

ZOMBIE CHEMICALS – LEARNING FROM OUR PAST TO PREVENT HAUNTING IN THE FUTURE: WHY THE EPA SHOULD REGULATE PFAS CHEMICAL COMPOUNDS

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PFAS are commonly used chemicals now found throughout the environment. The chemical properties that make PFAS popular (they are resistant to oil, fire, and water) also make them hazardous because they accumulate in the environment and biodegrade very slowly. PFAS are particularly mobile in aquatic environments, and thus create a significant public health risk when they are present in drinking water. The EPA has stated its intention to use the Safe Drinking Water Act to set a legally enforceable limit for PFAS in drinking water. To do this, the EPA would need to go through a lengthy rulemaking process. This note argues that to bypass a full rulemaking process and set a legally enforceable limit quickly, the EPA should either use the Safe Drinking Water Act “Urgent Threat” provision or “Emergency Powers” provision.

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I. INTRODUCTION: PFAS IN DRINKING WATER, A SERIOUS PUBLIC HEALTH CONCERN

In 2014, the city of Flint, Michigan decided to change the source of its drinking water from Lake Huron to the Flint River.¹ Residents of Flint were soon afflicted with lead poisoning and a myriad of other health issues caused by *E. Coli* and byproducts of disinfectants found in the water.² The water crisis in Flint received national attention when President Obama and the Environmental Protection Agency (EPA) declared a state of emergency in 2016.³ While the national attention regarding Flint's water crisis revolved around the calamity of lead in the drinking water, tests of the river from years earlier revealed high levels of contaminants of a different kind—chemicals known as PFAS.⁴ “PFAS” is the blanket term for Per- and Polyfluoroalkyl Substances, a group of chemicals thought to include thousands of different synthetic compounds.⁵ The two best-known PFAS are Perfluorooctanoic Acid (“PFOA”) & Perfluorooctyl Sulfonate (“PFOS”).⁶

One Michigan resident, with a history of breast cancer and arthritis, referred to PFAS as “zombie chemicals”: “You don't see them. You don't smell them. They just slowly affect you.”⁷ In the industry context, PFAS are sometimes referred to as “forever chemicals” because they never fully degrade and accumulate both in the environment and in the bloodstreams of

1. Merrit Kennedy, *Lead-Laced Water in Flint: A Step-by-Step Look at the Makings of a Crisis* (Apr. 20, 2016), <https://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-laced-water-in-flint-a-step-by-step-look-at-the-makings-of-a-crisis>.

2. *Flint Water Crisis Fast Facts* (Apr. 8, 2018), <https://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/index.html>.

3. Kennedy, *supra* note 1.

4. See Ron Fonger, *State Knew of PFAS in Flint River Before Switch, but City May Not Have Been Told*, https://www.mlive.com/news/flint/index.ssf/2018/08/state_health_official.html (last updated Jan. 30, 2019) (reporting that tests of the water in the Flint River before 2014 show a level of PFAS higher than the current federal advisory for drinking water).

5. Jeff B. Kray & Sarah J. Wightman, *Contaminants of Emerging Concern: A New Frontier for Hazardous Waste and Drinking Water Regulation*, 32 NAT. RES. & ENV'T 36, 36 (Spring 2018), https://www.americanbar.org/groups/environment_energy_resources/publications/natural_resources_environment/2017-18/spring/contaminants-emerging-concern-new-frontier-hazardous-waste-and-drinking-water-regulation/; *Basic Information on PFAS*, <https://www.epa.gov/pfas/basic-information-pfas> (last visited Nov. 18, 2019).

6. See, e.g., Jeffery S. Longworth, *AFF at Commercial Airports – the Blessings and the Curse of PFAS* (Jan. 10, 2019), <https://www.natlawreview.com/article/aff-commercial-airports-blessings-and-curse-pfas> (noting PFOA and PFOS as most common PFAS). Even though PFAS is a blanket term for almost 5,000 compounds, when referring to PFAS this Note is only referring to PFOA and PFOS. *Per and Polyfluoroalkyl Substances (PFAS)*, <https://www.fda.gov/food/chemicals-and-polyfluoroalkyl-substances-pfas> (last visited Nov. 18, 2019) (“There are nearly 5,000 types of PFAS.”).

7. Paula Gardner & Garret Ellison, *Michigan's Next Water Crisis is PFAS—And You May Already be Affected* (July 10, 2018), https://www.mlive.com/news/index.ssf/page/michigans_water_crisis_pfas.html.

humans and animals.⁸ In total, there are 172 known PFAS contamination sites in 40 states across the country.⁹ This statistic leaves out likely 1500 drinking water systems that are affected.¹⁰ Residents in these areas complain of an increased prevalence of cancer and other illnesses like thyroid problems, elevated cholesterol, and effects on the immune system.¹¹ The chemicals are estimated to be so widespread that they can be found in the bloodstream of nearly every American.¹² As a New York Times Magazine article put it:

[I]f you are a sentient being reading this article in 2016, you already have PFOA in your blood. It is in your parents' blood, your children's blood, your lover's blood. How did it get there? Through the air, through your diet, through your use of nonstick cookware, through your umbilical cord. Or you might have drunk tainted water.¹³

PFAS have been on the EPA's "emerging contaminant" list since 2012.¹⁴ Emerging contaminants are "previously unknown, unrecognized, unanticipated, unsuspected, or unregulated chemical pollutants."¹⁵ PFAS are not necessarily emerging. There is a vast array of documents indicating that manufacturers of PFAS have been aware of the hazards associated with PFAS exposure since the creation of PFOA.¹⁶ There is also evidence that the EPA may have known about the danger of these chemicals for almost as

8. See Joseph G. Allen, *These Toxic Chemicals are Everywhere – Even in Your Body. And They Won't Ever Go Away* (Jan. 2, 2018), https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e_story.html (discussing PFAS as "forever chemicals").

9. See Bill Walker, *Update: Mapping the Expanding PFAS Crisis* (Dec. 6, 2018), <https://www.ewg.org/research/update-mapping-expanding-pfas-crisis#.Wti8AW4vyUn> (tracking PFAS in the U.S., particularly PFOA and PFOS).

10. *Id.*

11. See, e.g., Jeff Brady, *Decades-Old Chemicals, New Angst Over Drinking Water* (Oct. 2, 2018), <https://www.npr.org/2018/10/02/651180024/decades-old-chemicals-new-angst-over-drinking-water>.

12. Bill Walker & David Andrews, *Drinking Water for 5.2 Million People Tainted by Unsafe Levels of PFCs* (May 23, 2016), <https://www.ewg.org/enviroblog/2016/05/drinking-water-52-million-people-tainted-unsafe-levels-pfcs>.

13. Nathaniel Rich, *The Lawyer Who Became DuPont's Worst Nightmare* (Jan. 26, 2016), <https://www.nytimes.com/2016/01/10/magazine/the-lawyer-who-became-duponts-worst-nightmare.html>.

14. Kray & Wightman, *supra* note 5, at 36.

15. *Id.*

16. Rich, *supra* note 13.

long,¹⁷ but at least since the late 1990s.¹⁸ Although the EPA has taken some steps to mitigate the impacts of PFAS, such as issuing a health advisory¹⁹ and releasing a PFAS Action Plan in 2019,²⁰ the contaminant does not have a legally-enforceable limit in drinking water at the federal level.²¹

Congress has authorized the EPA to protect public health and the environment through a variety of laws and regulations such as the Clean Air Act, the Clean Water Act, the Toxic Substances Control Act, the Comprehensive Environmental Response, Compensation, and Liability Act, and the Safe Drinking Water Act (SDWA).²² The SDWA protects the public drinking water systems as a means of safeguarding public health and provides the statutory authority to regulate PFAS contamination in drinking water.²³ The EPA has failed to utilize two provisions in the SDWA to regulate PFAS: 1) the Section 300g-1 (b)(1)(D) “Urgent Threats to Public Health” provision and 2) the Section 300i “Emergency Powers” provision.²⁴ Congress constructed these provisions to allow the EPA to pass regulations without rulemaking procedures when there are widespread public health problems.²⁵ This Note focuses on why the EPA should use the statutory authority granted

17. DuPont claims they volunteered health information to the EPA and produced proof in letters from 1982 and 1992. *Id.*

18. Kray & Wightman, *supra* note 5, at 37.

19. See U.S. ENVTL. PROTECTION AGENCY, TECH. FACT SHEET: PFOS & PFOA (2016) (identifying drinking water health advisories and what legally enforceable limits for PFOS and PFOA should be); see *infra* Part IV.

20. See generally U.S. ENVTL. PROTECTION AGENCY, NO. 823R18004, EPA’S PER-AND POLYFLUOROALKYL SUBSTANCES (PFAS) ACTION PLAN (2019) [Hereinafter EPA 2019 ACTION PLAN]; see also *infra* Part IV.

21. See generally *PFAS Laws and Regulations*, <https://www.epa.gov/pfas/pfas-laws-and-regulations> (last visited Oct. 20, 2019) (describing that PFAS are not federally regulated under the Clean Air Act, the Clean Water Act, the Toxic Substances Control Act, or the Comprehensive Environmental Response, Compensation, and Liability Act)

22. See *id.* (discussing the Clean Air Act, Toxic Substances Control Act, and Comprehensive Environmental Response, Compensation, and Liability Act); *Summary of the Clean Water Act*, <https://www.epa.gov/laws-regulations/summary-clean-water-act> (last visited Nov. 18, 2019) (discussing EPA’s authority under the Clean Water Act). PFAS are known to be more soluble in water and thus accumulate in aquatic environments. See CHAD FURL & CALLIE MEREDITH, WASH DEP’T OF ECOLOGY NO. 10-03-034, PERFLUORATED COMPOUNDS IN WASH. RIVERS AND LAKES 9–10 (Aug. 2010) (illustrating that environmental monitoring and scientific studies have primarily focused on how PFAS acts in water). This Note focuses on regulating the chemical in drinking water. EPA regulations under the Clean Air Act, the Toxic Substances Control Act, and the Comprehensive Environmental Response, Compensation, and Liability Act, though relevant, will not be the focus of this Note.

23. See generally The Safe Drinking Water Act (SDWA), 42 U.S.C. §§ 300f-300j-26 (2018) (governing designated contaminants that may have adverse health effects).

24. *Id.* §§ 300g-1, 300i; *infra* Part V.

25. See *id.* §§ 300g-1(b)(1)(D) (noting the Administrator may promulgate an emergency regulation for a contaminant without making a determination); *id.* § 300i(a) (allowing Administrator to act if a contaminant is likely to enter a public water system and pose an imminent and substantial endangerment to human health).

by Congress to regulate PFAS under the SDWA, specifically using the Urgent Threats provision or the Emergency Powers provision.

First, this Note discusses why PFAS are a serious public health problem, especially due to their prevalence in the country's drinking water supply. Second, this Note discusses the SDWA as a means of safeguarding public health and providing the statutory authority to regulate PFAS contamination in drinking water. Third, this Note discusses the ineffective measures taken by Congress and the EPA to address PFAS in drinking water. Lastly, this Note proposes that the EPA should use the SDWA to regulate PFAS either through the Urgent Threat or Emergency Powers provisions.

II. BACKGROUND ON PFAS

A. *The Development of PFAS*

PFAS were developed in the 1940s and were integrated into a wide array of industries such as aerospace, automotive, construction, electronic, pharmaceutical, oil, and gas.²⁶ They are in everyday items such as cleaning products, textiles, paper, carpet, paints, non-stick pans, and food wrappers.²⁷ PFAS are also in a fire fighting foam called aqueous film-forming foams (AFFFs).²⁸ The use of AFFFs is popular on military bases, former military installations, and commercial airports.²⁹ The Department of Defense has identified over 400 military sites throughout the country with significant PFAS contamination.³⁰ The two most common forms of PFAS are known as PFOA—initially manufactured by 3M and DuPont and used to make Teflon—and PFOS—manufactured by 3M and used to make Scotchgard.³¹

PFAS are popular in a vast array of industries because they are so persistent and hard to break down.³² PFAS share fire-resistant, oil-resistant, and water-repellant properties.³³ PFAS compounds are made up of fluorocarbon chains,³⁴ all relatively similar but with varying lengths of

25. See Nikki Delude Roy et al., *Regulatory Challenges Posed by Emerging Contaminants*, AM. BAR ASS'N WATER RES. COMM. NEWSL., Mar. 2018, at 8; *Basic Information on PFAS*, *supra* note 5.

27. *Basic Information on PFAS*, *supra* note 5.

28. See Longworth, *supra* note 6.

29. *Id.*

30. *Id.*

31. See, e.g., Rich, *supra* note 13 (noting DuPont initially purchased PFOA from 3M); *Statement on PFOA*, DUPONT, dupont.com/position-statements/pfoa.html (last visited Nov. 20, 2019) (noting DuPont manufactured PFOA); Walker, *supra* note 9 (noting PFOA's use in Teflon).

32. See, e.g., Rich, *supra* note 13 (noting 3M used PFOS in Scotchgard).

33. See, e.g., Kray & Wightman, *supra* note 5, at 36.

34. See Stephen Zemba & Russell Abell, *Emergence of PFAS: A Public Health Concern?*, AM. BAR ASS'N ENVTL. LITIG. & TOXIC TORTS COMMITTEE NEWSL., Aug. 2017, at 23 (describing that PFAS are "two-part molecules consist[ing] of an alkyl chain in which fluorine atoms fully or partially

carbon atoms.³⁵ The carbon bonds in PFAS are “among the strongest in organic chemistry and render the acids practically non-biodegradable.”³⁶ Therefore, PFAS tend to accumulate in the environment, specifically in soil and groundwater.³⁷

B. Routes to Human Exposure

Humans are exposed to PFAS through the use of products manufactured with PFAS, occupational exposure, and the consumption of contaminated food and drinking water.³⁸ PFAS migrate through air³⁹ and food,⁴⁰ but they are particularly mobile in water.⁴¹ PFAS are “mobile in soil and leach into groundwater . . . and atmospheric deposition can lead to contamination of soils and leaching into groundwater away from point sources.”⁴² As proof of PFAS’s ability to move efficiently in water, studies have found PFAS contamination in the Arctic.⁴³

PFAS contamination in drinking water is widespread across the country: “at least 15 million Americans in 27 states have PFAS in their tap water.”⁴⁴ Communities located near manufacturing plants or military bases have particularly high concentrations of PFAS in their drinking water due to the

replace hydrogen and a functional group at one end (usually carboxylate or sulfonate) that provides beneficial properties.”)

35. See Christine Lepisto, *What You Need to Know about PFOA and PFOS, the EPA Scandal Chemicals* (May 22, 2018), treehugger.com/environmental-policy/what-you-need-know-about-pfoa-and-pfos-chemicals-behind-pruitts-recent-epa-scandal.html (describing that PFAS compounds consist of chains of carbon atoms that vary in length). PFOA is also known as C8 for its eight carbon atoms. The variance in length of the carbon chains also helps predict how persistent and toxic the chemical is in the environment. *Id.*

36. FURL & MEREDITH, *supra* note 22, at 9.

37. See Rebecca Hersher, *Scientists Dig into Hard Questions about the Fluorinated Pollutants Known as PFAS* (Apr. 22, 2019), npr.org/sections/health-shots/2019/04/22/708863848/scientists-dig-into-hard-questions-about-the-fluorinated-pollutants-known-as-pfa (noting PFAS contaminate soil and water).

38. EPA 2019 ACTION PLAN, *supra* note 20, at 12.

39. See Zemba & Abell, *supra* note 34, at 24 (detailing that several communities, including Hoosick Falls, N.Y., Bennington Vt., and Merrimack N.H., and all located near textile factories that emitted PFAS into the air, have detected PFAS in their water).

40. *Basic Information on PFAS*, *supra* note 26 (describing that exposure through food happens when produce is grown with contaminated soil and water, through food packaging and wrappers containing PFAS, and manufacturing equipment that used PFAS during food processing).

41. *Per- and Polyfluoroalkyl Substances (PFAS)*, <https://portal.ct.gov/DPH/Drinking-Water/DWS/Per--and-Polyfluoroalkyl-Substances> (last updated Oct. 28, 2019).

42. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR PERFLUOROALKYLS: DRAFT FOR PUBLIC COMMENT 2 (2018).

43. *Id.*

44. Sharon Lerner, *States Are Doing What Scott Pruitt Won’t* (Apr. 21, 2018), <https://www.nytimes.com/2018/04/21/opinion/sunday/states-are-doing-what-scott-pruitt-wont.html>.

unfortunate practice of dumping byproducts of manufacturing or military use into water sources.⁴⁵

C. Health Concerns and Ramifications from Exposure to PFAS

Once exposed to PFAS, the contaminant bioaccumulates in the bloodstream and liver.⁴⁶ “Bioaccumulation” describes the phenomenon of chemicals building up and persisting over time in a living organism.⁴⁷ Studies of the effects of PFAS in the bloodstream of animals have revealed “reproductive and developmental, liver and kidney immunological effects,” as well as tumors.⁴⁸ The Agency for Toxic Substances and Disease Registry (ATSDR) published a profile summarizing the “key literature” on PFAS’s toxicological effects.⁴⁹ The ATSDR report linked PFAS to causing several poor health outcomes.⁵⁰ The ATSDR report concluded that the results of epidemiological studies of PFAS suggest a link between hepatic effects (liver disease), cardiovascular effects, endocrine effects (increased risk of thyroid problems), immune effects (risk of asthma), reproductive effects (a decrease in fertility), and developmental effects.⁵¹

Conclusive scientific evidence of the health effects from exposure to PFAS is hard to ascertain.⁵² For instance, studies investigating the effects of PFAS exposure in animals have frequently failed to find the same or similar effects in humans.⁵³ Due to variations in anatomical structure and biological processes, PFAS accumulate in the human body for long periods but only a few days in rodents.⁵⁴ While one epidemiological study may reveal a correlation between exposure to PFAS and human disease, a different study may not reproduce the same results.⁵⁵ To further illustrate this problem, a survey of residents in Hoosick Falls, New York, a town with contaminated

45. Kray & Wightman, *supra* note 5, at 36–37.

46. *Id.* at 36, 38.

47. *Bioaccumulation*, <https://www.merriam-webster.com/dictionary/bioaccumulation> (last visited Dec. 19, 2019).

48. *Basic Information on PFAS*, *supra* note 26.

49. *See generally* AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, *supra* note 42 (detailing the toxicological profile on 14 PFAS).

50. *See id.* at 4–6 (discussing human health effects).

51. *Id.* at 25, 24.

52. *See* Matthew Thurlow et al., *INSIGHT: PFAS Challenges Remain at EPA for Wheeler* (Oct. 3, 2018), <https://news.bloombergenvironment.com/environment-and-energy/insight-pfas-challenges-remain-at-epa-for-wheeler/> (noting many studies have been inconclusive).

53. *Id.*

54. *See* Linn Salto Mamsen et al., *Concentrations of Perfluoroalkyl Substances (PFAS) in Human Embryonic and Fetal Organs from First, Second, and Third Trimester Pregnancies*, 124 ENVTL. INT’L 482, 487 (2019) (noting faster elimination of PFAS in rats compared to humans).

55. Thurlow, *supra* note 51.

water, “found 31 incidences of kidney cancer, 11 cases of testicular cancer, 231 people with thyroid disease, 71 incidents of ulcerative colitis, and 35 cases of pregnancy-induced hypertension.”⁵⁶ This level of cancer, in general, is higher than average.⁵⁷ However, a survey of the same town by the New York State Department of Health revealed that there were “no statistically significant elevations of cancer [rates] . . . for any of the cancer types associated with PFOA.”⁵⁸

Nevertheless, earlier studies have revealed that there are serious risks associated with PFAS. Residents in contaminated areas complain of an increased prevalence of cancer, specifically testicular and kidney cancer, and other illnesses like thyroid disease, elevated cholesterol, ulcerative colitis, and pregnancy-induced hypertension.⁵⁹ The number of citizen-suit and tort claims against PFAS manufacturers are further illustrations of the medical harm caused by PFAS.⁶⁰ Medical monitoring, a provision of settlements with PFAS manufacturers, reveals that people with high exposures to PFAS have poor health outcomes and a higher prevalence of the diseases mentioned above.⁶¹

Data from Minnesota’s Washington County, an area where 3M manufactured Scotchguard and dumped PFOS byproducts, has a 28% higher cancer rate from 1999 to 2013 than other parts of the state.⁶² The resulting lawsuit between 3M and Minnesota settled for \$850 million and without 3M admitting fault, but there is evidence from leaked internal company documents that 3M knew that PFAS were likely cancer-causing chemicals.⁶³

Approximately 200 scientists have signed a joint statement stating their concern about PFAS and its health effects.⁶⁴ As one official explained:

56. Karen Dewitt, *Hoosick Falls Study Finds More Illnesses Linked to PFOA Exposure*, WAMC NORTHEAST PUB. RADIO (Aug. 21, 2018), <https://www.wamc.org/post/hoosick-falls-study-finds-more-illnesses-linked-pfoa-exposure>.

57. *Id.*

58. N.Y. STATE DEP’T OF HEALTH, *CANCER INCIDENCE INVESTIGATION: VILLAGE OF HOOSICK FALLS, RENSSELAER COUNTY*, at 1 (2017).

59. *Id.*; AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, *supra* note 42, at 4–6.

60. See Jeanine L.G. Grachuk, *Water Contamination: Recent PFAS Case Law – RCRA, CERCLA, and Toxic Tort Claims* (Mar. 29, 2017), <https://www.natlawreview.com/article/water-contamination-recent-pfas-case-law-rcra-cercla-and-toxic-tort-claims> (noting significant PFAS litigation).

61. See generally Bindu Panikkar et al., *Making the Invisible Visible: Results of a Community-Led Health Survey Following PFAS Contamination of Drinking Water in Merrimack, New Hampshire*, ENVTL. HEALTH, Aug. 2019, at 5–6, 13 (tracking health outcomes after PFAS exposure and noting more medical monitoring is needed).

62. Tiffany Kary & Christopher Cannon, *Cancer-Linked Chemicals Manufactured by 3M are Turning Up in Drinking Water* (Nov. 2, 2018), <https://www.bloomberg.com/graphics/2018-3M-groundwater-pollution-problem/>.

63. *Id.*

64. *Id.*

You are never going to have 100 Percent certainty on anything . . . but when you have a chemical that evidence points to is causing fatalities, you err more on the side of taking some action, as opposed to ‘Let’s wait and spend some more time and try to get the science entirely certain,’ which it hardly ever gets to be.⁶⁵

PFAS’s presence in drinking water leaves many people vulnerable to the adverse health risks associated with it.⁶⁶ Creating a legally-enforceable limit dictating an established safe level of PFAS in drinking water is critical to ensuring public health.⁶⁷ The SDWA protects public drinking water systems and provides the statutory authority to regulate PFAS contamination in drinking water.⁶⁸

III. LEGAL BACKGROUND

A. *The Safe Drinking Water Act*

The SDWA⁶⁹ was passed in 1974 due to a heightened awareness surrounding human exposure to suspected and known cancer-causing contaminants, as well as a response to several disease outbreaks caused by contaminants in drinking water.⁷⁰ The SDWA directs the Administrator of the EPA to promulgate regulations that protect public drinking water in the United States from contaminants⁷¹ that pose health risks.⁷² The SDWA works by setting standards for contaminants, establishing treatment

65. Eric Lipton, *Why Has the EPA Shifted on Toxic Chemicals? An Industry Insider Helps Call the Shots* (Oct. 21, 2017), <https://www.nytimes.com/2017/10/21/us/trump-epa-chemicals-regulations.html>.

66. See Walker, *supra* note 9 (describing individuals affected by PFAS in well water).

67. See Olga Naidenko, *PFAS in Drinking Water: Hazardous at Ever-Lower Levels*, ENVTL. WORKING GRP. (Feb. 19, 2019), <https://www.ewg.org/news-and-analysis/2019/02/pfas-drinking-water-hazardous-ever-lower-levels> (detailing how the EPA’s health advisory limit for PFAS remains too high, at 70 parts per trillion, compared to the lowest recommended levels of 0.3 parts per trillion, creating public health concerns).

68. See generally 42 U.S.C. §§ 300f–300j-26 (2018) (governing contaminants that may have adverse health effects).

69. *Id.* The original SDWA passed in 1974 was amended in 1977 and substantially amended in 1986, 1996 and 2016.

70. Richard Weinmeyer et al., *The Safe Drinking Water Act of 1974 and Its Role in Providing Access to Safe Drinking Water in the United States*, 19 AMA J. ETHICS 1018, 1018–20.

71. 42 U.S.C. § 300f(4)(C)(6) (defining a contaminant as any “physical, chemical, biological, or radiological substance or matter in water.”).

72. MARY TIEMANN, CONG. RESEARCH SERV., RL31243, SAFE DRINKING WATER ACT (SDWA): A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 5 (2017) (defining three criteria that must be met to promulgate safe drinking water regulation for a contaminant).

requirements, promoting compliance for states and local authorities, financing infrastructure projects, and protecting sources of drinking water.⁷³

In order to regulate drinking water standards, the EPA must follow the process laid out in Section 300g-1 of the SDWA, titled “National drinking water regulations.”⁷⁴ If the EPA determines that a contaminant should be regulated it establishes a national primary drinking water regulation (NPDWR).⁷⁵ An NPDWR sets a legally enforceable limit on the amount of contaminants existing in public water systems—otherwise known as a Maximum Contaminant Level (MCL).⁷⁶ The EPA looks to three factors when determining to regulate a contaminant in drinking water: (1) whether the contaminant may have an adverse health effect; (2) whether the contaminant is known to occur, will occur, is substantially likely to occur, or that the contaminant is known to occur in public water systems at a frequency level of a public health concern; and (3) whether regulating the contaminant presents a meaningful opportunity for a health risk reduction.⁷⁷

The EPA monitors a list of unregulated contaminants that may require regulation based on the criteria presented above, known as the Contaminant Candidate List (CCL).⁷⁸ Every five years the EPA publishes a list of no more than 30 unregulated contaminants to be monitored in public water systems, known as Unregulated Contaminant Monitoring Rule (UCMR).⁷⁹ Also, the EPA makes a regulatory determination every five years for at least five of the contaminants on the CCL.⁸⁰ A regulatory determination consists of evaluating the contaminant against the SDWA criteria.⁸¹ A contaminant published on the CCL does not impose any regulatory requirements on public water systems.⁸²

73. *Id.* at 1.

74. 42 U.S.C. § 300g-1; *How EPA Regulates Drinking Water Contaminants*, <https://www.epa.gov/dwregdev/how-epa-regulates-drinking-water-contaminants#decide> (last visited Dec. 19, 2019).

75. TIEMANN, *supra* note 72, at 4–5 (currently, the EPA regulates more than 90 contaminants in drinking water, including lead, arsenic, certain disinfectants and their byproducts, benzene, and pesticides); *How EPA Regulates Drinking Water Contaminants*, *supra* note 74.

76. 42 U.S.C. § 300g-1(b)(1)(A); *How EPA Regulates Drinking Water Contaminants*, *supra* note 74.

77. 42 U.S.C. § 300g-1(b)(1)(A)(i)–(iii).

78. *Contaminant Candidate List (CCL) and Regulatory Determination: Basic Information on the CCL and Regulatory Determination*, <https://www.epa.gov/ccl/basic-information-ccl-and-regulatory-determination> (last visited Dec. 19, 2019).

79. See TIEMANN, *supra* note 72, at 5 (determining the URCM by referencing the CCL, as well as other data).

80. *Id.*

81. *Contaminant Candidate List (CCL) and Regulatory Determination: Basic Information on the CCL and Regulatory Determination*, *supra* note 78.

82. *Id.*

When the EPA determines that a contaminant requires regulation, the EPA then sets an enforceable Maximum Contaminant Level Goal (MCLG).⁸³ An MCLG represents the level at which a contaminant can exist in a public water supply without any adverse known or anticipated health effects.⁸⁴ When calculating an MCLG, the EPA accounts for specific health concerns of sensitive subpopulations, such as those with compromised immune systems, chronic disease, infants, children, and the elderly.⁸⁵ For instance, when a chemical contaminant is known to cause cancer, and there is no known safe level where it exists in water without causing cancer, the EPA sets the contaminant's MCLG at zero.⁸⁶ For other contaminants that are known to cause adverse health effects, but are non-carcinogenic, the EPA calculates an estimated MCLG by determining the lowest concentration in water the human body may be exposed to without causing any adverse health effects.⁸⁷ The EPA then is required to set a Maximum Contaminant Level ("MCL") as close to the MCLG as feasibly possible, which means a level that takes into account the cost of implementation and what sort of technology is available to remove and treat the contaminated water supplies.⁸⁸

If the EPA decides to regulate a contaminant, it must propose the MCL and the NPDWR within 24 months⁸⁹ and publish a preliminary regulatory determination in the Federal Register, providing an opportunity for public comment.⁹⁰ After the notice and comment period is over, the EPA publishes a final rule within 18 months after the first proposal.⁹¹ When coming up with both the MCL and the NPDWR, the EPA undergoes a cost-benefit analysis and a health risk assessment that takes into account the best available peer-reviewed science and data.⁹² The NPDWR must weigh the health benefits and costs to states, local agencies, and public water systems when complying with the proposed standard.⁹³ By passing an economically feasible NPDWR,

83. *How EPA Regulates Drinking Water Contaminants*, *supra* note 74.

84. TIEMANN, *supra* note 72, at 5.

85. *How EPA Regulates Drinking Water Contaminants*, *supra* note 74.

86. *Id.*

87. *Id.* (describing that, when calculating an MCLG, the EPA considers the results of epidemiology or toxicology studies divided by uncertainty factors such as population effects, then multiplied by body weight and divided by the daily water consumption to provide a Drinking Water Equivalent Level (DWEL). After looking at other routes of exposure like food intake or inhalation, the DWEL is then multiplied by the percentage of total drinking water exposure for the general population).

88. *See* TIEMANN, *supra* note 72, at 5.

89. 42 U.S.C. § 300g-1(b)(2) (2018).

90. *How EPA Regulates Drinking Water Contaminants*, *supra* note 74.

91. TIEMANN, *supra* note 72, at 6.

92. *Id.*

93. *How EPA Regulates Drinking Water Contaminants*, *supra* note 72.

the SDWA attempts to minimize the burdens and costs placed on local administrators when implementing a drinking water standard.⁹⁴

B. SDWA Regulations for Emergency & Urgent Situations

1. Urgent Threat to Public Health Provision

The SDWA's "Urgent Threat" provision authorizes the EPA to promulgate an "interim NPDWR."⁹⁵ Interim NPDWRs are legally enforceable like NPDWRs, but, under this provision, the EPA does not need to decide whether the benefits of regulating the contaminant would justify the costs, nor does the EPA need to publish any sort of health risk reduction report.⁹⁶ The only criterion that the EPA needs to meet is that, after consulting with either the Secretary of Health and Human Services, the director of the Centers for Disease Control and Prevention, or the director of the National Institutes of Health, the contaminant presents an urgent threat to public health.⁹⁷ Within three years after promulgating the interim NPDWR, a full risk assessment and cost-benefit analysis should be published, and the EPA should revise the interim NPDWR to account for the full analysis.⁹⁸

2. Emergency Powers Provision

The SDWA also contains an "Emergency Powers" provision that grants the EPA "broad authority" to address public health endangerments.⁹⁹ The Emergency Powers provision authorizes the EPA Administrator to declare a state of emergency, issue orders, and commence civil actions if: (1) a contaminant that is likely to enter a public drinking water system poses an imminent and substantial threat to public health; and (2) state and local officials have not taken adequate action.¹⁰⁰ This provision is intended to prevent or eliminate potentially dangerous situations that may jeopardize human health.¹⁰¹

94. See Bronwen O'Herin, Note, *The Costs of Clean Water in Hoosick Falls: Private Civil Litigation and the Regulation of Drinking Water Quality*, 93 N.Y.U. L.R. 1743, 1748-49 (2018).

94. 42 U.S.C. § 300g-1(b)(D) (2018).

96. See TIEMANN, *supra* note 72, at 6.

97. 42 U.S.C. § 300g-1(b)(D).

98. *Id.*

99. 42 U.S.C. § 300i(a); see also U.S. ENVTL. PROT. AGENCY, UPDATED GUIDANCE ON INVOKING EMERGENCY AUTHORITY UNDER SECTION 1431 OF THE SAFE DRINKING WATER ACT 3 (2018).

100. 42 U.S.C. § 300i(a).

101. UPDATED GUIDANCE ON INVOKING EMERGENCY AUTHORITY, *supra* note 99, at 4.

IV. ANALYSIS

A. Current Actions by the EPA to Regulate PFAS

The SDWA protects public drinking water systems and provides the statutory authority to regulate PFAS contamination in drinking water. However, the EPA has not used its authority under the SDWA to set a legally enforceable limit for PFAS.¹⁰² PFAS were listed on the third UCMR, published in 2012.¹⁰³ The EPA collected data to evaluate the need for an MCL for PFAS, but have not set an enforceable MCL.¹⁰⁴ Instead, in 2016, the EPA established a health advisory for PFAS, setting an MCL at 70 parts per trillion.¹⁰⁵ Health advisories serve as “informal technical guidance” to assist federal, state, and local officials in determining what level of PFAS may occur without adverse health effects.¹⁰⁶ A health advisory is “non-enforceable and non-regulatory,” meaning the limit set under the health advisory is merely informative, and public drinking water systems do not have to comply.¹⁰⁷ Even the EPA states that a health advisory only offers a “margin of protection . . . from adverse health effects.”¹⁰⁸

The PFAS health advisory is not the only “non-regulatory” measure the EPA initiated regarding PFAS. In 2006, the EPA started a PFOA Stewardship Program in which they invited the eight leading manufacturers of PFOA to voluntarily agree to: (1) commit to reducing all forms of PFOA emissions by 95%; and (2) to work toward eliminating PFOA from emissions and products by 2015¹⁰⁹. While all eight participating companies cooperated and met the PFOA Stewardship Program goals, there is no regulation to prevent other manufacturing companies from producing these chemicals. Moreover, the prior impacts these eight companies had on the environment

102. See generally *PFOA, PFOS, and Other PFASs: EPA Actions to Address PFAS*, <https://www.epa.gov/pfas/epa-actions-address-pfas> (last visited Dec. 19, 2019) (explaining the steps EPA has taken to address PFAS, which does not include setting a legally enforceable limit on the chemical).

103. *PFAS Laws and Regulations*, *supra* note 21.

104. *Monitoring Unregulated Drinking Water Contaminants: Third Unregulated Contaminant Monitoring Rule*, <https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule> (last visited Dec. 19, 2019).

105. ENVTL. PROT. AGENCY, FACT SHEET: PFOA & PFOS DRINKING WATER HEALTH ADVISORIES 2 (2016).

106. *Id.*

107. *Drinking Water Health Advisories for PFOA and PFOS*, <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos> (last visited Dec. 19, 2019).

108. *Id.*

109. *Fact Sheet: 2010/2015 PFOA Stewardship Program*, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program> (last visited Dec. 19, 2019).

remain a problem because their byproducts biodegrade very slowly and continue to pollute the air, soil, and water.¹¹⁰

Recently, the EPA released a PFAS Action Plan detailing short- and long-term goals for how it plans to address PFAS in the future.¹¹¹ The Action Plan considers public input developed during the PFAS National Leadership Summit in 2018.¹¹² The key actions relevant to PFAS drinking water contamination include: (1) the EPA moving forward with setting a legally enforceable MCL through the process described in the SDWA;¹¹³ (2) establishing a nationwide drinking water monitoring program to help improve the frequency and concentration of PFAS in drinking water; and (3) expanding scientific research to improve detection, measurement, and a general understanding of PFAS in the environment and drinking water.¹¹⁴

It is a definite improvement that the EPA declared its future intentions for a PFAS NPDWR, but intentions do not definitively lead to action, and there is no guarantee that the EPA will follow through with this decision.¹¹⁵ The EPA has been discussing regulating PFAS since 2009, and if it were to follow through with its intentions, PFAS would be the first contaminant in nearly 20 years to have an enforceable NPDWR set under the SDWA.¹¹⁶

B. Current Actions by Congress to Push for PFAS Regulation

Various congressional leaders have expressed concern over how the EPA is handling PFAS, especially in response to the EPA's PFAS Action Plan.¹¹⁷ Some members of Congress have expressed that the Action Plan merely "kicks the can even further down the road."¹¹⁸ In a press release responding

110. See Jon Hurdle & Susan Phillips, *EPA Says It Plans To Limit Toxic PFAS Chemicals, But Not Soon Enough For Critics* (Feb. 14, 2019), <https://www.npr.org/2019/02/14/694660716/epa-says-it-will-regulate-toxic-pfas-chemicals-but-not-soon-enough-for-critics> (explaining how PFAS chemicals have been used in manufacturing for decades).

111. EPA'S PFAS ACTION PLAN: SUMMARY OF KEY ACTIONS, https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_factsheet_021319_final_508compliant.pdf.

112. *PFAS National Leadership Summit and Engagement*, <https://www.epa.gov/pfas/pfas-national-leadership-summit-and-engagement> (last visited Dec. 19, 2019).

113. EPA'S PFAS ACTION PLAN, *supra* note 111.

114. *Id.* (describing how other actions include strengthening cleanup strategies by listing PFAS as hazardous substances under CERCLA, considering adding PFAS to the Toxic Release Inventory, strengthening enforcement tools to address PFAS in the environment, and establishing a risk communication toolbox to help ensure consistent messages to the public).

115. See EPA 2019 ACTION PLAN, *supra* note 20, at 22 (describing that there is additional information needed to determine if an NPDWR will be set at all).

116. Laurel Schaidler, *EPA's Plan to Regulate Chemical Contaminants in Drinking Water is a Drop in the Bucket* (Mar. 2, 2019), <https://www.pennlive.com/opinion/2019/03/epas-plan-to-regulate-chemical-contaminants-in-drinking-water-is-a-drop-in-the-bucket-opinion.html>.

117. See Hurdle & Phillips, *supra* note 110.

118. See *id.* (quoting U.S. Senator Tom Carper).

to the Action Plan, two Congressmen, Dan Kildee and Brian Fitzpatrick issued a joint statement: “PFAS chemical contamination is a public health crisis and the EPA must act with an urgency that matches the scale of the problem . . . [F]urther aggressive and impactful actions must be taken by the Administration to protect Americans’ communities.”¹¹⁹

On January 23, 2019, members of Congress announced they were forming a bipartisan task force in the House of Representatives to address the “urgent” PFAS contamination crisis in drinking water.¹²⁰ The task force’s mission was to “collectively put pressure” on the EPA to designate PFAS as a hazardous substance and set a national drinking water standard.¹²¹

However, the EPA already contains the power to act swiftly and address the PFAS contamination crisis if it effectively utilizes the SDWA.¹²² The SDWA contains two provisions—the Urgent Threats to Public Health and the Emergency Powers provisions, respectively—that allow the EPA to pass regulations quickly in response to urgent public health problems.¹²³

V. SOLUTIONS

A. *The EPA Needs to Exercise its Authority to Regulate PFAS Under the SDWA*

PFAS meet the standards for creating a legally-enforceable NPDWR under the SDWA because they meet the criteria set out in the statute

119. Press Release, Congressman Dan Kildee, Joint Statement by Reps. Kildee and Fitzpatrick, Co-Chairs of Congressional PFAS Task Force, on EPA’s PFAS Plan, (Feb. 14, 2019), <https://dankildee.house.gov/media/press-releases/joint-statement-reps-kildee-and-fitzpatrick-co-chairs-congressional-pfas-task>.

120. Monica Amarello, *PFAS Contamination Transcends Partisan Politics*, ENVTL. WORKING GRP. (Jan. 23, 2019), <https://www.ewg.org/release/bipartisan-congressional-task-force-take-growing-pfas-contamination-crisis>.

121. Justine McDaniel & Laura McCrystal, *Members of Congress Will ‘Put Pressure on the EPA’ to Address PFAS-Contaminated Water*, PHILA. INQUIRER (Jan. 23, 2019), <http://www.philly.com/news/pfoa-pfos-pfas-water-contamination-congress-task-force-bucks-montgomery-20190123.html>. Another example of how Congress is responding to the lack of EPA action are the bills being introduced in Congress. These bills have not passed: The “PFAS Registry Act,” aimed at establishing a registry of any veterans or members of the armed forces who have been exposed to PFAS; “The PFAS Accountability Act” that encourages Federal agencies to enter into agreements with states to aid in the removal and remedial actions of contamination in drinking, surface and groundwater; and lastly “The PFAS Action Act,” which would require the EPA to classify all PFAS as “hazardous substances” under section 102(a) of CERCLA. *PFAS Federal Legislation*, <https://www.law.nyu.edu/centers/state-impact/press-publications/research-reports/pfas-federal-legislation> (last updated Dec. 18, 2019).

122. See 42 U.S.C. §§ 300g-1(b)(1)(D), 300i(a) (2018) (outlining the EPA’s power to regulate contaminants in water).

123. *Id.*

explained above.¹²⁴ First, they are contaminants with proven adverse health effects, linked to several illnesses.¹²⁵ PFAS are also suspected of being carcinogenic; strong evidence links a higher prevalence of cancer to residents living in areas with increased contamination.¹²⁶

Second, the discovery of PFAS in public water systems is widespread at a level that raises a public health concern.¹²⁷ An estimated 16 million Americans in 33 states have PFAS in their drinking water, and there are 172 known PFAS contamination sites in 40 states.¹²⁸ The extent of exposure to the contaminant the population is already facing, coupled with the known adverse health effects related to PFAS, paint a frightening public health crisis.¹²⁹

Lastly, regulating PFAS presents a meaningful opportunity for a health risk reduction.¹³⁰ For instance, the ATSDR suggested in their toxicity study that the level of PFOA in drinking water should be 11 parts per trillion and seven parts per trillion for PFOS.¹³¹ The non-enforceable national health advisory guideline currently sets the drinking level for PFAS at 70 parts per trillion in drinking water, which is much higher than the ATSDR.¹³² The part per trillion in drinking water at most contaminated sites exceeds the EPA's health advisory.¹³³ For instance, the levels tested around 126 military installations have all revealed that the water level tested higher than the EPA's health advisory, both in drinking water wells and in groundwater sources.¹³⁴ Additionally, blood tests around contamination sites also reveal a higher part per trillion of PFAS.¹³⁵ The blood of one particular resident living near a contamination site revealed a level of 3.2 million parts per trillion of PFAS, compared to the national average at 4,300 parts per trillion for PFOA and 1,100 parts per trillion for PFAS.¹³⁶

124. 42 U.S.C. § 300g-1(b)(1)(i-iii); *see also supra* Part III.

125. TOXICOLOGICAL PROFILE FOR PERFLUOROALKYLS, *supra* note 42, at 25.

126. *See* Kary & Cannon, *supra* note 62; Thurlow et al., *supra* note 52.

127. *See* Walker, *supra* note 9.

128. *Id.*

129. *See* Kary & Cannon, *supra* note 62; Thurlow, et al., *supra* note 52; Walker, *supra* note 9.

130. *See* 42 U.S.C. § 300g-1(b)(1)(A)(i-iii) (2018).

131. *See* Garret Ellison, *Blocked Report Drops PFAS Safety Level into Single Digits*, https://www.mlive.com/news/2018/06/atsdr_pfas_toxprofiles_study.html (last updated Jan. 30, 2019) (describing proposed ATSDR minimum risk levels).

132. *Drinking Water Health Advisories for PFOA and PFOS*, *supra* note 107.

133. Tara Copp, *DoD: At Least 126 Bases Report Water Contaminants Linked to Cancer, Congenital Disabilities* (Apr. 26, 2018), <https://www.militarytimes.com/news/your-military/2018/04/26/dod-126-bases-report-water-contaminants-harmful-to-infant-development-tied-to-cancers/>.

134. *Id.*

135. *See* Walker, *supra* note 9.

136. *Id.*

In the absence of federal action, many states have set local enforceable safe drinking water levels of PFAS at much lower parts per trillion, ranging anywhere from 14 in New Jersey to 35 in Minnesota.¹³⁷ Passing a federal NPDWR is necessary. The SDWA provides examples of specific remedies already in place, such as monetary damages and providing alternative sources of drinking water.¹³⁸

PFAS travel efficiently through water, thus, having a NPDWR that is enforceable at a federal level also offers a consistent level of protection to all people.¹³⁹ For example, people may live near neighboring states with different MCLs or no MCLs at all.¹⁴⁰ A state like New Jersey, with the strictest MCL, shares water supplies with a neighboring state, Delaware, which has no MCL set for PFAS.¹⁴¹ Regulating PFAS under the SDWA would mean removing PFAS off of the CCL and setting an MCL at a level that represents scientific recommendations (an approach that some states are already taking), or even at the level the ATSDR suggests.¹⁴²

The 2019 EPA Action Plan includes a proposal to set an NPDWR for PFAS by the end of 2019.¹⁴³ This proposal initiates a full rulemaking procedure that allows time for the public to comment and contribute information for the EPA's consideration.¹⁴⁴ Presumably, if the EPA were to follow through with what is laid out in the Action Plan and issue a NPDWR by December 31, 2019, at least another 36 more months may pass before the regulation is enforceable.¹⁴⁵ However, to protect public health, the SDWA's "Urgent Threat" provision and "Emergency Power" provision can immediately set an MCL to regulate PFAS without a public comment proceeding.¹⁴⁶

137. Kray & Wightman, *supra* note 5, at 37.

138. TIEMANN, *supra* note 72, at 19.

139. *See* Walker, *supra* note 9.

140. *Id.*

141. *Id.*

142. *See* Kary & Cannon, *supra* note 62; Kray & Wightman, *supra* note 5, at 39.

143. EPA 2019 ACTION PLAN, *supra* note 20, at 3.

144. *Id.*

145. 42 U.S.C. § 300g-1(b)(1)(E) (2018) (providing a 36-month time-frame that takes into account the 24 months allowed for notice and comment once a rule is published in the Federal Registrar and an additional 18 months for a final rule to be published; *see* David Schultz, *EPA Throws Cold Water on Hopes for Bold Nonstick Chemical Plan* (Feb. 14, 2019), <https://news.bloombergenvironment.com/environment-and-energy/epa-throws-cold-water-on-hopes-for-bold-nonstick-chemical-plan> (explaining that the decision to promulgate a rulemaking is only the beginning of the third step in a long four-step process to establish a new regulation).

146. H.R. REP. 104-632, pt. 1, at 9-10 (1996) (detailing that the legislative history of the 1996 Amendment's speak to Congress's intent to amend the SDWA so it focuses on protecting the public from contaminants in drinking water that pose the most significant health risks).

B. Utilizing the Urgent Threat Provision

The Urgent Threat provision provides the most efficient means for the EPA to pass a NPDWR because it allows the EPA to regulate immediately.¹⁴⁷ The Urgent Threat provision's location within the SDWA, under the "national drinking water regulations" section, the same section detailing the routine process for passing an NPDWR, reflects its purpose to provide an alternative to the standard regulation process.¹⁴⁸ The Urgent Threat provision should be used when a contaminant's presence in drinking water deserves immediate attention, allowing the EPA to bypass the formal process of passing a NPDWR without conducting a full rulemaking procedure or a risk reduction or health analysis.¹⁴⁹ In the 2019 Action Plan, the EPA affirmed its commitment to following the SDWA process for evaluating drinking water standards for PFAS and going through formal rulemaking.¹⁵⁰ The EPA's decision to partake in formal rulemaking process means it is not adequately using the Urgent Threat provision to protect public health.

The legislative history shows that the congressional intent behind including the Urgent Threat provision within the SDWA was to grant the EPA power to pass interim drinking water regulations quickly.¹⁵¹ The only determination the EPA makes before using the Urgent Threat provision is whether there is an urgent threat.¹⁵² There is no clear definition for what constitutes an urgent threat, but the legislative history reveals that it should require immediate or near-immediate action, likely under "exceptional circumstances."¹⁵³

There is little evidence on when, if ever, the EPA has used the Urgent Threat provision. Therefore, it is hard to determine what sort of situations might trigger the provision.¹⁵⁴ Nevertheless, it seems clear in the case of PFAS that some immediate action may be required, and that these may be exceptional circumstances.¹⁵⁵ The chemical qualities of PFAS that make

147. 42 U.S.C. § 300g-1.

148. *Id.*

149. *See* H.R. REP. 104-632, pt. 1, at 33 (1996) (describing the purpose of the Urgent Threat provision).

150. EPA 2019 ACTION PLAN, *supra* note 20, at 21.

151. H.R. REP. 93-1185 pt. 2, at 17 (1974).

152. 42 U.S.C. §§ 300g-1(b)(1)(D).

153. H.R. REP. NO. 104-632, pt. 1, at 33 (1996).

154. *See, e.g.*, National Interim Primary Drinking Water Regulations; Control of Trihalomethanes in Drinking Water, 44 Fed. Reg. 68,624 (Nov. 29, 1979) (codified at 40 C.F.R. pt. 141) (describing an instance in which the EPA set an MCL for a group of chemicals associated with chlorine and referred to the regulation as an "interim" measure, but not promulgating it under the Urgent Threat provision, demonstrating the uncertainty of what triggers the provision).

155. *See* H.R. REP. NO. 104-632, pt. 1, at 33-34 (1996) (showing that the legislative history referred to both "interim" and "revised" regulations but did not have an "Urgent Threat provision,"

them so persistent and pervasive in the environment create a unique public health problem that should qualify as “exceptional.”¹⁵⁶ Traces of PFAS are found not only in the blood of nearly all Americans but also in the blood of almost every person in the world.¹⁵⁷

Although the widespread impact of PFAS favors prompt and immediate action, over-regulating does have the potential to impose significant long-term costs on states, industries, and local agencies working to enforce a NPDWR.¹⁵⁸ Nevertheless, waiting for conclusive research and scientific evidence that overwhelmingly points to PFAS causing adverse health effects should not be at the expense of the people and communities who are experiencing health problems now.¹⁵⁹ The Urgent Threat provision maintains that once the EPA passes an interim NPDWR, further research and health assessments must be published within three years.¹⁶⁰ The EPA can use this three-year time period provided for by the SDWA to gather additional research to reach a better understanding of the “sources, pathways, [and] populations exposed” to PFAS.¹⁶¹ If, during this period, the EPA determines that the research suggests setting the interim NPDWR at an even lower level—such as zero parts per trillion—it is allowed to issue revisions.¹⁶²

A “regulate first, conduct research later” approach minimizes the harms of PFAS while still allowing for scientific evidence and research to inform the interim NPDWR.¹⁶³ Further, this research is eventually published in the Federal Register and available for stakeholders to comment.¹⁶⁴

C. Utilizing the Emergency Powers Provision

The Urgent Threat provision is the ideal route for the EPA to pass a PFAS regulation quickly. However, because little is known about the scope of the Urgent Threat provision, the SDWA also provides another means of circumventing a rulemaking process and creating quick regulations through

which was added during the 1996 Amendments. Instead the house report stated that “[t]his section amends Section 1412(b) for the purpose of addressing urgent public health threats.”)

156. See e.g., Kray & Wightman, *supra* note 5, at 36 (discussing the fire-, oil-, and water-resistant properties of PFAS).

157. See Rhea Suh, *We Can't Assume Our Water is Safe to Drink. But We Can Fix It* (March 2019), <https://www.nationalgeographic.com/magazine/2019/03/drinking-water-safety-in-united-sates-can-be-fixed/> (“Toxic chemicals such as those in Teflon are so ubiquitous they’re found in the blood of 98 percent of people in the United States and nearly every country in the world.”).

158. See Thurlow et al., *supra* note 52.

159. Lipton, *supra* note 65.

160. 42 U.S.C. § 300g-1(b)(1)(D) (2018).

161. *Id.*; EPA 2019 ACTION PLAN, *supra* note 20, at 10.

162. 42 U.S.C. § 300g-1(b)(1)(D).

163. H.R. REP. NO. 104-632, pt. 1, at 33–34 (1996).

164. 42 U.S.C. § 300g-1(b)(1)(D).

the Emergency Powers provision.¹⁶⁵ The Emergency Powers provision states that the EPA has “broad” authority to “deal promptly and effectively” in situations that affect public health.¹⁶⁶ For the EPA to utilize the Emergency Powers provision, there must be (1) information that a contaminant is, or is likely, to enter into the water system, and may present “imminent and substantial” adverse health effects, and (2) a failure of state and local authorities to protect human health.¹⁶⁷

To fit the criteria of the Emergency Powers provision, a contaminant does not need to have a NPDWR already, be on the CCL or the UCMR, or even have a health advisory.¹⁶⁸ Imminent endangerments do not have to be instantaneous, and in fact, the actual harm may not be present for years.¹⁶⁹ For instance, carcinogens count as warranting emergency action even though their health effects are latent.¹⁷⁰ Although, the harm should not be so remote that the risk of harm is speculative.¹⁷¹ Additionally, “[n]o actual injury need ever occur.”¹⁷²

In its 2019 Action Plan, the EPA insisted that the Emergency Powers provision cannot be used to set a NPDWR.¹⁷³ Perhaps the EPA is referring to the fact that the statutory text of the Emergency Powers provision requires that it only be utilized when other provisions within the SDWA cannot be used to adequately protect public health.¹⁷⁴ As mentioned above, the EPA has failed to utilize an adequate means of protecting public health through the Urgent Threat provision.

The assertion by the EPA that the Emergency Powers provision would not apply to setting a NPDWR seems to go against Congress’s intent in creating broad emergency powers.¹⁷⁵ The legislative history and congressional intent in enacting the Emergency Powers provision reflect Congress’s desire to vest the EPA with an effective means of handling public health emergencies.¹⁷⁶ The provision states that the EPA administrator can take actions that he deems necessary and types of remedial actions may

165. *Id.* § 300i(a).

166. H.R. REP. NO. 93-1185, at 31 (1974).

167. 42 U.S.C. § 300i(a).

168. UPDATED GUIDANCE ON INVOKING EMERGENCY AUTHORITY, *supra* note 99, at 7.

169. *Id.* at 8.

170. *Id.* at 9.

171. *Id.* at 10.

172. *Id.* at 8.

173. EPA 2019 ACTION PLAN, *supra* note 20, at 15.

174. H.R. REP. NO. 93-1185, pt. 2, at 35–36 (1974).

175. H.R. REP. NO. 93-1185, pt. 2, at 35 (1974).

176. Eric Moorman, “A Greater Sense of Urgency”: EPA’s Emergency Authority Under the SDWA and Lessons from Flint Michigan, 47 ENVTL. LAW REPORTER 10786, 10786–87 (2017) (“Congress clearly intended EPA to use its emergency powers to respond promptly to potential threats to public drinking water sources long before such threats have materialized.”).

include but are not limited to issuing orders, monitoring of regulated or unregulated potential or identified contaminants, and controlling the source of contaminants.¹⁷⁷ There is no reason why an NPDWR for PFAS could not fit into these broad types of remedies.

In October 2015, during the Flint water crisis, many community groups and the National Resource Defense Council urged the EPA to use its Emergency Powers provision.¹⁷⁸ During this time the EPA had the knowledge it needed to meet the criteria of enacting an emergency order under the Emergency Powers provision.¹⁷⁹ The EPA knew that lead was present in the water system and that at least four homes had lead in their drinking water above action level.¹⁸⁰ Almost a year later the EPA finally issued an emergency order.¹⁸¹ The EPA has acknowledged that its delay in utilizing its authority under the Emergency Powers provision contributed to serious harm in Flint.¹⁸² The Office of Inspector General recognized the EPA's failure to use the Emergency Powers in Flint and urged the EPA to revise its Emergency Powers guidelines, stating that "[t]he EPA must be better prepared and able to timely intercede in public health emergencies like that which occurred in Flint."¹⁸³

While the drinking water crisis in Flint is different from the PFAS crisis in terms of the widespread pollution of PFAS¹⁸⁴ and the concrete harms stemming from lead in drinking water,¹⁸⁵ the EPA's delayed actions in Flint inform why the EPA must act swiftly to mitigate the harms of PFAS. The EPA is aware of how severe and widespread the PFAS crisis is and still is reluctant to act with that knowledge.¹⁸⁶ The EPA's decision not to take urgent action in the PFAS crisis goes against the primary purpose of the Emergency

177. 42 U.S.C. § 300i(a) (2018); *see e.g.* UPDATED GUIDANCE ON INVOKING EMERGENCY AUTHORITY, *supra* note 99, at 14. Other examples of remedial actions include providing alternative water supplies at no cost to consumers; providing information about actual or impending emergencies; providing public notification of hazards; and commencing civil actions for injunctive relief and conducting investigations and research studies. *Id.*

178. Moorman, *supra* note 176, at 10,796.

179. U.S. ENVTL. PROT. AGENCY OFFICE OF INSPECTOR GEN., MANAGEMENT ALERT: DRINKING WATER CONTAMINATION IN FLINT, MICHIGAN, DEMONSTRATES A NEED TO CLARIFY EPA AUTHORITY TO ISSUE EMERGENCY ORDERS TO PROTECT THE PUBLIC 5 (Oct. 20, 2016).

180. *Id.*

181. Moorman, *supra* note 176, at 10,796.

182. *Id.*

183. MANAGEMENT ALERT, *supra* note 179, at 8.

184. Walker & Andrews, *supra* note 12.

185. *Ground Water and Drinking Water: Basic Information about Lead in Drinking Water*, <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water#health> (last visited Dec. 19, 2019).

186. *See* EPA 2019 ACTION PLAN, *supra* note 20, at 10 ("The EPA has heard about the many challenges communities are facing with PFAS . . . Stakeholders and decision makers have emphasized the need to accelerate the understanding of PFAS toxicity and the impacts of PFAS to ecosystems.").

Powers provision—for the EPA to act early enough to prevent hazards from materializing.¹⁸⁷ During the delay between the EPA acting in Flint nearly 100,000 Flint residents became exposed to the harmful level of lead in their drinking water.¹⁸⁸ To stop the widespread pollution of PFAS and prevent thousands more people from becoming sick, the EPA should act swiftly so as not to repeat the same mistake.

CONCLUSION

PFAS create a proven public health problem, particularly with drinking water. While the EPA stated an intention to begin a rulemaking process for PFAS, even if this process were to begin at the end of 2019, the regulation would not be promulgated for years to come. Congress has given the EPA the authority to issue quick and immediate responses and to circumvent the lengthy regulatory requirements through the Urgent Threat and Emergency Powers provisions of the SDWA. The EPA should use those provisions as Congress intended and set PFAS thresholds immediately.

187. *See generally* Moorman, *supra* note 176, at 10,786 (summarizing legislative history, internal EPA guidance, and judicial opinions to conclude that the Emergency Authority is broad and contains few definite limits).

188. *Id.* at 10,796.