UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION

VICTORIA CAREY, MARIE BURRIS, MICHAEL KISER, and BRENT NIX, individually and on behalf of all others similarly situated,	)	
Plaintiff,	)	Case Nos.: 7:17-CV-00189 7:17-CV-00197 7:17-CV-00201
v.	)	
E. I. DU PONT DE NEMOURS AND COMPANY and THE CHEMOURS COMPANY FC, LLC,	)	CONSOLIDATED CLASS ACTION COMPLAINT
Defendants.	)	

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GLOSSARY

Defined Term	Definition
APFO	Ammonium perfluorooctanoate, the ammonium salt of PFOA (also known as "C8")
CDC	U.S. Centers for Disease Control and Prevention
CFPUA	Cape Fear Public Utility Authority
CFPUA Notice	Notice of intent to sue sent to DuPont by the CFPUA dated August 3, 2017
Chemours	The Chemours Company FC, LLC
Class Period	1980 to Present
Classes	Fed. R. Civ. P. 23(b)(2) class and Fed. R. Civ. P. 23(b)(3) class
Consent Order	Consent order entered into by DuPont and the EPA on January 28, 2009, governing the manufacturing of GenX
Defendants	DuPont and Chemours
DENR	North Carolina Department of Environment and Natural Resources
DEQ	North Carolina Department of Environmental Quality
DHHS	North Carolina Department of Health and Human Services
DuPont	E. I. du Pont de Nemours and Company
DWQ	North Carolina Division of Water Quality
DWR	North Carolina Division of Water Resources
EPA	U.S. Environmental Protection Agency
Fayetteville Works	DuPont's Fayetteville Works industrial facility, located at 22828 NC Highway 87 W, Fayetteville, North Carolina 28306.
GenX (C-3 Dimer)	A replacement chemical to be used after the phase-out of PFOAs
GenX Report	A 2014 report entitled: "Evaluation of chronic toxicity and carcinogenicity of ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-propanoate in Sprague–Dawley rats"
HAL	Health Advisory Level
Mono-ether PFECAs	Perfluoroalkyl ether carboxylic acids with one ether group
Multi-ether PFECAs	Perfluoroalkyl ether carboxylic acids with multiple ether groups
Non-neoplastic	New growth in tissue that does not serve a useful purpose – *i.e.*, tumors.
NPDES	National Pollutant Discharge Elimination System
NPDES Permit	Fayetteville Works Facility NPDES Permit No. NC0003573
PFASs	Polyfluorinated substances
PFCs	Polyfluorinated chemicals

PFCAs	Perfluorocarboxylic acids
PFOAs	Perfluorooctanoic acids, also known as "C8"
PFOS	Perfluorooctane sulfonate
PFPrOPrA	Perfluoro-2-propoxypropanoic acid
PFSAs	Perfluorosulfonic acids
Plaintiffs	Victoria Carey, Marie Burris, Mike Kiser, and Brent Nix
PPA	Polymer Processing Aid
PPARα agonists	peroxisome proliferators
PVF	Polyvinyl Fluoride
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SWMUs	Solid Waste Management Units

I. INTRODUCTORY STATEMENT

1. For nearly four decades, Defendants have willfully, wantonly, recklessly, and negligently discharged toxic, cancer-causing chemicals into the Cape Fear River, the primary source of drinking water for thousands of North Carolina residents.

2. From 1980 to the present (the "Class Period"), Defendants have operated the Fayetteville Works chemical plant, which has discharged wastewater containing polyfluorinated chemicals such as GenX (collectively referred to as "PFCs") into the Cape Fear River. Throughout the Class Period, Defendants knew that these chemicals were extremely dangerous: even very small doses could cause testicular, pancreatic, uterine, and kidney cancer, as well as liver disease, thyroid disease, ulcerative colitis and pregnancy-induced hypertension, among other illnesses. Nevertheless, Defendants dumped these chemicals into the air and water surrounding the Fayetteville Works plant, simply to avoid the expense of taking safety precautions. Knowing that their conduct was illegal and wrong, Defendants lied to government regulators, claiming that they were disposing of PFCs at a secure, offsite facility, or incinerating it. Defendants' lies about the way they were disposing of GenX were particularly harmful: because neither state nor local water providers knew that Defendants were discharging GenX into the local water supply, they could not and did not design water filters to keep families from drinking that poison.

3. The impact on counties that use the Cape Fear River as a primary source of drinking water—New Hanover, Bladen, Brunswick, Cumberland, and Pender Counties in North Carolina—has been devastating. Bladen, Brunswick, Pender, and New Hanover Counties have among the highest concentrations of liver disease in the United States.[1] In addition, the rate of

[1] Multiple cause of death data published by the U.S. Centers for Disease Control and Prevention ("CDC").

liver and testicular cancers in New Hanover County is significantly higher than the state average, the rate of kidney cancer in Bladen County is significantly higher than the state average, the rate of pancreatic cancer in Brunswick County is significantly higher than the state average, and the rate of uterine cancer in Cumberland County is significantly higher than the state average.[2]

4. There is no "quick fix" for these dire consequences. The chemicals have spread throughout more than 100 miles of the Cape Fear River and tens of thousands of miles of municipal and residential piping, where they have bonded with pipes, microbes, plants, animals, and sediments which will slowly release the chemicals back into the water supply for decades. They have also been emitted into the atmosphere and settled over more than 1000 square miles.

5. But if the chemicals are not removed quickly, thousands more individuals could develop PFAS-related illness. According to the 2016 U.S. Census, Bladen, Brunswick, Pender, New Hanover, and Cumberland Counties have a combined population of 770,394 individuals who occupy 385,231 housing units.[3]

6. This is a class action on behalf of the thousands of residents and business owners who have experienced, and will continue to experience, serious personal injury, property damage, and emotional injuries caused by Defendants' conduct. These damages include, among other things: loss of life, permanent physical injuries, medical bills for PFC-related illness; the cost of testing for PFC-related illness; the cost of filtering contaminated air and water; the cost of cleaning and replacing contaminated plumbing, fixtures, and appliances; loss of use and enjoyment of contaminated property; the reduced value of property and businesses; and the anxiety Plaintiffs felt when they realized that they had been breathing and drinking contaminated

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[2] Central Registry of the North Carolina Department of Health and Human Services ("DHHS").

[3] U.S. Census Bureau, *Population and Housing Unit Estimates*, available at https://www.census.gov/programs-surveys/popest.html (last accessed Jan. 31, 2018).

air and water. Plaintiffs are seeking monetary damages and injunctive relief to address all of these past, present and future injuries.

II. JURISDICTION AND VENUE

7. The Court has diversity jurisdiction under 28 U.S.C. § 1332(d). This is a class action in which Plaintiffs are citizens of the State of North Carolina, and Defendants are citizens of the State of Delaware. There are more than one hundred putative Class members, seeking damages that exceed $5,000,000.00, exclusive of interest and costs.

8. The Court has personal jurisdiction over Defendants because each of them has personally availed itself of the benefits and protections of the laws of the State of North Carolina. Each Defendant conducted business and committed torts in North Carolina, by itself or through an agent or *alter ego*, which caused Plaintiffs and Class members to suffer severe personal and property injuries in the state.

9. Venue is proper in this Court because the original injury and damage occurred in the Eastern District of North Carolina and Defendants conduct business in the Eastern District of North Carolina. Plaintiffs reside or resided in the Eastern District of North Carolina and/or own property located in the Eastern District of North Carolina that was damaged, and many of the occurrences described herein occurred in the Eastern District of North Carolina.

III. PARTIES

A. Plaintiffs

10. Plaintiff **Victoria Carey** is a citizen of North Carolina, residing at 8256 Egret Pointe NE, Leland, North Carolina 28451.

11. Plaintiff **Dr. Marie Burris** is a citizen of North Carolina, residing at 14 Botanical Court, Bunnlevel, North Carolina 28323. She owns property at 21158 NC Highway 87 W, Fayetteville, North Carolina 28306.

12. Plaintiff **Michael E. Kiser** is a citizen of North Carolina, residing at 4421 Jay Bird Circle, Unit 207, Wilmington, North Carolina 28412.

13. Plaintiff **Brent Nix** is a citizen of North Carolina, residing at 5008 Laurenbridge Lane, Wilmington, North Carolina 28409.

B. Defendants

14. Defendant **E. I. du Pont de Nemours and Company** ("DuPont") is a Delaware corporation, with its principal place of business located at 1007 Market Street, Wilmington, Delaware 19898. DuPont is a multinational chemical manufacturer. It owned the Fayetteville Works industrial facility, located at 22828 NC Highway 87 W, Fayetteville, North Carolina 28306 ("Fayetteville Works"), from the early 1970s until February 1, 2015, during which time it disposed of PFCs into the Cape Fear River. DuPont still operates a manufacturing area at Fayetteville Works.

15. Defendant **The Chemours Company FC, LLC** ("Chemours") is a Delaware limited liability company, with its principal place of business located at 1007 Market Street, Wilmington, Delaware 19898. Chemours is a multinational chemical manufacturer. Chemours, including its assets and liabilities, was wholly owned by DuPont when Chemours acquired Fayetteville Works from DuPont on February 1, 2015. Chemours later separated from DuPont in July 2015. During the time Chemours has owned and operated Fayetteville Works, it has discharged PFCs into the Cape Fear River.

IV. STATEMENT OF FACTS

A. Fayetteville Works

16. The Fayetteville Works chemical plant produces a variety of films, fibers, and specialty chemicals. The plant is enormous, spanning 2,150 acres. For years, Fayetteville Works

has had at least five discrete manufacturing areas: (i) fluoromonomers/Nafion; (ii) polymer processing aid ("PPA"); (iii) Butacite; (iv) SentryGlas; and (v) polyvinyl fluoride ("PVF").

17. The wastewater from each of the five manufacturing areas flows through one or more on-site wastewater treatment plants, where the contaminated wastewater is diluted with hundreds of thousands of gallons of river water before it is ultimately discharged into the Cape Fear River. This dilution makes PFCs harder to detect, but does not ultimately reduce the amount of PFCs flowing into the Cape Fear River.

18. Fayetteville Works is operating under National Pollutant Discharge Elimination System ("NPDES") Permit No. NC0003573 (the "NPDES Permit").

B. The Pollutants: GenX and Other PFCs

19. The Fayetteville Works plant discharged a group of synthetic chemical compounds called polyfluorinated or perfluorinated chemicals, or simply PFCs. PFCs are used in manufacturing Teflon, and other fire-resistant, stain-resistant, and water-resistant products.

20. In particular, Defendants have manufactured and discharged the following PFCs: GenX, perfluorocarboxyl acids ("PFCAs"), perflurosulfonic acids ("PFSAs"), perfluoroalkyl ether carboxylic acids with one ether group ("mono-ether PFECAs"), perfluoroalkyl ether carboxylic acids with multiple ether groups ("multi-ether PFECAs"), perfluorooctanoic acids ("PFOAs") (including ammonium perfluorooctonate ("APFO")), perfluorooctane sulfonate ("PFOS"), Perfluoro-2-propoxypropanoic acid ("PFPrOPrA"), Nafion, and Nafion wastes and other wastes and breakdown products of these chemicals (some of which are called legacy and emerging PFCs).

21. PFCs are highly toxic to humans. Scientists have linked PFCs to kidney cancer, testicular cancer, prostate cancer, ovarian cancer, non-Hodgkin lymphoma, liver disease,

ulcerative colitis, thyroid disease, hypercholesterolemia, and pregnancy-induced hypertension, among other illnesses.

22. In light of the dangers posed by PFCs, the U.S. Environmental Protection Agency ("EPA") recently established a lifetime health advisory level ("HAL") of 70 ng/L (parts per trillion or "ppt") for the sum of the PFOA and PFOS concentrations in drinking water. The State of North Carolina has adopted a preliminary health-based standard of 140 ppt for GenX. This preliminary standard will likely be lowered in the future to account for the risk that GenX causes cancer and to account for any special harm that GenX may present to vulnerable populations such as children and individuals exposed to multiple PFCs.

23. Moreover, PFCs are extremely difficult to remediate because they are not biodegradable. "Long-chain PFCs"—so called because they have six or more carbon atoms—can persist in the environment for over 2,000 years. And even short-chain PFCs do not biodegrade quickly. A recent DuPont study found that GenX—a short-chain PFC—biodegraded by less than one percent after 28 days. Other studies have confirmed that long-chain PFCs and their short-chain alternatives are "equally persistent."[4]

24. Moreover, it is extremely difficult to clean air, water, or property contaminated by PFCs because the chemicals bond with proteins in the cells of living organisms and adhere to sediment, scale and pipes. Thus, current drinking water filtration systems cannot remove PFCs effectively.

25. That is extremely troubling, because PFCs can persist in the human body for decades. For example, when PFOA is ingested, it stays in human blood for 25 years. Because the human body cannot get rid of PFCs, they accumulate over time. As a result, even if someone

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[4] Gomis, et al, Env. Intern. 113 (2018) at 2.

drinks water with extremely low levels of PFCs, the chemicals can slowly build to toxic levels in the person's blood. This slow accumulation of PFCs has harmed thousands of North Carolina residents, who have been drinking PFC-laden water for more than 30 years.

C. Defendants Conceal the Harmful Effects of GenX and Related Contaminants

26. From the 1950s to the early 2000s, DuPont relied heavily on PFOA—a long-chain PFC with 8 carbon atoms—to make Teflon and other non-stick products. Throughout this period, DuPont conducted a robust series of animal studies, which strongly suggested that PFOA might be toxic. At the same time, DuPont conducted a smaller—but still significant—set of studies demonstrating that humans exposed to PFOA developed a variety of illnesses. Despite the clear warning signs that DuPont received from its data, it disposed of PFOA in drinking water near its plants in North Carolina and West Virginia, rather than paying to take safety precautions. DuPont also lied to both North Carolina and West Virginia regulators to hide the fact that it was endangering local families. In 2015, as part of a settlement with West Virginia residents, an expert panel of epidemiologists determined that, by discarding PFOA into drinking water, DuPont caused West Virginians to develop kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, hypercholesterolemia, and pregnancy-induced hypertension.

27. History is now repeating itself. Since the 1980s, DuPont has used not just PFOA, but GenX and similar PFCs at its Fayetteville Works plant. In the early 2000s, when government regulators pressured DuPont to stop using PFOA in its manufacturing processes, DuPont began to replace PFOA with its close chemical cousin, GenX. But GenX might be even more toxic than PFOA.[5] Overlooking the results of its own toxicity studies, DuPont has discharged GenX into the

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[5] Gomis, *et al.*, Env. Intern. 113 (2018) at 1 ("The toxicity ranking using modeled serum (GenX > PFOA > PFHxA > PFBA) and liver (GenX > PFOA≈PFHxA≈PFBA) concentrations indicated that some fluorinated alternatives have similar or higher toxic potency than their predecessors when correcting for differences in toxicokinetics.").

Cape Fear River, showing the same cold disregard for human health that it showed when it discharged PFOA. And, just as it did with PFOA, DuPont has concealed its dangerous discharge practices from government regulators. Plaintiffs are now paying the price of Defendants' failure to learn from their mistakes. GenX—together with the other PFCs Defendants have been dumping into the Cape Fear River for decades—is devastating local families and businesses.

1. **DuPont's History with PFOA**

28. Since the 1960s, DuPont has worked to conceal a bevy of scientific evidence suggesting that PFOA is harmful to human health.

29. In 1961, DuPont researchers conducted the first safety test of PFOA, administering PFOA to rodents. The researchers noted that the rodents had enlarged livers—a classic response to poison—and recommended further testing.

30. In 1962, DuPont performed a second safety test of PFOA and found that rodents exposed to PFOA had enlarged livers, kidneys, adrenal glands, and testes. That same year, DuPont asked human subjects to smoke cigarettes laced with PFOA and observed, "Nine out of ten people in the highest-dosed group were noticeably ill for an average of nine hours with flu-like symptoms that included chills, backache, fever, and coughing."

31. In 1966, DuPont researchers discovered that PFOA was toxic to fish.

32. These toxicity tests prompted DuPont staff to consider safe mechanisms for disposing of PFOA. In 1966, DuPont staffers suggested disposing of PFOA in steel drums so that it would not leak into the air or into drinking water.

33. Nevertheless, when DuPont opened the Fayetteville Works plant in 1971, it disposed of water containing PFOA and other PFCs in the Cape Fear River.

34. Throughout the 1970s, DuPont continued to collect evidence that PFOA could accumulate in the human body and cause a variety of illnesses. In 1978, a company called 3M—

which manufactured PFOA for DuPont—told DuPont that PFOA had accumulated in the blood of 3M employees who had been exposed to the substance. DuPont then tested its own employees and found that they too had PFOA in their blood.

35. In 1978, DuPont began to review employee medical records and found that workers exposed to PFOA and similar chemicals at DuPont's New Jersey plant had increased rates of endocrine disorders. DuPont also found that workers exposed to PFOA more often had abnormal liver function test results. Nevertheless, DuPont did not disclose its findings to regulators.

36. In 1979, DuPont and 3M conducted additional tests and discovered that PFOA caused abnormal enzyme levels in dogs and fatal illnesses in monkeys.

37. Despite the growing body of evidence suggesting that PFOA was toxic, DuPont continued to dispose of PFOA in unsafe ways at the Fayetteville Works facility. In or around 1979, DuPont began disposing of PFOA-laden wastewater in unlined biosludge settlement lagoons. DuPont knew or should have known that wastewater poured into those lagoons would flow into the Cape Fear River.[6]

38. As DuPont's emissions of PFOA increased, so did the evidence that PFOA was dangerous. In 1981, DuPont learned that PFOA caused birth defects in rodents. As a result of this study, DuPont removed female workers from jobs that caused PFOA exposure at its Washington Works plant in West Virginia. But DuPont did not issue any sort of warning to women who lived near the Washington Works plant or the Fayetteville Works plant. Nor did DuPont report its concerns about PFOA to the EPA.

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[6] *See* Phase I Resource Conservation and Recovery Act ("RCRA") Facility Investigation ("RFI"), dated April 14, 2003 and revised August 1, 2003; Phase II RFI dated June 2006, and its August 2009 Addendum.

39. In 1988, DuPont researchers concluded that PFOA caused Leydig cell tumors in rodents. As a result, DuPont classified PFOA as a possible carcinogen (*i.e.*, a potential cancer-causing substance).

40. Given the emerging evidence that PFOA could cause health problems, 3M shipped PFOA to DuPont in 1988 with a notice stating that PFOA residue should be "mix[ed] with flammable material and incinerate[d] in an industrial or commercial facility." But DuPont did not incinerate all of the PFOA it produced at the Fayetteville Works facility; instead, it continued to discharge substantial amounts into the Cape Fear River and the surrounding air.

41. In 1989, DuPont researchers completed a review of employee health records at DuPont's Washington Works plant in West Virginia, which handled PFOA. The researchers found a significant incidence of kidney and other urinary cancers among male employees.

42. While the newly discovered links between PFOA and cancers prompted DuPont to warn its employees about the potential hazards of the chemical, DuPont did not warn the communities that surrounded the Fayetteville Works plant or drew drinking water from the Cape Fear River. Nor did DuPont stop discharging PFOA and other PFCs into the community's drinking water and air.

43. In 1994, a DuPont committee drafted a "white paper" about PFOA. The paper discussed a study published in the *Journal of Occupational Medicine*, which found that workers exposed to PFOA were more likely to die of prostate cancer. In light of that study—as well as the other evidence that PFOA was toxic—the authors of the white paper considered strategies for "replac[ing] [PFOA] with other more environmentally safe materials." Nevertheless, DuPont did not direct Fayetteville Works staff to stop discharging PFOA and similar chemicals into the Cape Fear River and surrounding air.

44. By 2000, 3M—which supplied most of DuPont's PFOA—had seen enough evidence about the dangers of PFOA that it decided to stop manufacturing the substance. Instead of looking for PFOA alternatives, however, DuPont resolved to manufacture PFOA on its own.

45. But DuPont faced a problem: if it told regulators about the dangers of PFOA and its components, the regulators might not let DuPont produce it. So DuPont decided to lie.

46. On May 3, 2001, DuPont asked the North Carolina Department of Environmental Quality ("DEQ") to renew its NPDES Permit. The renewal application explained that DuPont intended to begin manufacturing APFO, the ammonium salt of PFOA, at Fayetteville Works. Then, the application made several false claims about the health effects of APFO, including: (i) a claim that there had been "no observed health effects in workers" in the forty years that DuPont had used the chemical; (ii) a claim that "epidemiological data from others in industry supports its conclusion that APFO does not pose a health concern to humans or animals at levels present in the workplace or environment"; and (iii) a claim that the compound "is neither a known developmental toxin nor a known human carcinogen." Given all of the studies in its possession,[7] DuPont knew or should have known that these statements were inaccurate.

47. In 2002, before its NPDES Permit renewal application had been approved, DuPont began producing APFO at the Fayetteville Works facility. The manufacturing continued for at least a decade.

48. In or around 2002, DuPont submitted supplemental information to the North Carolina DEQ in support of its NPDES Permit renewal application. In the supplement, DuPont stated that its PFOA manufacturing operation at Fayetteville Works would have no process wastewater discharges because the wastewater would be captured and incinerated offsite. With

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[7] *See* CFPUA Notice.

that assurance from DuPont, the DEQ granted the NPDES renewal application in 2004. Crucially, the renewed permit did not authorize DuPont to discharge the PFOA manufacturing wastewater, which included GenX and other dangerous PFCs, into the river. Nor did the permit allow DuPont to discharge PFCs into the air. But DuPont did both.

49. On May 1, 2006, DuPont again submitted a NPDES Permit renewal application to the DEQ. The application represented that: (i) wastewater from PFOA manufacturing operations was "collected and shipped off-site for disposal"; (ii) "[n]o process wastewater from this manufacturing facility [was] discharged to the site's biological [wastewater treatment plant] or to the Cape Fear River"; (iii) the PFOA produced at the facility was "used to produce fluoropolymers and fluorinated telomers, but none of the produced PFOA [was] used at the Fayetteville Works site"; (iv) DuPont manufactured five Nafion products, including FLPR Vinyl Ether monomers and HFPO monomers (hexafluoropropylene oxide); and (v) the Vinyl Ether and HFPO monomers were shipped to other DuPont locations to produce various fluorochemical products such as Teflon, while the Nafion wastewater was treated in the facility's wastewater treatment plant. The DEQ issued the renewed NPDES Permit on May 25, 2007.

50. Government investigations later revealed that DuPont misrepresented the way it handled PFOA in its NPDES Permit applications. A Phase II Resource Conservation and Recovery Act ("RCRA") Facility Investigation ("RFI") dated June 2006, and its August 2009 Addendum, found that there was PFOA contamination in soil and groundwater throughout Fayetteville Works. The investigations also noted chemical releases at the Nafion manufacturing area, including from solid waste management units ("SWMUs") handling Nafion wastewater.

51. In 2011 and 2012, DuPont received the results of the first comprehensive study of the effects of PFOA on human health—called the "C8 Health Project" (because PFOA is

sometimes known as C8)—which confirmed that PFOA causes cancer and a host of other health problems in humans. The C8 Health Project was created as part of the settlement agreement reached in *Jack W. Leach, et al. v. E.I. du Pont de Nemours & Company*, No. 01 Civ. 608 (W.Va., Wood County Circuit Court, April 10, 2002). That case—and 3,000 others like it—alleged that a DuPont plant in Parkersburg, West Virginia spilled PFOA into the Ohio River, contaminating the drinking water of more than 60,000 people in West Virginia and Ohio. The C8 Health Project tracked health outcomes for those individuals, to determine the extent to which PFOA caused disease. The project was one of the largest toxicology/epidemiology studies ever conducted, with 69,030 study participants providing health data and blood samples for laboratory testing. Three world-renowned epidemiologists (the C8 Science Panel) analyzed 55 health outcomes for this group, and concluded that PFOA was probably linked to six outcomes: kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, hypercholesterolemia, and pregnancy-induced hypertension.

52. Similarly, in 2013, a study of humans exposed to PFOA suggested that PFOA exposure was linked to kidney cancer, testicular cancer, prostate cancer, ovarian cancer, and non-Hodgkin lymphoma.

53. Despite these sobering results, DuPont continued its reckless discharges of PFCs into the Cape Fear River, while providing false assurances to state regulators that it was processing PFCs in a responsible manner.

54. Between 2011 and 2013, the Fayetteville Works facility spilled PFOA on at least seven occasions, including once in June 2011 (at the PPA facility) and twice in March 2012 (at the Nafion facility and the Waste Fluorocarbon Storage Tank). Although DuPont had an obligation to report each of those spills—because its NPDES Permit did not authorize PFOA

discharges[8]—DuPont reported none of them (until they were uncovered years later by a government investigation). As a result, state regulators were unable to take steps to warn families whose drinking water was contaminated by the PFOA spills.

2. **DuPont's History with GenX and Other PFCS**

55. Since the 1980s, Defendants have also been discharging GenX and other PFCs into the Cape Fear River and the surrounding air. Defendants repeatedly hid those discharges from state and federal regulators who could have protected North Carolina families from GenX and its dangerous chemical cousins.

56. In 1980, the Fayetteville Works plant began discharging wastewater from its vinyl ether manufacturing process—which contained significant amounts of GenX—into the Cape Fear River. Around the same time, the plant began discharging additional waste streams containing other PFCs.

57. DuPont then began to lie to government regulators about the way it was discharging dangerous wastewater. In or around December 1995, DuPont asked the North Carolina Department of Environment and Natural Resources ("DENR," now the DEQ) to renew DuPont's NPDES Permit. DuPont's renewal application included a request to reroute Nafion wastewater to bypass the facility's wastewater treatment plant. DuPont falsely indicated in its permit application that the only significant pollutant in the "low biodegradable" wastewater was fluoride. However, the wastewater also included GenX and other PFCs.

58. In the early 2000s, when the EPA learned of the dangers associated with PFOA, DuPont knew that it would soon have to find a replacement product. DuPont eventually settled on GenX as the best available alternative to PFOA.

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[8] 2014 RFI Report; NPDES Permit No. NC0003573.

59. In 2009, DuPont and the EPA reached a consent order pursuant to the Toxic Substances Control Act ("Consent Order"), in which DuPont agreed to modify its Teflon manufacturing process, replacing PFOA with GenX. In negotiating this agreement, DuPont represented that GenX would probably be safer than PFOA because it would biodegrade and pass through the human body more quickly, causing less damage. Despite this representation, the Consent Order stated that "EPA ha[d] concerns that [GenX] w[ould] persist in the environment, . . . bioaccumulate, and be toxic ('PBT') to people . . . ." In light of those concerns, the Consent Order instructed DuPont to study whether GenX was biodegradable and whether GenX caused illnesses in animals. The order further instructed DuPont to "recover and capture (destroy) or recycle [GenX] from all the process wastewater effluent streams and air emissions (point source and fugitive) at an overall efficiency of 99% . . ." The Consent Order may have instructed DuPont to take even more precautions if DuPont had disclosed that it had already discharged GenX—as a waste product—into the Cape Fear River for 30 years. But DuPont kept that crucial fact secret. Alternatively, the Consent Order might have required more of DuPont if the company disclosed the fact that, as of 2009, it was *still* discharging substantial amounts of GenX into the Cape Fear River and surrounding air. But DuPont falsely claimed that it was "currently" sending GenX waste "to an off-site RCRA incinerator."

60. When DuPont conducted the studies contemplated by the Consent Order, it learned that the EPA was right to be concerned about GenX. On March 15, 2010, DuPont submitted a study to the EPA, showing that GenX—like PFOA—was not biodegradable. Consistent with government guidelines,[9] DuPont's study measured the extent to which GenX

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[9] *See* SEPA HJIT 153-2004, "the guidelines for the testing of chemicals," OECD Procedure 302C, "Inherent Biodegradability: Modified MITI Test (II)," adopted May 1981.

biodegraded over 28 days. The study authors found that GenX did not biodegrade at all during the test period. More specifically, they found that:

> [b]ased on the residue analysis, **the biodegradation of the test substance [*i.e.*, GenX]was 0%** and there was hardly any change for the test substance in the 'abiotic' vessel during the testing period. The BOD results showed that **biodegradation of the test substance was both <1% after 14 and 28 days**. The test was valid because the level of biodegradation of [a control] substance aniline exceeded 40% after 7 days, and 65% after 14 days. **Therefore, the test substance was not inherently biodegradable under this test condition.**

61. In addition, the animal studies contemplated by the Consent Order demonstrated that rodents exposed to GenX—like rodents exposed to PFOA—suffered severe health consequences. In July 2010, DuPont submitted the results of two rodent studies to the EPA, showing that rodents exposed to GenX had birth defects, early birth and low birth weight, liver necrosis (*i.e.*, dead liver tissue), and cellular deformation indicative of liver disease and early-stage cancer.

62. More specifically, DuPont's studies showed that, among rodents exposed to GenX:

> There was a dose-related increase in the number of dams [female rodents] found with **early deliveries** on GD 21.
>
> In addition, mean fetal weight was **8 and 28% lower** (statistically significant) than controls at 100 and 1000 mg/kg/day, respectively.
>
> A higher mean litter proportion of 14th rudimentary ribs was observed in the 1000 mg/kg/day group, resulting in a higher mean litter proportion of **total skeletal variations and total developmental variations** . . . .

In addition, the study's authors found "**[f]ocal necrosis** of the liver . . . in some females in the 100 and 1000 mg/kg/day groups in a dose-related manner." Similarly, non-maternal rodents

exposed to GenX had liver diseases, including focal necrosis and an increase of peroxisome proliferators (which have been shown to cause liver disease and induce tumors).

63. Despite the results of these studies, DuPont repeatedly violated the Consent Order's instruction to "recover and capture (destroy) or recycle [GenX] from all the process wastewater effluent streams and air emissions (point source and fugitive) at an overall efficiency of 99% . . ." Instead, DuPont discharged significant quantities of GenX into the Cape Fear River, the groundwater, and the air surrounding the Fayetteville Works plant. Those discharges flew in the face of the Consent Order's express statement that "uncontrolled . . . disposal of [GenX] may present an unreasonable risk of injury to human health and the environment."

64. Recognizing that it was violating the Consent Order, DuPont continued to conceal its discharges of GenX into the Cape Fear River. In 2010—less than a month after DuPont sent the results of the rodent studies to the EPA—DuPont environmental manager Michael Johnson met with the DEQ's Division of Water Quality ("DWQ," subsequently Division of Water Resources ("DWR")) as part of its NPDES Permit renewal process. A state regulator's handwritten notes of the meeting suggested that Johnson promised to replace the PFOA at Fayetteville Works with a new material called "Gen-X (C-3 Dimer)," and further promised that the company would dispose of the new material "offsite by incinerator." In fact, DuPont continued discharging GenX and other PFCs into the Cape Fear River without notifying the EPA, area residents, drinking water providers, or state and local officials.

65. On January 28, 2011, DuPont submitted the results of another rodent study to the EPA. Like the earlier studies, the new study found that rodents exposed to GenX developed liver necrosis and liver cell damage that could be a precursor to cancer. As the study's authors put it:

> Hepatocellular hypertrophy [among rodents exposed to GenX] was characterized by cytoplasmic eosinophilic stippling that is

> consistent with **peroxisome proliferation**. In the 5 mg/kg/day F0 males and females, other **liver lesions** included increases in single cell **necrosis**, **mitotic figures**, lipofuscin pigment, and **focal necrosis** (females only).

66. Despite these test results—and their marked similarity to the results of the PFOA animal studies—DuPont continued to discharge water contaminated with GenX into the Cape Fear River and to deceive state regulators about its wastewater treatment processes.

67. On April 29, 2011, DuPont submitted a new NPDES Permit renewal application. Like its earlier renewal applications, the 2011 application represented that: (i) "[a]ll process wastewater generated from [the facility producing GenX] is collected and shipped off-site for disposal"; and (ii) "[n]o process wastewater from this manufacturing facility is discharged to the site's biological [wastewater treatment plant] or to the Cape Fear River." Once again, these statements were inaccurate. Relying on these false statements, the DEQ approved the renewal application on February 6, 2012.

68. Meanwhile, DuPont repeatedly tried to disprove the results of the rodent studies it was required to submit to the EPA. But each rodent study only confirmed that GenX was toxic to animals. Unable to obtain the results it wanted, DuPont asserted—without justification—that the rodent studies were irrelevant to the question whether GenX could harm humans.

69. In 2013, DuPont completed studies showing that rodents exposed to GenX had a higher incidence of liver tumors, pancreatic tumors, and testicular tumors. The rodents exposed to GenX also had a higher incidence of uterine polyps, though the study authors did not find the incidence of polyps to be statistically significant. In scientific terms:

> Test substance-related **neoplastic changes** were observed at the high dose (500 mg/kg/day in females; 50 mg/kg/day in males) and included **hepatocellular tumors** in females and, in males, equivocal **increases in pancreatic acinar cell tumors and testicular interstitial cell tumors.**

70. Despite the fact that the 2013 rodent study followed standard scientific protocols—and was very similar to the rodent studies that DuPont had previously used to establish PFOA's toxicity to humans—DuPont insisted that the results were not relevant to human health:

> Based on the high dose threshold for these tumor responses in this study, the lack of genotoxicity of the test material across a battery of in vitro and in vivo tests, and the known responses of the rat versus other species, including humans, to these PPAR(a) associated tumor responses, these tumor findings are not considered relevant for human risk assessment.

71. In 2014, DuPont scientists dismissed the results of yet another, more extensive evaluation of the toxic effects of GenX, "Evaluation of chronic toxicity and carcinogenicity of ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-propanoate in Sprague–Dawley rats" ("GenX Report"). The study—conducted by DuPont scientists—again showed that GenX caused serious health problems in rodents, including "[i]ncreases in enzymes indicative of liver injury," and tumor cells—some of them cancerous—in the liver, kidneys, stomach, tongue, pancreas, and testes.

72. Putting that point in more scientific terms, the GenX Report stated that, "[at] the interim necropsy, **non-neoplastic** test substance-associated effects were present in the liver of males at 50 mg/kg and in the liver and kidneys of females at 500 mg/kg."

73. In addition:

> Kidney changes in females at 500 mg/kg included tubular dilation, edema of the renal papilla, **transitional cell hyperplasia in the renal pelvis**, tubular mineralization, **renal papillary necrosis** and CPN. Tubular dilation frequently occurred in an ascending pattern extending from the papilla to the outer cortex, while at other times it was present only in the papilla. **Edema of the papilla** was characterized by increased rarefaction or myxomatous change in the papillary interstitium, sometimes with polypoid protrusions

> from the lateral surface of the papilla. The **edema** and tubular dilation were often associated with hyperplasia of the transitional cell epithelium lining the papilla and pelvis. Small foci of tubular mineralization were often present and, in some animals, necrosis of the tip of the papilla was present.

74. Moreover, in female rodents given 500 mg/kg, "statistically significant increases in **hyperplasia** of squamous epithelium were observed in the nonglandular stomach (limiting ridge only) and tongue (in association with subacute/chronic inflammation in the tongue)." Hyperplasia is the enlargement of an organ or tissue caused by an increase in the reproduction rate of its cells, often as an initial stage in the development of cancer.

75. The GenX Report ultimately concluded that the rodents suffered from tumors called carcinomas and adenomas:

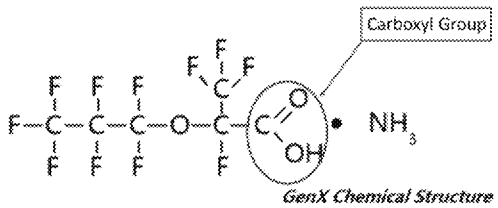
> Compound-related neoplastic changes occurred in the livers of females administered 500 mg/kg and included **increased incidences of hepatocellular adenoma and carcinoma.** These tumors occurred in association with the degenerative and necrotic liver lesions observed at this dose as described above. Hepatocellular tumors and test substance-associated degenerative and necrotic lesions were not observed in females at lower doses and **the incidences of hepatocellular tumors were similar in all male groups.** . . .
>
> In males administered 50 mg/kg, **a statistically significant increase in the combined incidence of pancreatic acinar cell adenomas and carcinomas was seen,** but neither the incidence of adenoma or carcinoma alone was statistically increased, although the incidence of carcinomas (2.9%) was slightly outside the historical range of 0–1.7%.
>
> . . .
>
> The incidence of **Leydig cell adenomas** (11.4%) was increased above historical control ranges for this tumor (0–8.3%) in males administered 50 mg/kg, although this increase was not statically significant compared to controls. In addition, a Leydig cell adenoma was present in 1 male at the interim necropsy in the 50 mg/kg group. The incidence of Leydig cell hyperplasia was also increased above historical control range in this group at terminal sacrifice (also 0–8.3%); although again, this incidence was not statistically significant versus controls. However, comparison to within-study controls was complicated by the fact that controls had a relatively high incidence of Leydig cell hyperplasia (10%). Based on the above considerations and the known activity of PPARα agonists to

> produce Leydig cell hyperplasia and adenomas in rats, the relationship to the test compound for **these lesions was considered equivocal in this study.**

76. These results should have caused DuPont to classify GenX as a potential carcinogen. As a public health expert recently testified against DuPont in another case, "The only time that you can discount . . . tumor-causing effects, in animals, is if you know the mechanism by which [a] substance is causing cancer [in the animals] and you know that mechanism is not relevant to humans." The DuPont scientists who conducted the GenX Report specifically acknowledged that they did not have "definitive" data on all of the mechanisms by which GenX caused tumors. Yet DuPont dismissed the results as likely irrelevant to humans.

77. DuPont offered very feeble reasons for discounting the results of the GenX report, suggesting that it was looking for any possible excuse to justify its decision to discharge GenX into the Cape Fear River. For example, DuPont claimed that the high doses of GenX given to the rodents were not representative of human exposures to GenX. But all two-year cancer rodent studies follow the protocol developed by the U.S. National Toxicology Program, which requires that rodents receive an elevated dose of a potential toxin.

78. The DuPont scientists who authored the GenX Report also turned a blind eye to the well-known fact that, in light of its molecular structure, GenX likely disrupts cellular functions. GenX has a chemical carboxyl group which likely bonds with cells and impairs normal growth and function, which could cause the cancer and other diseases that the scientists observed in the rodents.



79. Finally, the authors of the GenX Report ignored the fact that rodent studies predicted that PFOA—which is chemically similar to GenX—was toxic to humans, and that prediction was borne out by the C8 Health Project. The authors of the GenX Report therefore had reason to believe that rodents could be used to gauge the toxicity of PFCs to humans.

80. Later studies conducted by independent researchers show just how hard DuPont scientists must have worked to dismiss the results of their rodent studies. For example, in January 2018, Stockholm University published the results of a rodent study suggesting that GenX is even more toxic than PFOA.[10]

81. As surely as DuPont continued to ignore the results of scientific studies showing that GenX was dangerous, it continued lying to state regulators. On June 24, 2015, Michael Johnson, now Chemours' environmental manager, met with DWQ regulators to discuss the identification of a new perfluorinated compound in the Cape Fear River. According to handwritten notes by a state regulator, Johnson stated that a PFOA replacement equivalent to "C3 Dimer Acid/Salt" or "HFPO Dimer Acid Ammonium Salt" was "no longer discharged to

[10] Gomis, *et al.*, Env. Intern. 113 (2018) at 1 ("The toxicity ranking using modeled serum (GenX > PFOA > PFHxA > PFBA) and liver (GenX > PFOA≈PFHxA≈PFBA) concentrations indicated that some fluorinated alternatives have similar or higher toxic potency than their predecessors when correcting for differences in toxicokinetics.").

river." Both of those compound names are technical references to GenX. But DuPont was still discharging GenX into the Cape Fear River in 2015.

82. Chemours submitted its most recent NPDES Permit renewal application on April 27, 2016. The application contained the same misrepresentations as DuPont's April 2011 renewal application.

83. The motive for DuPont's decades-long scheme to deceive regulators about its PFC discharges was simple: DuPont wanted to avoid the cost of dealing with PFCs safely. As DuPont's counsel noted following the revelation that DuPont had discharged PFOAs into West Virginia's water supply: "We really should not let situations like this arise. . . . [But] the plant trie[d] to save money . . . ."

D. Defendants' Toxic Discharges to the Cape Fear River and Air Emissions Come to Light

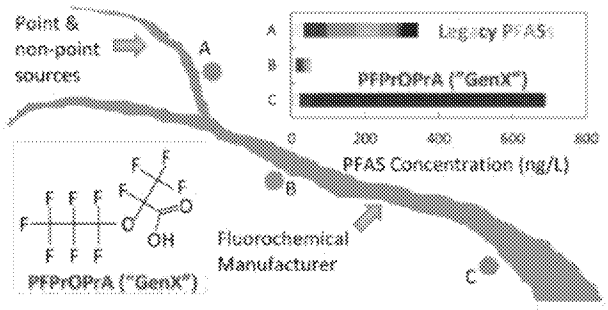
84. A few years ago, North Carolina State University Professor Detlef Knappe took samples from the Cape Fear River to get a better understanding of how PFCs may have affected Wilmington's water supply. Greatly alarmed by his analysis of the samples, he contacted the Cape Fear Public Utility Authority ("CFPUA")—the public authority responsible for providing water to Wilmington residents. On May 3, 2016, Professor Knappe informed the CFPUA that, according to his findings, GenX and related contaminants were detected at an average concentration of 631 ppt at the CFPUA intake.

85. On November 10, 2016, Dr. Knappe, together with co-authors at the University of North Carolina at Charlotte and several government agencies, published a paper showing elevated levels of GenX and numerous other PFCs in a drinking water treatment plant along the Cape Fear River near Wilmington. The authors expressed particular concern about GenX, which

"presents a greater drinking water challenge" than the older industrial compounds it was meant to replace because it is harder to remove from the water.

86. On November 23, 2016, Dr. Knappe shared his published research by email with a number of city and county water treatment plants and government officials in DEQ, including current DWR Director Jay Zimmerman and then-Assistant Secretary of the Environment Tom Reeder. Knappe noted that levels of GenX "were very high in Wilmington" and that none of the newly discovered compounds being discharged by the Chemours plant were being removed by the city's Sweeney treatment plant. Dr. Knappe's study abstract noted a number of other troubling features of the PFCs in Wilmington's water:

ABSTRACT: Long-chain per- and polyfluoroalkyl substances (PFASs) are being replaced by short-chain PFASs and fluorinated alternatives. For ten legacy PFASs and seven recently discovered perfluoroalkyl ether carboxylic acids (PFECAs), we report (1) their occurrence in the Cape Fear River (CFR) watershed, (2) their fate in water treatment processes, and (3) their adsorbability on powdered activated carbon (PAC). In the headwater region of the CFR basin, PFECAs were not detected in raw water of a drinking water treatment plant (DWTP), but concentrations of legacy PFASs were high. The U.S. Environmental Protection Agency's lifetime health advisory level (70 ng/L) for perfluorooctanesulfonic acid and perfluorooctanoic acid (PFOA) was exceeded on 57 of 127 sampling days. In raw water of a DWTP downstream of a PFAS manufacturer, the mean concentration of perfluoro-2-propoxypropanoic acid (PFPrOPrA), a replacement for PFOA, was 631 ng/L (n = 37). Six other PFECAs were detected, with three exhibiting chromatographic peak areas up to 15 times that of PFPrOPrA. At this DWTP, PFECA removal by coagulation, ozonation, biofiltration, and disinfection was negligible. The adsorbability of PFASs on PAC increased with increasing chain length. Replacing one CF_2 group with an ether oxygen decreased the affinity of PFASs for PAC, while replacing additional CF_2 groups did not lead to further affinity changes.



87. The study identified 17 different PFCs in the water supply:

Table S1. Perfluoroalkyl substances (PFASs) detected in the Cape Fear River (CFR) watershed

Compound	Molecular weight	Formula	CAS #	# of perfluorinated carbons	Chain length (including all C, O and S)
Perfluorocarboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)	214.0	$C_4HF_7O_2$	375-22-4	3	4
Perfluoropentanoic acid (PFPeA)	264.0	$C_5HF_9O_2$	2706-90-3	4	5
Perfluorohexanoic acid (PFHxA)	314.1	$C_6HF_{11}O_2$	307-24-4	5	6
Perfluoroheptanoic acid (PFHpA)	364.1	$C_7HF_{13}O_2$	375-85-9	6	7
Perfluorooctanoic acid (PFOA)	414.1	$C_8HF_{15}O_2$	335-67-1	7	8
Perfluorononanoic acid (PFNA)	464.1	$C_9HF_{17}O_2$	375-95-1	8	9
Perfluorodecanoic acid (PFDA)	514.1	$C_{10}HF_{19}O_2$	335-76-2	9	10
Perfluorosulfonic acids (PFSAs)					
Perfluorobutane sulfonic acid (PFBS)	300.1	$C_4HF_9SO_3$	375-73-5	4	5
Perfluorohexane sulfonic acid (PFHxS)	400.1	$C_6HF_{13}SO_3$	355-46-4	6	7
Perfluorooctane sulfonic acid (PFOS)	500.1	$C_8HF_{17}SO_3$	1763-23-1	8	9
Perfluoroalkyl ether carboxylic acids with one ether group (mono-ether PFECAs)					
Perfluoro-2-methoxyacetic acid (PFMOAA)	180.0	$C_3HF_5O_3$	674-13-5	2	4
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	230.0	$C_4HF_7O_3$	377-73-1	3	5
Perfluoro-4-methoxybutanoic acid (PFMOBA)	280.0	$C_5HF_9O_3$	863090-89-5	4	6
Perfluoro-2-propoxypropanoic acid (PFPrOPrA)	330.1	$C_6HF_{11}O_3$	13252-13-6	5	7
Perfluoroalkyl ether carboxylic acids with multiple ether group (multi-ether PFECAs)					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	246.0	$C_4HF_7O_4$	39492-88-1	3	6
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	312.0	$C_5HF_9O_5$	39492-89-2	4	8
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	378.1	$C_6HF_{11}O_6$	39492-90-5	5	10

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88. The Wilmington *Star News* obtained a copy of Dr. Knappe's results, and on June 7, 2017, the paper broke the story that GenX, a chemical "linked to cancer and a host of other ailments[,] has been found in the drinking water system of the Cape Fear Public Utility Authority (CFPUA), which cannot filter it."

89. That same day, the executive committee of CFPUA approved a letter to DEQ asking for help evaluating GenX.

90. Bowing to media and regulatory scrutiny, Chemours met with DEQ officials on June 12, 2017, and informed them that for several decades, Fayetteville Works had routinely discharged GenX and other PFCs into the Cape Fear River.

91. Two days later, DEQ and the North Carolina Department of Health and Human Services ("DHHS") began an investigation into GenX in the Cape Fear River.

92. Shortly after the investigation began, the State of North Carolina set a preliminary health-based standard for GenX: drinking water should not contain more than 140 ppt of GenX. Notably, however, the preliminary standard does not take into account GenX's cancer-causing potential. As the state put it, "Although the preliminary [standard is] based upon a study with combined cancer and non-cancer endpoints, the [140 ppt] goal considers non-cancer endpoints only." Nor does the preliminary standard represent an appropriate safety goal for vulnerable populations, such as children and individuals who have been exposed to other PFCs (including the 16 other PFCs, at a minimum, that DuPont released into the Cape Fear River). If cancer risks, child safety, and other PFCs were taken into account, the standard would be considerably lower than 140 ppt.

93. On June 15, 2017, local officials held a closed meeting with Chemours staff. According to a *Star News* reporter's notes from the meeting, the officials pressed Chemours' plant manager to estimate the amount of GenX that had been discharged into the river. The Chemours plant manager attempted to evade questions but eventually implied that Defendants had discharged literally tons of GenX into the Cape Fear River over the past four decades.

94. In the same meeting, however, Kathy O'Keefe, Chemours' toxicologist, claimed that the massive discharges of GenX and other PFCs were safe:

> "I was surprised there was such a strong reaction but I understand it because it's an emotional issue. I'm a mother. I have two children. I have tons to worry about with my children. I don't want to worry about what's in their water, what's in their food."
>
> "I think a lot of it is the unknown. There's this toxic chemical in our water. There's the first rule of toxicology which is the dose makes the poison. Just because something is present doesn't mean it's going to cause harm."
>
> "When you cook Brussels sprouts, did you know you release formaldehyde?"

> "The easiest thing to do is say these are the levels that we see, this is the safe level that has been established and I always use the term margin of safety but there's probably a better term to use. There's a safe distance between the (level) seen in the water and the level of safety that's been set by our agencies."

95. Tests performed just four days later proved Chemours' toxicologist wrong: on June 19, 2017, DEQ regulators in Fayetteville and Wilmington began sampling and testing 13 locations along the Cape Fear River for the presence of GenX; their results showed that finished water from four water treatment plants had GenX concentrations exceeding the state's safety standard of 140 ppt, including i) Bladen Bluffs (790 ppt); ii) NW Brunswick (910 and 695 ppt); iii) Pender County (421 ppt); and iv) CFPU Sweeney (1100 and 726 ppt).

Gen X Concentration in Finished Water						
Location	06/22/2017 results ppt		06/29/2017 results ppt		07/06/2017 results ppt	
	Test America, CO	EPA RTP, NC	Test America, CO	EPA RTP, NC	Test America	EPA RTP, NC
International Paper Finished	690	523	140	111	N/A	80
NW Brunswick Water Treatment Plant (WTP) Finished	910	695	51	52	N/A	125
Pender Co. 421 WTP Finished	340	269	160	112	N/A	68
CFPUA Sweeney Finished	1100	726	110	100	N/A	87

Gen X Concentration in Finished Water		
Location	06/19/2017 results ppt	06/26/2017 results ppt
	Test America, CO	Test America, CO
Bladen Bluffs Finished	790	76

96. On June 20, 2017, under extreme public pressure, Chemours announced it would "capture, remove and safely dispose of" wastewater containing GenX, instead of discharging it into the Cape Fear River. Chemours did not mention that it had already contaminated the groundwater, and was still emitting GenX into the air.

97. On July 10, 2017, DEQ received data from the Colorado lab that tested water samples drawn in June and July 2017. The lab found raw water concentrations of GenX as high as 39,000 ppt, and water treated by CFPUA with concentrations of 790 ppt—far greater than the preliminary safety threshold of 140 ppt.

98. On August 31, 2017, the EPA revealed that it had discovered two other chemicals in the Cape Fear River that are wastes of the Nafion production process, which it referred to as Nafion byproduct 1 and Nafion byproduct 2. Both chemicals have longer carbon chains than GenX, with each compound comprising a chain of seven fluorinated carbon atoms. The concentrations of these Nafion byproducts in the EPA's water samples were up to 60 times greater than the EPA's health-based standard of 70 ppt for other long-chain PFCs, including PFOA. More specifically, the concentrations in EPA's samples were:

Date	Nafion Byproduct 1 (ppt)	Nafion Byproduct 2 (ppt)
Week 1	53	1640
Week 2	143	4320
Week 3	N/A	N/A
Week 4	120	2360
Week 5	158	7860
Week 6	72	4670

99. Around the same time, DWR collected and tested groundwater samples from 14 groundwater-monitoring wells on Chemours' property. DWR detected high concentrations of GenX in 13 wells. Of these 13 wells, one had a concentration of GenX that was more than 437 times the state's drinking water health goal, six had GenX concentrations over 150 times the health goal; and three had concentrations over 80 times the health goal. DWR also detected

PFOS and PFOA in four wells; in two of them, the combined concentration of PFOA and PFOS exceeded 3,000 ppt. Perhaps most alarmingly, one of the contaminated wells was located uphill from the plant. Because water does not flow uphill, that suggests that some GenX had traveled through the air and settled over nearby property.

100. On September 5, 2017, DWR filed a Notice of Intent to Suspend Chemours' NPDES Permit within 60 days because Chemours "misrepresent[ed] [and] fail[ed] to disclose fully all relevant facts." DWR also explained that it:

> found no evidence in the permit indicating that Chemours or DuPont (Chemours's predecessor) disclosed the discharge to surface water of GenX compounds at the Fayetteville Works. In particular, the NPDES permit renewal applications submitted to DWR contained no reference to "GenX" or to any chemical name, formula, or CAS number that would identify any GenX compounds in the discharge. In fact, the information provided by DuPont and Chemours led DWR staff to reasonably believe that no discharge of GenX had occurred.

101. Three days later, on September 8, 2017, Chemours attempted to signal to the public that it would cooperate with DEQ by signing a partial consent order. It represented that it would continue its efforts to prevent GenX discharges and would do the same for Nafion byproducts 1 and 2. On the same day that it signed the partial consent order, however, counsel for Chemours sent DEQ a private letter in which it claimed that DEQ's "zero discharge" limitation was arbitrary and capricious, procedurally defective, contrary to statute, and unconstitutional.

102. That same month, Chemours and DEQ both began testing privately owned wells within a 1-mile radius of Fayetteville Works for GenX. By the end of September, DEQ had ordered Chemours to supply bottled drinking water to more than 20 private well owners whose wells contained GenX concentrations exceeding the state's drinking water health goal of 140 ppt.

103. On November 3, 2017, DEQ conducted an on-site inspection of the Fayetteville Works facility. During the inspection, and only upon questioning by DEQ staff, Chemours' employees admitted that, less than one month earlier, on October 6, 2017, Chemours' vinyl-ethers production facility had leaked onto the ground an unknown quantity of C3 dimer-acid fluoride—a chemical compound that, when mixed with water, can break down into a chemical equivalent of GenX. Over the course of the next three days, rain events caused the chemical to be absorbed into stormwater and discharged directly into the Cape Fear River via Chemours' outfall 002. Chemours failed to bring the spill to DEQ's attention, despite the fact that Chemours' NPDES Permit required it to report any significant or abnormal discharge to DEQ within 24 hours.

104. On November 16, 2017, DEQ moved to partially suspend Chemours' NPDES Permit, partly due to Chemours' failure to report the significant pollution incident on October 6, 2017. The partial revocation would bar Chemours from discharging into the Cape Fear River any process wastewater containing GenX, Nafion byproducts, or any other PFAS.

105. One day later, on November 17, 2017, DEQ announced an investigation into reports from Chemours of yet another leak from the Fayetteville Works vinyl-ethers production facility—this time by air. Chemours informed DEQ that a rupture in the manufacturing area's condensation tower had allowed 55 pounds of hexafluoropropylene oxide ("HFPO") and 70 pounds of HFPO dimer acid fluoride to be released into the air.

106. In early December 2017, two events raised additional concerns that PFCs including GenX were spreading by air. First, in early December, a farmer several miles south of Fayetteville Works discovered GenX in a concentration of 2,070 ppt in his honey. Second, DEQ found concentrations of GenX greater than three times the state's 140-ppt health goal in five

wells located on the eastern bank of the Cape Fear River—that is, across the river from Fayetteville Works. In a December 2017 public hearing, DEQ indicated that, in addition to contaminating the Cape Fear watershed, Defendants had also contaminated the surrounding airshed. DEQ estimated that, between 2012 and 2016, GenX fell from the air onto the land near the Fayetteville works plant—including parcels located east of the Cape Fear River—in concentrations exceeding 3,000 micrograms per square meter. It also estimated that land more than three miles northeast of the plant could contain air depositions of over 500 micrograms per square meter.

107. Very recent testing suggests that GenX and other PFCs may have contaminated plants and vegetables around the Fayetteville Works plant. On a video call between Dutch scientists (who are studying GenX contamination at Chemours' plant in Dordrecht, Netherlands) and North Carolina's Science Advisory Board, the Dutch scientists noted that carrots, beets, lettuce and other vegetables at 10 sites around the Chemours plant had been tested for PFCs. Approximately 40% were contaminated with GenX and/or PFOA. Thus, North Carolina residents may have been eating—as well as drinking—PFCs.

108. By the end of 2017, the number of wells with GenX concentrations exceeding the state health goal climbed to 115, with another 140 wells testing positive for GenX but falling below the state health threshold.

E. Remediation of Buildup of GenX, Nafion Wastes, and Related Contaminants in Residential Plumbing Requires Plumbing and Fixture Replacement

1. PFCs, Including GenX and Nafion, Bond With Biofilms, Scale, Iron, and Rust in Pipes, Fittings, Fixtures and Appliances.

109. For a variety of reasons, GenX and other PFCs will be very difficult to remove from North Carolina residents' pipes, fittings, and fixtures.

110. First, scientific studies have consistently demonstrated that PFCs such as GenX and Nafion wastes bond with cells, including cells in the thin layer of microorganisms that coats municipal and residential pipes, water heaters, fixtures, and appliances, sometimes called a "biofilm." These biofilms can be difficult—if not impossible—to remove. But removing them is essential: individual microbes in a biofilm routinely die and break off from the film. The continuous dying and detachment of cells releases PFCs, including PFOAs, GenX and Nafion wastes, back into drinking water.

111. In addition to bonding with biofilm, PFCs, PFOAs and PFOS such as GenX and Nafion wastes can adsorp (*i.e.*, chemically bond) directly with the iron and iron oxide in pipes. The PFCs can then desorp back into drinking water.

112. PFCs, GenX and Nafion also exist in small stagnant pockets of water trapped in scale throughout home plumbing systems. If these small pockets of water are ever disturbed, they can release PFCs back into drinking water.

113. PFCs thus reside in bacteria, biofilm, scale, iron, and iron oxide in the bottom of water heaters, the nooks and crannies of rusted pipes, and valves, elbows, and water fixtures, among other locations. The pipes and fixtures thus act as a reservoir or sponge, continuously attracting and discharging GenX back into families' water supply.

2. Remediation Can Only Be Accomplished By Replacing Pipes, Fittings, Appliances, and Fixtures and Installing Filtration Systems

114. Currently, there is no known means to filter GenX and certain other legacy PFCs out of the water supply. And even if drinking water utilities develop a filtering method, the GenX is already bound to the biofilms in municipal pipes and residential pipes, fittings, fixtures, and appliances. The only solution is to: (i) install a sophisticated water filtration system at the juncture connecting municipal pipes to the pipes for individual homes and businesses; (ii)

remove and replace plumbing, fixtures, fittings, and appliances inside individual homes and businesses; and (iii) provide bottled water to residents in the interim.

115. Meanwhile, until these remedial actions are complete, the residents will need to be supplied with bottled water for daily use.

F. Plaintiffs' Experiences

1. **Victoria Carey**

116. Victoria Carey lives in Leland, North Carolina, with her husband. Brunswick Regional Water & Sewer H2GO provides them with tap water from the Cape Fear River.

117. Since 2002, the Carey family, unaware that Defendants had contaminated their water with PFCs, regularly used the water for drinking, cooking, cleaning, bathing, and clothes washing.

118. After learning from the press that Defendants had contaminated the water supply, Ms. Carey had her home, including the hot water heater, tested. The testing revealed concentrations of GenX in excess of North Carolina's 140 ppt standard for GenX. As a result, Ms. Carey believes that GenX and possibly other PFCs have adhered to the plumbing in her home, diminishing her property value, and requiring abatement.

119. In addition, Ms. Carey has been diagnosed with thyroid nodules, a goiter (enlargement of the thyroid gland), and hyperthyroidism. Her husband has been diagnosed with a similar thyroid condition. Ms. Carey has also been diagnosed with an idiopathic immune condition. These illnesses are typical of those caused by GenX and other PFCs.

2. **Marie Burris**

120. Dr. Marie Burris owns property at 21158 NC Highway 87 W, Fayetteville, North Carolina 28306, a few miles from the Fayetteville Works site. She resided there for 11 years until 2015, and currently rents the property out.

121. In October 2017, Dr. Burris was informed by the DEQ that "the concentration of GenX in [her] well water is greater than the N.C. Department of Health and Human Services (DHHS) drinking water goal of 140 ng/l for GenX." The test results were 322 ng/L.

122. DEQ recommended that she not use her water for drinking. Her tenant presently must rely on bottled water for drinking supplied by Defendant Chemours. Thus, Dr. Burris and her tenant have limited use and enjoyment of the land. Absent a permanent solution, the value of Dr. Burris's property will likely diminish.

3. **Michael Kiser**

123. Michael Kiser has lived in or around Wilmington since 1993. His source of water was the CFPUA at all of his residences. In 2011, he was diagnosed with colon cancer. In 2015, he was diagnosed with stomach cancer. He also suffers from ulcers and cysts on his liver and intestines. These illnesses are typical of those caused by GenX and other PFCs. His afflictions have resulted in surgery, hospitalization, loss of income, and a reduction in quality of life.

4. **Brent Nix**

124. Brent Nix owns residential property at 5008 Laurenbridge Lane, Wilmington, North Carolina 28409, and has resided there since December 2016. Before moving to Laurenbridge Lane, Mr. Nix resided at 4508 Alder Ridge Road, Wilmington, North Carolina for approximately five years. At both residences, Mr. Nix consumed PFC-laden water supplied by the CFPUA.

125. Mr. Nix is a triathlete who consumes a great deal of water. Shortly after the GenX story broke, Mr. Nix stopped drinking water supplied by the public utility and switched to bottled water, which costs more than $100 each month. Thus, Mr. Nix has limited use and enjoyment of his land.

126. In the fall of 2017, Mr. Nix was diagnosed with ulcerative colitis and diverticulitis. These gastrointestinal illnesses are typical of those caused by GenX and other PFCs.

V. CLASS ALLEGATIONS

127. Plaintiffs request certification pursuant to Fed. R. Civ. P 23(b)(2) or (b)(3) on behalf of a proposed class defined as: All persons who from 1980 to the present lived within New Hanover, Brunswick, Bladen, Cumberland, or Pender Counties, or who currently own property there. The Fed. R. Civ. P. 23(b)(2) class and Fed. R. Civ. P. 23(b)(3) class are collectively the "Classes" and their members are referred to as "Class members."

128. The number of Class members is sufficiently numerous to make class action status the most practical method for Plaintiffs to secure redress for injuries sustained and to obtain class-wide equitable injunctive relief.

129. There are questions of law and fact raised by Plaintiffs' claims common to those raised by the Classes they seek to represent. Such common questions predominate over questions affecting only individual members of the Classes.

130. The violations of law and resulting harms alleged by Plaintiffs are typical of the legal violations and harms suffered by the different Class members.

131. As class representatives, Plaintiffs will fairly and adequately protect the interests of Class members. Plaintiffs' counsel are unaware of any conflicts of interest between the class representatives and absent Class members with respect to the matters at issue in this litigation; the class representatives will vigorously prosecute the suit on behalf of the Classes; and the class representatives are represented by experienced counsel. Plaintiffs are represented by attorneys

with substantial experience and expertise in complex and class action litigation involving personal injury and property damage.

132. Plaintiffs' attorneys have identified and thoroughly investigated all claims in this action, and have committed sufficient resources to represent the Classes.

133. The maintenance of the action as a class action will be superior to other available methods of adjudication and will promote the convenient administration of justice. Moreover, the prosecution of separate actions by individual members of the Classes could result in inconsistent or varying adjudications with respect to individual members of the Classes and/or one or more Defendants.

134. Defendants have acted or failed to act on grounds generally applicable to Class members, necessitating declaratory and injunctive relief for the Classes.

135. With respect to the personal injury claims, Plaintiffs seek class certification as to particular issues as permitted under Fed. R. Civ. P. 23(c)(4). Plaintiffs seek certification as to the common questions of the risks of the chemicals released by Defendants, and Defendants' liability for those releases. Plaintiffs respectfully maintain that class certification as to these issues is appropriate because certification as to particular issues is superior to any alternative means of adjudication as it eliminates the possibility of duplicative, inefficient litigation of identical issues. Resolution of these matters would materially advance the litigation.

COUNT I: NEGLIGENCE BY ALL PLAINTIFFS AGAINST DEFENDANTS

136. Plaintiffs and the Classes incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

137. Defendants owed Plaintiffs and the Classes a duty to exercise reasonable care.

138. As alleged herein, Defendants, individually and collectively, breached their duty of reasonable care by allowing contaminants to be released into the Cape Fear River, as well as the drinking water and the airshed of New Hanover, Brunswick, Bladen, Cumberland, and Pender Counties.

139. Upon learning of the release of the contaminants in 1980, Defendants owed Plaintiffs and the Classes a duty to act reasonably to remediate, contain, and eliminate the contamination before it injured Plaintiffs, the Classes and their property and to act reasonably to minimize the damage to Plaintiffs, the Classes and their property.

140. Defendants breached that duty by continuing to contaminate the local water supply and airshed, and by failing to act reasonably in providing Plaintiffs and the Classes usable water. Furthermore, Defendants failed to take reasonable, adequate and sufficient steps or action to eliminate, correct, or remedy any contamination after it occurred.

141. Defendants further breached that duty by failing to timely notify Plaintiffs and the Classes of the contamination of the Cape Fear River, as well as the airshed, and the drinking water of New Hanover, Brunswick, Bladen, Cumberland, and Pender Counties, and of the presence of contaminants in the ground, wells, homes, businesses, and rental properties of Plaintiffs and Class members.

142. As a result of Defendants' breaches of their duty to remediate the contamination, prevent the discharge of the contamination, and timely notify Plaintiffs and the Classes of the contamination, Plaintiffs and the Classes were forestalled from undertaking effective and immediate remedial measures, and Plaintiffs and the Classes have expended and/or will be forced to expend significant resources to test, monitor, and remediate the effects of Defendants' negligence for many years into the future.

143. Defendants negligently breached their duties to Plaintiffs and the Classes to ensure that their water supply was safe and, consequently and proximately, the homes, businesses, and rental properties of Plaintiffs and Class members have been damaged.

144. Defendants willfully and wantonly breached their legal duty to properly remediate the contamination despite full knowledge of the extent of the contamination and the threat it poses to human health, safety and property.

145. As a direct and proximate result of Defendants' negligence, Plaintiffs and the Classes have suffered and continue to suffer personal and property damage.

COUNT II: GROSS NEGLIGENCE
BY ALL PLAINTIFFS AGAINST DEFENDANTS

146. Plaintiffs and the Classes incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

147. Defendants owed Plaintiffs and the Classes a duty to exercise reasonable care. Upon learning of the release of the contaminants, Defendants owed Plaintiffs and the Classes a duty to act reasonably to remediate, contain, and eliminate the contamination before it injured Plaintiffs, the Classes and their property.

148. As alleged herein, Defendants, individually and collectively, caused drinking water with concentrations of GenX, and on information and belief other toxic chemicals, to be provided to Plaintiffs and the Classes in contravention of drinking water standards. As such, Defendants, either with gross negligence, recklessly, willfully, wantonly, and/or intentionally, contaminated the Cape Fear River and the drinking water of New Hanover, Brunswick, Bladen, Cumberland, and Pender Counties, and contaminated the homes, businesses and rental properties of Plaintiffs and Class members.

149. Defendants owed Plaintiffs and the Classes a duty to act with reasonable care in undertaking their obligations. As more fully described herein, Defendants breached their duties of care by failing to notify residents of New Hanover, Brunswick, Bladen, Cumberland, and Pender Counties that their water was contaminated with GenX and other toxic chemicals.

150. As a direct and proximate result of Defendants' gross negligence and willful and wanton conduct, Plaintiffs and the Classes have suffered and continue to suffer personal and property damage.

151. Defendants' conduct was so reckless as to demonstrate a substantial lack of concern for whether injury would result to Plaintiffs or the Classes.

COUNT III: NEGLIGENCE PER SE
BY ALL PLAINTIFFS AGAINST DEFENDANTS

152. Plaintiffs and the Classes incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

153. Defendants owed Plaintiffs and the Classes a duty to follow standards of conduct set forth in laws, regulations, and permits, whose purpose is to ensure public safety.

154. By allowing GenX, and on information and belief related contaminants, to be released into the Cape Fear River as well as the drinking water and airshed of New Hanover, Brunswick, Bladen, Cumberland, and Pender Counties, Defendants violated federal and state public safety statutes and implementing regulations designed to safeguard human health and protect the environment, including, among others, the Clean Water Act, the Resource Conservation Recovery Act, the Safe Drinking Water Act, and the Solid Waste Disposal Act.

155. As a direct and proximate result of Defendants' violation of these standards, Plaintiffs and the Classes have suffered and continue to suffer personal and property damage.

COUNT IV: PUBLIC AND PRIVATE NUISANCE BY ALL PLAINTIFFS AGAINST DEFENDANTS

156. Plaintiffs and the Classes incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

157. Defendants' acts and omissions in discharging contaminants into the air and water supply in and around the Cape Fear River caused and continue to cause a substantial and unreasonable interference with Plaintiffs' and Class members' use and enjoyment of their properties and have materially diminished and continue to diminish the value of such properties.

158. As further detailed in the allegations herein, when Defendants discharged contaminants into the air and the water supply in and around the Cape Fear River, Defendants knew that the discharge would invade Plaintiffs' and Class members' interests in the use and enjoyment of their lands and properties. Additionally, Defendants' willful and wanton discharge of contaminants into the air and water supply in and around the Cape Fear River was negligent and/or reckless.

159. Defendants' substantial and unreasonable interference with the use and enjoyment of Plaintiffs' and Class members' properties and continuing substantial and unreasonable interference with such use and enjoyment constitutes a continuing private and public nuisance.

160. Defendants' contamination has injured Plaintiffs' and Class members' properties in a manner that is special to, and not shared by, the general public.

161. Defendants' creation and continuing creation of a continuing private and public nuisance proximately caused and continues to proximately cause substantial injuries to Plaintiffs and Class members in the form of bodily injury and property damage for which Defendants are liable. The substantial injury to Plaintiffs and Class members includes, but is not limited to, the

costs to remove GenX and related contaminants from the water supply and the costs to remediate Plaintiffs' and Class members' damages.

COUNT V: TRESPASS
BY ALL PLAINTIFFS AGAINST DEFENDANTS

162. Plaintiffs and Class members incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

163. Defendants' acts and omissions in willfully and wantonly discharging contaminants into the water supply in and around the Cape Fear River have resulted and continue to result in the release and threatened release of toxic chemicals at, under, onto, and into Plaintiffs' and Class members' bodies and properties.

164. The toxic chemicals present on Plaintiffs' and Class members' properties and in their bodies originating at Fayetteville Works were at all relevant times hereto, and continue to be, the property of Defendants.

165. The invasion and presence of the toxic chemicals at, under, onto, and into Plaintiffs' and Class members' properties and bodies was and continues to be without permission or authority from Plaintiffs, or any of the other Class members or anyone who could grant such permission or authority.

166. The presence and continuing presence of the toxic chemicals at Plaintiffs' and Class members' properties and in their bodies constitutes a continuing trespass.

167. Defendants' past and continuing trespass and battery upon Plaintiffs' and Class members' properties and bodies proximately caused and continues to proximately cause damage to Plaintiffs and Class members in the form of bodily injury and property damage, for which Defendants are liable.

COUNT VI: UNJUST ENRICHMENT BY ALL PLAINTIFFS AGAINST DEFENDANTS

168. Plaintiffs and Class members incorporate by reference the allegations set forth in all foregoing paragraphs, as if fully set forth herein.

169. Defendants failed to incur expenditures to limit or prevent the release of GenX and other toxic PFCs into the environment and prevent the contamination of Plaintiffs' and Class members' properties and household water supplies for a minimum of 33 years, failed to incur the costs to timely investigate the impacts on Plaintiffs and Class members and their properties, failed to incur the costs to timely mitigate the impacts on Plaintiffs and Class members and their properties, and failed to incur costs to remediate the contaminated soil, dust and groundwater at Fayetteville Works. Defendants have been unjustly enriched by these and other failures to make expenditures to prevent the persons and properties of Plaintiffs and Class members from being contaminated with PFASs, GenX and Nafion byproducts.

170. Defendants have received a measurable monetary benefit by failing to make the necessary expenditures. It would be unconscionable and contrary to equity for Defendants to retain that benefit. Defendants are therefore liable to Plaintiffs and Class members.

PRAYER FOR RELIEF

Plaintiffs request the following relief from the court:

a. An order certifying a damages class pursuant to Fed. R. Civ. P 23(b)(3) and an injunctive relief class pursuant to Fed. R. Civ. P. 23(b)(2);

b. An injunctive order to remediate the harm caused by Defendants' conduct including, but not limited to: repairs of private property, funding of an epidemiological study to investigate the full scope of the health impact of GenX and other PFCs on the affected population, and establishment of

medical monitoring to provide health care and other appropriate services to Class members for a period of time deemed appropriate by the Court;

c. An order for an award of compensatory damages;

d. An order for an award of punitive damages;

e. An order for equitable relief;

f. An order for pre-judgment and post-judgment interest;

g. An order for an award of reasonable attorneys' fees and litigation expenses; and

h. An order for all such other relief the court deems equitable.

DEMAND FOR TRIAL BY JURY

Plaintiffs demand a trial by jury as to all those issues triable as of right.

Dated: January 31, 2018

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on January 31, 2018, I electronically filed the CONSOLIDATED CLASS ACTION COMPLAINT with the Clerk of the Court using the ECF who in turn served it on all counsel or parties of record on the Service List below, and served the foregoing notice on the following by placing a copy of the same in the United States Mail, first class postage prepaid, addressed as follows:

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Dated: January 31, 2018

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