# Sea Change: A Guide for Insurers to Navigate the Latest Waves in US PFAS Legal Developments

Per- and polyfluoroalkyl substances, or PFAS, are human-made chemical substances that have become heavily regulated around the world due to their persistence in the environment and human body and links to serious human health risks. Although innovative remediation techniques are showing promise of someday ridding PFAS of their notorious "forever chemicals" moniker,<sup>1</sup> PFAS legal action in the US is here to stay (and grow). The ubiquity of PFAS, their extensive use across industries and the sheer scope of US legislative and regulatory actions have positioned these chemicals as one of the most formidable challenges facing the regulated community and their insurers in the decades to come.

PFAS-related claims can, and will continue to, result in significant: legal defense costs; product liability, property damage, bodily injury and environmental cleanup claims; and public relations crises – all leading to coverage claims and disputes under a variety of insurance products including general liability, product liability, property, Directors & Officers (D&O), Rep & Warranty (R&W), contractor and pollution legal liability programs. Risks to insurers/reinsurers will arise under both claims-made policies and occurrence-based policies. Federal and state statutes, regulations and mounting litigation make insureds vulnerable when sharing required PFAS-related information that can be used against them in future litigation. Adding to this challenge is the creativity of the plaintiffs' bar, which continues to develop new legal theories (some more scientifically sound than others), expand the pool of defendants and secure massive settlements. With litigation trends showing no signs of slowing and settlements reaching staggering amounts, the stakes have never been higher.

Failure to fully evaluate PFAS-related exposures could leave the regulated community and their insurers vulnerable to unforeseen claims and financial instability. This article provides an overview of US PFAS developments, summarizes the evolving technical and legal landscape in the US and offers risk management insights for responsible parties and their insurers and reinsurers. In an era of technical and legal uncertainty and rapidly developing issues, mounting PFAS claims and aggressive litigation tactics, a proactive approach to PFAS risk assessment and management planning has never been more critical.

## I. Introduction to PFAS

PFAS are a class of synthetic chemicals scientists first developed in the 1930s. PFAS are characterized by a strong carbon-fluorine bond, providing durability, heat resistance, flame retardance and water- and oil-repellent properties. Because few chemicals bring all these properties together, PFAS were the "go-to" option starting in the 1940s for a wide variety of consumer products and industrial processes around the world.<sup>2</sup> Common applications of PFAS include non-stick cookware, water-repellent

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<sup>&</sup>lt;sup>1</sup> Carl Zimmer, *Forever Chemicals No More? PFAS Are Destroyed with New Technique*, N.Y. TIMES (Aug. 18, 2022), <u>https://www.nytimes.com/2022/08/18/science/pfas-forever-chemicals.html</u>.

<sup>&</sup>lt;sup>2</sup> Scott Young, (*P*)*FASten Your Seatbelts*, HARVARD LAW SCHOOL: HARVARD LAW TODAY (May 1, 2024), <u>https://hls.harvard.edu/today/the-impact-of-the-epas-first-ever-federal-pfas-rule-limiting-toxic-forever-chemicals-in-drinking-water/</u>; *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, U.S. EPA (Nov. 26, 2024), <u>https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas</u>.



clothing, firefighting foam, stain-resistant fabrics, grease-resistant food wrappers and waterproof makeup. However, PFAS have significant and long-lasting environmental and human health impacts. Hundreds of scientific publications document harmful effects of PFAS on human health.<sup>34</sup>

The same properties that make PFAS useful, durable and water-resistant make them persistent in the environment. Through manufacturing discharges, landfill disposal, consumer products and runoff from sites on which firefighting foam (known as aqueous film-forming foam (AFFF)) was used, PFAS have contaminated water supplies, soil and wildlife, winding their way into our food chains while resisting degradation. Contamination is both far-reaching and right at home. PFAS have been found in rainwater across continents,<sup>5</sup> in the Amazon Rainforest,<sup>6</sup> in US game animals,<sup>7</sup> on top of Mount Everest,<sup>8</sup> in the depths of Antarctica<sup>9</sup> and even in the brains of East Greenland polar bears.<sup>10</sup> Nearly all people in the US have measurable levels of PFAS in their blood (well over most of the new US regulatory limits).<sup>11</sup>

The health risks posed by PFAS come directly from using consumer products, or indirectly from ingestion of contaminated water and food sources. As a result, in the last two decades, US federal and state governmental agencies, water utilities, environmental groups and consumers alike have taken significant legal steps to address PFAS, ranging from selective or comprehensive PFAS product bans to litigation addressing impacts of past activities on human health and the environment. To date, dozens of laws and regulations have gone into effect across the US, and lawsuits have resulted in billion-dollar settlements.<sup>12</sup>

The PFAS upheaval is ongoing, with technical developments and new laws and regulations taking effect nearly every day, and new areas of litigation emerging. PFAS and their aftermath are continuing to shape risk landscapes for both the private and public sectors. Based on who they insure today and who

<sup>7</sup> Patrick Whittle, *Maine Asks Hunters to Avoid Eating Deer, Turkey in Some Areas Because of PFAS Contamination*, A.P. NEws (Oct. 28, 2024), <u>https://apnews.com/article/pfas-deer-meat-hunting-maine-6e5500ca60c8b99de971df37dcea056f</u>.

<sup>11</sup> NAT'L INST. ENVTL. HEALTH SCI., *supra* note 4.

<sup>&</sup>lt;sup>3</sup> *PFAS*, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY: 2019 ANNUAL REPORT (Nov. 8, 2024), <u>https://www.atsdr.cdc.gov/2019-annual-report/php/pfas.html</u>.

<sup>&</sup>lt;sup>4</sup> Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), NAT'L INST. ENVTL. HEALTH SCI.,

https://www.niehs.nih.gov/health/topics/agents/pfc (last visited Dec. 2, 2024).

<sup>&</sup>lt;sup>5</sup> Ian T. Cousins et al., *Outside the Safe Operating Space of a New Planetary Boundary for Per- and Polyfluoroalkyl Substances (PFAS)*, 56 ENVTL. SCI. TECH. 11172 (Aug. 2, 2022), available at

https://pubs.acs.org/doi/10.1021/acs.est.2c02765 (documenting PFAS in rain collected in China, Sweden, the US, Malta, Portugal and Antarctica); Matt McGrath, *Pollution: 'Forever Chemicals' in Rainwater Exceed Safe Levels*, BBC (Aug. 2, 2022), https://www.bbc.com/news/science-environment-62391069.

<sup>&</sup>lt;sup>6</sup> Ivan Kourtchev et al., *Occurrence of a "Forever Chemical" in the Atmosphere Above Pristine Amazon Forest*, 944 Sci. TOTAL ENV'T 173918 (Sept. 20, 2024), available at <u>https://doi.org/10.1016/j.scitotenv.2024.173918</u>.

<sup>&</sup>lt;sup>8</sup> K.R. Miner et al., *Deposition of PFAS 'Forever Chemicals' on Mt. Everest*, 759 Sci. Total ENV'T. (Mar. 10, 2021), available at <a href="https://doi.org/10.1016/j.scitotenv.2020.144421">https://doi.org/10.1016/j.scitotenv.2020.144421</a>.

<sup>&</sup>lt;sup>9</sup> Zhiyong Xie et al., *Legacy and Emerging Per- and Poly-Fluoroalkyl Substances in Polar Regions*, 42 CURRENT OP. GREEN SUSTAINABLE CHEMISTRY 100840 (July 8, 2023), available at <u>https://doi.org/10.1016/j.cogsc.2023.100840</u>.

<sup>&</sup>lt;sup>10</sup> Kathrine Eggers Pedersen et al., *Brain Region-Specific Perfluoroalkylated Sulfonate (PFSA) and Carboxylic Acid (PFCA) Accumulation and Neurochemical Biomarker Responses in East Greenland Polar Bears (Ursus maritimus),* 138 ENVTL. RESEARCH 22 (2015), available at https://doi.org/10.1016/j.envres.2015.01.015.

<sup>&</sup>lt;sup>12</sup> See infra Part II (discussing litigation) and Part III (discussing legal requirements).



they have insured in the past, insurance and reinsurance companies should accelerate their risk management preparations for the impact of this ongoing upheaval.

## II. PFAS Litigation

Just as car crash, tobacco and asbestos litigation drastically changed their related industries and practices, PFAS risks (and ensuing litigation) are transforming the real estate investment and M&A market, manufacturing and consumer products industries. The book on PFAS litigation is being written in real time, and the conclusion has not yet been drafted. This section provides an overview of the most common US PFAS lawsuits including manufacturing-related toxic torts, AFFF cases and consumer products cases—the newest frontier of PFAS litigation.

#### A. Manufacturing-Related Toxic Torts

In the first PFAS lawsuit (memorialized in the Hollywood hit "Dark Waters"), a farmer near DuPont's West Virginia Teflon plant sued the company in 1999 after his cows fell ill and died, alleging DuPont had dumped over 7,000 tons of PFOA-containing sludge into an unlined landfill, contaminating his land and water.<sup>13</sup> After a settlement, his lawyer filed a class action on behalf of local residents, resulting in a \$671 million payout.<sup>14</sup> The US Environmental Protection Agency (EPA) also sued DuPont under the Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Toxic Substances Control Act (TSCA) and Resource Conservation and Recovery Act (RCRA) for violations at this site, leading to administrative orders and the largest civil administrative penalty EPA has ever obtained under federal environmental laws.<sup>15</sup> In 2023, Ohio reached a \$110 million settlement with DuPont over pollution from the same factory.<sup>16</sup>

The DuPont West Virginia story demonstrates how one site can create layers of liability over decades, as various private and public plaintiffs piled on to address varied harms. Today, insurance companies should be prepared for manufacturing insureds to face lawsuits over present or past PFAS contamination near current or former factories, or sites where manufacturers disposed of byproducts. Although posterchild defendants are still chemical manufacturers, companies that have manufactured

<sup>&</sup>lt;sup>13</sup> Nathaniel Rich, *The Lawyer Who Became DuPont's Worst Nightmare*, N.Y. TIMES MAG. (Jan. 6, 2016), <u>https://www.nytimes.com/2016/01/10/magazine/the-lawyer-who-became-duponts-worst-nightmare.html</u>.

<sup>&</sup>lt;sup>14</sup> Arathy S. Nair, *DuPont Settles Lawsuits Over Leak of Chemical Used to Make Teflon*, REUTERS (Feb. 13, 2017), <u>https://www.reuters.com/article/business/dupont-settles-lawsuits-over-leak-of-chemical-used-to-make-teflon-idUSKBN15S18T/</u>.

<sup>&</sup>lt;sup>15</sup> E.I. DuPont de Nemours and Company and The Chemours Company PFOA Settlements, U.S. EPA (Dec. 6, 2024), https://www.epa.gov/enforcement/ei-dupont-de-nemours-and-company-and-chemours-company-pfoasettlements.

<sup>&</sup>lt;sup>16</sup> State Secures \$110 Million Settlement with DuPont for Environmental Restoration Along Ohio River, OHIO ATTORNEY GEN. (Nov. 29, 2023), <u>https://www.ohioattorneygeneral.gov/Media/News-Releases/November-2023/State-Secures-\$110-Million-Settlement-with-DuPont</u>. Like Ohio's 2023 case against DuPont, US states are increasingly pursuing lawsuits to recover PFAS cleanup costs. Thirty state Attorneys General have recently filed suits, leading to costly settlements such as 3M's \$850 million to Minnesota for PFAS disposal, *3M Lawsuit*, MINN. ATTORNEY GEN., <u>https://www.ag.state.mn.us/Office/Cases/3M/default.asp</u> (last visited Dec. 2, 2024), and Solvay's \$393 million to New Jersey for contamination near its Gloucester County site, *Attorney General Platkin and DEP Commissioner LaTourette Announce Proposed Settlement with Solvay Polymers*, N.J. ATTORNEY GEN. (June 28, 2023), <u>https://www.njoag.gov/attorney-general-platkin-and-dep-commissioner-latourette-announce-proposed-settlement-with-solvay-polymers-regarding-forever-chemical-pollution-in-and-around-west-deptford/.</u>



items that have included PFAS as components (e.g., clothing, furniture, cookware) should also be on the lookout.<sup>17</sup> As the West Virginia DuPont matter shows, multiple plaintiffs can get a bite at the apple for a single site's operational impact over multiple decades. By conducting an archaeological "dig" on past and present policies applicable to such potentially implicated sites, insurers can get a sense of their potential liabilities and associated cost ranges from these types of claims.

## B. Aqueous Film-Forming Foam (AFFF) Cases: Water System Settlements & Personal Injury Trends

To date, public and private-citizen plaintiffs have filed tens of thousands of cases against manufacturers and sellers of AFFF containing PFOA and/or PFOS.<sup>18</sup> These cases center around military bases, airports, firehouses and other key sites where AFFF was commonly used to fight oil-based fires and for training exercises, and from where plaintiffs allege PFAS leached into drinking water supplies and the environment.

For efficiency, the US federal court system consolidated over 10,000 AFFF lawsuits into a single multidistrict litigation (MDL) in the District of South Carolina.<sup>19</sup> From there, the court has been dividing the cases into different "bellwether categories," setting up criteria for selecting smaller "tiers" of representative cases within each category and scheduling procedures for moving each tier forward through discovery and trial.<sup>20</sup> Broadly, the cases have been divided into three categories of plaintiffs and corresponding claims: public water systems making drinking water contamination claims; state attorneys general making environmental contamination claims; and individuals making products liability claims (including personal injury (with medical monitoring), property damage and/or other economic losses).<sup>21</sup> Some cases in the MDL have settled for large sums and many others are ongoing.

The District of South Carolina addressed the public water systems' drinking water contamination claims first, leading to the largest AFFF settlements so far.<sup>22</sup> In 2023 and 2024, 3M, Carrier Global Corp., DuPont, BASF and Tyco Fire Products LP settled such claims for \$10.3 billion,<sup>23</sup> \$730 million,<sup>24</sup> \$1.18

https://www.pfaswatersettlement.com/ (last visited Dec. 2, 2024).

<sup>&</sup>lt;sup>17</sup> In November, Michigan's Attorney General sued a paper company over PFAS discharges into the White Pigeon River, underscoring that both PFAS manufacturers and users can be held liable. *AG Nessel Sues St. Joseph County Paper Company for PFAS Contamination*, MICH. ATTORNEY GEN. (Nov. 1, 2024),

https://www.michigan.gov/ag/news/press-releases/2024/11/01/ag-nessel-sues-st-joseph-county-paper-company-for-pfas-contamination.

 <sup>&</sup>lt;sup>18</sup> Aqueous Film-Forming Foams (AFFF) Products Liability Litigation, MDL No. 2873, U.S. DIST. COURT, DIST. S.C., <u>https://www.scd.uscourts.gov/mdl-2873/index.asp</u> (last visited Dec. 30, 2024).
<sup>19</sup> Id.

<sup>&</sup>lt;sup>20</sup> Initial Bellwether Selection and Protocols (Case Management Order No. 13), MDL No. 2:18-mn-2873-RMG (D.S.C. 2020), *available at* <u>https://www.scd.uscourts.gov/mdl-2873/orders/CMO%2013%20ECF%201049.pdf</u> (last visited Dec. 31, 2024) [hereinafter Initial Bellwether Selection].

<sup>&</sup>lt;sup>21</sup> John Gardella, *PFAS AFFF MDL Settlements Moving Forward*, NAT'L LAW REV. (Aug. 31, 2023), https://natlawreview.com/article/pfas-afff-mdl-settlements-moving-forward.

<sup>&</sup>lt;sup>22</sup> Initial Bellwether Selection, *supra* note 20. *See Public Water System Settlements*, U.S. DIST. COURT, DIST. S.C: AQUEOUS FILM-FORMING FOAM (AFFF) PRODUCTS LIABILITY LITIGATION (MDL 2873),

<sup>&</sup>lt;sup>23</sup> Clark Mindock, *3M's \$10.3 Billion PFAS Settlement Gets Preliminary Approval*, REUTERS (Aug. 30, 2023), <u>https://www.reuters.com/legal/government/us-states-withdraw-objections-3ms-103-billion-pfas-settlement-2023-08-29/</u>.

<sup>&</sup>lt;sup>24</sup> Dietrich Knauth, *Carrier Reaches \$730 Mln Settlement Over Fire Protection Unit PFAS Claims*, REUTERS (Oct. 21, 2024), <u>https://www.reuters.com/legal/litigation/carrier-reaches-730-mln-settlement-over-fire-protection-unit-pfas-claims-2024-10-21/</u>.



billion,<sup>25</sup> \$315 million<sup>26</sup> and \$750 million,<sup>27</sup> respectively. Carrier Global Corp. announced it was entitled to a maximum of \$2.4 billion in insurance payouts due to the case against it.<sup>28</sup> More than a dozen defendants remain in the public water system litigation of the MDL, with estimates suggesting that the defendants who settled only account for a small share of the total alleged PFAS-related liabilities (somewhere between 3 and 7 percent or less).<sup>29</sup>

Despite the large AFFF settlements, some estimate that the true cost to remediate drinking water supplies across the US is much higher, leaving open the question of who will pay. One study estimated it will cost water utilities about \$5.2 billion *per year* to comply with the federal drinking water standards<sup>30</sup> for just two PFAS compounds, PFOA and PFOS—altogether more than all of the settlement amounts to date combined.<sup>31</sup>

Insurers should pay attention to the products liability cases of the MDL, as the financial risks related to them have yet to be fully revealed. Plaintiffs generally include occupational plaintiffs who were chronically exposed to AFFF through their jobs, and plaintiffs who lived near AFFF-contaminated sites and were exposed through food or drinking water, with some focusing on medical harm and others focusing on property damage and other economic losses.<sup>32</sup> These cases have not settled in any major way. Discovery is ongoing, with various key pre-trial actions scheduled for 2025.<sup>33</sup>

# C. Consumer Products Cases: Emerging Trend to Watch For

Consumer products cases are the latest trend in PFAS litigation, with cases targeting food, food packaging, cosmetics, toiletries and other everyday items.<sup>34</sup> Plaintiffs have frequently alleged violations of consumer protection or unfair trade practice statutes as well as unjust enrichment, negligent misrepresentation, breach of warranty and fraud.<sup>35</sup> Certain consumer products cases focus on

<sup>31</sup> Gardella, *supra* note 21.

<sup>&</sup>lt;sup>25</sup> Shweta Watwe, *DuPont \$1.18 Billion PFAS Settlement Gets Final Court Approval*, BLOOMBERG LAW (Feb. 9, 2024), <u>https://news.bloomberglaw.com/litigation/dupont-1-18-billion-pfas-settlement-gets-final-court-approval</u>.

<sup>&</sup>lt;sup>26</sup> Clark Mindock, *BASF to Pay \$316 Million to Settle PFAS 'Forever Chemicals' US Lawsuit*, REUTERS (May 21, 2024), https://www.reuters.com/legal/basf-pay-316-million-settle-pfas-forever-chemicals-us-lawsuit-2024-05-21/.

 <sup>&</sup>lt;sup>27</sup>Bridgit Bowden, *PFAS-Affected Water Systems to Receive \$750M in Settlement with Tyco Fire Products*, WIS. PUB.
RADIO (Apr. 12, 2024), <u>https://www.wpr.org/news/pfas-water-systems-settlement-tyco-fire-products</u>.
<sup>28</sup> Knauth, *supra* note 24.

<sup>&</sup>lt;sup>29</sup> See Frequently Asked Questions (DuPont), U.S. DIST. COURT, DIST. S.C: AQUEOUS FILM-FORMING FOAM (AFFF) PRODUCTS LIABILITY LITIGATION (MDL 2873), <u>https://www.pfaswatersettlement.com/3m-frequently-asked-questions/</u> (last visited Dec. 30, 2024) ("The Parties agree, and Class Counsel have a reasonable basis to believe, that the Settling Defendants collectively comprise a very small share of MDL defendants' total alleged PFAS-related liabilities, on the order of approximately 3-7% or less.").

<sup>&</sup>lt;sup>30</sup> In 2024, EPA finalized regulations setting legally enforceable Maximum Contaminant Levels (MCLs) for several PFAS (ranging from 4 to 10 parts per trillion) under the Safe Drinking Water Act for the first time. *Per- and Polyfluoroalkyl Substances (PFAS): Final PFAS National Primary Drinking Water Regulation*, U.S. EPA (Dec. 2, 2024), <u>https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas.</u> *See also infra* Part III.A.1.

<sup>&</sup>lt;sup>32</sup> See U.S. DIST. COURT, DIST. S.C., supra note 18; Gardella, supra note 21.

<sup>&</sup>lt;sup>33</sup> Scheduling Order Governing Initial Personal Injury Bellwether Trial Pool Cases (Case Management Order No. 26D), MDL No. 2:18-mn-2873-RMG (D.S.C. 2024) *available at* <u>https://www.scd.uscourts.gov/mdl-</u>

<sup>&</sup>lt;u>2873/orders/CMO%2026.D%20ECF%204964.pdf</u> (last visited Dec. 31, 2024).

 <sup>&</sup>lt;sup>34</sup> J. Barton Seitz et al., *Not Worried About PFAS Liability? You Should Be,* WASH. L. FOUNDATION (June 3, 2022), <a href="https://www.wlf.org/2022/06/03/publishing/not-worried-about-pfas-liability-you-should-be/">https://www.wlf.org/2022/06/03/publishing/not-worried-about-pfas-liability-you-should-be/</a>.
<sup>35</sup> Id.



"greenwashing," with allegations of fraud for labeling PFAS-containing products as "clean," "sustainable," "free of harsh chemicals," etc.<sup>36</sup>

Unlike in the other categories of PFAS lawsuits, these cases primarily allege economic injury under a "price premium" theory.<sup>37</sup> Under this theory, plaintiffs claim that defendants had an obligation to inform consumers that products contained PFAS; had consumers known, they would not have bought the products and/or paid a premium for them, thus suffering economic injury.<sup>38</sup> By focusing on economic injury rather than health risks, plaintiffs aim to avoid having to prove a direct link between, for example, use of PFAS-containing mascara to developing a specific disease, and in showing sufficient similarity across classes of plaintiffs in class actions.<sup>39</sup>

Plaintiffs have faced various challenges. Despite independent testing, plaintiffs have failed to prove which PFAS compounds are in a product and in what quantities, or to prove that such contents would have dissuaded purchasing.<sup>40</sup> In other cases, plaintiffs have failed regarding deceptive marketing and unfair trade practice claims, making arguments that missed the fact that PFAS were, in fact, disclosed on cosmetic labels, or turning to government notices, like guidance from the federal Food and Drug Administration (FDA), to determine that, because companies were using PFAS in FDA-authorized ways, labeling claims (e.g., "all natural") were not deceptive.<sup>41</sup>

But the plaintiffs' bar is creative and the PFAS technical and legal landscape is evolving. Advances in testing, increased confidence in scientific links between PFAS and health risks and clearer regulatory thresholds are likely to embolden plaintiffs and their counsel.<sup>42</sup> Consumer brands who have sold products with PFAS or that are not phasing them out are likely to face lawsuits in the years to come.

# III. US PFAS Legal Requirements

In the United States and throughout the world, PFAS legal developments are on the rise, extending the scope of PFAS requirements to new chemicals and compounds, applications and industries. Legal requirements vary from imposing outright bans, setting new disclosure/reporting requirements and establishing onerous (costly and long-term) remediation and monitoring standards.<sup>43</sup>

<sup>&</sup>lt;sup>36</sup> Id.

<sup>&</sup>lt;sup>37</sup> Kelly Howell, Recent Court Decisions Involving PFAS and Consumer Products Cases Shape the Landscape of Emerging Toxic Tort Litigation, AMERICAN BAR ASSOC: TORTSOURCE (May 20, 2024),

https://www.americanbar.org/groups/tort trial insurance practice/resources/tortsource/2024-winter/decisionspfas-consumer-products-emerging-toxic-tort-litigation/.

<sup>&</sup>lt;sup>38</sup> Id.

<sup>&</sup>lt;sup>39</sup> Young, *supra* note 2.

<sup>&</sup>lt;sup>40</sup> Howell, *supra* note 37.

<sup>&</sup>lt;sup>41</sup> *Id.* (citing *Solis v. Coty, Inc.,* Case No. 22-cv-0400, 2023 US Dist. LEXIS 38278 (S.D. Cal. Mar. 7, 2023) and *Richburg & Ruiz v. ConAgra Brands, Inc.,* Case No. 22-cv-220, 2023 US Dist. LEXIS 21137 (ND III. Feb 8, 2023)).

<sup>&</sup>lt;sup>42</sup> As an example of the synergy between litigation and regulation, a group of water systems in California has already cited EPA's 2024 landmark maximum contaminant levels (MCL) (discussed below) in making its case against a group of manufacturers. *California Water Utilities File PFAS Lawsuit Citing New EPA Standards*, DRILLER (Apr. 17, 2024), <u>https://www.thedriller.com/articles/92956-california-water-utilities-file-pfas-lawsuit-citing-new-epa-standards</u>.

<sup>&</sup>lt;sup>43</sup> *Bill Tracker*, SAFER STATES, <u>https://www.saferstates.org/bill-tracker/?toxic\_chemicals=PFAS</u> (last visited Dec. 2, 2024) [hereinafter SAFER STATES].



Insurers can expect this trend to expose their insureds to increased compliance costs, enforcement risks and litigation that harnesses newly disclosed information, new legal standards and new causes of action.

US PFAS requirements are complex due to the mix of federal and state laws and regulations that companies must navigate, as new laws and regulations are frequently emerging. This landscape – and corresponding enforcement – is undeniably blurry and uncertain given the rapid and comprehensive legal and political changes in the US.

Under the Biden administration (2021-2024), the EPA promulgated several landmark regulations targeting PFAS in drinking water, polluted land, and manufacturing and imports. These rules provide some uniformity across the country, but given the slow pace of the federal government, new PFAS laws and regulations continue to be implemented at the state level.

However, it is difficult to predict the fate of these new federal regulations under the next Trump administration, which begins in January 2025. Analysts generally predict that a Trump presidency will lead to weaker enforcement of federal environmental requirements,<sup>44</sup> although it remains uncertain how this approach would impact existing US PFAS requirements.<sup>45</sup> If that is the case, will state legislatures more aggressively step in to fill gaps? We will soon see.

Companies will have to dedicate resources to keeping up with this dynamic legal landscape in the years ahead. This section summarizes current and emerging trends in US federal and state PFAS requirements as of the date of this article.

A. US Federal Laws

2024 was a watershed year for federal PFAS regulation, with EPA issuing consequential PFAS rules under the SDWA,<sup>46</sup> the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, or the Superfund law),<sup>47</sup> and TSCA,<sup>48</sup> while considering new PFAS requirements under the Clean Air Act (CAA),<sup>49</sup> RCRA<sup>50</sup> and the CWA.<sup>51</sup>

In addition to EPA's efforts, the FDA has taken steps to phase out PFAS in food.<sup>52</sup>

Companies will need to take significant steps to comply with these rules or face enforcement and litigation risks that may get passed on to insurers. This includes companies that have not had to think much about PFAS or the EPA before.

1. EPA's Landmark 2024 Safe Drinking Water Act (SDWA) Regulations

<sup>&</sup>lt;sup>44</sup> Coral Davenport et al., *What Trump's Environmental Record Says About a Second Term*, N.Y. TIMES (Nov. 1, 2024), <u>https://www.nytimes.com/2024/11/01/climate/trump-environment-election.html</u>.

<sup>&</sup>lt;sup>45</sup> Hiroko Tabuchi, *Trump Promises Clean Water. Will He Clean Up 'Forever Chemicals'*?, N.Y. TIMES (Nov. 20, 2024), https://www.nytimes.com/2024/11/20/climate/trump-pfas-lead-clean-water.html.

<sup>&</sup>lt;sup>46</sup> 42 U.S.C. § 300f et seq.

<sup>&</sup>lt;sup>47</sup> 42 U.S.C. § 9601 et seq.

<sup>&</sup>lt;sup>48</sup> 15 U.S.C. § 2601 et seq.

<sup>&</sup>lt;sup>49</sup> 42 U.S.C. § 7401 et seq.

<sup>&</sup>lt;sup>50</sup> 42 U.S.C. § 6901 et seq.

<sup>&</sup>lt;sup>51</sup> 33 U.S.C. § 1251 et seq.

<sup>&</sup>lt;sup>52</sup> See infra Part III.A.5.

In April 2024, EPA issued the PFAS National Primary Drinking Water Regulation, the first-ever nationwide PFAS drinking water rule with enforceable limits under the SDWA.<sup>53</sup> Prior to this, EPA's actions were advisory in nature and regulation of PFAS in water supplies largely fell to the states, some of which had enforceable limits years before the EPA.<sup>54</sup>

The new maximum contaminant levels (MCLs) for PFAS apply to "public water systems," defined as collection, treatment, storage, distribution and pretreatment facilities that provide water for human consumption with at least fifteen service connections or regularly serving at least twenty-five individuals.<sup>55</sup>

EPA set MCLs for six PFAS compounds: PFOA, PFOS, PFHxS, PFNA, HFPO-DA (related to GenX) and certain mixtures of those PFAS as well as PFBS.<sup>56</sup> The MCL for PFOA and PFOS, two of the most common PFAS, is almost unmeasurable with current technology, set at four parts per trillion (ppt) which is roughly one drop of water in five Olympic-sized swimming pools.<sup>57</sup>

Public water systems have five years to get into compliance.<sup>58</sup> The new rule requires them to monitor for PFAS on an ongoing basis. By 2027, they must complete initial monitoring and provide the public with information about how much PFAS are in the water. By 2029, they must implement remediation solutions that ensure their water supplies meet the new MCLs. Remediation techniques include installing filtration equipment, identifying noncontaminated sources of water to pull from and working with new technologies.<sup>59</sup>

The US Department of the Interior estimates that 45% of US drinking water sources contain PFAS at harmful levels,<sup>60</sup> affecting 105 million Americans and requiring \$1.5 billion annually to achieve compliance with new MCLs.<sup>61</sup> Billions in federal funding are available to help communities through grants for testing and treating public water and private wells, but these funds likely won't cover the full cost, meaning expenses will likely be passed on to consumers via water bills, to insurance companies through claims on legacy programs and/or to companies and their insurers through litigation. Only through careful risk assessments can insurers and reinsurers begin to estimate the costs they can expect will be sought from them in the years ahead as well as the less direct fallout from these sweeping new requirements.

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<sup>&</sup>lt;sup>53</sup> Per- and Polyfluoroalkyl Substances (PFAS): Final PFAS National Primary Drinking Water Regulation, U.S. EPA (Dec. 2, 2024), <u>https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas</u>.

<sup>&</sup>lt;sup>54</sup> Timothy Fletcher, *PFAS—Rougher Waters Ahead?*, GEN RE (Sept. 17, 2024), https://www.genre.com/us/knowledge/publications/2024/september/pfas-rougher-waters-ahead-en.

<sup>55 42</sup> U.S.C. § 300f(4)(A).

<sup>&</sup>lt;sup>56</sup> U.S. EPA, supra note 53.

<sup>&</sup>lt;sup>57</sup> Key EPA Actions to Address PFAS, U.S. EPA (Oct. 31, 2024), <u>https://www.epa.gov/pfas/key-epa-actions-address-pfas</u>.

<sup>&</sup>lt;sup>58</sup> Id.

<sup>&</sup>lt;sup>59</sup> Young, *supra* note 2.

<sup>&</sup>lt;sup>60</sup> Tap Water Study Detect PFAS 'Forever Chemicals' Across the US, USGS (July 5, 2023),

https://www.usgs.gov/news/national-news-release/tap-water-study-detects-pfas-forever-chemicals-across-us. <sup>61</sup> PFAS National Primary Drinking Water Regulation, 89 Fed. Reg. 32532 (Apr. 26, 2024) (codified at 40 CFR pts. 141-42), available at <u>https://www.federalregister.gov/documents/2024/04/26/2024-07773/pfas-national-primary-</u> drinking-water-regulation.



#### 2. CERCLA, the EPA's Superfund Law, Extended to PFAS

In 2024, the EPA designated PFOA and PFOS as hazardous substances under CERCLA.<sup>62</sup> Now, the EPA can impose costs and obligations on potentially responsible parties (PRPs) to conduct testing, reporting and clean up PFAS-related releases.

In a Biden administration policy document, EPA indicated that it will not pursue contribution from entities "where equitable factors do not support seeking response actions or costs," and that it will not focus enforcement on community water systems or publicly owned treatment works, municipal separate storm sewer systems, publicly owned or operated municipal solid waste landfills, publicly owned airports and local fire departments nor farms that apply biosolids to land.<sup>63</sup> This leaves parties that have played significant roles in releasing or exacerbating the spread of PFAS as likely defendants, including manufacturers and privately owned water systems.

The extension of CERCLA to PFAS has huge implications for insurers and reinsurers who thought they were done paying out for the investigation and remediation of particular federal (and state) "Superfund" sites. Most (if not all) CERLCA settlements (including consent orders and decrees), and those of analogous state programs, have reopener provisions, allowing EPA (or state environmental agencies) to reopen such settlements and impose new investigation and, if needed, remediation obligations on PRPs for PFAS. As new claims are made against insureds, they will look to old general liability, property and other policies, arguing that any waivers or releases of liability previously negotiated/settled only pertain to prior claims and not the new, costly PFAS claims. Careful risk assessments involving archaeological reviews of old insurance policies (and any related coverage settlements) can prepare insurers and reinsurers for the costs they can expect to be asked to incur.

#### 3. New EPA Manufacturer and Importer Regulations under TSCA

In October 2023, the EPA finalized a new rule under TSCA that imposes yet another PFAS requirement on far more entities. Under this new rule, all entities who imported PFAS or PFAS-containing products or directly manufactured PFAS from 2011 through 2022 for a commercial purpose need to submit one-time reports detailing PFAS uses, production volumes, disposal, exposures and hazards.<sup>64</sup> This report will generally require accounting for PFAS-related activities for each year from 2011 through 2022, looking back at past activities even if companies have phased out PFAS in current production or imports.

The reporting period begins in July 2025 with a deadline of January 11, 2026 (unless extended by the incoming Trump administration), with extra time available for smaller business.<sup>65</sup> It may apply to

<sup>&</sup>lt;sup>62</sup> Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, U.S. EPA (May 8, 2024), <u>https://www.epa.gov/superfund/designation-perfluorooctanoic-acid-pfoa-and-perfluorooctanesulfonic-acid-pfos-cercla</u>.

<sup>&</sup>lt;sup>63</sup> Memorandum from David M. Uhlmann, Assistant Administrator for Enforcement & Compliance Assurance, U.S. EPA, to Regional Administrators & Deputy Regional Administrators, Regional Counsels & Deputy Regional Counsels, U.S. EPA (Apr. 19, 2024), available at <a href="https://www.epa.gov/system/files/documents/2024-04/pfas-enforcement-discretion-settlement-policy-cercla.pdf">https://www.epa.gov/system/files/documents/2024-04/pfas-enforcement-discretion-settlement-policy-cercla.pdf</a>.

<sup>&</sup>lt;sup>64</sup> TSCA Section 8(a)(7) Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances, U.S. EPA (Nov. 14, 2024), <u>https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/tsca-section-8a7-reporting-and-recordkeeping.</u>



entities in the construction, manufacturing, wholesale trade, retail trade and waste management and remediation services.<sup>66</sup> It does <u>not</u> apply to chemicals that are regulated under statutory regimes outside of TSCA, like the FDA's Federal Food, Drug & Cosmetic Act or the EPA's Federal Insecticide, Fungicide and Rodenticide Act.<sup>67</sup>

For some companies, gathering information to meet this reporting requirement is a big lift and will come at a great cost. Companies will have to review their entire supply chains over the implicated 12 years to see when PFAS might have come into their factories, and when PFAS might have come out.<sup>68</sup> They will need to review their employee practices to address questions of exposure. They may need to contact suppliers to inquire about the uncertain contents of various component parts of their products.<sup>69</sup> Any PFAS component incorporated into a product, like PFAS waterproofing on a raincoat, Teflon coating in aerospace parts, or PFAS in a car engine pump, will have to be reported.<sup>70</sup>

Many companies who will be subject to this rule are already regulated under TSCA, through its four-year Chemical Data Reporting (CDR) requirement.<sup>71</sup> However, many entities are covered by this new regulation that were not previously subject to CDR, and thus will be facing TSCA reporting for the first time. Unlike under CDR, there are no exceptions for byproducts, low volume or de minimis quantities of PFAS.<sup>72</sup>

When US companies submit the required information about their PFAS use to the government, it becomes publicly available through the Freedom of Information Act (FOIA). In a recent class action, plaintiffs leveraged public information made available through a state disclosure law to build its case.<sup>73</sup> Many more insureds are likely to face product liability and consumer protection lawsuits as a direct result of new PFAS information entering the public domain through this TSCA reporting rule.

## 4. EPA's PFAS Developments under RCRA, CAA and CWA

In February 2024, EPA proposed adding nine PFAS to its list of hazardous constituents (not waste) that would be regulated under some provisions of RCRA (an act that gives the EPA authority to control hazardous waste from "cradle to grave"—through its entire lifecycle, including generation, treatment, storage and disposal).<sup>74</sup>

 <sup>&</sup>lt;sup>66</sup> Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Data Reporting and Recordkeeping Under the Toxic Substances Control Act (TSCA); Change to Submission Period and Technical Correction, 89 Fed. Reg. 72336 (Sept. 5, 2024) (codified at 40 CFR pt. 705), available at <a href="https://www.federalregister.gov/documents/2024/09/05/2024-19931/perfluoroalkyl-and-polyfluoroalkyl-substances-pfas-data-reporting-and-recordkeeping-under-the-toxic.">https://www.federalregister.gov/documents/2024/09/05/2024-19931/perfluoroalkyl-and-polyfluoroalkyl-substances-pfas-data-reporting-and-recordkeeping-under-the-toxic.</a>
<sup>67</sup> 7 U.S.C. § 136 et seq. (1996).

<sup>&</sup>lt;sup>68</sup> *Ready for PFAS Compliance*, MHI: MHIVIEW, <u>https://videos.mhi.org/ready-for-pfas-compliance/</u> (last visited Dec. 2, 2024).

<sup>&</sup>lt;sup>69</sup> Id.

<sup>&</sup>lt;sup>70</sup> Id.

<sup>&</sup>lt;sup>71</sup> Id.

<sup>&</sup>lt;sup>72</sup> Id.

<sup>&</sup>lt;sup>73</sup> Christopher A. Cole, State Law Requiring PFAS Disclosure Leads to Class Action Lawsuit, NAT'L. LAW REV. (June 26, 2024), <u>https://natlawreview.com/article/state-law-requiring-pfas-disclosure-leads-class-action-lawsuit</u>.

<sup>&</sup>lt;sup>74</sup> Proposal to List Nine Per- and Polyfluoroalkyl Compounds as Resource Conservation and Recovery Act Hazardous Constituents, U.S. EPA (Apr. 10, 2024), <u>https://www.epa.gov/hw/proposal-list-nine-and-polyfluoroalkyl-</u>compounds-resource-conservation-and-recovery-act; Summary of the Resource Conservation and Recovery Act,



In summer 2024, some US states requested that EPA regulate a few PFAS under the CAA by listing them as Hazardous Air Pollutants (HAPs).<sup>75</sup> The CAA authorizes EPA to regulate emissions of HAPs.<sup>76</sup> These efforts are still underway, so companies and their insurers should monitor developments as part of their risk management planning.

Under the CWA, EPA and states are now collecting additional PFAS data points by leveraging wastewater permits to require PFAS sampling of regulated discharge locations, both privately and publicly owned.<sup>77</sup>

#### 5. Food, Drug and Consumer Products Regulations under the FDA

The FDA regulates human and veterinary drugs, biological products, medical devices and some consumer products including the nation's food supply, cosmetics and products that emit radiation, pursuant to various federal laws.<sup>78</sup>

Although the FDA has not set safety levels for PFAS (nor for most chemical contaminants), it has been organizing market phase outs of PFAS since the early 2000s, adding new chemicals to its phase out lists as the science evolves, with a focus on grease-proofing agents in food contact substances. In the early 2000s, the FDA first began working with manufacturers to voluntarily stop sales of food packaging that contained long-chain PFAS; PFOA and PFOS being most common.<sup>79</sup> In 2016, the FDA revoked regulations allowing long-chain PFAS in food packaging.<sup>80</sup> In 2020, the FDA announced a voluntary phase-out of a certain type of *short*-chain PFAS in food contact substances.<sup>81</sup> In 2024, the FDA announced that substances containing PFAS of any kind were no longer permitted to be sold into the US market as grease-proofing agents on paper food packaging—a culmination of these voluntary market phase-out programs.<sup>82</sup>

The FDA has also been testing the presence of PFAS in the food supply.<sup>83</sup> No PFAS have been detected in over 97 percent of the fresh and processed foods that the FDA has tested. That said, the FDA

<sup>79</sup> Market Phase-Out of Grease-Proofing Substances Containing PFAS, U.S. FDA,

U.S. EPA (July 31, 2024), <u>https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act</u>.

<sup>&</sup>lt;sup>75</sup> States Ask EPA to Designate Several PFAS as Hazardous Air Pollutants, N.C. DEP'T ENVTL. QUALITY (Aug. 29, 2024), <u>https://www.deq.nc.gov/news/press-releases/2024/08/29/states-ask-epa-designate-several-pfas-hazardous-air-pollutants</u>.

<sup>&</sup>lt;sup>76</sup> Summary of the Clean Air Act, U.S. EPA (July 31, 2024), <u>https://www.epa.gov/laws-regulations/summary-clean-air-act</u>.

<sup>&</sup>lt;sup>77</sup> Frequent Questions about PFAS Methods for NPDES Permits, U.S. EPA (Jan. 31, 2024), <u>https://www.epa.gov/cwa-</u>methods/frequent-questions-about-pfas-methods-npdes-permits.

<sup>&</sup>lt;sup>78</sup> What We Do, U.S. FDA, <u>https://www.fda.gov/about-fda/what-we-do</u> (last visited Dec. 2, 2024).

https://www.fda.gov/food/process-contaminants-food/market-phase-out-grease-proofing-substances-containingpfas (last visited Dec. 2, 2024) [hereinafter *Market Phase-Out*].

<sup>&</sup>lt;sup>80</sup> Id.

<sup>&</sup>lt;sup>81</sup> FDA Announces the Voluntary Phase-Out by Industry of Certain PFAS Used in Food Packaging, U.S. FDA (July 31, 2020), <u>https://www.fda.gov/food/hfp-constituent-updates/fda-announces-voluntary-phase-out-industry-certain-pfas-used-food-packaging</u>.

<sup>&</sup>lt;sup>82</sup> Market Phase-Out, supra note 79.

<sup>&</sup>lt;sup>83</sup> April 2024 Update on PFAS, U.S. FDA (Apr. 18, 2024), <u>https://www.fda.gov/food/hfp-constituent-updates/april-2024-update-pfas</u>.



detected what it considered dangerous levels of PFOS in certain seafood imported from China in October 2024.<sup>84</sup>

Even though the FDA has not set PFAS safety limits, past actions suggest that it still has an interest in removing PFAS from public consumption. As the science and pressure on PFAS improves, other products regulated under the FDA may face similar phase-out programs or inspections. Companies whose products are regulated under the FDA may decide that it makes sense to phase out PFAS ahead of any potential FDA involvement, which would also reduce risks from the uptick in consumer products litigation discussed above—because as the FDA further homes in on PFAS in food, drugs and cosmetics, litigation risks and associated claims in those sectors will only increase.

#### B. US State Laws

Separately, US states have issued a variety of laws and promulgated regulations addressing PFAS in drinking water, consumer products, the environment and more. Companies can expect new PFAS-related legal requirements in the year ahead, especially in states with strong environmental agendas.

Regarding PFAS in drinking water, eleven states currently have MCLs for certain PFAS; two other states are in the process of establishing such standards.<sup>85</sup> Twelve states have adopted guidance, health advisories or notification levels for certain PFAS in drinking water.<sup>86</sup>

Over a dozen states impose legal requirements on PFAS in consumer products.<sup>87</sup> These requirements restrict, ban and/or require some level of reporting for products with "intentionally added" PFAS. Subject categories include firefighting foam, food packaging, plastics, clothing, textiles and personal care products like toiletries and cosmetics. These new requirements demonstrate that the public's awareness about the presence of PFAS has increased. In addition, disclosure rules provide the public (and the plaintiffs' bar) with reports that can be leveraged for litigation. In 2024, for example, plaintiffs in a class action directly cited a required report submitted to a state agency under that state's reporting laws.<sup>88</sup>

States have also passed laws dedicating public funds toward PFAS remediation, suggesting that they may seek to recoup some of those costs through litigation.

Companies with multi-state footprints must navigate the variations in state laws to ensure they are in compliance, or they may face enforcement actions, litigation and fines.

 <sup>&</sup>lt;sup>84</sup> Import Alert: Detention without Physical Examination of Foods Due to Chemical Contamination, U.S. FDA (Oct. 25, 2024), <u>https://www.accessdata.fda.gov/cms\_ia/importalert\_1180.html</u>.

<sup>&</sup>lt;sup>85</sup> SAFER STATES, *supra* note 43.

<sup>&</sup>lt;sup>86</sup> Fletcher, *supra* note 54.

<sup>&</sup>lt;sup>87</sup> U.S. PFAS Regulations by State for Consumer Products, SOURCE INTELLIGENCE (Oct. 31, 2024), https://blog.sourceintelligence.com/us-pfas-regulations-by-state.

<sup>&</sup>lt;sup>88</sup> Cole, supra note 73.



#### IV. Risk Management: Weathering the Storm

The PFAS tide is turning. In 2022, investors managing \$8 trillion in assets wrote to the world's biggest chemical companies, urging them to phase out PFAS manufacturing and use.<sup>89</sup> Companies have responded to the pressure from all sides, with PFAS manufacturer 3M, for example, setting a 2025 deadline to stop producing PFAS.<sup>90</sup>

But even as PFAS are being phased out, challenges for insurers and reinsurers are only beginning. The explosion of PFAS litigation is yet to come. When (not if) it does, PFAS litigation poses significant risks to insurers and reinsurers as more and more claims are made and the universe of new defendant types captured in the litigation expands. While many try, the insurance industry exposure in the US is hard to fully quantify given the everchanging and evolving: patchwork of (not always consistent/uniform) federal and state legal requirements and litigation; science and laboratory technologies; problems with PFAS source identification and determining with needed accuracy the precise timing of historic releases/spills; and the ubiquitous nature of PFAS everywhere (i.e., what is "background"?). What is certain is that claims will rise and the aggressive plaintiff bar will use a shotgun approach, raising claims across the country under all policies that could potentially provide coverage (and insureds will demand defense costs, especially in those programs where such costs do not erode the applicable policy's limits of liability); legacy product, general liability, property, D&O, R&W, contractor and pollution legal liability programs (whether they were written on an occurrence- or claims -made basis) will all be implicated. Insurers will need to assess how PFAS fit into policy defined terms and exclusions in applicable policies. And the insureds and their insurers will be challenged to allocate responsibility between different types of policies, different years of coverage, priority of coverage, different insurers from year to year, and the evolving "pollution exclusions" written into policies over the years that may bar (or provide) coverage in whole or part.

Going forward, for existing and new risks under all these programs, insurers and their reinsurers will need to evaluate these PFAS risks carefully and thoroughly as they write new coverage. Some predict the global PFAS liabilities will exceed a trillion dollars,<sup>91</sup> much of which will be sought from insurers and their reinsurers.

#### V. Conclusion

To navigate the expected onslaught of PFAS challenges and claims, insurers and reinsurers must continue to act decisively to look both backward and forward as new legal and technical frontiers open up in the PFAS arena. This means assembling qualified expert teams to assess potential PFAS exposure across legacy and current programs, monitor rapidly evolving technical developments and legal requirements, and proactively manage risks tied to insureds' historic and current manufacturing operations and ever-expanding bodily injury, property damage, cleanup and other claims.

<sup>&</sup>lt;sup>89</sup> Simon Jessop, *Call to Phase Out 'Forever Chemicals' Gains Investor Momentum*, REUTERS (Nov. 30, 2022), <u>https://www.reuters.com/business/environment/call-phase-out-forever-chemicals-gains-investor-momentum-</u> <u>2022-12-01/</u>.

<sup>&</sup>lt;sup>90</sup> 3M to End 'Forever Chemicals' Output at Cost of Up to \$2.3 Bln, REUTERS (Dec. 20, 2022), https://www.reuters.com/business/3m-stop-making-forever-chemicals-take-up-23-bln-charge-2022-12-20/.

<sup>&</sup>lt;sup>91</sup> Alex Wolf, *Trillions in PFAS Liabilities Threaten Corporate Bankruptcy Wave*, BLOOMBERG LAW (Oct. 24, 2023), https://news.bloomberglaw.com/bankruptcy-law/trillions-in-pfas-liabilities-threaten-corporate-bankruptcy-wave.



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