August 29, 2024

VIA EMAIL and OVERNIGHT DELIVERY

The Honorable Michael S. Regan
Administrator, U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20004

Re: Multistate Petition to Add PFAS Compounds to the List of Clean Air Act Hazardous Air Pollutants

Dear Administrator Regan:

The unregulated nature of per- and polyfluorinated substances (PFAS) as air pollutants is a tremendous concern in our States and across the U.S. Therefore, we respectfully submit this petition for the addition of the following four PFAS to the Clean Air Act list of hazardous air pollutants: perflurooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), and HFPO dimer acid (HFPO-DA or GenX).

Under your leadership, EPA has initiated regulatory actions for PFAS under several federal environmental laws, and we urge EPA to initiate such action under the Clean Air Act to protect public health and the environment from airborne PFAS emissions. As we demonstrate in the enclosed petition, EPA has the authority and the necessary substantive information to grant this petition pursuant to Clean Air Act Section 112(b)(3), 42 U.S.C. § 7412(b)(3).

Thank you for your commitment to addressing PFAS issues and your timely consideration of this petition.

Sincerely,

Elizabeth S. Biser
Secretary
North Carolina Department of
Environmental Quality

James C. Kenney
Secretary
New Mexico Environment Department

Shawn M. LaTourette
Commissioner
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Multistate Petition to EPA for Addition of PFAS Compounds to the List of Hazardous Air Pollutants Under Section 112 of the Clean Air Act

For several years, New Mexico, North Carolina, and New Jersey (the Petitioning States) have been at the forefront of addressing the public health and environmental impacts of per- and polyfluoroalkyl substances (PFAS). More recently, our response to this challenge has been supported by extensive efforts of the Environmental Protection Agency (EPA) to develop science-based regulatory programs to address PFAS under the leading federal environmental laws. However, EPA has not established an air pollution control program for PFAS, and PFAS emissions in ambient air remain largely unmeasured and unregulated. We respectfully file this petition and urge EPA to add the following PFAS compounds to the list of hazardous air pollutants (HAPs) to be regulated under Section 112 of the Clean Air Act (CAA): perflurooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (GenX or HFPO-DA).

I. Introduction

In our experience, PFAS have exhibited important physical and chemical properties that have made them uniquely harmful to humans and the environment, and challenging to redress. For example, the strength and stability of the carbon-fluorine bond has made PFAS compounds very unlikely to decompose in the environment. Thus, once PFAS compounds have been deposited in the environment, they will persist or transform to other PFAS that may also persist. Similarly, due to the widespread manufacture, use, and disposal of PFAS, they have become prevalent throughout our states. In fact, PFAS may be found in all environmental media including air, surface water, groundwater, soil, and sediment. PFAS are also found in food sources (including crops, gardens, fish, milk, and livestock) and in humans.

North Carolina has extensive firsthand experience with measuring, assessing, delineating, mitigating, and removing PFAS from the environment. In 2017, following the discovery of GenX and other PFAS in the Cape Fear River near the Chemours Fayetteville Works, the Department of Environmental Quality (NCDEQ) suspended the discharge of process wastewater from the facility. NCDEQ also filed a lawsuit in state court against Chemours which led to the entry in 2019 of a consent order that requires Chemours to prevent or reduce PFAS impacts across several environmental media. NCDEQ was able to demonstrate the causal link between significant air emissions of PFAS from the facility (historically and currently) and, through deposition, the widespread PFAS contamination of groundwater in private drinking water wells near the facility. Among its provisions, the consent order requires the installation of a thermal oxidizer control system, issuance of a Title V air permit with PFAS limits, sampling of private drinking water wells, and provision of alternate water supplies for residents with PFAS-contaminated private wells. The sampling of private wells is ongoing today and has thus far revealed contamination in private wells located over 27 miles from the facility. Similarly, one

site in southern New Jersey is evaluating impacts from PFAS over an area that is nearly 40 square miles, whereas another is investigating PFAS impacts over a 67 square mile area.

Furthermore, ongoing sampling and analysis conducted by EPA and NCDEQ near the Chemours Fayetteville Works demonstrate that PFAS are present in ambient air and are likely due to airborne releases of PFAS. Meanwhile, in New Jersey, one study (Washington et al., 2020) found a unique PFAS in surficial soils that was originally emitted from a facility located in the southern portion of New Jersey and then migrated over 90 miles to the north.

Since 2021, EPA has developed approaches to regulating PFAS and has undertaken PFAS enforcement actions under the Safe Drinking Water Act (SDWA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response Cleanup and Liability Act (CERCLA), and the Toxic Substances Control Act (TSCA). Several states, including the Petitioning States, have pursued similar agendas on their own and in partnership with EPA. But, to our knowledge, no federal agency has yet developed a program to regulate PFAS emissions in air. And, to a large extent, neither have the states. We are aware that the State of Michigan, through its Department of Environment, Great Lakes and Energy's air toxics program has set inhalation-based initial threshold screening levels for PFOA and PFOS. (Michigan EGLE Interoffice Communications dated April 25, 2024)

The Petitioning States submit that Section 112 of the CAA provides the optimal approach to fill this gap. CAA Section 112(b)(1) establishes a list of HAPs that EPA has used to identify sources for which EPA will promulgate emissions standards. CAA Section 112(b)(2) explicitly authorizes EPA to add pollutants to the list of HAPs based on periodic reviews, and CAA Section 112(b)(3) allows EPA to add a substance to the list of HAPs upon granting a petition filed by any person. For example, EPA recently used this approach to add one compound (n-propyl bromide or 1-bromopropane) to the list of HAPs. (87 Fed. Reg. 393; January 5, 2022). EPA's addition of PFAS to the list of HAPs as requested in this petition would greatly expand the partnership between EPA and the states through the cooperative federalism embodied in the CAA.

Embedded within Section 112 is a sense of urgency in addressing toxic air pollutants. As discussed further on page 4 of this petition, in the 1990 CAA Amendments, Congress modified Section 112 by adopting a technology-based approach to HAP emission controls, based on the performance of better-controlled emission sources, rather than continuing its focus on health-based limits that had resulted in few HAP emission standards. Since 1990, EPA has developed technology-based emission standards for numerous industrial source categories. We believe that EPA's commitment to reducing PFAS in the environment and protecting public health would be advanced further by designation of PFAS as HAPs under Section 112.

II. The Necessity of Federal Regulation of PFAS Emissions under CAA Section 112

The entire class of PFAS compounds encompasses thousands of fluorinated chemicals, many of which have been produced or used at many different industrial and manufacturing locations

across the U.S. The properties of PFAS have made them useful in a wide variety of consumer products, such as non-stick cookware, water-repellant clothing, and fire-fighting foam.

As part of the far-reaching and extended life cycle of PFAS compounds, they are prevalent in air emissions from stationary sources. For example, at the Chemours facility in North Carolina, where PFAS compounds have been manufactured, PFAS compounds have been emitted over several decades (by Chemours since 2015 and by its predecessor DuPont before then). Prior to the installation of a thermal oxidizer control system in 2019, the facility operated for several decades without substantial emission controls for PFAS. Through widespread deposition, the air emissions have left a hydrologic footprint in the groundwater across at least four counties near the facility similar to the deposition described above in New Jersey.

Similar findings are documented in the EPA Administrative Order on Consent (AOC) for the 3M facility in Cordova, Illinois dated November 2022. Several PFAS compounds, including PFOA, PFOS, and GenX were found in private wells within a three-mile radius around the facility, which operated for three decades prior to the installation of a thermal oxidizer in 2003. The AOC requires 3M to offer treatment to private well owners within a three-mile radius of the facility, and sample drinking water at private wells within a four-mile radius and drinking water systems within a ten-mile radius.

While PFAS emissions from major stationary sources such as Chemours and 3M remain a significant concern, other sources of PFAS air emissions will continue to evolve. For example, although there are effective treatment technologies for removing PFAS from drinking water and wastewater (such as activated carbon, reverse osmosis, or ion exchange), these technologies focus on the capture and transfer of PFAS from one media to another, rather than on their destruction or decomposition.

EPA has promulgated numerous federal standards that recognize hazardous air pollutants are emitted from remedial activities, including the remediation of land, groundwater, surface water, as well as the transport of these wastes to their final disposal site. These regulations are codified in 40 CFR part 61 and 40 CFR part 63. In New Mexico, for example, the Department of Defense had widespread and catastrophic releases of PFAS to the groundwater at and around Cannon Air Force Base near Clovis, New Mexico. PFAS cleanup activities that are occurring around the country under CERCLA, RCRA, or state-based remediation schemes may give rise to unintended and uncontrolled air emissions of PFAS. Without EPA acting on this petition, remediating our land and waters may result in air dispersion of these chemicals into communities or other geographic areas of our environment. By shifting PFAS pollution from one medium, such as water, to another medium, such as air, the responsible party for cleanup may become less clear, consequently resulting in federal or state liability.

Further, EPA's adoption of Maximum Contaminant Levels for six PFAS, which the Petitioning States support, will lead to the installation of PFAS treatment and removal systems at public water systems which have PFAS contamination in their source water. However, it will also lead

to an increase in the need to dispose of PFAS contamination from the regeneration of activated carbon and the residuals from reverse osmosis and ion exchange processes, which will increase the potential for cross-media contamination into soils and ground water.

On April 8, 2024, EPA published interim technical guidance for destruction and disposal of PFAS and PFAS-containing materials (EPA, Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances— Version 2). In the draft, EPA highlights the prospects of stationary sources of air emissions, including thermal destruction of PFAS through processes such as commercial incinerators, cement kilns, lightweight aggregate kilns, and activated carbon reactivation units with thermal oxidizers. EPA also describes the uncertainties related to the PFAS removal efficiencies by thermal treatment.

III. Review of Four PFAS: Health and Environmental Effects and Air Emissions

The provisions for filing a petition for an addition to the list of HAPs require the petitioner to show "that there is adequate data on the health or environmental effects of the pollutant or other evidence adequate to support the petition." CAA Section 112(b)(3)(A). In addition, the CAA directs that "the Administrator shall add a substance to the list upon a showing by the petitioner or on the Administrator's own determination that the substance is an air pollutant and that emissions, ambient concentrations, bioaccumulation or deposition of the substance are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects." CAA Section 112(b)(3)(B).

In its notice of granting the petitions to add n-propyl bromide to the list of HAPs, EPA elaborated on its CAA decision making authority by referring to the CAA's legislative history and a 1980 (pre-*Chevron*) interpretation of the CAA by the U.S. Court of Appeals for the D.C. Circuit. EPA then discussed the level of certainty required in a HAP petition.

> [T]he CAA is a protective or preventive statute. One of its stated purposes is ''to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare.'' CAA section 101(b)(1). Relevant legislative history also provides support for this stated purpose. (The CAA is ''to assure that regulatory action can effectively prevent harm before it occurs; to emphasize the predominant value of protection of public health.'' H.R. Rep. No. 95–294, 95th Cong., 1st Sess. 49 (1977)). Such statutes do not call for certainty of harm, but rather accord a decision maker flexibility in taking regulatory action that is protective of public health and the environment. They allow a decision maker to exercise discretion when forming her judgement, which would likely involve balancing of factors that are uniquely within her expertise and policy choices, and predictions on the frontiers of scientific knowledge. (''[A]n agency [has] latitude to exercise its discretion in accordance with the remedial purposes of the controlling statute where relevant facts cannot be ascertained or are on the frontiers of scientific inquiry.'' Nat'l Lime Ass'n v. EPA, 627 F.2d 416, 454 (D.C. Cir. 1980)).

> Further, requiring data/information that provides absolute certainty of the adverse health effects of a substance would likely result in making listing decisions similar to the risk- and health-based approach employed prior to the 1990 CAA Amendments. See S. Rep. No. 101–228 at 3, 128 (1989); see also H.R. Rep. No. 101–490, pt. 1, at 322 (1990). Up until then, the EPA was required to list HAP for regulation based on a conclusion that they could ''cause or contribute to, an increase in mortality, an increase in serious irreversible, or incapacitating reversible illness.'' Section 112(a)(1), CAA, Pub. L. 91–604, 84 Stat. 1676, 1685 (1970). In doing so, the EPA would consider emissions levels at which health effects have previously been observed and factor in an ample margin of safety to protect public health. This approach proved unsatisfactory in achieving the goal of improved public health and in the 1990 CAA Amendments, Congress dispensed with this provision, listed 189 HAP in CAA section 112(b)(1) for regulation, and provided for modifications of the HAP list either by petition or on the Administrator's determination in CAA sections 112(b)(3)(A) and (B). Thus, we interpret CAA section 112(b)(3)(B) as invoking the Administrator's expertise in considering information/data that addresses the potential or likelihood of harm rather than concrete proof of actual harm. We also believe that CAA section 112(b)(3)(B) would allow the Administrator to act in the face of uncertainty as to the proven health effects of a substance, draw inferences from the data before her, as well as err on the side of caution in determining whether the data are sufficient to support listing a substance. This determination would likely take into account the risks associated with not taking an action as compared to taking action and granting the petition to add a substance to the CAA section 112(b)(1) HAP list.

(82 Fed. Reg. 2354, 2357; January 9, 2017) (footnote omitted).

In this petition, the Petitioning States respectfully urge EPA to add the following PFAS to the list of HAPs in CAA Section 112:

Chemical name	Abbreviated name	CASRN
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorooctane sulfonic acid	PFOS	1763-23-1
Perfluorononanoic acid	PFNA	375-95-1
Hexafluoropropylene oxide dimer acid	HFPO-DA (GenX)	13252-13-6

PFOA and PFOS

The health and environmental effects of the PFAS compounds listed in this petition have been thoroughly examined by EPA in its recent regulatory actions for those compounds. For example, in the course of developing the MCLs, EPA determined that PFOA and PFOS, which are legacy PFAS compounds that have been manufactured and in use for several decades, are likely human carcinogens. (EPA, Maximum Contaminant Level Goals for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Drinking Water, April 2024, pp. 11-25). In its decision to designate PFOA and PFOS as CERCLA hazardous substances, EPA determined that "PFOA

and PFOS, and their salts and isomers, may present substantial danger to public health or welfare or the environment." (89 Fed Reg 39125; May 8, 2024)

PFOA and PFOS are air pollutants which persist in the environment. In the CERCLA designations for PFOA and PFOS, EPA stated: "Available information about the fate and transport of PFOA and PFOS support EPA's conclusions that these substances remain in the environment for many years (i.e., persistency) and that they can move through air, land, and water (i.e., mobility) after release." (89 Fed Reg 39147; May 8, 2024)

PFNA

The New Jersey Drinking Water Quality Institute (2015), ATSDR (2021), and USEPA (2024) have evaluated the health effects of PFNA. In laboratory animals, PFNA causes toxicity to the liver, immune system, kidney, and the male reproductive system, and maternal exposure adversely affects development of the fetus and offspring. Effects of PFNA in humans include decreased birthweight and increased blood serum levels of liver enzymes, an indicator of liver damage.

As is the case for PFOA and PFOS (mentioned above), PFNA is persistent in the environment, and can move through air, land and water. Large amounts of PFNA were reported to be released by a New Jersey fluoropolymer manufacturing facility (Roux Associates, 2013), and a study has indicated that the releases resulted in the migration of the contaminant into the underlying groundwater.

GenX

EPA's MCL analysis for GenX describes various adverse health effects in oral toxicity studies with rodents, such as liver toxicity, kidney toxicity, immune system effects, hematological effects, reproductive/developmental effects, and cancer. (EPA, Maximum Contaminant Level Goals for Three Individual Per- and Polyfluoroalkyl Substances (PFAS) and a Mixture of Four PFAS, April 2024, p. 2-1).

GenX is an air pollutant. At the Chemours facility in North Carolina, the facility operates under a facility-wide 12-month rolling-sum emissions limit of 23 pounds of GenX. This permit limit, issued by NCDEQ, was derived by estimating and then reducing the facility-wide emissions in 2017 (2,300 pounds) by 99%. GenX, manufactured exclusively by Chemours and transported through atmospheric deposition, has been detected in private and public wells in areas stretching several miles away from the facility in North Carolina. EPA found that similar effects on groundwater, which are likely attributable to deposition related to GenX emissions, have been observed in areas near the Chemours facility in Parkersburg, West Virginia. (EPA, Maximum Contaminant Level Goals for Three Individual Per- and Polyfluoroalkyl Substances (PFAS) and a Mixture of Four PFAS, April 2024, p. A-13). In the vicinity of the Chambers Works facility in Pennsville, New Jersey, the State found 37 residential wells impacted by GenX. The wells are located between one and 5.2 miles from the facility, with the greatest GenX concentrations detected in the farthest wells.

IV. EPA Has Abundant Information to Support the Addition of PFAS to the List of HAPs

The information provided in this petition demonstrates that:

- PFAS, and in particular PFOA, PFOS, PFNA, and GenX are air pollutants; and
- Through emissions, ambient concentrations, bioaccumulation, or deposition, these PFAS are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects.

Thus, EPA is equipped to make the necessary findings to support adding these PFAS to the list of HAPs under CAA Section 112(b)(3)(B). Further, we encourage EPA to use the results of its research and analyses on the toxicity, fate and transport, and prevalence of PFAS to add other PFAS compounds to the list of HAPs. This exploration of air emissions mitigation options, including listing certain PFAS as HAPs, is a centerpiece of the EPA's strategy to address PFAS air emissions in the 2021-2024 PFAS Strategic Roadmap (available at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf).

V. Prospective Emission Control Strategies

Although emission controls for PFAS under CAA Section 112 are beyond the scope of this petition for listing of PFAS as HAPs, the Petitioning States urge EPA to explore emission control options as it evaluates this petition. In particular, we encourage EPA to develop innovative approaches for identifying categories and subcategories of PFAS sources under CAA Section 112(c) and establishing technology-based emission controls under CAA Section 112(d). For example, EPA's PFAS Thermal Treatment Database provides a useful inventory of sources, control technologies, and emissions data for PFAS. NCDEQ's experiences show that PFAS air emissions, well below HAP major source thresholds, can result in significant impacts through deposition. Therefore, as EPA advances an air regulatory program under CAA Section 112, strong Generally Available Control Technology (GACT) standards are needed to complement any Maximum Achievable Control Technology (MACT) standards. EPA should also consider the use of surrogates (such as total organic fluorine) to accurately account for PFAS transformation products and for demonstrating compliance with PFAS emission standards.

VI. Conclusion

The petitioning States respectfully urge EPA to grant this petition and commence the process of listing PFOA, PFOS, PFNA, and GenX as HAPs under CAA Section 112(b)(3). We commend EPA for its broad approach and numerous actions to counter the challenges of PFAS.

References

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New Jersey Drinking Water Quality Institute (2015) Health-Based Maximum Contaminant Level Support Document: Perfluorononanoic Acid (PFNA) https://www.nj.gov/dep/watersupply/pdf/pfna-health-effects.pdf

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