6	<3.6	<15
Hydro-EVE Acid	<1	<1	<1	<1	<4.1	<4.1	<17
R-EVE	<2	<2	<2	<2	<12	<12	<50
PES	<1	<1	<1	<1	<4.1	<4.1	<17
PFECA B	<1	<1	<1	<1	<6.1	<6	<24
PFECA-G	<1	<1	<1	<1	<9	<8.9	<36
Total Table 3+ (17 compounds)	ND	**86**	**6**	**45**	**2,200**	**1,400**	**9,900**
Total Table 3+ (20 compounds)	ND	**86**	**6**	**49**	**2,200**	**1,400**	**9,900**
Other (%)							
Percent Moisture	20	28	27	30	26	31	27
Percent Solids	80	72	73	70	74	70	74

TABLE 7
SEDIMENT ANALYTICAL RESULTS - ROUND 3
Chemours Fayetteville Works, North Carolina

LocID	LOC7E	LOC7F	LOC20A	EB	FBLK
Field Sample ID	**SED7E-101220**	**SED7F-101220**	**SED20A-101220**	**SEDEB-101220**	**SEDFB-101220**
Sample Date	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**	**10/12/2020**
QA/QC				**Equipment blank**	**Field blank**
Sample Matrix	**Solid**	**Solid**	**Solid**	**Liquid**	**Liquid**
Sample Delivery Group (SDG)	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**	**320-65553-1**
Lab Sample ID	**320-65553-9**	**320-65553-8**	**320-65553-7**	**320-65553-12**	**320-65553-11**
Table 3+ SOP	(µg/kg)	(µg/kg)	(µg/kg)	(ng/L)	(ng/L)
Hfpo Dimer Acid	<10	<8.8	<7.9	<2	<2
PFMOAA	<9	<7.7	**14**	<2	<2
PFO2HxA	<8.4	<7.2	<6.5	<2	<2
PFO3OA	<13	<11	<10	<2	<2
PFO4DA	<28	<24	<21	<2	<2
PFO5DA	<25	<22	<20	<2	<2
PMPA	<17	<15	<14	<20	<20
PEPA	<11	<9.3	<8.4	<10	<10
PS Acid	**4,400**	**3,200**	**2,500**	<2	<2
Hydro-PS Acid	**160**	**110**	**77**	<2	<2
R-PSDA	<23	<20	<18	<2	<2
Hydrolyzed PSDA	<38	<32	<29	<2	<2
R-PSDCA	<9.6	<8.2	<7.5	<2	<2
NVHOS	<11	<9.8	<8.8	<2	<2
EVE Acid	<9	<7.7	<7	<2	<2
Hydro-EVE Acid	<10	<8.8	<7.9	<2	<2
R-EVE	<31	<26	<24	<2	<2
PES	<10	<8.8	<7.9	<2	<2
PFECA B	<15	<13	<12	<2	<2
PFECA-G	<22	<19	<17	<2	<2
Total Table 3+ (17 compounds)	**4,600**	**3,300**	**2,600**	ND	ND
Total Table 3+ (20 compounds)	**4,600**	**3,300**	**2,600**	ND	ND
Other (%)					
Percent Moisture	25	32	29	--	--
Percent Solids	76	68	71	--	--

Notes:
Bold - Analyte detected above associated reporting limit
µg/kg - micrograms per kilogram
ng/L - nanograms per liter
QA/QC - Quality assurance/ quality control
SDG - Sample Delivery Group
SOP - standard operating procedure
< - Analyte not detected above associated reporting limit.

TABLE 8
SURFACE WATER ANALYTICAL RESULTS - ROUND 4
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	Loc7C-2	Loc7C	LOC7E	LOC7E	LOC20A	Loc7C-2
Field Sample ID	LOC-7C-2-24-110420	LOC-7C-24-110420	LOC-7E-24-110420	LOC-7E-24-110420-D	LOC-20A-24-110420	LOC-7C-2-24-110520
Sample Date	11/4/2020	11/4/2020	11/4/2020	11/4/2020	11/4/2020	11/5/2020
QA/QC				Duplicate		
Sample Type	Composite	Composite	Composite	Composite	Composite	Composite
Sample Delivery Group (SDG)	320-66421-1	320-66421-1	320-66421-1	320-66421-1	320-66421-1	320-66446-1
Lab Sample ID	320-66421-3	320-66421-2	320-66421-4	320-66421-5	320-66421-1	320-66446-3
	LOC-7C-2-24-110420	LOC-7C-24-110420	LOC-7E-24-110420	LOC-7E-24-110420-DDuplicate	LOC-20A-24-110420	LOC-7C-2-24-110520
Table 3+ SOP (ng/L)						
HFPO-DA	**37**	**38**	**33**	**34**	**54**	**32**
PFMOAA	**25**	**19**	**21**	**22**	**19**	**18**
PFO2HxA	**17**	**16**	**16**	**15**	**19**	**21**
PFO3OA	**4.8**	**5.8**	**4.4**	**4**	**5.9**	**6.1**
PFO4DA	**3.1**	**3**	**2.4**	**2.3**	**3**	**2.8**
PFO5DA	<2	<2	<2	<2	<2	<2
PMPA	**32**	**27**	**28**	**24**	**28**	**27**
PEPA	<10	<10	<10	<10	<10	<10
PS Acid	**10**	**11**	**7.2**	**7.2**	**10**	**4.8**
Hydro-PS Acid	**5.3**	**4.8**	**4.9**	**4.8**	**6**	**4.6**
R-PSDA	**24 J**	**21 J**	**19 J**	**18 J**	**9.5 J**	**7.2 J**
Hydrolyzed PSDA	**48 J**	**44 J**	**38 J**	**39 J**	**51 J**	**32 J**
R-PSDCA	<2	<2	<2	<2	<2	<2
NVHOS	**2**	**4.2**	**3.3**	**3.7**	**2.8**	<2
EVE Acid	**3**	**3**	**2**	<2	**2.9**	<2
Hydro-EVE Acid	<2	<2	<2	<2	<2	<2
R-EVE	**8.2 J**	**5.8 J**	**5.1 J**	**5.6 J**	**4 J**	<2
PES	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**140**	**130**	**120**	**120**	**150**	**120**
Total Table 3+ (20 compounds)	**220**	**200**	**180**	**180**	**220**	**160**

TABLE 8
SURFACE WATER ANALYTICAL RESULTS - ROUND 4
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling	Open Channel Sampling
Location ID	**Loc7C**	**LOC7E**	**LOC20A**	**LOC20A**	**FBLK**	**EB**
Field Sample ID	**LOC-7C-24-110520**	**LOC-7E-24-110520**	**LOC-20A-24-110520**	**LOC-20A-24-110520-D**	**LOC-FB-110420**	**LOC-EB-110420**
Sample Date	**11/5/2020**	**11/5/2020**	**11/5/2020**	**11/5/2020**	**11/4/2020**	**11/4/2020**
QA/QC				**Duplicate**	**Field Blank**	**Equipment Blank**
Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**
Sample Delivery Group (SDG)	**320-66446-1**	**320-66446-1**	**320-66446-1**	**320-66446-1**	**320-66421-1**	**320-66421-1**
Lab Sample ID	**320-66446-2**	**320-66446-1**	**320-66446-4**	**320-66446-5**	**320-66421-6**	**320-66421-7**
	LOC-7C-24-110520	LOC-7E-24-110520	LOC-20A-24-110520	LOC-20A-24-110520-DDuplicate	LOC-FB-110420Field Blank	LOC-EB-110420Equipment Blank
Table 3+ SOP (ng/L)						
HFPO-DA	**36**	**34**	**47**	**49**	<2	<2
PFMOAA	**19**	**19**	**26 J**	**18 J**	<2	<2
PFO2HxA	**28**	**22**	**24**	**25**	<2	<2
PFO3OA	**8.7**	**6.4**	**6.8**	**7.9**	<2	<2
PFO4DA	**3.9**	**3.1**	**3**	**3.4**	<2	<2
PFO5DA	**2**	<2	<2	<2	<2	<2
PMPA	<20	<20	**30**	**29**	<20	<20
PEPA	<10	<10	<10	<10	<10	<10
PS Acid	**8.6**	**6.5**	**8.1**	**8**	<2	<2
Hydro-PS Acid	**4.9**	**5**	**4.7**	**5**	<2	<2
R-PSDA	**8.8 J**	**9.1 J**	**18 J**	**7.2 J**	<2	<2
Hydrolyzed PSDA	**26 J**	**33 J**	**35 J**	**29 J**	<2	<2
R-PSDCA	<2	<2	<2	<2	<2	<2
NVHOS	**2.1**	<2	**2.6**	<2	<2	<2
EVE Acid	**2.2**	<2	<2	<2	<2	<2
Hydro-EVE Acid	<2	<2	<2	<2	<2	<2
R-EVE	**3.2 J**	**2.2 J**	**5.4 J**	<2 UJ	<2	<2
PES	<2	<2	<2	<2	<2	<2
PFECA B	<2	<2	<2	<2	<2	<2
PFECA-G	<2	<2	<2	<2	<2	<2
Total Table 3+ (17 compounds)	**120**	**96**	**150**	**150**	ND	ND
Total Table 3+ (20 compounds)	**150**	**140**	**210**	**180**	ND	ND

TABLE 8
SURFACE WATER ANALYTICAL RESULTS - ROUND 4
Chemours Fayetteville Works, North Carolina

Sampling Program	Open Channel Sampling	Open Channel Sampling
Location ID	**FBLK**	**EB**
Field Sample ID	**LOC-FB-110520**	**LOC-EB-110520**
Sample Date	**11/5/2020**	**11/5/2020**
QA/QC	**Field Blank**	**Equipment Blank**
Sample Type	**Composite**	**Composite**
Sample Delivery Group (SDG)	**320-66446-1**	**320-66446-1**
Lab Sample ID	**320-66446-6**	**320-66446-7**
	LOC-FB-110520Field Blank	LOC-EB-110520Equipment Blank
Table 3+ SOP (ng/L)		
HFPO-DA	<2	<2
PFMOAA	<2	<2
PFO2HxA	<2	<2
PFO3OA	<2	<2
PFO4DA	<2	<2
PFO5DA	<2	<2
PMPA	<20	<20
PEPA	<10	<10
PS Acid	<2	<2
Hydro-PS Acid	<2	<2
R-PSDA	<2	<2
Hydrolyzed PSDA	<2	<2
R-PSDCA	<2	<2
NVHOS	<2	<2
EVE Acid	<2	<2
Hydro-EVE Acid	<2	<2
R-EVE	<2	<2
PES	<2	<2
PFECA B	<2	<2
PFECA-G	<2	<2
Total Table 3+ (17 compounds)	ND	ND
Total Table 3+ (20 compounds)	ND	ND

Notes:

Bold - Analyte detected above associated reporting limit

B - analyte detected in an associated blank

J - Analyte detected. Reported value may not be accurate or precise

ND - no Table 3+ analytes were detected above the associated reporting limits

ng/L - nanograms per liter

QA/QC - Quality assurance/ quality control

SDG - Sample Delivery Group

SOP - standard operating procedure

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

< - Analyte not detected above associated reporting limit.

TABLE 9

Geosyntec Consultants NC, P.C.

OUTFALL CHANNEL NEAR DUPONT MEASURED AND CALCULATED GROUNDWATER UPWELLING RATES

Chemours Fayetteville Works, North Carolina

Facility Status	Parameter	Transect 1 (PZ-41)	Transect 2 (PZ-42)	Transect 3 (PZ-43)	Transect 4 (PZ-44)	Transect 5 (PZ-45)	Open Channel (Combined)
Oct 8, 2020 (Pre-TAR)	Piezometer Groundwater Elevation (ft. asl.)	135.2	135.4	132.7	133.4	133.2	
	Channel Water Elevation (ft. asl.)	134.9	134.4	133.7	133.1	132.8	
	Distance Between Piezometer and Channel Water (ft)	11.8	10.1	9.9	10.3	10.8	
	Head Gradient	0.03	0.09	-0.10	0.03	0.04	0.05
	Estimated Upwelling Rate (gpm)						11
Oct 18, 2020 (TAR)	Piezometer Groundwater Elevation (ft. asl.)	134.3	133.8	131.3	132.8	133.0	
	Channel Water Elevation (ft. asl.)	134.3	133.2	133.1	132.2	131.2	
	Distance Between Piezometer and Channel Water (ft)	11.8	10.1	9.9	10.3	10.8	
	Head Gradient	0.00	0.06	-0.19	0.06	0.17	0.07
	KA Parameter						231
	Measured Upwelling Rate (gpm)						17
Nov 3, 2020 (Post-TAR)	Piezometer Groundwater Elevation (ft. asl.)	134.6	134.4	129.4	133.0	132.8	
	Channel Water Elevation (ft. asl.)	134.9	133.8	133.8	132.8	132.1	
	Distance Between Piezometer and Channel Water (ft)	11.8	10.1	9.9	10.3	10.8	
	Head Gradient	-0.02	0.05	-0.44	0.02	0.07	0.03
	Estimated Upwelling Rate (gpm)						7

Notes:

1) Gradient calculations were performed using piezometers located between the open channel and the facility.
2) Positive gradients indicate upwelling conditions in the Open Channel are possible while negative gradient indicate recharge from the Open Channel is possible.
3) The combined head gradient value is an average of the head gradients at Transects 1, 2, 4, and 5.
4) Transect 3 which is not in direct hydraulic connection with the open channel was not included in this combined assessment.
5) The 17 gpm increase in flow between Locations 7C and 20A during TAR on October 18, 2020 is interpreted to originate from upwelling groundwater.
6) The groundwater upwelling rates on October 8 and November 3, 2020 were estimated using Darcy's Law where Q = iKA; where Q is the upwelling flow rate, i is the gradient and KA is the product of hydraulic conductivity (K) and area (A). Gradients (i) were calculated for each date and KA was estimated using the measured upwelling rates on October 18, 2020.

Abbreviations:

ft asl - feet above sea level
gpm - gallons per minute
TAR - turnaround

TABLE 10
TABLE 3+ PFAS MASS DISCHARGE
Chemours Fayetteville Works, North Carolina

Sample Date	10/18/2020			11/4/2020			11/5/2020		
Location IDs	Loc7C (Flume)	Loc20A (Flume)	Delta[1]	Loc7C	Loc20A	Delta[1]	Loc7C	Loc20A	Delta[1]
Field Sample IDs	LOC-7C-4-101820	LOC-20A-4-101820		LOC-7C-24-110420	LOC-20A-24-110420		LOC-7C-24-110520	LOC-20A-24-110520	
Flow Rates (gpm)	0.40	17.0		5,827	5,827		6,308	6,308	
Mass Discharge (µg/sec)									
HFPO-DA	**0.21**	**7.5**	**7.3**	**14**	**20**	**6.0**	**14**	**19**	**5.0**
PFMOAA	**0.018**	**1.7**	**1.7**	**7.0**	**7.0**	0.0	**7.6**	**10**	**2.4**
PFO2HxA	**0.028**	**1.3**	**1.3**	**5.9**	**7.0**	**1.1**	**11**	**9.6**	**-1.4**
PFO3OA	**0.012**	**0.26**	**0.25**	**2.1**	**2.2**	**0.10**	**3.5**	**2.7**	**-0.80**
PFO4DA	**0.0094**	**0.23**	**0.22**	**1.1**	**1.1**	0.0	**1.6**	**1.2**	**-0.40**
PFO5DA	**0.0074**	**0.14**	**0.13**	ND	ND	0.0	**0.80**	ND	**-0.80**
PMPA	ND	**1.8**	**1.8**	**9.9**	**10**	**0.10**	ND	**12**	**12**
PEPA	**0.013**	**0.8**	**0.81**	ND	ND	0.0	ND	ND	0.0
PS Acid	**0.14**	**0.99**	**0.85**	**4.0**	**3.7**	**-0.30**	**3.4**	**3.2**	**-0.20**
Hydro-PS Acid	**0.025**	**0.24**	**0.22**	**1.8**	**2.2**	**0.40**	**2.0**	**1.9**	**-0.10**
R-PSDA	**0.043**	**0.39**	**0.35**	**7.7**	**3.5**	**-4.2**	**3.5**	**7.2**	**3.7**
Hydrolyzed PSDA	**0.13**	**1.0**	**0.87**	**16**	**19**	**3.0**	**10**	**14**	**4.0**
R-PSDCA	**0.0028**	**0.017**	**0.014**	ND	ND	0.0	ND	ND	0.0
NVHOS	**0.012**	**0.082**	**0.070**	**1.5**	**1.0**	**-0.50**	**0.84**	**1.0**	**0.16**
EVE Acid	**0.048**	**0.29**	**0.24**	**1.1**	**1.1**	0.0	**0.88**	ND	**-0.88**
Hydro-EVE Acid	**0.012**	**0.077**	**0.065**	ND	ND	0.0	ND	ND	0.0
R-EVE	**0.017**	**0.18**	**0.16**	**2.1**	**1.5**	**-0.60**	**1.3**	**2.1**	**0.80**
PES	**0.0015**	**0.0050**	**0.0035**	ND	ND	0.0	ND	ND	0.0
PFECA B	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
PFECA-G	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
Total Table 3+ (17 Compounds)	**0.53**	**15**	**14**	**48**	**55**	**7.0**	**46**	**61**	**15**
Total Table 3+ (20 Compounds)	**0.74**	**17**	**16**	**74**	**79**	**5.0**	**61**	**84**	**23**

Notes:
Bold - Difference in mass discharge at upstream and downstream locations is non-zero.
1 - The delta is the difference in mass discharge calculated at the downstream locations (Loc20A) and upstream locations (Loc7C). Negative values indicate higher discharge at the upstream location. Zero values indicate non-detect concentrations at both locations or the same concentrations at both locations.
2- Flow rates of the date of October 18, 2020 during facility turnaround were determined using flumes for each location (7C and 20A). Flow rates for the other dates occurring after facility turnaround were retrieved from Facility Discharge Monitoring Reports; flow rates for these dates were assumed to be equivalent at the upstream and downstream locations (7C and 20A).

Abbreviations:
gpm - gallons per minute
µg/sec - micrograms per second

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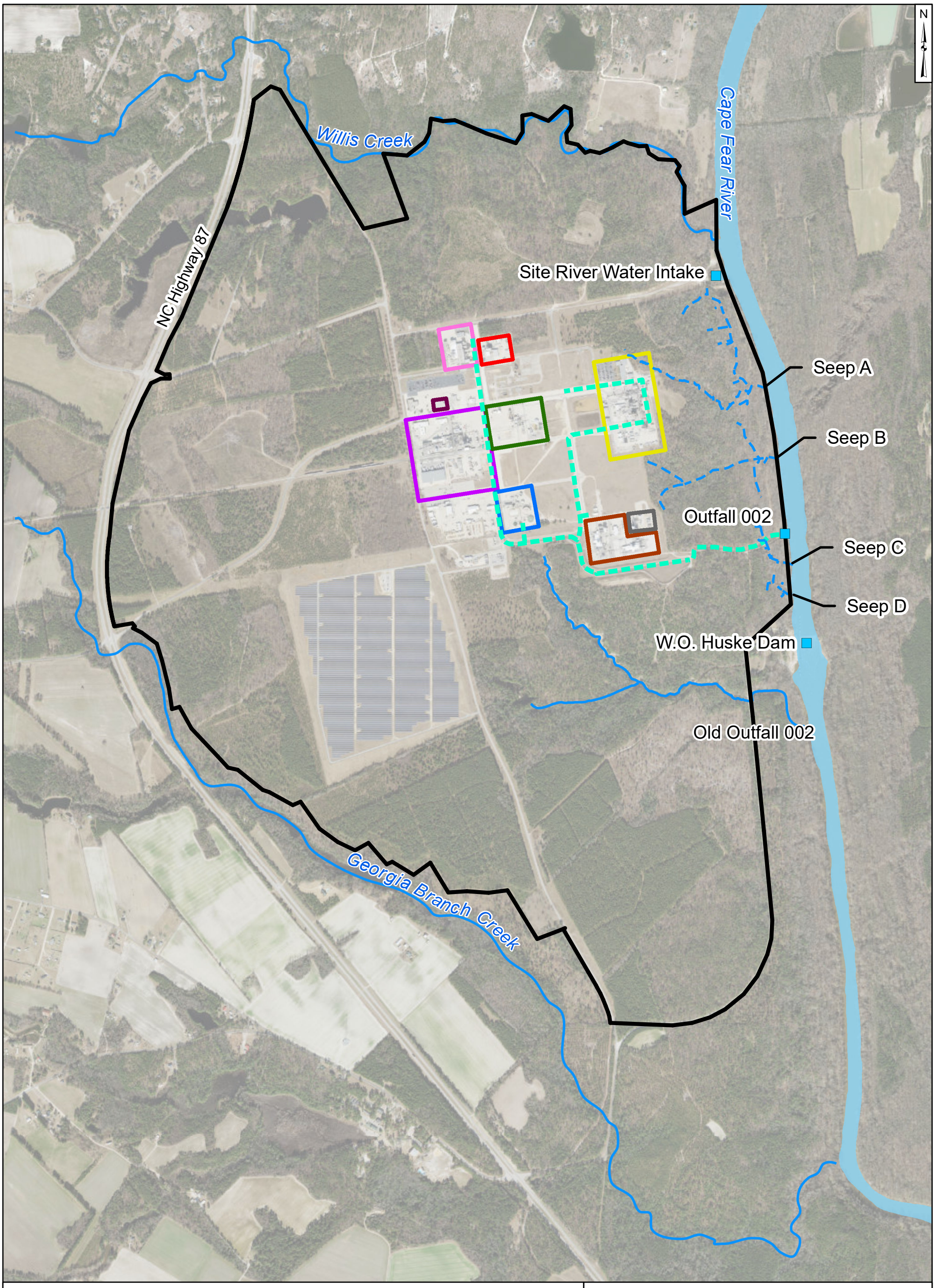
FIGURES



Legend

- Site Features
- Site Boundary
- Nearby Tributary
- Observed Seep (Natural Drainage)
- Site Conveyance Network

Areas at Site

- Chemours Monomers IXM
- Chemours Polymer Processing Aid Area
- DuPont Polyvinyl Fluoride Leased Area
- Former DuPont PMDF Area
- Kuraray SentryGlas® Leased Area
- Kuraray Trosifol® Leased Area
- Wastewater Treatment Plant
- Power - Filtered and Demineralized Water Production
- Kuraray Laboratory

1,000 500 0 1,000 Feet

Notes:
1. 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).
2. Basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Site Location Map

Chemours Fayetteville Works, North Carolina

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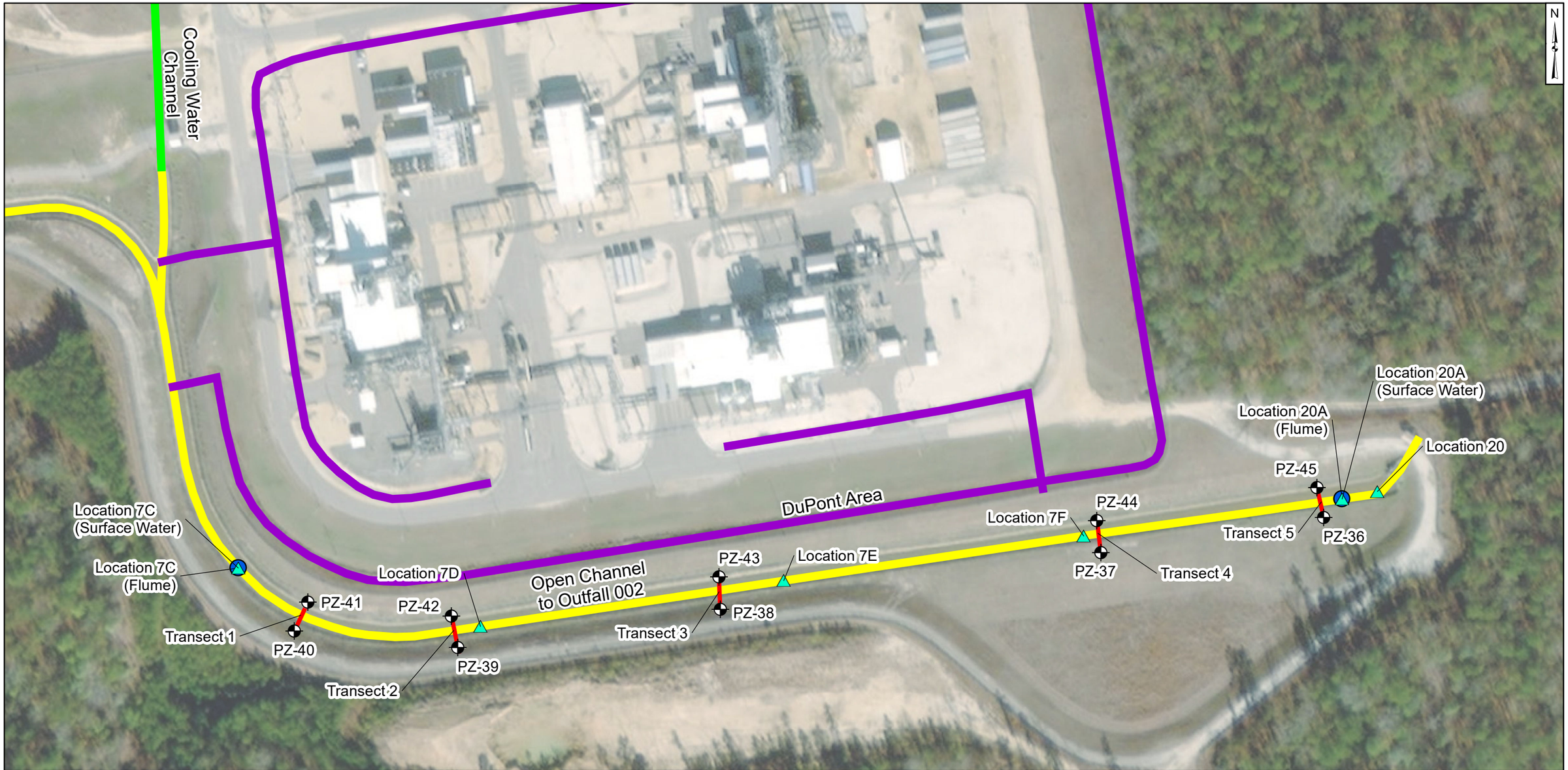
Raleigh | November 2020

Figure 1



Legend

- Surface Water Sample Locations
- Flume Locations
- Piezometer Locations
- Transect Line

Discharge Areas

- Cooling Water Channel
- Open Channel to Outfall
- DuPont Area

Notes:
Basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

100 50 0 100 Feet

Surface Water and Groundwater Sampling and Monitoring Locations

Chemours Fayetteville Works, North Carolina

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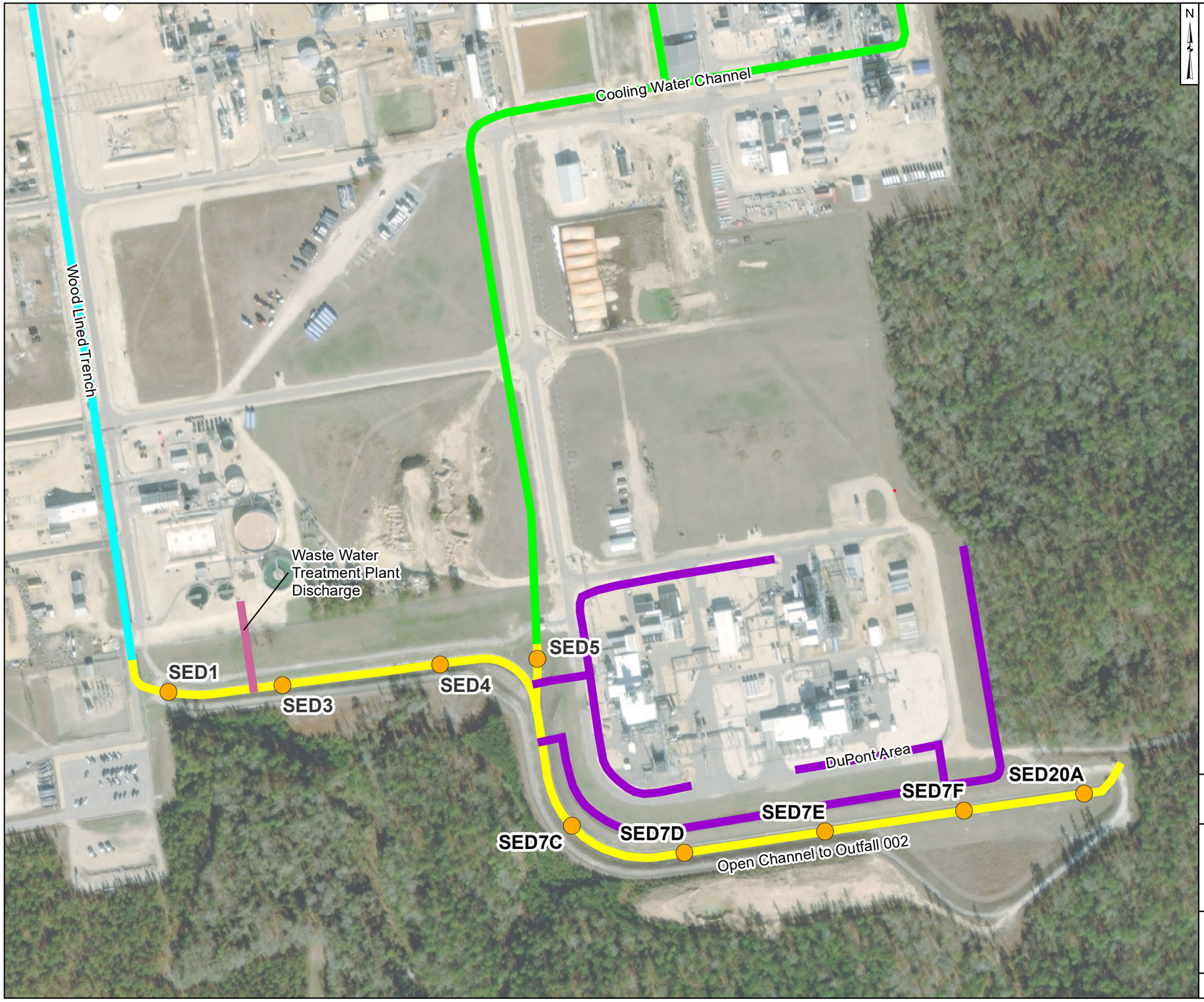
Figure 2



Legend

- Open Channel Sediment Sampling Location

Discharge Areas

- Wood Lined Trench
- Wastewater Treatment Plant Discharge
- Cooling Water Channel
- Open Channel to Outfall 002
- DuPont Area

Notes:

Locations correspond to sediment locations collected in October 2019 or surface water locations collected in September 2020. Samples should be collected in the vicinity of these locations depending on where sediment is present. Coordinates for updated locations should be documented upon sample collection.

400 200 0 400 Feet

Sediment Sampling Locations

Chemours Fayetteville Works, North Carolina

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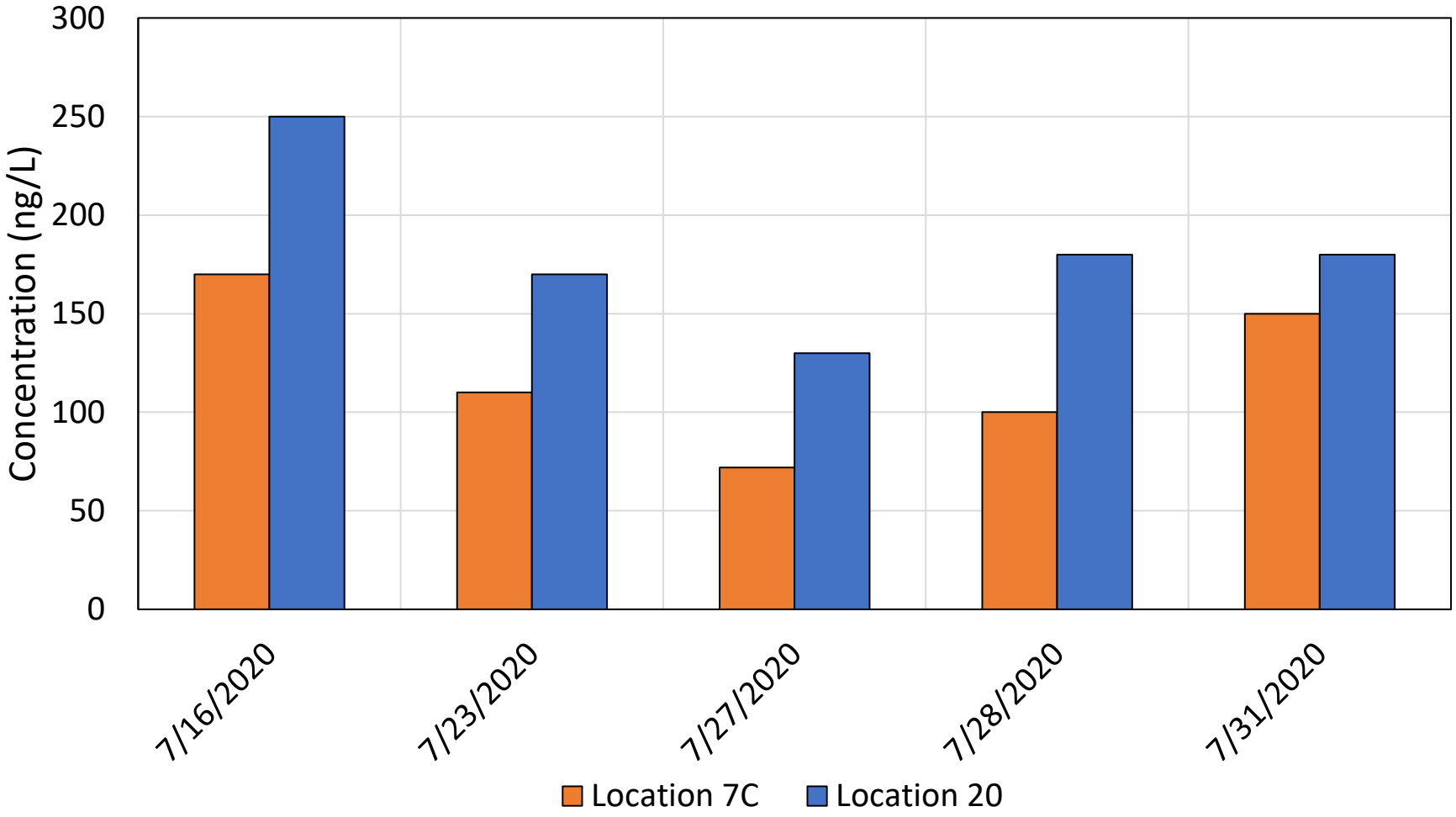
Figure 3



Notes:
Data shown is Table 3+ (17 compounds) concentrations

Abbreviations:
ng/L - nanograms per liter

Surface Water Results - Round 1
Chemours Fayetteville Works, North Carolina

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Figure
4

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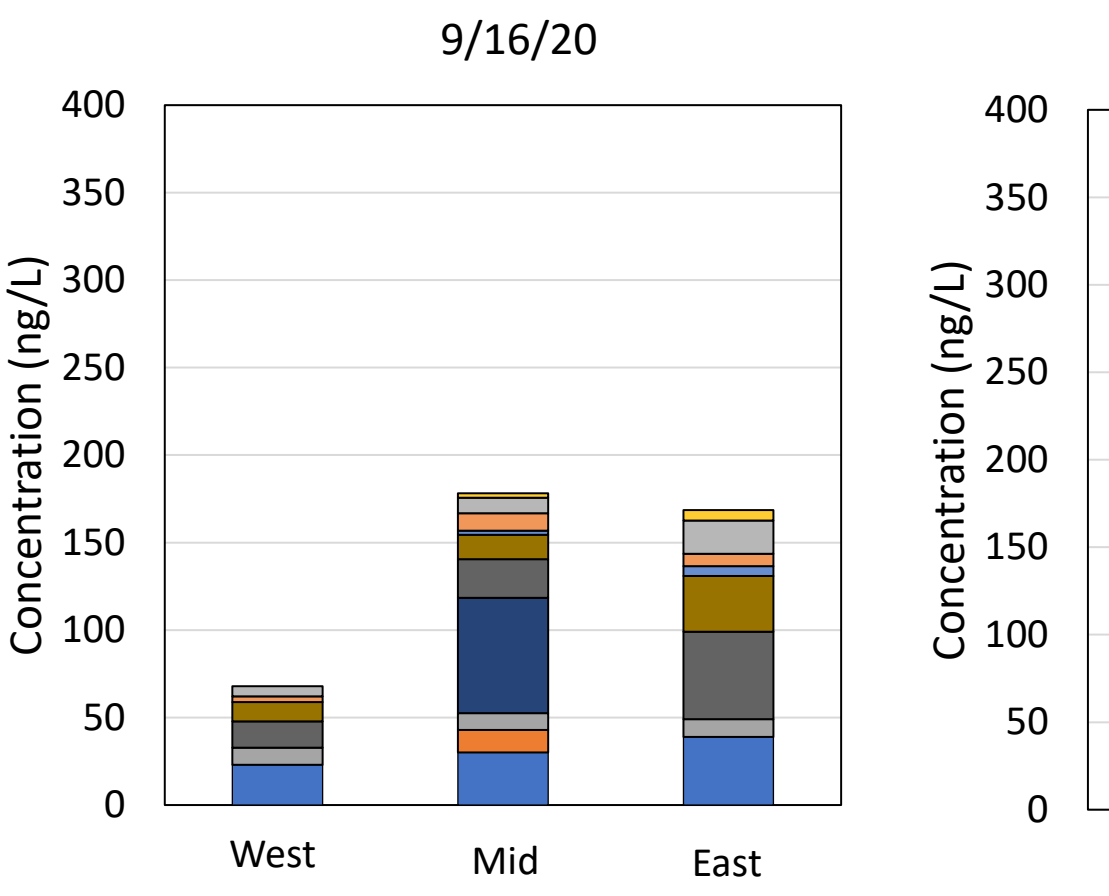

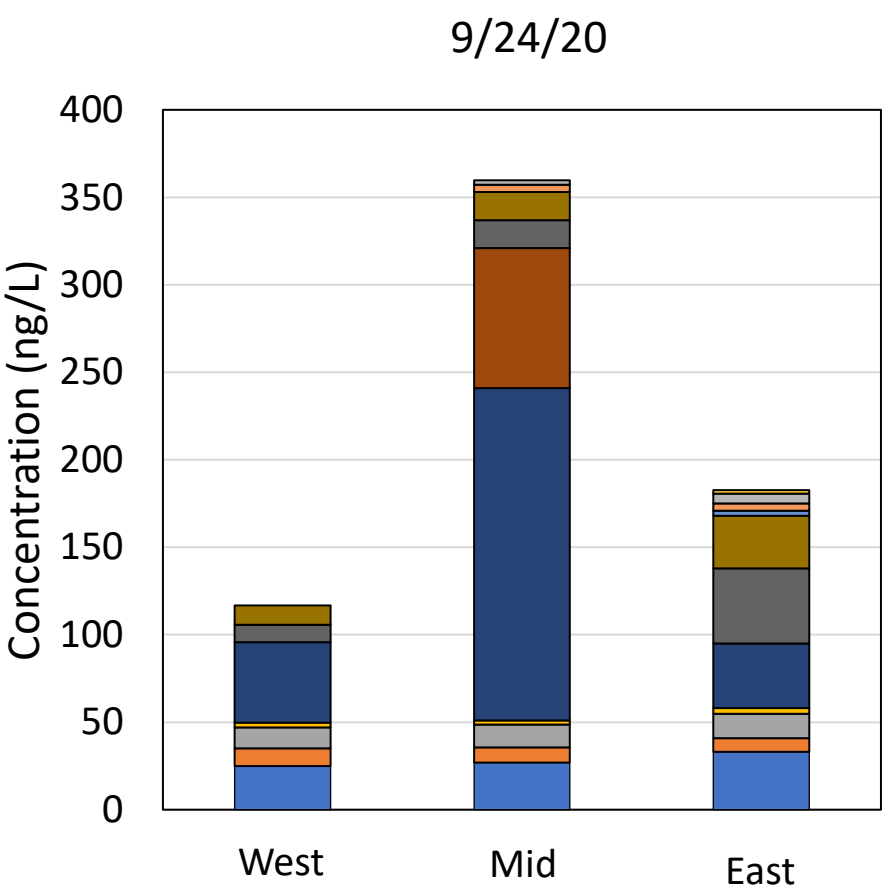

HFPO-DA | PFMOAA | PFO2HxA | PFO3OA | PFO4DA
PFO5DA | PMPA | PEPA | PS Acid | Hydro-PS Acid
R-PSDCA | NVHOS | EVE Acid | Hydro-EVE Acid | PES
PFECA B | PFECA-G

Notes:
Data shown is Table 3+ (17 compounds) concentrations
Abbreviations:
ng/L - nanograms per liter

Surface Water Transect Results - Round 2
Chemours Fayetteville Works, North Carolina

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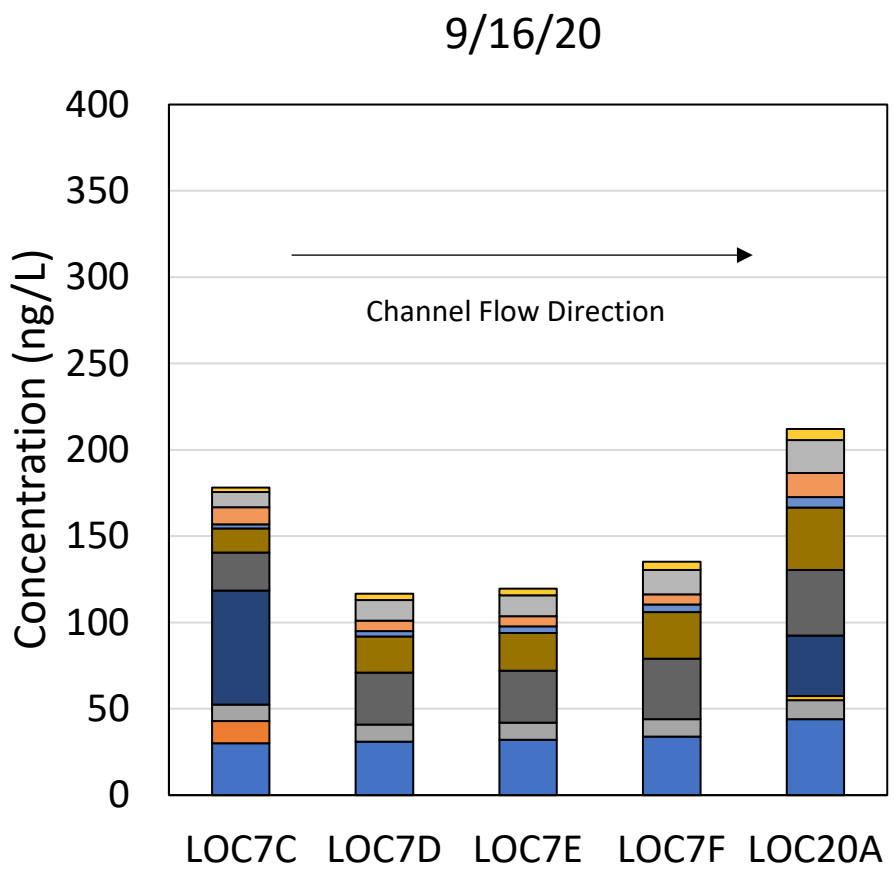
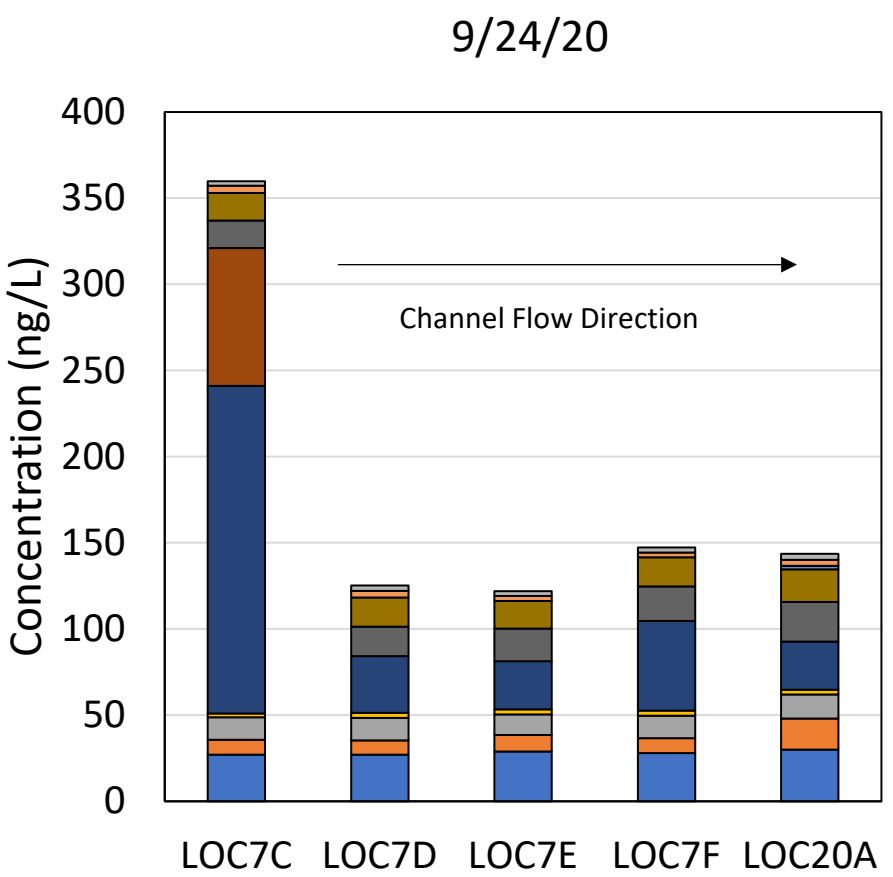
Figure 5





HFPO-DA | PFMOAA | PFO2HxA | PFO3OA | PFO4DA
PFO5DA | PMPA | PEPA | PS Acid | Hydro-PS Acid
R-PSDCA | NVHOS | EVE Acid | Hydro-EVE Acid | PES
PFECA B | PFECA-G

Notes:
Data shown is Table 3+ (17 compounds) concentrations
Abbreviations:
ng/L - nanograms per liter

Surface Water Results - Round 2
Chemours Fayetteville Works, North Carolina

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Geosyntec Consultants of NC, P.C.
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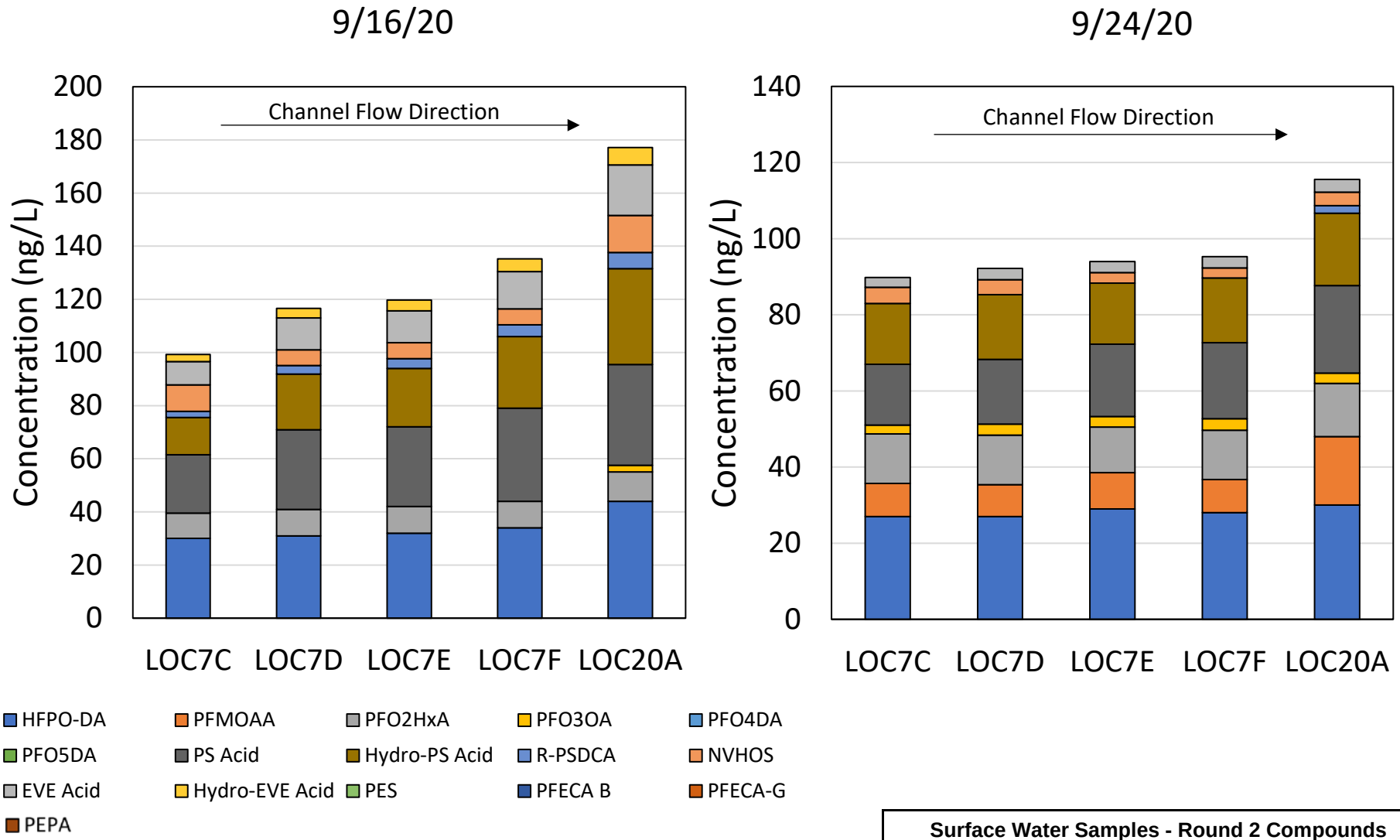
Figure 6



Notes:
September 16 2020 does not show PMPA and PFOMAA concentrations
September 24 2020 does not show PMPA and PEPA concentrations
Data shown is Table 3+ (17 compounds) concentrations

Abbreviations:
ng/L - nanograms per liter

Surface Water Samples - Round 2 Compounds with Increasing Concentration
Chemours Fayetteville Works, North Carolina

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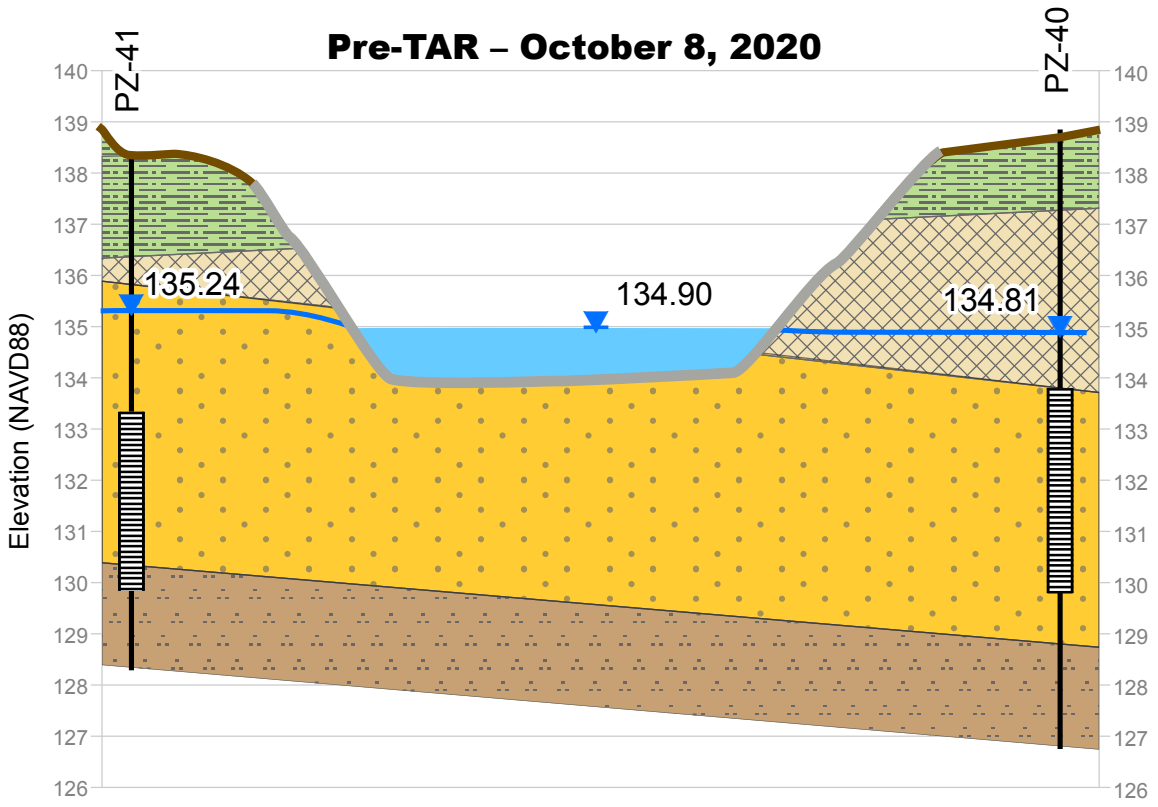
Figure 7



Legend

- Ground Surface
- Borehole
- Well Screen
- Channel Liner

Water Table

- Water Level
- Interpreted potentiometric surfaces based on measured water levels

Lithology

- Clay
- Clayey Sand
- Sand
- Sandy Clay
- Silty Sand

Notes:

TAR – Plant Turnaround – October 2020

Pre-TAR measurements taken October 8, 2020

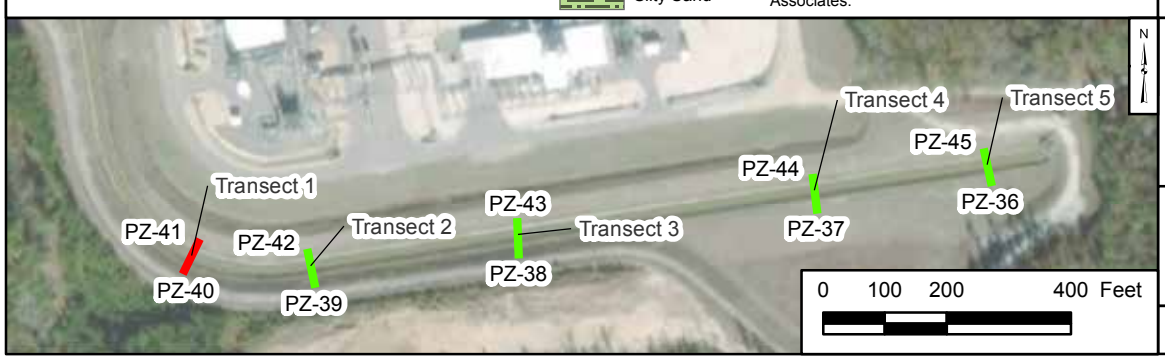
TAR measurements taken October 18, 2020

Post-TAR measurements taken November 3, 2020

Ground surface and piezometer elevations determined based on surveys by Donaldson Garret and Associates and by Freeland Clinkscales and Associates.

Vertical Exaggeration 2X

0 5 10 20 Feet



Transect 1 – PZ-40 to PZ-41

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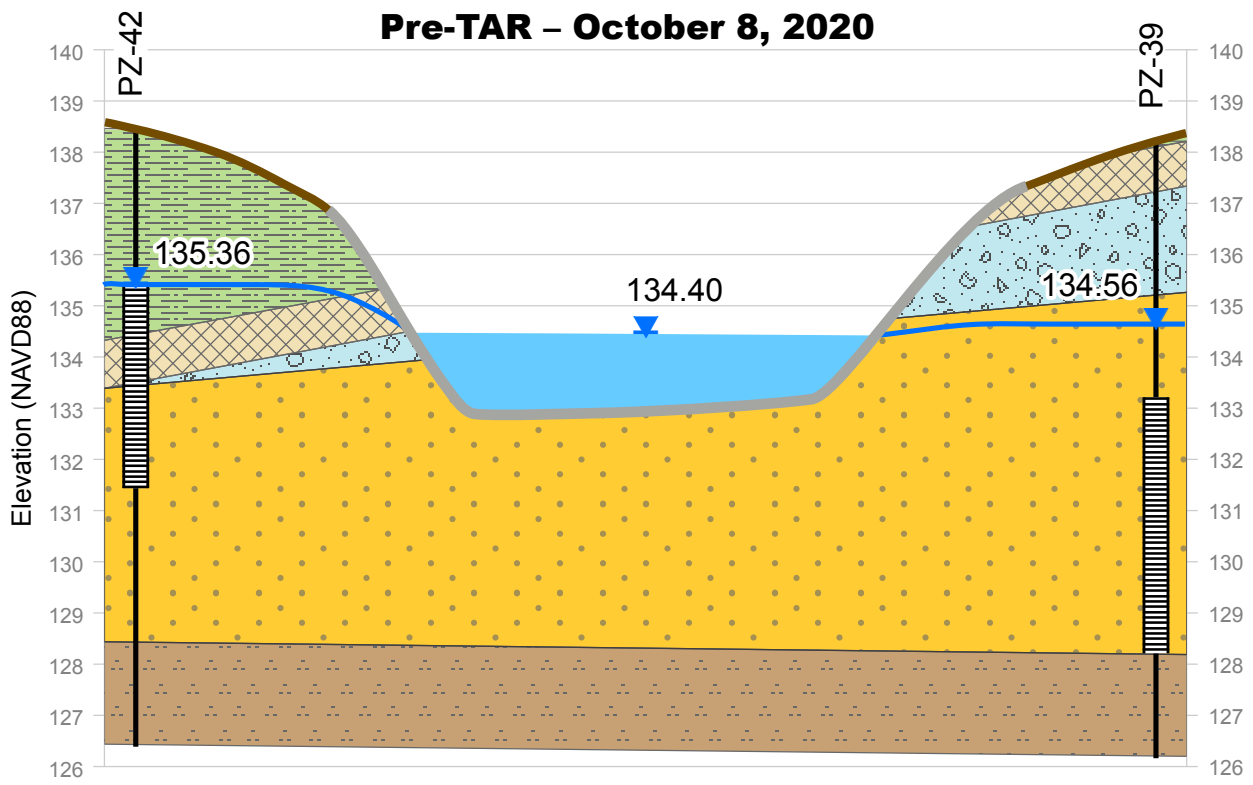
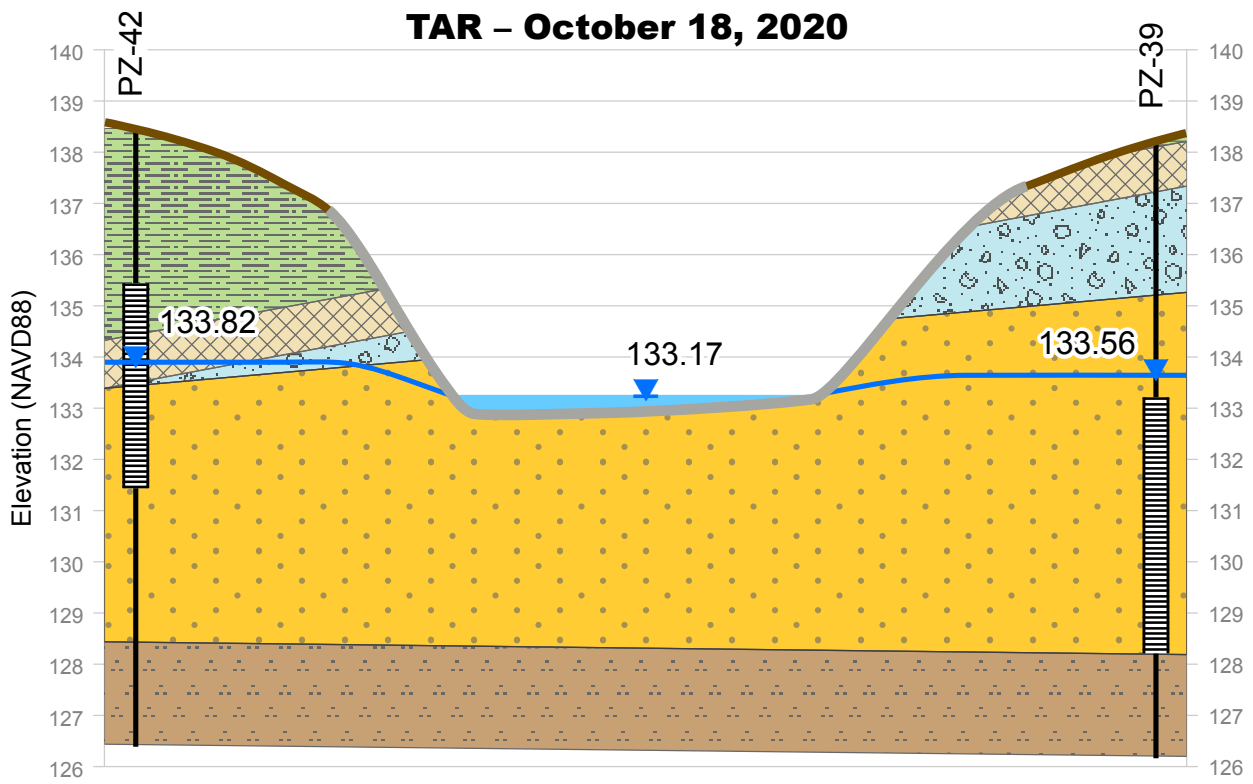
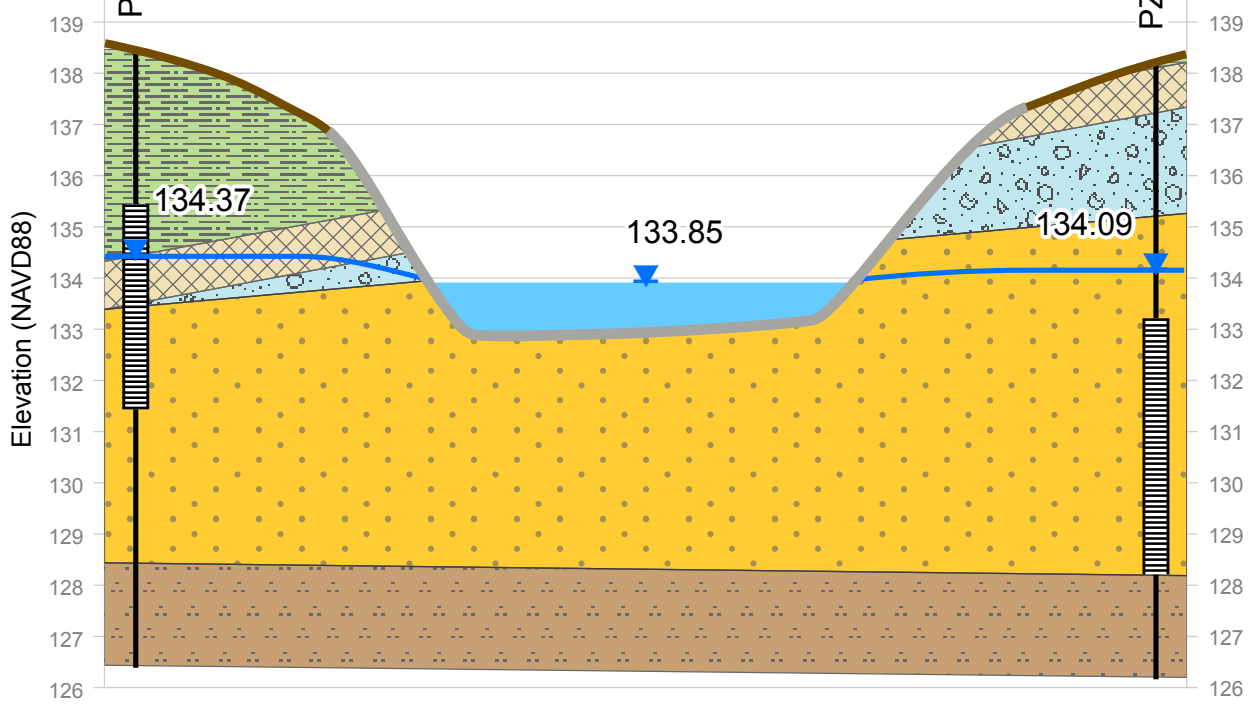
Figure 8A







Legend

- Ground Surface
- Borehole
- Well Screen
- Channel Liner

Water Table

- Water Level
- Interpreted potentiometric surfaces based on measured water levels

Lithology

- Clay
- Clayey Sand
- Sand
- Sandy Clay
- Silty Sand

Notes:

TAR – Plant Turnaround – October 2020

Pre-TAR measurements taken October 8, 2020

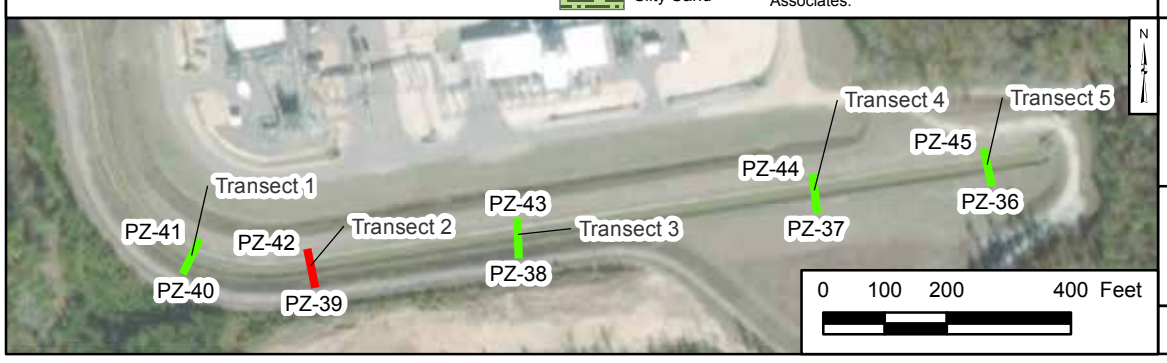
TAR measurements taken October 18, 2020

Post-TAR measurements taken November 3, 2020

Ground surface and piezometer elevations determined based on surveys by Donaldson Garret and Associates and by Freeland Clinkscales and Associates.

Vertical Exaggeration 2X

0 5 10 20 Feet



Transect 2 – PZ-42 to PZ-39

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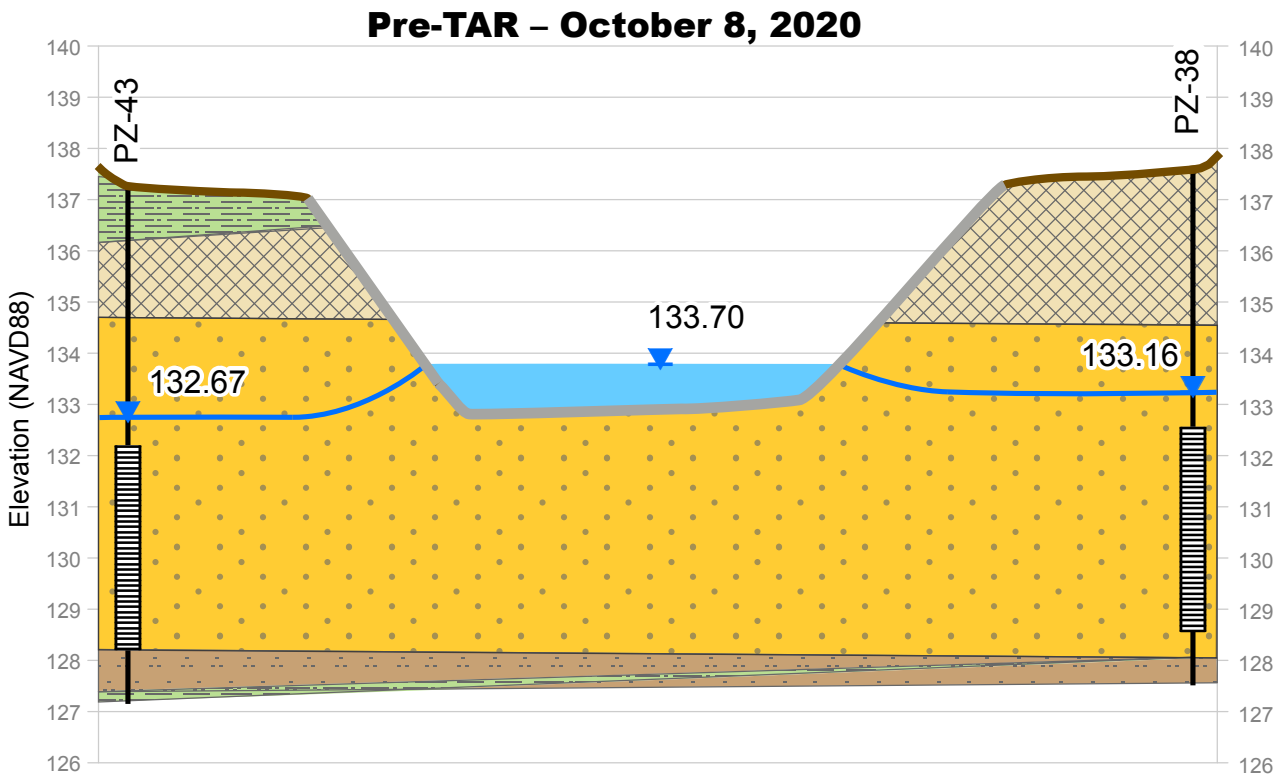
Figure **8B**



Legend

- Ground Surface
- Borehole
- Well Screen
- Channel Liner

Water Table

- Water Level
- Interpreted potentiometric surfaces based on measured water levels

Lithology

- Clay
- Clayey Sand
- Sand
- Sandy Clay
- Silty Sand

Notes:

TAR – Plant Turnaround – October 2020

Pre-TAR measurements taken October 8, 2020

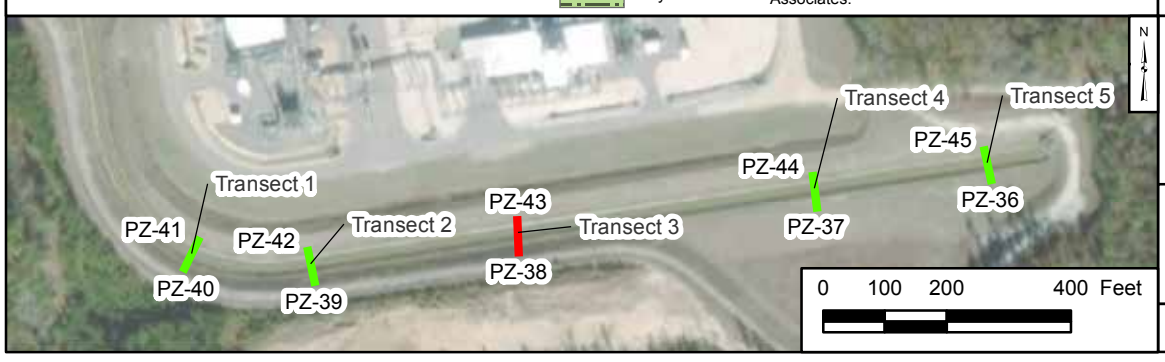
TAR measurements taken October 18, 2020

Post-TAR measurements taken November 3, 2020

Ground surface and piezometer elevations determined based on surveys by Donaldson Garret and Associates and by Freeland Clinkscales and Associates.

Vertical Exaggeration 2X

0 5 10 20 Feet



Transect 3 – PZ-43 to PZ-38

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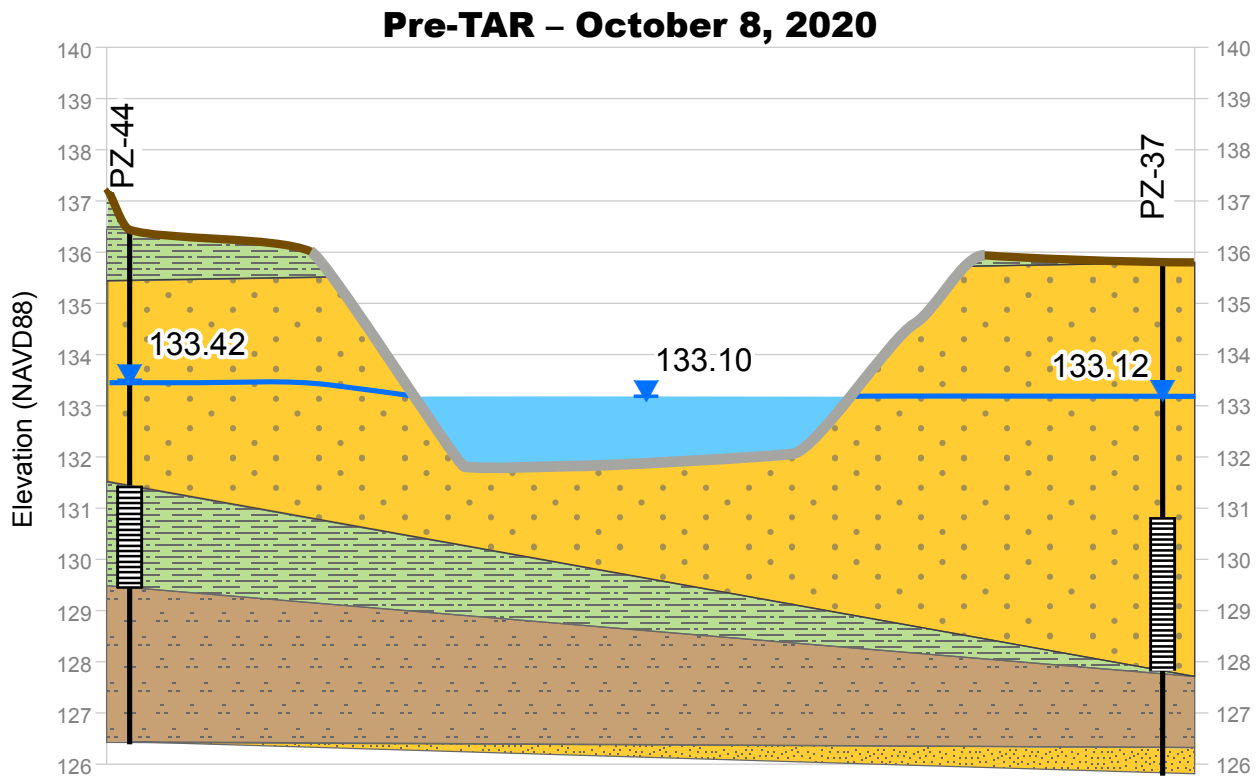
Figure 8C



Legend

- Ground Surface
- Borehole
- Well Screen
- Channel Liner

Water Table

- Water Level
- Interpreted potentiometric surfaces based on measured water levels

Lithology

- Clay
- Clayey Sand
- Sand
- Sandy Clay
- Silty Sand

Notes:

TAR – Plant Turnaround – October 2020

Pre-TAR measurements taken October 8, 2020

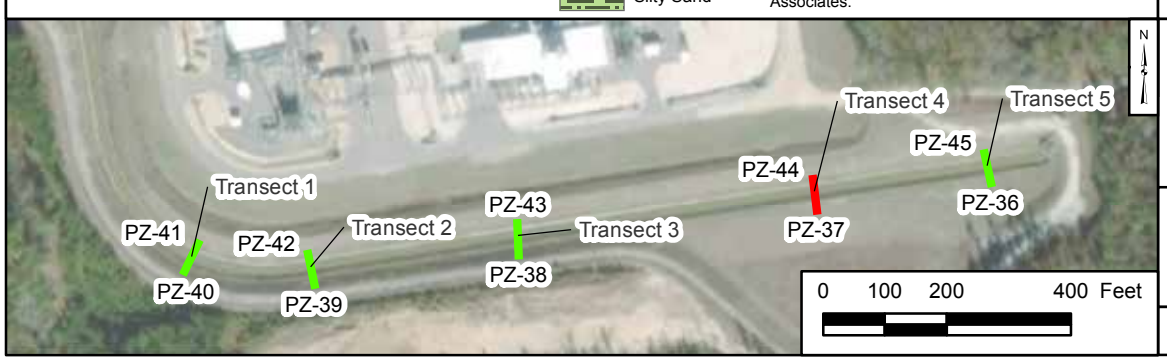
TAR measurements taken October 18, 2020

Post-TAR measurements taken November 3, 2020

Ground surface and piezometer elevations determined based on surveys by Donaldson Garret and Associates and by Freeland Clinkscales and Associates.

Vertical Exaggeration 2X

0 5 10 20 Feet



Transect 4 – PZ-44 to PZ-37

Chemours Fayetteville Works, North Carolina

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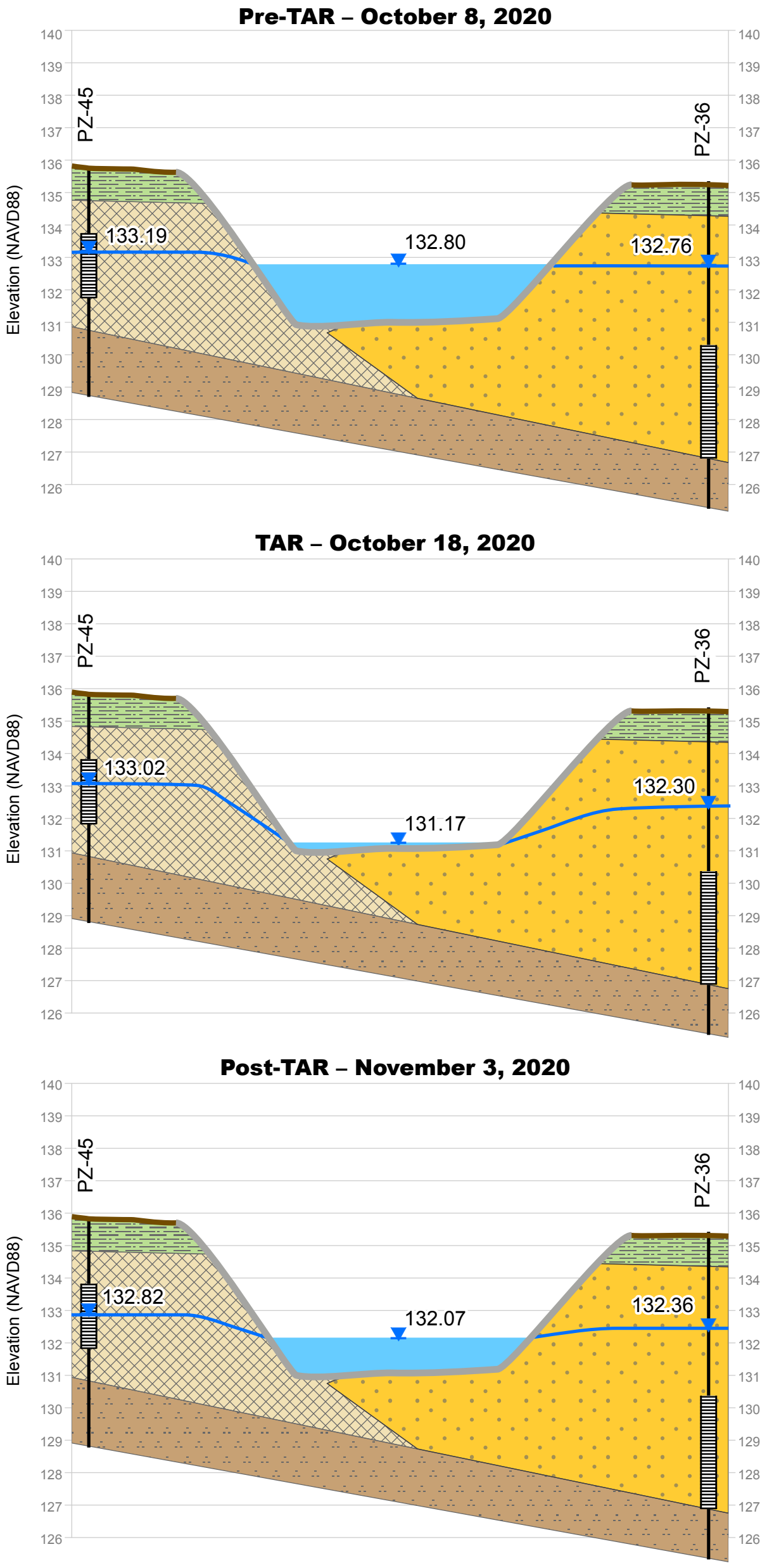
Figure 8D



Legend

- Ground Surface
- Borehole
- Well Screen
- Channel Liner

Water Table

- Water Level
- Interpreted potentiometric surfaces based on measured water levels

Lithology

- Clay
- Clayey Sand
- Sand
- Sandy Clay
- Silty Sand

Notes:

TAR – Plant Turnaround – October 2020

Pre-TAR measurements taken October 8, 2020

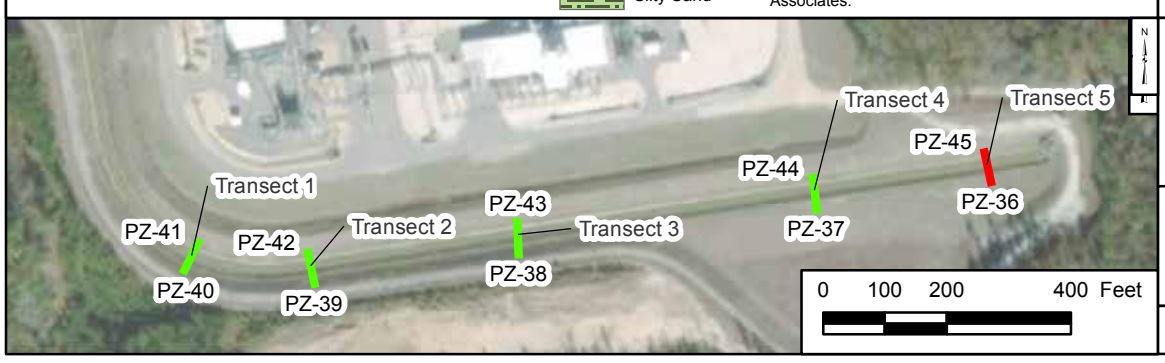
TAR measurements taken October 18, 2020

Post-TAR measurements taken November 3, 2020

Ground surface and piezometer elevations determined based on surveys by Donaldson Garret and Associates and by Freeland Clinkscales and Associates.

Vertical Exaggeration 2X

0 5 10 20 Feet



Transect 5 – PZ-45 to PZ-36

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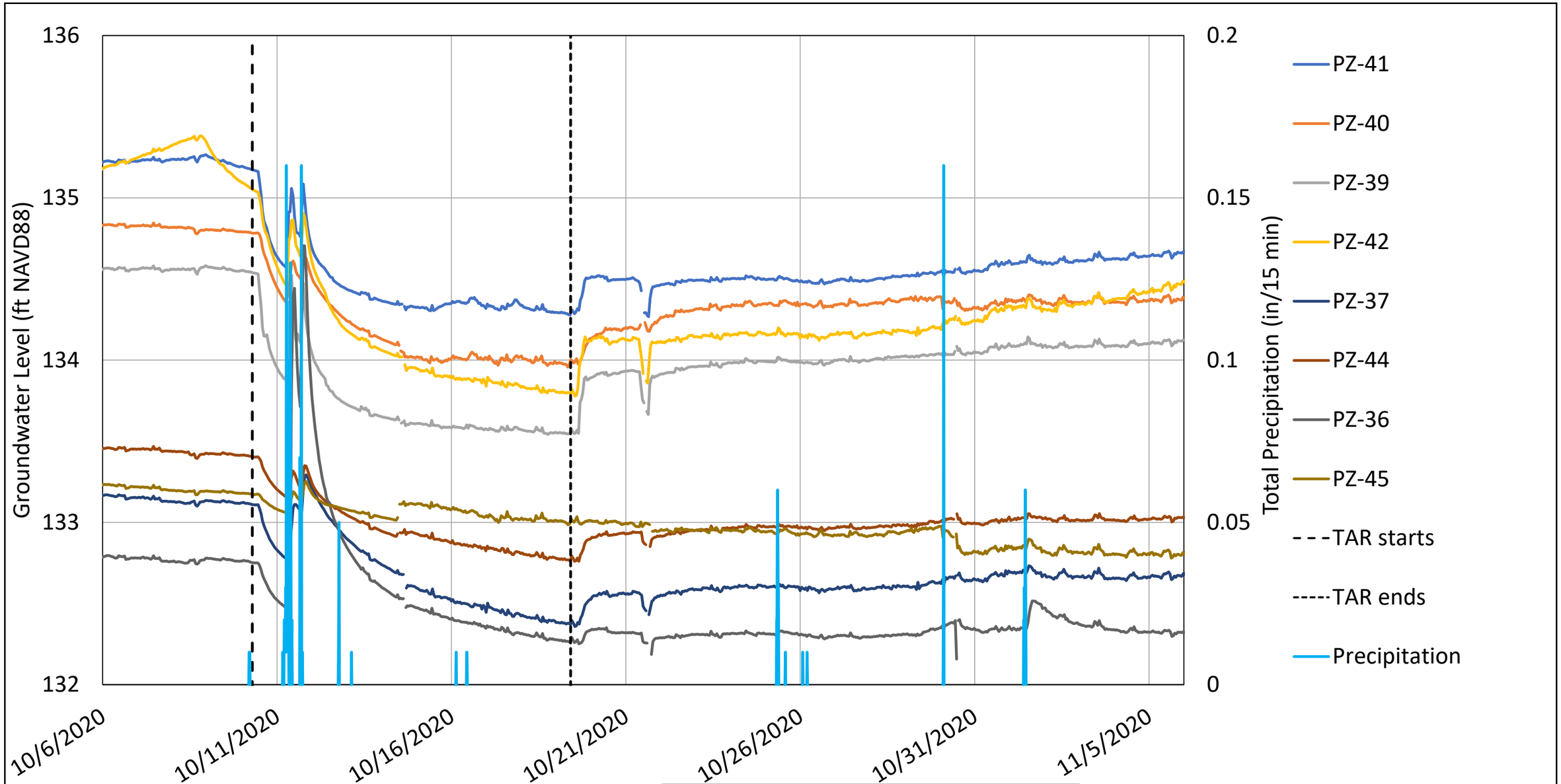
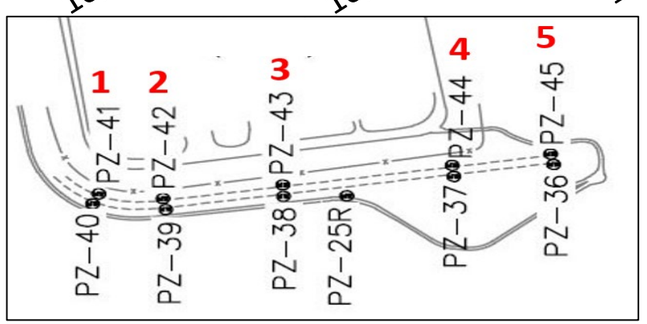
Figure 8E



Notes:
1) Elevations are from barometrically adjusted level logger data
2) Transect 3 and PZ-25R are not included in this figure, these locations are often dry
3) Total cumulative precipitation over the monitored period is 2.08 inches

Abbreviations:
ft NAVD88 - feet North American Vertical Datum of 1988
in/15min - Inches of precipitation every 15 miuntes
TAR - Turnaround
PZ - Piezometer



Piezometer Water Levels
Chemours Fayetteville Works, North Carolina

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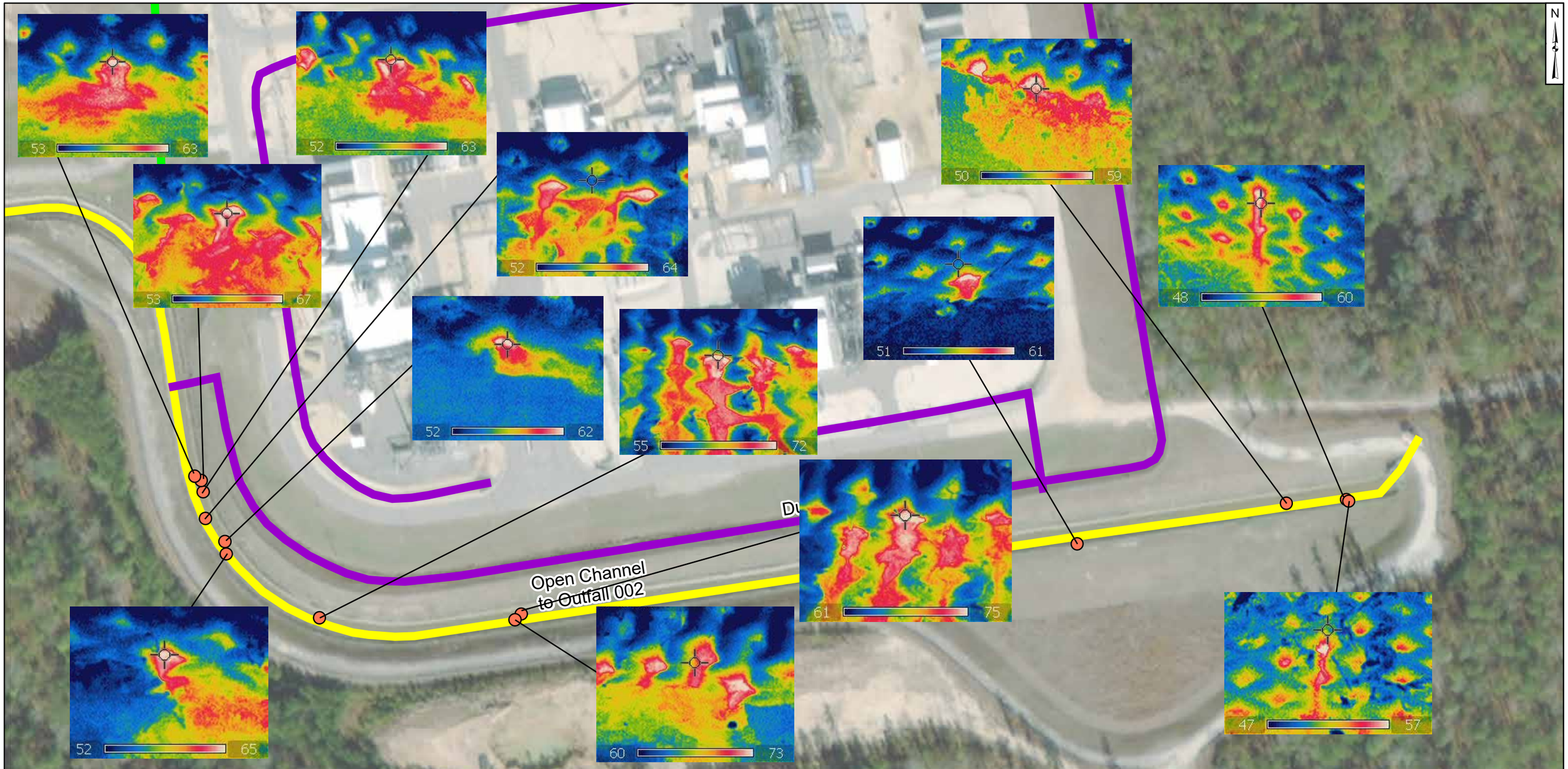
Figure 9



Legend

- Thermal Image Locations

Discharge Areas

- Cooling Water Channel
- Open Channel to Outfall 002
- DuPont Area

Notes:
1. Images shown here are instances where there was observations of groundwater upwelling into the open channel.
2. Thermal Survey was conducted on October 17th 2020, between 07:30 and 09:30.

Basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

100 50 0 100 Feet

Thermal Imaging Survey

Chemours Fayetteville Works, North Carolina

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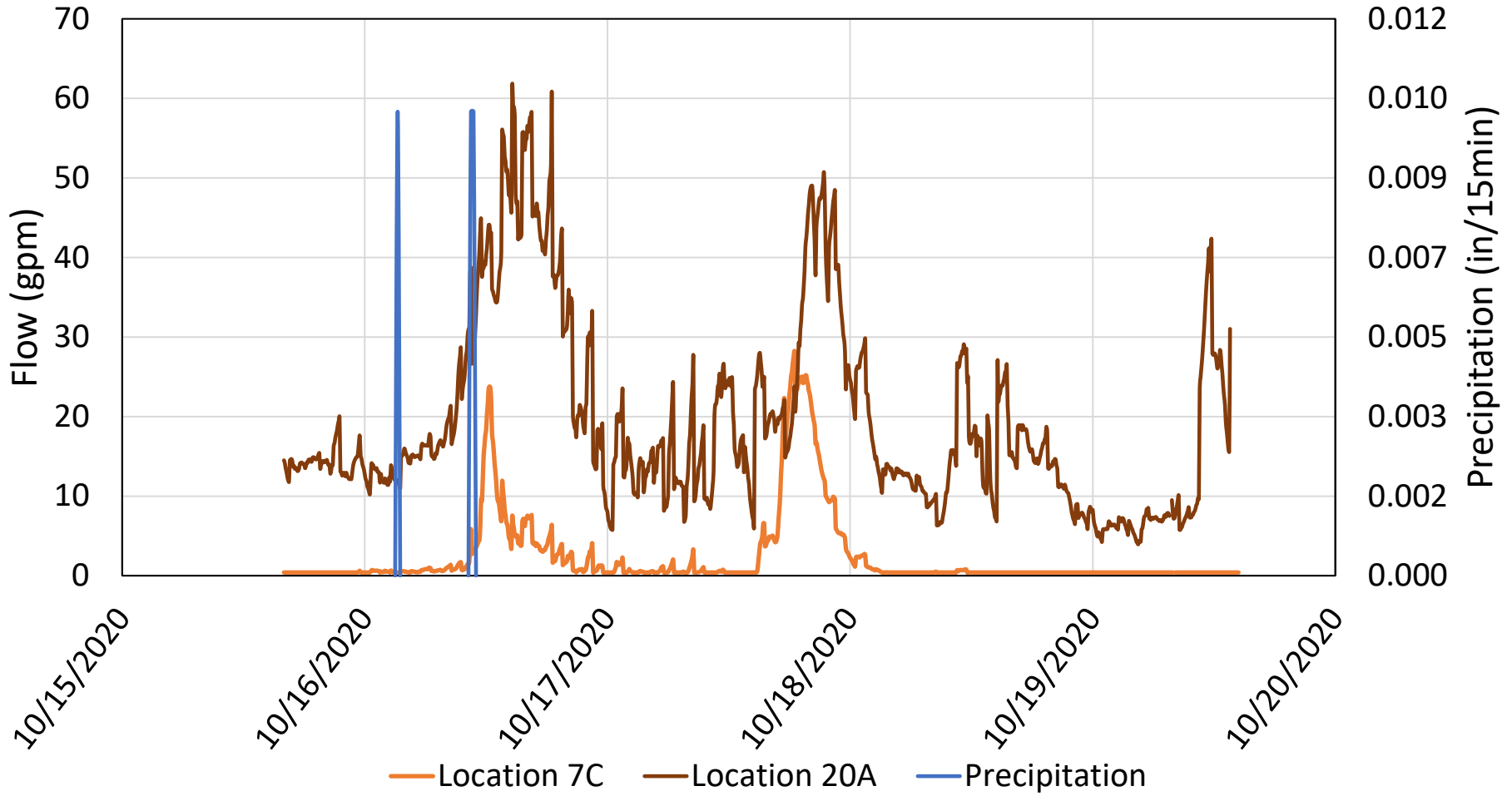
Figure **10**



Notes:

1) Average delta between location 20A & 7C is 16.9 GPM (no time offset applied).
2) Total precipitation over the period shown is a cumulative 0.03 inches.
3) All precipitation occured on November 16th 2020.

Abbreviations:

TAR - Turnaround
in/15min - Inches of precipitation every 15 minutes
gpm - Gallon per minute

TAR Flow Measurements
Chemours Fayetteville Works, North Carolina

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Figure 11

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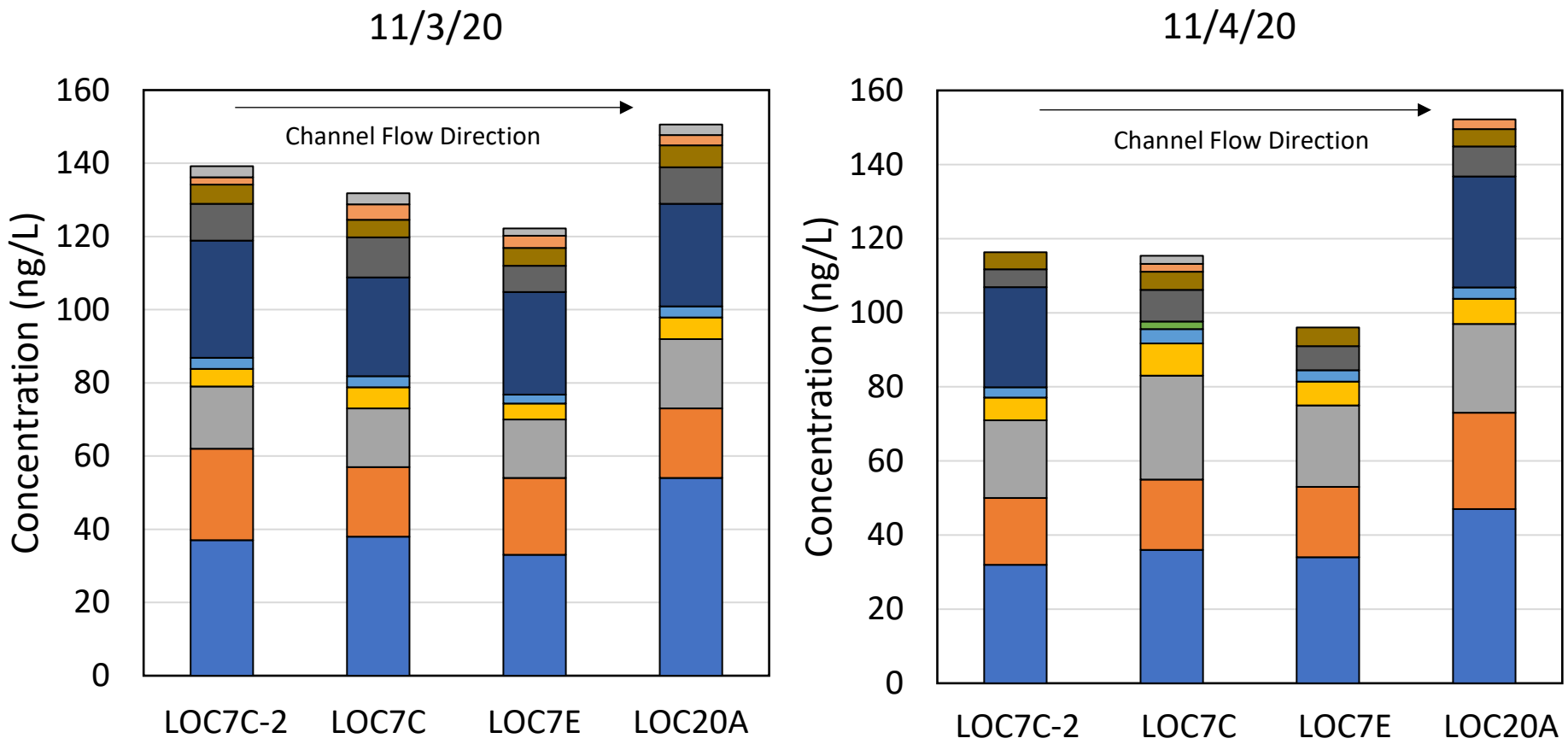

Notes:
Data shown is Table 3+ (17 compounds) concentrations
Abbreviations:
ng/L - nanograms per liter

Surface Water Results - Round 4
Chemours Fayetteville Works, North Carolina

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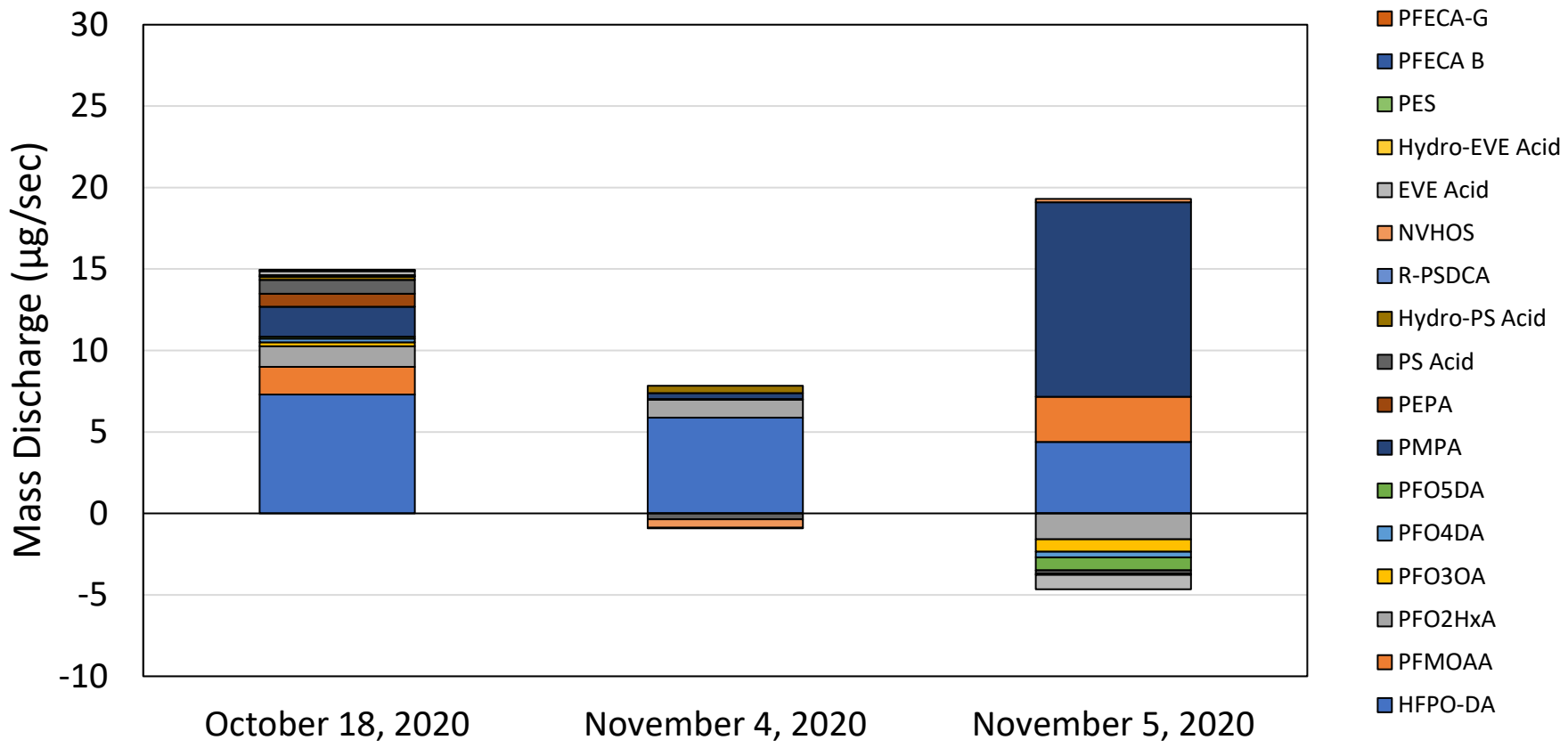
Figure 12

Mass Discharge Changes Between Locations 7C and 20/20A (Upstream to Downstream)



Notes:

1) Data shown is Table 3+ (17 compounds) data

2) Mass discharges are shown for dates listed below that are interpreted to represent groundwater upwelling mass discharge increases:

- October 18, 2020 - during TAR
- November 4, 2020 - after TAR
- November 5, 2020 - after TAR

Abbreviations:

µg/sec - micrograms per second

TAR - Turnaround

Mass Discharge Increases

Chemours Fayetteville Works, North Carolina

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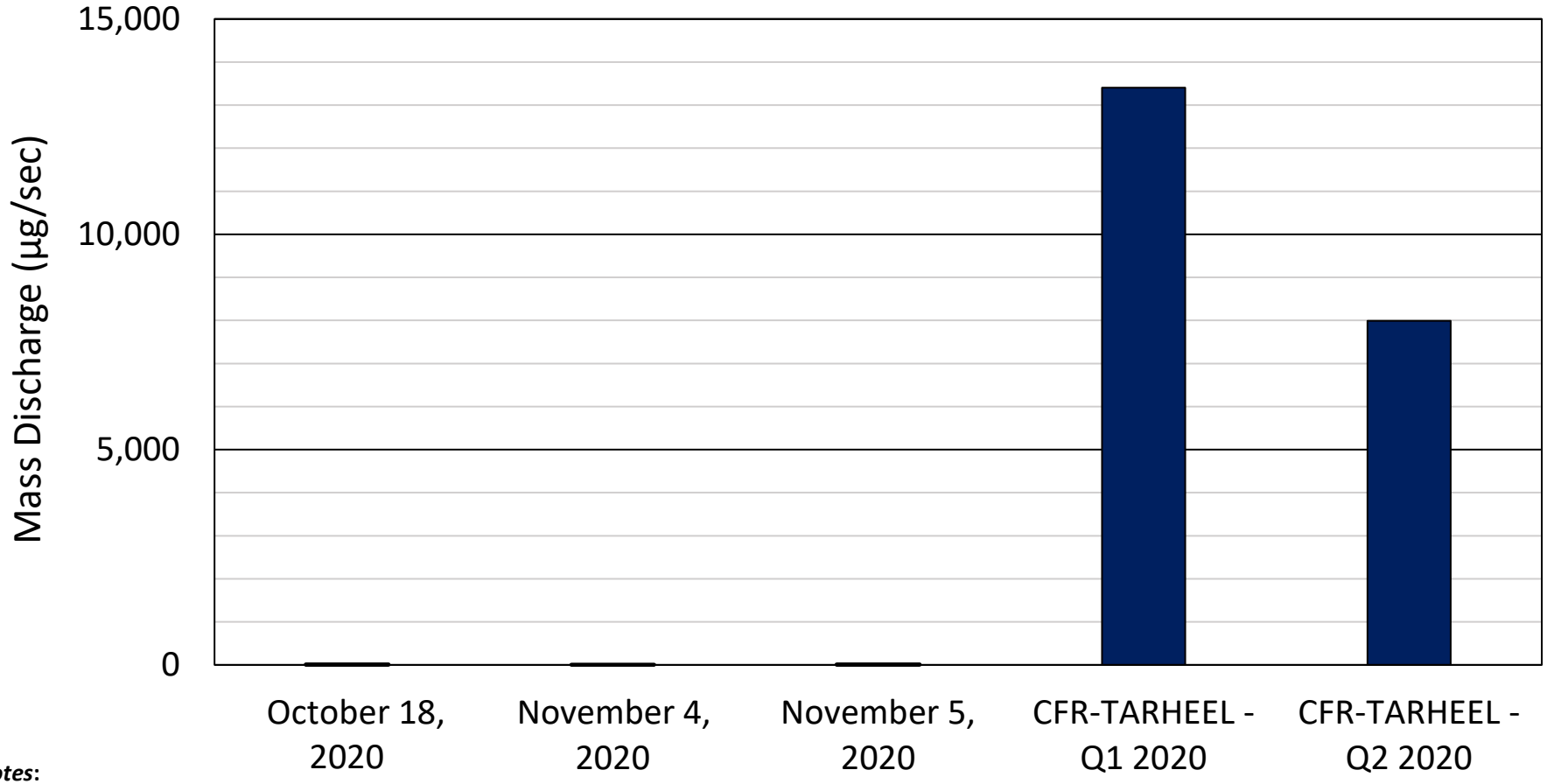
Figure 13

Raleigh | November 2020



Notes:
1) Data shown is Table 3+ (17 compounds) data
2) October 18, 2020 (during TAR) = 14 µg/sec
3) November 4, 2020 (after TAR) = 7 µg/sec
4) November 5, 2020 (after TAR) = 15 µg/sec
5) CFR-TARHEEL results come from the Cape Fear River time integrated composite sample collected at the Tar Heel Ferry Road Bridge approximately seven river miles downstream of the Site.

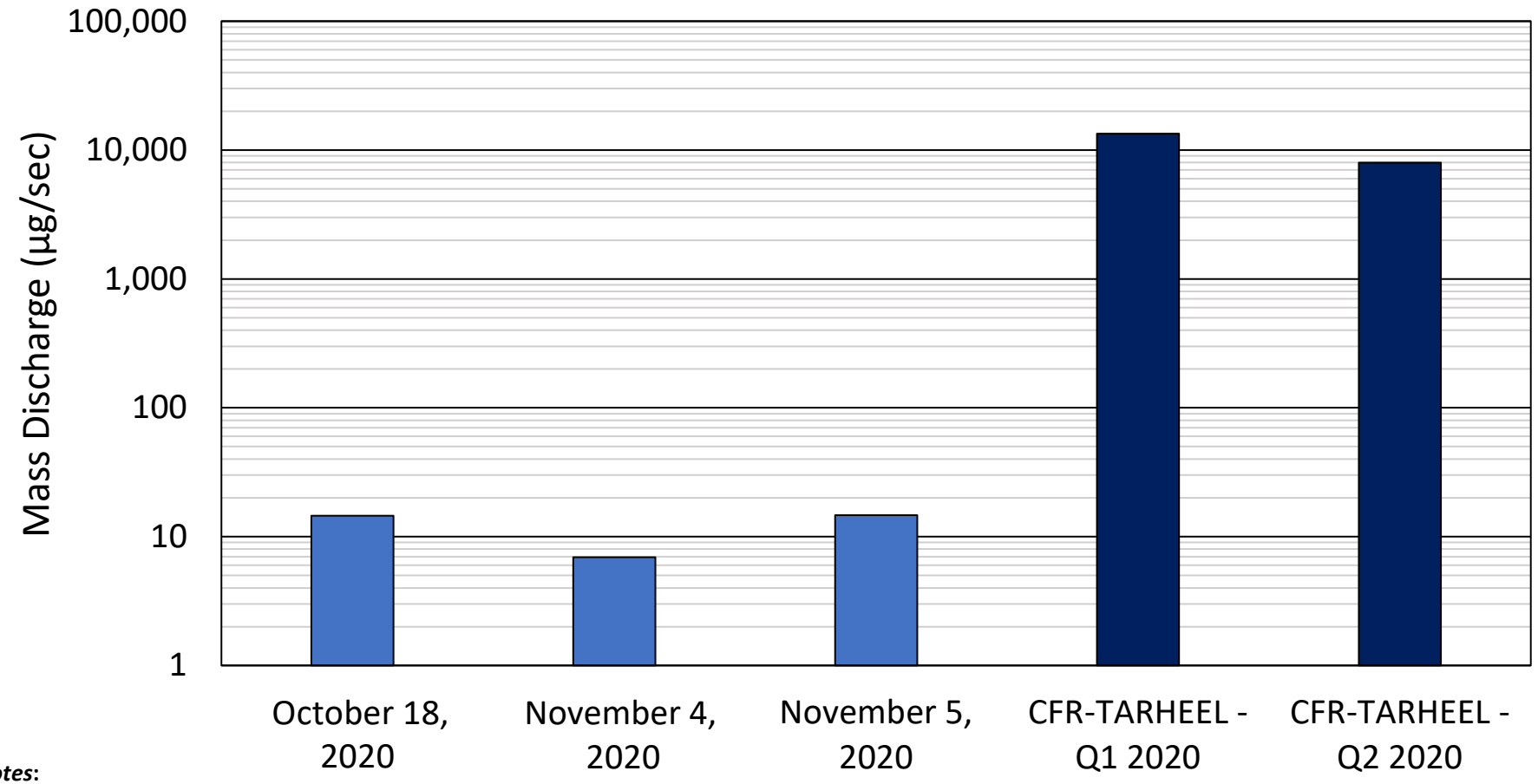
Abbreviations:
µg/sec - micrograms per second
TAR - Turnaround

Mass Discharge Comparison (Linear Scale)
Chemours Fayetteville Works, North Carolina

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

Figure
14

Raleigh | November 2020



Notes:
1) Data shown is Table 3+ (17 compounds) data
2) October 18, 2020 (during TAR) = 14 µg/sec
3) November 4, 2020 (after TAR) = 7 µg/sec
4) November 5, 2020 (after TAR) = 15 µg/sec
5) CFR-TARHEEL results come from the Cape Fear River time integrated composite sample collected at the Tar Heel Ferry Road Bridge approximately seven river miles downstream of the Site.

Abbreviations:
µg/sec - micrograms per second
TAR - Turnaround

Mass Discharge Comparison (Log Scale)
Chemours Fayetteville Works, North Carolina

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Figure 15

Raleigh | November 2020

Geosyntec consultants

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NC License No.: C-3500 and C-295

APPENDIX A
Laboratory Reports and DVM Workbooks

Laboratory reports are provided on a USB memory storage drive that was shipped with the hard copies provided to NCDEQ

ADQM DATA REVIEW NARRATIVE

Site **Chemours FAY – Fayetteville**

Project **Open Channel Sampling**

Project Reviewer **Michael Aucoin, AECOM as a Chemours contractor**

Sampling Dates **July 16 - 17, 2020**
July 23, 2020
July 27 - 28, 2020
July 31, 2020

Analytical Protocol

Laboratory	Analytical Method	Parameter(s)
TestAmerica - Sacramento	Cl. Spec. Table 3 Compound SOP	Table 3+ compounds incl 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:

  July 21, 2020
  July 24, 2020
  July 31, 2020
  August 6, 2020

Data Review

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:

- Due to uncertainty from observed matrix effects during the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE, a J-qualifier has been added to all positive results in the data set, if not already qualified by the DVM and even if there was no matrix spike analyzed for that particular sample, and the results should be considered to be estimated values.
- Some analytical results have been qualified J as estimated, due to poor recovery of a matrix spike, or poor field duplicate or 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:

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:** Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-20-24-071620	07/16/2020	320-62878-3	R-PSDA	0.041	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	R-PSDA	0.036	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	Hydrolyzed PSDA	0.14	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	Hydrolyzed PSDA	0.13	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	R-EVE	0.010	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	R-EVE	0.0098	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	R-PSDA	0.028	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	R-PSDA	0.029	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	Hydrolyzed PSDA	0.098	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	Hydrolyzed PSDA	0.099	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	R-EVE	0.0059	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	R-EVE	0.0061	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Open Channel Sampling **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
LOC-7C-24-071620	07/16/2020	320-62878-1	NVHOS	0.0085	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620	07/16/2020	320-62878-1	NVHOS	0.0089	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-24-071620-D	07/16/2020	320-62878-2	NVHOS	0.0046	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-20-24-071620	07/16/2020	320-62878-3	PFO3OA	0.0054	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20-24-071620	07/16/2020	320-62878-3	PFO3OA	0.0043	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

ADQM DATA REVIEW NARRATIVE

Site **Chemours FAY – Fayetteville**

Project **Supplemental Open Channel Sampling**

Project Reviewer **Michael Aucoin, AECOM as a Chemours contractor**

Sampling Dates **September 15 - 16, 2020**
September 24, 2020
October 12, 2020
October 18, 2020
November 4 - 5, 2020

Analytical Protocol

Laboratory	Analytical Method	Parameter(s)
TestAmerica - Sacramento	Cl. Spec. Table 3 Compound SOP	Table 3+ compounds incl HFPO-DA
TestAmerica - Denver	9060A	TOC
TestAmerica - Denver	SM 2540 D	TSS
Alpha Analytical	9060A	TOC
Alpha Analytical	SM 2540 D	TSS

Sample Receipt

The following items are noted for this data set:

- All samples were received in satisfactory condition and within EPA temperature guidelines on:

  September 18, 2020
  September 26, 2020
  September 30, 2020
  October 13, 2020
  October 21, 2020
  November 5 - 6, 2020

Data Review

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:

- Some TOC results were qualified B and the reported results may be biased high, or false positives, due to a comparable concentration found in an associated equipment or field blank.
- Due to uncertainty from observed matrix effects during the analysis of R-PSDA, Hydrolyzed PSDA and R-EVE, a J-qualifier has been added to all positive results in the data set, if not already qualified by the DVM and even if there was no matrix spike analyzed for that particular sample, and the results should be considered to be estimated values.
- Some analytical results have been qualified J as estimated, and non-detect results qualified UJ indicating an estimated reporting limit, due to poor recovery of a matrix spike or lab control spike, or poor field duplicate or 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.
- TOC and TSS results were reported by the laboratory to the method detection limit (MDL); results reported between the MDL and the limit of quantitation (LOQ) are qualified J and should be considered to be estimated values.

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.

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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:** Supplemental Open Channel Sampling **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
LOC-SEEP-A-1-091620	09/16/2020	280-140581-4	Carbon	1.5	MG/L	MDL	0.35	1.0	B	9060A		
LOC-SEEP-A-1-24-091520	09/15/2020	280-140581-3	Carbon	1.5	MG/L	MDL	0.35	1.0	B	9060A		
LOC-SEEP-B-1-091620-D	09/16/2020	280-140581-7	Carbon	1.8	MG/L	MDL	0.35	1.0	B	9060A		
LOC-SEEP-B-1-24-091520	09/15/2020	280-140581-5	Carbon	1.7	MG/L	MDL	0.35	1.0	B	9060A		
LOC-SEEP-B-1-24-091520-D	09/15/2020	280-140581-8	Carbon	1.9	MG/L	MDL	0.35	1.0	B	9060A		

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

Validation Reason Contamination detected in Field Blank(s). Sample result does not differ significantly from the analyte concentration detected in the associated field blank(s).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
LOC-SEEP-B-1-091620	09/16/2020	280-140581-6	Carbon	2.4	MG/L	MDL	0.35	1.0	B	9060A		

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **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
SEEP-B-1-SPLIT-A-091620-D-Z	09/16/2020	320-64813-11	PFO5DA	0.078	ug/L	PQL		0.078	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-SPLIT-B-091620-D-Z	09/16/2020	320-64813-12	PES	0.0067	UG/L	PQL		0.0067	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-A-092420-D-Z	09/24/2020	320-65180-11	R-EVE	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520-D	11/05/2020	320-66446-5	R-EVE	0.0020	UG/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620	09/16/2020	320-64813-5	PES	0.0067	UG/L	PQL		0.0067	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	PFECA-G	0.048	UG/L	PQL		0.048	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	PFECA-G	0.048	UG/L	PQL		0.048	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-B-091520-Z	09/15/2020	320-64813-4	PFECA-G	0.048	UG/L	PQL		0.048	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-B-091520-Z	09/15/2020	320-64813-4	PFECA-G	0.048	UG/L	PQL		0.048	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-PSDCA	0.017	UG/L	PQL		0.017	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-PSDCA	0.017	UG/L	PQL		0.017	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-B-091520-Z	09/15/2020	320-64780-4	R-PSDCA	0.017	UG/L	PQL		0.017	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-B-091520-Z	09/15/2020	320-64780-4	R-PSDCA	0.017	UG/L	PQL		0.017	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	PFMOAA	0.0020	ug/L	PQL		0.0020	UJ	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

Validation Reason Associated LCS and/or LCSD 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
LOC-7C-EAST-24-092420	09/24/2020	L2040786-02	Total Suspended Solids	9.9	MG/L	MDL	5.0	5.0	J	2540 D-1997		
LOC-7C-WEST-24-092420	09/24/2020	L2040786-01	Total Suspended Solids	5.2	MG/L	MDL	5.0	5.0	J	2540 D-1997		
LOC-7D-24-092420	09/24/2020	L2040786-03	Total Suspended Solids	8.4	MG/L	MDL	5.0	5.0	J	2540 D-1997		
LOC-7E-24-092420	09/24/2020	L2040786-04	Total Suspended Solids	6.5	MG/L	MDL	5.0	5.0	J	2540 D-1997		
LOC-7F-24-092420	09/24/2020	L2040786-05	Total Suspended Solids	5.1	MG/L	MDL	5.0	5.0	J	2540 D-1997		

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	NVHOS	1.2	UG/L	PQL		0.015	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	NVHOS	1.2	UG/L	PQL		0.015	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PMPA	22	UG/L	PQL		0.62	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PMPA	23	UG/L	PQL		0.62	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hfpo Dimer Acid	30	UG/L	PQL		0.081	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-PSDA	2.5	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-PSDA	2.5	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydrolyzed PSDA	40	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydrolyzed PSDA	40	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	R-PSDA	0.070	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	R-PSDA	0.075	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	Hydrolyzed PSDA	0.092	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	Hydrolyzed PSDA	0.10	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	R-EVE	0.050	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-091620-Z	09/16/2020	320-64782-3	R-EVE	0.051	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	R-PSDA	0.077	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	R-PSDA	0.079	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	Hydrolyzed PSDA	0.074	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	Hydrolyzed PSDA	0.079	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	R-EVE	0.054	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-B-091620	09/16/2020	320-64782-2	R-EVE	0.057	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	R-PSDA	0.018	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	R-EVE	0.0054	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	R-PSDA	0.077	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	R-PSDA	0.071	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	Hydrolyzed PSDA	0.096	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	Hydrolyzed PSDA	0.089	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	R-EVE	0.052	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	R-EVE	0.048	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	R-PSDA	0.056	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	R-PSDA	0.053	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	Hydrolyzed PSDA	0.058	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	Hydrolyzed PSDA	0.055	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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 SOP	Pre-prep	Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	R-EVE	0.0071	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	R-EVE	0.0065	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	R-PSDA	0.060	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	R-PSDA	0.062	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	Hydrolyzed PSDA	0.060	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	Hydrolyzed PSDA	0.063	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	R-EVE	0.0090	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420-Z	09/24/2020	320-65177-3	R-EVE	0.0092	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	R-PSDA	0.080	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	R-PSDA	0.083	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	Hydrolyzed PSDA	0.083	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	Hydrolyzed PSDA	0.085	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	R-EVE	0.060	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-091620-Z	09/16/2020	320-64782-4	R-EVE	0.063	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	R-PSDA	0.026	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	R-PSDA	0.029	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	Hydrolyzed PSDA	0.052	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	Hydrolyzed PSDA	0.052	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	R-EVE	0.0069	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	R-EVE	0.0063	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	R-PSDA	0.031	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	R-PSDA	0.032	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	Hydrolyzed PSDA	0.048	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	Hydrolyzed PSDA	0.048	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	R-EVE	0.0068	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	R-EVE	0.0070	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	R-PSDA	0.032	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	R-PSDA	0.029	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	Hydrolyzed PSDA	0.082	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	Hydrolyzed PSDA	0.075	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	R-EVE	0.029	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	R-EVE	0.027	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	R-PSDA	0.022	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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 SOP	Pre-prep	Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	R-PSDA	0.025	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	Hydrolyzed PSDA	0.049	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	Hydrolyzed PSDA	0.050	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	R-EVE	0.0068	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	R-EVE	0.0069	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7E-24-110420	11/04/2020	320-66421-4	R-PSDA	0.019	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7E-24-110420	11/04/2020	320-66421-4	R-PSDA	0.019	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7E-24-110420	11/04/2020	320-66421-4	R-EVE	0.0051	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7E-24-110420	11/04/2020	320-66421-4	R-EVE	0.0050	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	NVHOS	1.8	UG/L	PQL		0.015	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	NVHOS	1.8	UG/L	PQL		0.015	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PMPA	34	UG/L	PQL		0.62	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PMPA	34	UG/L	PQL		0.62	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	Hfpo Dimer Acid	28	UG/L	PQL		0.081	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	R-PSDA	2.5	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	R-PSDA	2.4	UG/L	PQL		0.071	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	Hydrolyzed PSDA	37	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	Hydrolyzed PSDA	37	UG/L	PQL		0.038	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	R-EVE	2.6	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	R-EVE	2.7	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PEPA	13	UG/L	PQL		0.016	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PEPA	13	UG/L	PQL		0.016	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO2HxA	40	ug/L	PQL		0.027	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO2HxA	39	ug/L	PQL		0.027	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO3OA	7.7	ug/L	PQL		0.039	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO3OA	7.1	ug/L	PQL		0.039	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO4DA	0.79	ug/L	PQL		0.059	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFO4DA	0.74	ug/L	PQL		0.059	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFMOAA	150	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	PFMOAA	150	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	Hydro-EVE Acid	0.85	UG/L	PQL		0.014	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-B-1-24-SPLIT-A-091520-Z	09/15/2020	320-64813-3	Hydro-EVE Acid	0.81	UG/L	PQL		0.014	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-EVE	1.4	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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 SOP	Pre-prep	Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	R-EVE	1.4	UG/L	PQL		0.072	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PEPA	7.9	UG/L	PQL		0.016	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PEPA	8.1	UG/L	PQL		0.016	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PS Acid	0.024	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PS Acid	0.024	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO2HxA	42	ug/L	PQL		0.027	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO2HxA	44	ug/L	PQL		0.027	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO3OA	13	ug/L	PQL		0.039	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO3OA	13	ug/L	PQL		0.039	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO4DA	5.4	ug/L	PQL		0.059	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO4DA	5.7	ug/L	PQL		0.059	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO5DA	0.25	ug/L	PQL		0.078	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFO5DA	0.26	ug/L	PQL		0.078	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFMOAA	100	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	PFMOAA	110	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydro-PS Acid	0.011	ug/L	PQL		0.0061	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydro-PS Acid	0.012	ug/L	PQL		0.0061	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydro-EVE Acid	1.5	UG/L	PQL		0.014	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SEEP-A-1-24-SPLIT-A-091520-Z	09/15/2020	320-64780-3	Hydro-EVE Acid	1.6	UG/L	PQL		0.014	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **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
LOC-SEEP-B-1-SPLIT-A-091620	09/16/2020	320-64813-5	R-PSDCA	0.055	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620	09/16/2020	320-64813-5	PFO5DA	0.19	ug/L	PQL		0.078	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620-D	09/16/2020	320-64813-9	PES	0.045	UG/L	PQL		0.0067	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620-D	09/16/2020	320-64813-9	R-PSDCA	0.086	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620-D	09/16/2020	320-64813-9	PFO5DA	0.27	ug/L	PQL		0.078	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-A-091620-Z	09/16/2020	320-64813-7	PFO5DA	0.18	ug/L	PQL		0.078	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-SPLIT-B-091620-Z	09/16/2020	320-64813-8	PES	0.014	UG/L	PQL		0.0067	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
SED3-101220	10/12/2020	320-65553-2	PFO2HxA	26	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFO3OA	15	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFO4DA	5.3	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFO4DA	8.2	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFO5DA	3.2	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFO5DA	4.1	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFMOAA	81	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	Hydro-PS Acid	4.4	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	Hydro-PS Acid	5.3	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220-D	10/12/2020	320-65553-3	PFO2HxA	1.4	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **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
SED3-101220-D	10/12/2020	320-65553-3	PFMOAA	3.6	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220-D	10/12/2020	320-65553-3	Hydro-PS Acid	1.1	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
LOC-20A-24-110520-D	11/05/2020	320-66446-5	PFMOAA	0.018	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	R-PSDA	0.015	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	R-EVE	0.0049	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	PFMOAA	0.026	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520	11/05/2020	320-66446-4	PFMOAA	0.025	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-110520-D	11/05/2020	320-66446-5	R-PSDA	0.0072	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-A-092420-Z	09/24/2020	320-65180-7	R-EVE	0.037	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420	09/24/2020	320-65180-6	Hydrolyzed PSDA	0.0093	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420	09/24/2020	320-65180-6	PFMOAA	0.012	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420-D	09/24/2020	320-65180-10	Hydrolyzed PSDA	0.013	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420-D	09/24/2020	320-65180-10	PFMOAA	0.017	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420-D-Z	09/24/2020	320-65180-12	Hydrolyzed PSDA	0.0069	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
CFR-TARHEEL-SPLIT-B-092420-Z	09/24/2020	320-65180-8	Hydrolyzed PSDA	0.011	UG/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	PFO2HxA	0.011	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-21-SPLIT-A-091620	09/16/2020	320-64782-1	PFO2HxA	0.0098	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
SED3-101220	10/12/2020	320-65553-2	PFO3OA	9.1	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	PFMOAA	0.018	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-A-092420	09/24/2020	320-65177-1	PFMOAA	0.018	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	PFMOAA	0.0093	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420	09/24/2020	320-65177-2	PFMOAA	0.0093	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	PFMOAA	0.0082	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-20A-24-SPLIT-B-092420-Z	09/24/2020	320-65177-4	PFMOAA	0.0079	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	PFMOAA	0.013	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-091620	09/16/2020	320-64771-1	PFMOAA	0.012	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	PMPA	0.19	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	PMPA	0.19	UG/L	PQL		0.020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	PFMOAA	0.0087	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-7C-MID-24-SPLIT-A-092420	09/24/2020	320-65175-1	PFMOAA	0.0091	ug/L	PQL		0.0020	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-B-091520	09/15/2020	320-64813-2	R-PSDCA	0.056	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-B-091520	09/15/2020	320-64813-2	R-PSDCA	0.055	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	R-PSDCA	0.052	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

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
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	R-PSDCA	0.049	UG/L	PQL		0.017	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	PFMOAA	160	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep
LOC-SEEP-B-1-24-SPLIT-A-091520	09/15/2020	320-64813-1	PFMOAA	170	ug/L	PQL		0.080	J	Cl. Spec. Table 3 Compound SOP		PFAS_DI_Prep

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the rejection level. 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
SED3-101220	10/12/2020	320-65553-2	PFO2HxA	16	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D
SED3-101220	10/12/2020	320-65553-2	PFMOAA	46	UG/KG	PQL		1.0	J	Cl. Spec. Table 3 Compound SOP		Shake_Bath_14D

Site: Fayetteville **Sampling Program:** Supplemental Open Channel Sampling **Validation Options:** LABSTATS

Validation Reason The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EB-091620	09/16/2020	280-140581-14	Carbon	0.47	MG/L	MDL	0.35	1.0	J	9060A		
EB-092420	09/24/2020	L2040786-06	Total Organic Carbon	0.28	MG/L	MDL	0.11	0.50	J	9060A		
FB-091620	09/16/2020	280-140581-15	Carbon	0.50	MG/L	MDL	0.35	1.0	J	9060A		
FB-092420	09/24/2020	L2040786-07	Total Organic Carbon	0.31	MG/L	MDL	0.11	0.50	J	9060A		

Geosyntec consultants

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

APPENDIX B
Piezometer Borehole Logs

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

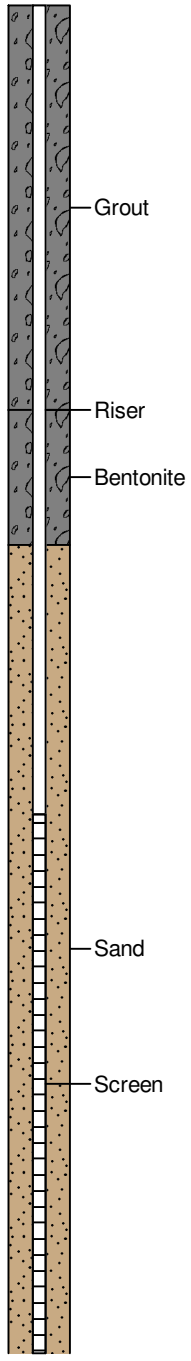
Project Number: 452344.02000

Date Started	: 10/2/20
Date Completed	: 10/2/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-25R

Northing	: 395,971.54
Easting	: 2,050,748.23

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 145.03
0	SILTY SAND: brown (10YR 4/3), fine to medium-grained, soft/friable, subangular, damp	SM	145.03
1			144.03
2			143.03
3	CLAYEY SAND: brown (7.5YR 4/6), fine to medium-grained, stiff to firm, damp, slightly plastic		142.03
4			141.03
5		SC	140.03
6			139.03
7	SAND: brown (7.5YR 4/6), medium-grained, with clay, loose to soft, damp		138.03
8		SP	137.03
9	1" layer of very fine to fine-grained sand		136.03
10		SP	



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 10'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

Project Number: 452344.02000

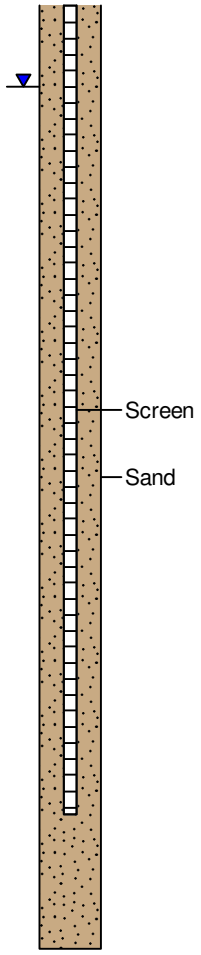
Date Started	: 10/2/20
Date Completed	: 10/2/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-25R

Northing	: 395,971.54
Easting	: 2,050,748.23

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Surf. Elev. 145.03	Depth in feet
10				135.03	10
11				134.03	11
12				133.03	12
13		SP		132.03	13
14				131.03	14
15				130.03	15
16				129.03	16
17	CLAY: yellowish brown (10YR 5/6), moderate plasticity, firm to hard, damp			128.03	17
18				127.03	18
19				126.03	19
20					20

Piezometer: PZ-25R
147.51



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 10'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

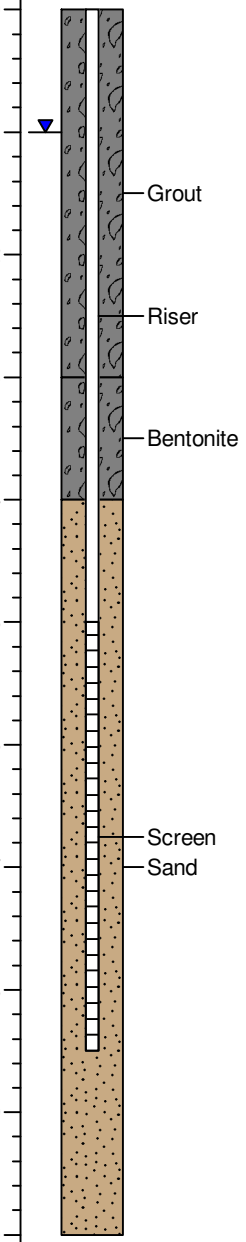
Project Number: 452344.02000

Date Started	: 9/30/20
Date Completed	: 9/30/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-36

Northing	: 396,086.17
Easting	: 2,051,331.44

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 135.37
0	SILTY SAND: Reddish yellow (7.5YR 6/6), fine grained, subrounded grains, damp	SM	135.37
1	SAND: brown (7.5 YR 5/6), medium-grained, subrounded grains, saturated, full of heavy minerals (metals)	SP	134.37
2			133.37
3			132.37
4	light gray (7.5YR 7/1)	SP	131.37
5	SAND: light grey (7.5YR 7/1), medium to increasing coarse-grained, subangular, saturated, well sorted, trace heavy metals	SW	130.37
6			129.37
7			128.37
8			127.37
9	CLAY: dark grey (7.5YR 4/1), stiff, damp, medium plasticity, micaceous, interbedded very fine-grained sand, light grey (7.5YR 7/1)	CL	126.37
10	END of BORING		125.37
11			



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 3.5'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

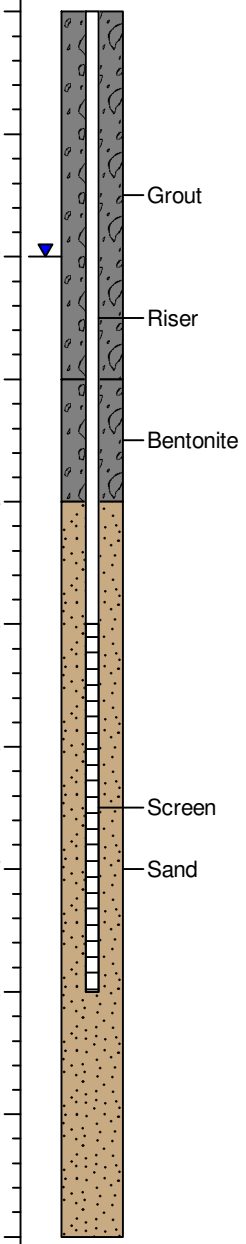
Project Number: 452344.02000

Date Started	: 9/28/20
Date Completed	: 9/29/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-37

Northing	: 396,042.40
Easting	: 2,051,050.05

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 135.83
0	SILTY SAND: medium-brown (10YR 5/6), medium-grained, roots present, damp, soft	SM	135.83
1	Yellowish brown (10YR 6/8), medium-grained, moist, loose sand	SM	134.83
2		SM	133.83
3	Light grey (10YR 7/1), medium-grained, subangular grains, moist	SM	132.83
4		SM	131.83
5	Subrounded grains, loose sand, trace heavy minerals (metals)	SM	130.83
6		SM	129.83
7		SM	128.83
8	CLAY: very soft, mottled yellowish-brown (10YR 5/4) and brownish-yellow (10YR 6/6), damp, medium plasticity	CL	127.83
9		CL	126.83
10	SAND: dark grey (7.5YR 4/1), medium-stiff, damp, interbedded very fine-grained light grey sand (7.5YR 7/1), micaceous	SP	125.83
11	END of BORING		



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 3'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

Project Number: 452344.02000

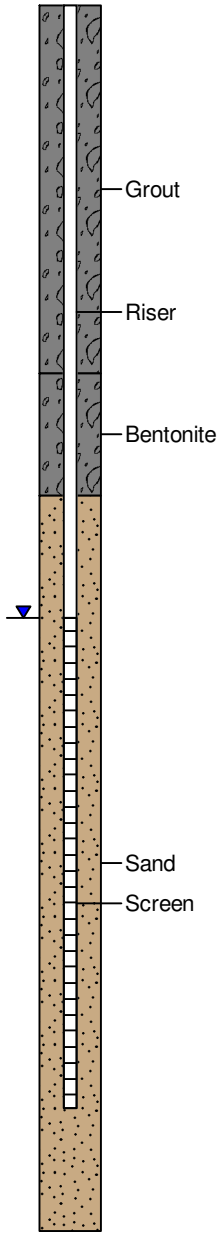
Date Started : 9/29/20
Date Completed : 9/29/20
Drilling Method : Direct-Push
Sampling Method : Macrocore
Drilling Firm : SAEDACCO
Lead Driller/License # : Brian Ewing/4240
Geologist : Brandon Weidner
Boring Log By : Karen Teague

LOG OF BORING: PZ-38

Northing : 395,970.01
Easting : 2,050,569.66

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 137.56
0	CLAYEY SAND: strong brown (7.5YR 5/6), fine to increasing medium-grained, decreasing clay with depth, damp, loose, roots, trace mica	SC	137.56
3	SILTY SAND: brownish yellow (10YR 6/6), fine-grained, subrounded grains, very loose, damp	SM	134.56
5	SILTY SAND: interbedded colors of yellow brown (10YR 5/8), brownish yellow (10YR 6/8) and brown (10YR 5/3), fine to medium-grained increasing grains size with depth, subrounded, moist, loose	SM	132.56
7	SILTY SAND: brownish yellow (10YR 6/6), medium to increasing course grains with depth, subrounded grains, trace heavy minerals throughout	SM	130.56
9	Light grey (10YR 7/1), large grains	SM	128.56
10	CLAY: dark grey (10YR 4/1), high plasticity, firm to hard, medium to coarse-grained sand 1/2" thick, loose; last 2" is pink (7.5YR 7/3)	CL	127.56
11	END of BORING		

Piezometer: PZ-38
137.34



Well Construction Information

WELL RISER
Material : PVC
Diameter : 1"

WELL SCREEN
Material : PVC
Diameter : 1"
Slot Size : 0.010"
Length : 4'

SAND PACK
Material : Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

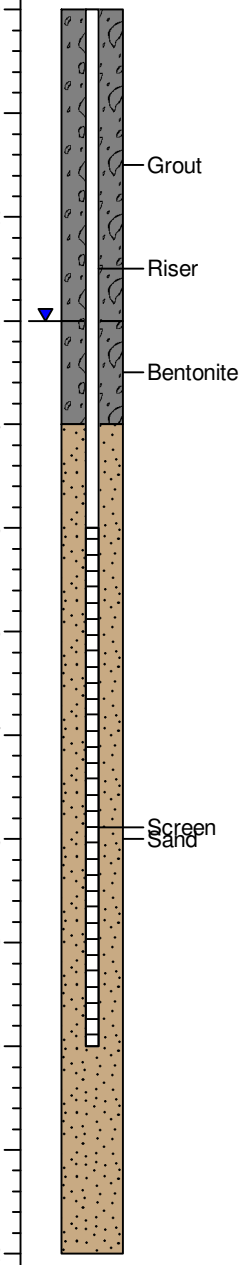
Project Number: 452344.02000

Date Started : 9/30/20
Date Completed : 9/30/20
Drilling Method : Direct-Push
Sampling Method : Macrocore
Drilling Firm : SAEDACCO
Lead Driller/License # : Brian Ewing/4240
Geologist : Brandon Weidner
Boring Log By : Karen Teague

LOG OF BORING: PZ-39

Northing : 395,921.87
Easting : 2,050,238.18

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Surf. Elev. 138.21	Depth in feet
0	CLAYEY SAND: strong brown (7.5YR 5/6), fine to medium-grained, subrounded, low plasticity, moist	SC		138.21	0
1	SANDY CLAY: light grey (7.5YR 7/1), medium plasticity, very fine-grained, subrounded	CL		137.21	1
2				136.21	2
3	SAND: light grey (7.5YR 7/1), very fine to fine-grained, heavy minerals (metals) present, saturated, very loose	SP		135.21	3
4	Yellow (10YR 7/6)	SP		134.21	4
5	SAND: light grey (10YR 7/1), medium-grained to decreasing grain size with depth, subangular, loose, metals, saturated	SW		133.21	5
6				132.21	6
7	Very fine-grained	SP		131.21	7
8				130.21	8
9				129.21	9
10	CLAY: mottled brownish yellow (10YR 6/6) and yellowish brown (10YR 6/8), high plasticity, soft, damp	CL		128.21	10
11	SANDY CLAY: dark grey, (10YR 4/1), very fine-grained sand, medium plasticity, damp, micaceous	CL		127.21	11
12	END of BORING			126.21	12
13					13



Well Construction Information

WELL RISER
Material : PVC
Diameter : 1"

WELL SCREEN
Material : PVC
Diameter : 1"
Slot Size : 0.010"
Length : 5'

SAND PACK
Material : Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

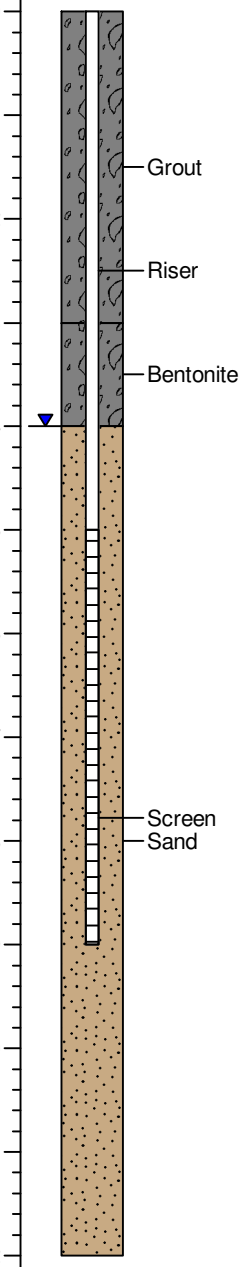
Project Number: 452344.02000

Date Started	: 9/29/20
Date Completed	: 9/29/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-40

Northing	: 395,943.02
Easting	: 2,050,031.90

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 138.80
0	SILTY SAND: strong brown (7.5YR 5/8), very fine to fine-grained, subangular, loose, damp	SM	138.8
1			137.8
2	CLAYEY SAND: strong brown (7.5YR 5/6), damp, roots, firm	SC	136.8
3			135.8
4	CLAYEY SAND: brown (7.5YR 5/3), medium-grained, subrounded, moist, lighter brown grains at 5'	SC	134.8
5	SAND: light brown, fine-grained (medium-grained at 7' and 9'), heavy minerals, moist, 1/2" clay lenses throughout section	SP	133.8
6			132.8
7			131.8
8	Saturated	SP	130.8
9			129.8
10	CLAY: mottled brownish yellow (10YR 6/6) with yellowish brown (10YR 6/8), very soft, high plasticity, moist	CL	128.8
11			127.8
12	Very dark grey (7.5YR 3/1), high plasticity, hard, damp	CL	126.8
	END of BORING		
13			



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 4'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

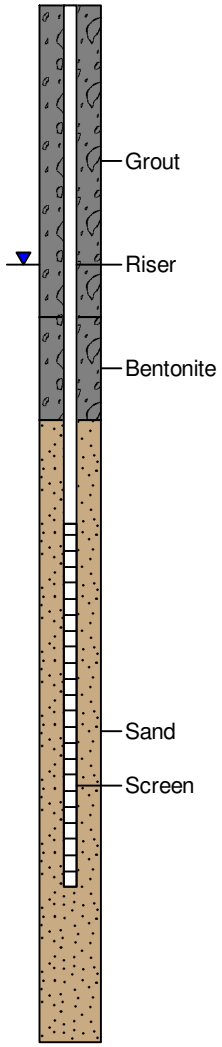
Project Number: 452344.02000

Date Started	: 9/30/20
Date Completed	: 9/30/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-41

Northing	: 395,979.29
Easting	: 2,050,048.97

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 138.34
0	SILTY SAND: very pale brown (10YR 7/4), fine-grained, subangular grains, loose, damp, roots	SM	138.34
1	medium-grained	SM	137.34
2	CLAYEY SAND: light grey (10YR 7/1), very fine-grained, low plasticity, stiff, damp	SC	136.34
3	SAND: very pale brown (10YR 7/3), very fine-grained, subrounded, loose, saturated	SP	135.34
4			134.34
5	SAND: very pale brown (10YR 7/4), very fine to medium-grained with depth, heavy minerals, saturated		133.34
6		SW	132.34
7			131.34
8	2" layer of light grey (10YR 7/1)	SW	130.34
9	CLAY: mottled brownish yellow (10YR 6/6), yellowish brown (10YR 6/8) and dark grey (7.5YR 4/1), fine to medium-grained, micaceous	CL	129.34
10	END of BORING		128.34
11			127.34
12			126.34
13			



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 3.5'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

Project Number: 452344.02000

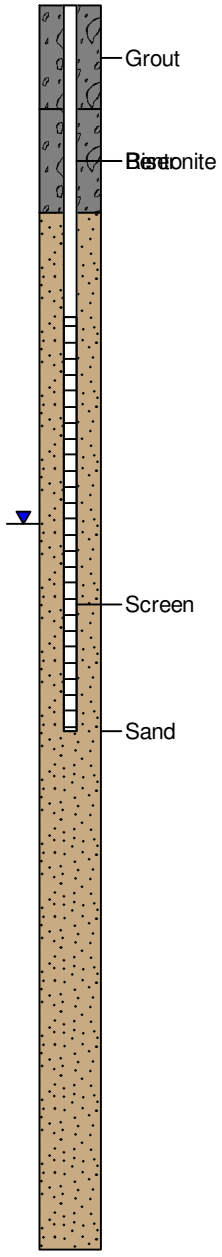
Date Started : 9/30/20
Date Completed : 9/30/20
Drilling Method : Direct-Push
Sampling Method : Macrocore
Drilling Firm : SAEDACCO
Lead Driller/License # : Brian Ewing/4240
Geologist : Brandon Weidner
Boring Log By : Karen Teague

LOG OF BORING: PZ-42

Northing : 395,961.73
Easting : 2,050,230.23

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Surf. Elev. 138.44	Depth in feet
0	SILTY SAND: very pale brown (10YR 8/2), fine-grained sand, increasing to medium-grained with depth, subrounded, loose, moist	SM		138.44	0
1	White (7.5YR 8/1)	SM		137.44	1
2	Very pale brown (10YR 8/2)	SM		136.44	2
3		SM		135.44	3
4	CLAYEY SAND: light grey (10YR 7/1), medium-grained, subrounded, medium plasticity	SC		134.44	4
5	SAND: light grey (10YR 7/1), fine to medium-grained, finer grains with depth, subrounded, loose, saturated	SP		133.44	5
6		SP		132.44	6
7	very fine to fine-grained, dense, very stiff, damp	SP		131.44	7
8		SP		130.44	8
9		SP		129.44	9
10	CLAY: mottled yellowish brown (10YR 6/6) and brownish yellow (10YR 6/8), interbedded light grey layers (10YR 7/1), high plasticity, moist, soft	CL		128.44	10
11		CL		127.44	11
12	Dark grey (7.5YR 4/1), high plasticity, wood fragments (reddish color), stiff	CL		126.44	12
13	END of BORING				13

Piezometer: PZ-42
138.17



Well Construction Information

WELL RISER
Material : PVC
Diameter : 1"

WELL SCREEN
Material : PVC
Diameter : 1"
Slot Size : 0.010"
Length : 4'

SAND PACK
Material : Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

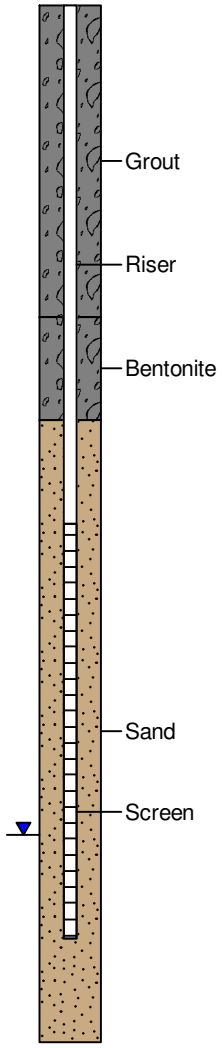
Project Number: 452344.02000

Date Started	: 10/1/20
Date Completed	: 10/1/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-43

Northing	: 396,011.61
Easting	: 2,050,567.89

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 137.20
0	SILTY SAND: brown (10YR 5/3), very fine to fine-grained, subangular, damp, roots	SM	137.2
1	CLAYEY SAND: yellowish brown (10YR 5/4), fine-grained, subrounded, damp	SC	136.2
2			135.2
3	SAND: pinkish grey (7.5YR 7/2), very fine to fine-grained, trace coarse-grains and heavy minerals	SP	134.2
	Yellow (10YR 8/6), fine-grained, damp, heavy minerals		
4		SP	133.2
5	trace mica		132.2
6		SP	131.2
7			130.2
	Light grey 1" layer	SP	
8	SAND: reddish yellow (7.5YR 6/8) medium-grained, subangular, saturated	SP	129.2
9	CLAY: mottled brownish yellow (10YR 6/6) and yellowish brown (10YR 6/8), medium stiff, high plasticity, damp	CL	128.2
10	SILTY SAND: alternating white (7.5YR 8/1) and reddish yellow (7.5YR 7/6)	SM	127.2
	END of BORING		
11			126.2
12			125.2
13			



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 4'

SAND PACK

Material	: Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

Project Number: 452344.02000

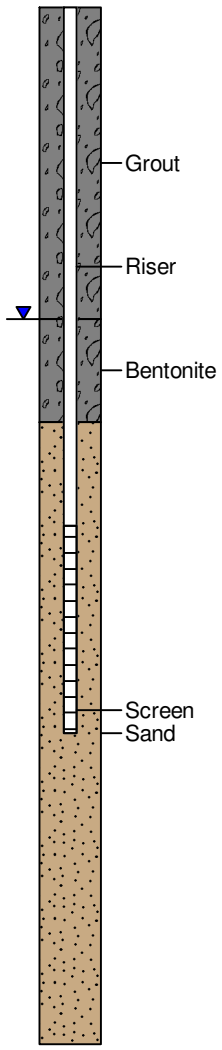
Date Started : 10/1/20
Date Completed : 10/1/20
Drilling Method : Direct-Push
Sampling Method : Macrocore
Drilling Firm : SAEDACCO
Lead Driller/License # : Brian Ewing/4240
Geologist : Brandon Weidner
Boring Log By : Karen Teague

LOG OF BORING: PZ-44

Northing : 396,082.75
Easting : 2,051,045.25

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 136.44	Depth in feet
0	SILTY SAND: brown (10YR 5/3), fine-grained, subangular, roots, damp, loose	SM	136.44	0
1	SAND: light brown (7.5YR 6/4), medium-grained, subangular, very loose, damp	SP	135.44	1
2	Pinkish white (7.5YR 8/2), subangular, very loose, moist	SP	134.44	2
3	SAND: yellowish brown (10YR 6/8), medium to coarse-grained, subangular, trace clay, saturated	SP	133.44	3
4			132.44	4
5	SILTY SAND: light grey (10YR 7/1), coarse-grained, subangular, trace metals, saturated	SM	131.44	5
6			130.44	6
7	CLAY: dark grey (7.5YR 4/1), high plasticity, stiff, damp, interbedded with very fine sands througout, micaceous and medium plasticity	CL	129.44	7
8			128.44	8
9	mottled yellowish brown (10YR 6/6) and (10YR 6/8), soft	CL	127.44	9
10	END of BORING		126.44	10
11			125.44	11
12			124.44	12
13				13

Piezometer: PZ-44
136.26



Well Construction Information

WELL RISER
Material : PVC
Diameter : 1"

WELL SCREEN
Material : PVC
Diameter : 1"
Slot Size : 0.010"
Length : 2'

SAND PACK
Material : Sand

PARSONS

The Chemours Company FC, LLC
Fayetteville Site Investigation

Project Number: 452344.02000

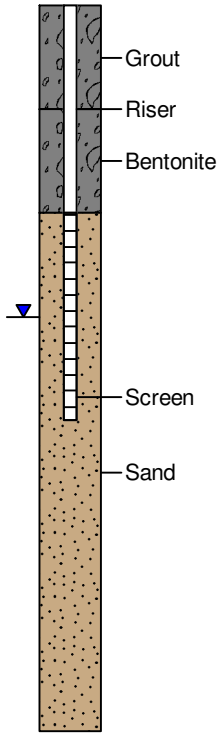
Date Started	: 10/1/20
Date Completed	: 10/1/20
Drilling Method	: Direct-Push
Sampling Method	: Macrocore
Drilling Firm	: SAEDACCO
Lead Driller/License #	: Brian Ewing/4240
Geologist	: Brandon Weidner
Boring Log By	: Karen Teague

LOG OF BORING: PZ-45

Northing	: 396,124.41
Easting	: 2,051,323.03

Depth in feet	DESCRIPTION	USCS	Surf. Elev. 135.83
0	SILTY SAND: brown (10YR 5/3), fine-grained, loose, roots, damp	SM	135.83
1	CLAYEY SAND: strong brown (7.5YR 4/6), medium-grained, subangular, loose, moist	SC	134.83
2			133.83
	Light grey layer (7.5YR 7/1)	SC	
3	Saturated, increased clay with depth		132.83
4		SC	131.83
5	CLAY: mottled, brownish yellow (10YR 6/6), yellowish brown (10YR 6/8) and dark grey (7.5YR 4/1), high plasticity	CL	130.83
6	damp	CL	129.83
	Dark grey (7.5YR 4/1)	CL	
7	END of BORING		128.83
8			127.83
9			126.83
10			125.83
11			124.83
12			123.83
13			

Piezometer: PZ-45
135.69



Well Construction Information

WELL RISER

Material	: PVC
Diameter	: 1"

WELL SCREEN

Material	: PVC
Diameter	: 1"
Slot Size	: 0.010"
Length	: 2'

SAND PACK

Material	: Sand