



**TESTIMONY OF MAE WU**  
**SENIOR DIRECTOR, HEALTH AND FOOD**  
**NATURAL RESOURCES DEFENSE COUNCIL**  
**BEFORE THE**  
**SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE**  
**COMMITTEE ON ENERGY AND COMMERCE**  
**UNITED STATES HOUSE OF REPRESENTATIVES**  
**HEARING ENTITLED:**  
**“THERE’S SOMETHING IN THE WATER: REFORMING OUR NATION’S**  
**DRINKING WATER STANDARDS”**

**JULY 28, 2020**

Good morning Chairman Tonko, Ranking Member Shimkus, and members of the subcommittee. I am Mae Wu, Senior Director for Health and Food at the Natural Resources Defense Council. I have worked on drinking water issues for many years, including serving on the EPA’s National Drinking Water Advisory Council and on the Federal Advisory Committee for the Total Coliform Rule and Distribution System Rule revision. I appreciate the opportunity to testify today.

Last year, my friend Gary (not his real name) was rushed to the hospital in excruciating pain. He almost died because his colon had ripped open and he had become septic. Unbeknownst to him, he had ulcerative colitis, and since that terrifying day, he and his young family have been struggling with the effects of this disease. Gary went from biking 8 miles every day to barely

being able to walk around the block; he dropped 50 pounds in six weeks. He can't eat fresh tomatoes and corn and greens now – vegetable must be boiled until they're soft. Now, numerous surgeries, months away from work, and removal of his colon later, this active 48 year old can't be away from a toilet for more than a few hours at a time, can't go on camping trips with his daughter, is missing dance recitals, and he and his wife are recalibrating what the future they had planned out before will now look like. The stress on his wife – who has been juggling caring for Gary, caring for their young daughter, and managing the household – has also been a great strain.

While we don't know for sure what caused Gary's ulcerative colitis, we do know a few things. One, a massive study of tens of thousands of people in West Virginia whose water was contaminated by the toxic chemical known as PFOA,<sup>1</sup> and other scientific studies,<sup>2</sup> have shown that drinking water contaminated with toxic PFOA has been linked to ulcerative colitis. Two, independent testing of water from the utility that provides water to Gary's home showed that it contains PFOA and PFOS at levels below the Environmental Protection Agency's (EPA's) Health Advisory but above what we think is safe.<sup>3</sup> Three, PFOA and other similar chemicals called PFAS contaminate tens of millions of Americans' drinking water, and most of us aren't aware that it's in our water. Last, we know that EPA does not regulate PFOA, PFOS, or any other PFAS in tap water. Stories like Gary's have come out of West Virginia where PFOA contamination of tap water was widespread, telling of the devastating impacts of PFOA exposure and its links to ulcerative colitis, cancer of the kidneys and testicles, and many other harmful effects.<sup>4</sup>

Gary isn't just another number on a piece of paper. His and his family's ordeal is, sadly, not uncommon for victims of many different diseases. And yet, EPA has been hampered in efforts to protect the public from health harms from drinking water contamination by its reliance on quantification of benefits to justify the cost of regulating contaminants in our drinking water that

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<sup>1</sup> See, C8 Science Panel, *Probable Link Evaluation of Autoimmune Disease*, 2012, available online at [http://www.c8sciencepanel.org/pdfs/Probable\\_Link\\_C8\\_Autoimmune\\_Disease\\_30Jul2012.pdf](http://www.c8sciencepanel.org/pdfs/Probable_Link_C8_Autoimmune_Disease_30Jul2012.pdf)

<sup>2</sup> See e.g., Steenland, K., Kugathasan, S., & Barr, D. B. (2018). *PFOA and ulcerative colitis*. *Environmental Research*, 165, 317–321.

<sup>3</sup> Environmental Working Group, Appendix to report on PFAS testing report. Available at [https://static.ewg.org/reports/2020/pfas-testing-report/EWG\\_PFAS-TW\\_Appendix\\_C06.pdf?\\_ga=2.240648963.1686279475.1595533164-928578258.1591899108](https://static.ewg.org/reports/2020/pfas-testing-report/EWG_PFAS-TW_Appendix_C06.pdf?_ga=2.240648963.1686279475.1595533164-928578258.1591899108), last visited July 24, 2020.

<sup>4</sup> See e.g., Sharon Lerner, "The Teflon Toxin," *The Intercept* (August 11, 2015), <https://theintercept.com/2015/08/11/dupont-chemistry-deception/>; Robert Bilott. *Exposure: Poisoned Water, Corporate Greed, and One Lawyer's Twenty-Year Battle Against DuPont*, 2019.

can cause ulcerative colitis, kidney disease, cancer, developmental delays, and many other adverse health impacts that cost more than just the final tally on a medical bill.

## **Background**

The Safe Drinking Water Act (“SDWA”) is supposed to protect us and our tap water. But EPA’s failure to take steps to protect our drinking water over the past quarter century shines a light on the many problems with how we regulate drinking water in the U.S.

The Safe Drinking Water Act needs an upgrade.

Between 1975 and 1992, EPA set standards for about 100 contaminants in drinking water. Everything basically came to a screeching halt with the passage of the 1996 Amendments. In fact, since 1996, EPA has not gone through the SDWA’S Kafkaesque process of placing a new contaminant on the Contaminant Candidate List (“CCL”), running it through the daunting gauntlet of analyses and findings required to regulate, and setting a new drinking water standard. Indeed, while sometimes it is argued that EPA has issued a few drinking water rules since 1996, the major example—the microbial and disinfection byproducts and related rules—were statutorily mandated (and exempt from the provision allowing EPA to weaken the standard based on cost-benefit analysis<sup>5</sup>). The arsenic rule update, groundwater rule, and radon standard were also explicitly mandated by Congress. The other drinking rules EPA has issued since 1996 came as part of the statutorily mandated six-year reviews of existing standards. In sum, the statutory provisions for listing candidate unregulated contaminants on the CCL, considering, and regulating new contaminants have simply failed to work and must be fixed.<sup>6</sup>

### **A Cautionary Tale: The Non-Regulation of Perchlorate**

The winding story of the non-regulation of the chemical perchlorate highlights many of the problems with the SDWA’s standard setting provisions.

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<sup>5</sup> 42 U.S.C. §300g-1(b)(6)(C).

<sup>6</sup> 42 U.S.C. §300g-1(b).

According to a 2010 GAO report, “Perchlorate has been found in water and other media at varying levels in 45 states, as well as in the food supply, and comes from a variety of sources.”<sup>7</sup> EPA reported that approximately 4 percent of 3865 public water supplies tested—serving up to 16 million people—had detections of perchlorate at or above 4 ppb (the lowest level that was looked for) or higher.<sup>8</sup> FDA found it in well over half of food samples it analyzed, including baby foods and infant formula.<sup>9</sup> It is also in human breast milk.<sup>10</sup>

In the 1980s, perchlorate was known to be leaching from military dumpsites and other facilities into groundwater.<sup>11</sup> By the 1990s, accumulating science showed that we need to protect people from exposure to perchlorate. A component of rocket fuel and munitions, also used in fireworks and contained in some fertilizers, perchlorate can significantly interfere with fetal development, as a result of exposure to women during pregnancy, and may harm the developing brains of infants. Perchlorate can block normal thyroid hormone production, and “small differences in available thyroid hormone (and the iodine associated with it) during the first few weeks of life can have significant lifetime consequences.”<sup>12</sup>

In 1998, EPA placed perchlorate on its first Contaminant Candidate List (CCL 1) newly created by the 1996 Amendments to the SDWA. In 2000, EPA placed perchlorate on its first Unregulated Contaminant Monitoring Rule list (UCMR 1) to require drinking water systems to monitor for the contaminant between 2001 and 2003. Since then, perchlorate has appeared on subsequent Contaminant Candidate Lists from CCL 2 to CCL 3 to CCL 4.

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<sup>7</sup> GAO, *PERCHLORATE: Occurrence Is Widespread but at Varying Levels; Federal Agencies Have Taken Some Actions to Respond to and Lessen Releases*, August 2010, GAO-10-769.

<sup>8</sup> 73 Federal Register 60262, 60270 (October 10, 2008)

<sup>9</sup> Murray, CW, Egan SK, Kim H, Beru N, Bolger PM.(2008) *US Food and Drug Administration’s Total Diet Study: Dietary intake of Perchlorate and iodine*. J Exp Sci Environ Epi. 1-10.  
<http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/ChemicalContaminants/Perchlorate/ucm077615.htm>

<sup>10</sup> Dohan, O, C Portulano, C. Basquin, A Reyna-Noyra, LM Amzel, and N Carrasco. 2007. *The Na<sup>+</sup>/I<sup>-</sup> symporter (NIS) mediates electroneutral active transport of the environmental pollutant perchlorate*. PNAS 104(51):20250-20255; Kirk AB, Dyke JV, Martin CF, Dasgupta PK (2007) *Temporal patterns in perchlorate, thiocyanate, and iodide excretion in human milk*. Environ Health Perspect 115:182-186.; Pearce EN, Leung AM, Blount BC, Bazrafshan HR, He X, Pino S, Valentin-Blasini L, Braverman LE (2007) *Breast milk iodine and perchlorate concentrations in lactating Boston-area women*. J Clin Endocrinol Metab 92:1673-1677. <http://www.ncbi.nlm.nih.gov/pubmed/17311853>

<sup>11</sup> Sass, J. *U.S. Department of Defense and White House working together to avoid cleanup and liability for perchlorate pollution*. Int J Occup Environ Health. Jul-Sep 2004;10(3):330-4, 330.

<sup>12</sup> Comments of Drs. Carol Beglos, Larry Schwartz, and R. Thomas Zoeller, University of Massachusetts-Amherst, submitted November 10, 2008 to docket EPA-HQ-OW-2008-0692-1437; available at <https://www.regulations.gov/document?D=EPA-HQ-OW-2008-0692-1437>, last visited July 22, 2020.

Years of obstruction by the Department of Defense (“DOD”) and military contractors including Aerojet, Lockheed Martin, and Kerr-McGee – the largest sources of perchlorate contamination – and the Bush White House held up any real action that EPA could take to regulate perchlorate in drinking water.<sup>13</sup> In 2008, the EPA preliminarily decided not to set an enforceable drinking water standard for perchlorate in the face of DOD and defense industry pushback against the scientific evidence of health risks associated with perchlorate exposure. In response to this dangerous and disappointing announcement, the EPA Children’s Health Protection Advisory Committee raised concern about continuing to expose pregnant women and their fetuses, and lactating women to “unsafe levels of perchlorate,” and repeated its recommendation that EPA set a health-protective drinking water standard.<sup>14</sup> In 2011, the EPA reversed its preliminary decision, determining that a drinking water standard should be developed because perchlorate was found to contaminate the drinking water of between 5 million and nearly 17 million people in the U.S.

This determination started the clock to meet important statutory deadlines and set in a motion a gauntlet of assessments that EPA had to conduct. EPA was required to propose (within two years) and finalize (within 18 months) the standard. Yet, over the next five years, those deadlines came and went, and NRDC sued EPA to set a standard as required by statute. Instead of complying with a court-approved date to propose a standard by 2020, the Trump Administration has purported to revoke the 2011 finding that a drinking water standard for perchlorate is needed to protect human health. So here we remain – more than twenty years of knowing that this chemical contaminates our drinking water and that exposure to harms human health – with absolutely no federal standards to protect people from exposure to perchlorate.

We are now facing potentially the same situation with another category of toxic chemicals: per- and polyfluoroalkyl substances (“PFAS”) often referred to as “toxic forever chemicals.” EPA recently announced a preliminary decision to set drinking water standards for two specific PFAS – PFOA and PFOS. Given the agency’s track record with setting drinking water standards under

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<sup>13</sup> Sass, Jennifer *U.S. Department of Defense and White House working together to avoid cleanup and liability for perchlorate pollution* Int J Occup Environ Health . Jul-Sep 2004;10(3):330-4. doi: 10.1179/oeht.2004.10.3.330.

<sup>14</sup> Letter from Melanie Marty, chair of Children’s Health Protection Advisory Committee, to Stephen Johnson, Administrator of EPA dated Nov. 3, 2008, available <https://www.epa.gov/sites/production/files/2014-05/documents/perchlorateletter.pdf>, last visited July 24, 2020.

the 1996 Amendments to the Safe Drinking Water Act, the likelihood that it will promulgate and finalize health protective standards within the statutory deadlines is, at best, remote.

To protect public health – and to ensure that everyone has access to safe drinking water – we need to examine why we haven’t set any new standards despite mounting evidence that we need them, and what change looks like.

### **EPA Has Sought to Use the Legal Standard to Avoid Regulation**

In 1996, the Amendments to the Safe Drinking Water Act established a new standard on which regulations for drinking water contaminants could be based.

The EPA Administrator is supposed to set a drinking water standard when three elements are established:

1. The contaminant may have an adverse effect on human health;
2. The contaminant occurs (or is likely to occur) in public water systems “with a frequency and at levels of public health concern”; and
3. If, “in the sole judgment of the Administrator,” regulation of the contaminant “presents a meaningful opportunity for health risk reduction” for those served by public water systems.

Ironically, “meaningful” doesn’t have any defined meaning. It also is left to the Administrator’s “sole judgment.” EPA has regulated no new contaminants under this provision in 24 years. Even if a contaminant both has an adverse impact on human health AND occurs in our drinking water at levels of public health concern, the Administrator has to make a further determination that it would be “meaningful” to regulate the contaminant before the agency can move forward. But to protect our health, when a contaminant is showing up in drinking water and it presents potential harm to human health, the Agency must move forward with regulations. The third hurdle is unnecessary and should be eliminated.

EPA has only once made a final regulatory determination to regulate a contaminant (perchlorate) – reversing a Bush EPA preliminary decision not to regulate it. But the Trump Administration

recently purported to withdraw that decision. Basing standards on the political winds is no way to protect our drinking water.

**The Contaminant Candidate List May Have Been A Good Idea In Theory, But It Has Become A Cover To Do Nothing In Practice.**

In addition to the new standard for determining whether to regulate a drinking water contaminant, the 1996 Amendments created a process to list unregulated contaminants every five years that are known or likely to occur in public water systems and may require regulation. Then, every five years, the EPA must make a final determination about whether at least five of those unregulated contaminants ought to be regulated (or not). However, the statute does not require that any determinations must include decisions to regulate contaminants in drinking water that harm public health.

So far, EPA has published four of these lists – called Contaminant Candidate Lists (“CCL”) – the most recent list containing more than 100 candidate contaminants. And yet, EPA has not once made a final determination that a contaminant should be regulated and subsequently developed regulations for it. With such a large list, an EPA that does not want to act can simply cherry pick five contaminants (or more) that do not need regulation and check the box. In fact, since 2003, the EPA has made final determinations for 25 contaminants. In 24 cases, EPA has decided not to set any standard. For the remaining one, perchlorate, EPA made a final regulatory determination that a regulation was needed but, instead of developing a regulation, is now purporting to reverse that finding and say no rule is necessary after all.<sup>15</sup> For one contaminant, strontium, EPA preliminarily determined it would regulate, but has since deferred making a final decision. EPA has also preliminarily said no to six more and preliminarily said yes to two (PFOA and PFOS, part of the PFAS family.)

Instead of giving EPA an easy way out and not have to set new standards, adding various triggers that compel EPA to act would better protect public health. An automatic trigger could require EPA to set standards for any contaminant or class of contaminants found in water of, for example, 100,000 people in at least three states at levels above a scientifically-derived health-

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<sup>15</sup> NRDC is challenging that action in court as contrary to the law and the Consent Decree that EPA entered into with NRDC.

protective value like an EPA Health Advisory or Agency for Toxic Substances and Disease Registry (“ATSDR”) or World Health Organization toxicity value.

Perhaps a governor could be authorized to petition for a national primary drinking water regulation for a contaminant, with a presumption that EPA would establish the regulation, unless it determines that clear and convincing evidence show the contaminant doesn’t meet the statutory criteria (with de novo review). In fact, there is precedent for such a Governor petition process. The SDWA already authorizes seven governors to petition for EPA to add a contaminant to the Unregulated Contaminant Monitoring Rule list, and EPA must add the contaminant unless it determines another contaminant poses a higher health concern.<sup>16</sup> Other statutory provisions allow a single governor to petition EPA to force action.<sup>17</sup>

Similarly, citizen petitions for a regulation should be granted unless EPA finds it doesn’t meet the health impact and occurrence requirements with de novo review.<sup>18</sup> Setting a deadline by which EPA must either propose a national primary drinking water standard, and the maximum contaminant level goal and maximum contaminant level or deny the petition in either of these instances will ensure that these petitions do not get ignored, lost, or delayed.

At the same time, returning to the days of EPA moving forward with setting protective standards, an update to SDWA should require EPA to set Health Advisories for at least ten contaminants or classes of contaminants of potential high hazard every five years.

In addition, EPA should be statutorily required to regulate certain high-hazard drinking water contaminants that have languished as unregulated for far too long without action. In the previous two major SDWA Amendments, in 1986 and 1996, EPA was specifically required to regulate certain specified contaminants because of the agency’s inaction. Regrettably, that is again necessary today. Specifically, EPA should be required to promulgate, within three years, National Primary Drinking Water Regulations for key contaminants including: PFAS (setting

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<sup>16</sup> 42 USC §300j-4(a)(2)(B)(ii)

<sup>17</sup> For example, 42 U.S.C. §11023(e) (Emergency Planning and Community Right-To-Know Act) allows a governor to petition EPA to list a hazardous substance on the Toxics Release Inventory and EPA must respond within 180 days. 42 U.S.C. §6921(c) (Resource Conservation and Recovery Act) allows a governor to petition EPA to list a material as a hazardous waste, and EPA must respond in 90 days.

<sup>18</sup> 42 USC §300g-1(b)(1)(A)(i) and (ii)



maximum contaminant levels for any specific PFAS for which EPA or ATSDR have draft or final toxicity values and a treatment technique for total PFAS as a class); legionella; algal toxins including cyanotoxins; perchlorate; chromium VI; 1,2-dioxane; and strontium.

### **Urgent Threats Need To Be Dealt With Urgently**

While EPA has never used this authority, the agency is authorized to act before it has completed many of these analyses if it finds there's an "urgent threat to public health." This term is undefined. If EPA uses this authority, however, the agency must go back after setting an interim standard and complete the full array of studies within three years and reevaluate the interim standard within five years once those studies are complete. The fact that this authority has never been used, despite crises such as the PFAS contamination problem affecting millions (and likely tens of millions) of Americans' tap water, or the widespread Legionella problem, makes it clear that the agency simply is unwilling or incapable of taking serious regulatory action to address new unregulated contaminants, no matter what the level of hazard.

EPA should be authorized to issue such immediate standard without a requirement to return and do a cost-benefit analysis. EPA should also be required to act if a contaminant or class of contaminants poses a hazard so serious that waiting for many years poses an imminent health threat. Governors and citizens also should be authorized to petition for such standards, with a requirement for a prompt EPA response to the petition.

### **Stick with The Feasibility Analysis and Get Rid Of Cost-Benefit**

On the rare (one time) occasion that EPA decides to move forward with a drinking water regulation, the 1996 Amendments have created a complicated and endless feedback loop that makes it nearly impossible to get a standard out – but also created many opportunities for polluters to challenge the process and prevent regulations from becoming finalized.

The statute identifies laudable definitions for how these standards ought to be set. For a contaminant, the EPA establishes a Maximum Contaminant Level Goal ("MCLG"), which reflects the level "at which no known or anticipated adverse effects on the health of persons

occur and which allows an adequate margin of safety.”<sup>19</sup> A Maximum Contaminant Level (“MCL”) is then the level that is “as close to the maximum contaminant level goal as is feasible.”<sup>20</sup> The term feasible incorporates the use of the best technology or other means available that are effective out in the field (not just in the laboratory) and taking cost into consideration.<sup>21</sup>

And yet, then the Health Risk Reduction and Cost Analysis (“HRRCA”) requirements are added onto this feasibility requirement – although cost is already taken into consideration. In fact, EPA is authorized to set a standard for a contaminant that is *weaker* than is feasible to achieve if it finds based on cost-benefit analysis that the benefits of the standard would not justify the costs.<sup>22</sup> In such a case, EPA may set the standard that is justified by the cost-benefit analysis (with certain exceptions).

One of the biggest problems with the reliance on “cost benefit analyses” in the SDWA amendments is the fact that while costs of regulation are fairly simple to identify, the monetary benefits are often obscured and undercounted.

Take for example the cost benefit analysis for perchlorate. The EPA calculated the benefits of preventing loss of IQ points based on the lower lifetime earning of someone with one point less IQ but also considered that lower IQ would mean less schooling. Of course, many qualitative impacts of lower IQ are not included. There are impacts on a family or the entire community dealing with children with lower IQ. There are costs associated with extra educational supports needed for these children. There are impacts on these children’s and families’ quality of life associated with the lower lifetime earnings.

In addition, EPA’s analysis of benefits failed to consider many of the non-quantified benefits that are likely to accrue from a stringent MCL for perchlorate, including many health benefits for children such as reduced likelihood of Attention Deficit and Hyperactivity Disorder and autism. The agency failed to consider the consumer willingness to pay for better drinking water. And

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<sup>19</sup> 42 USC §300g-1(b)(4)(A)

<sup>20</sup> 42 USC §300g-1(b)(4)(B)

<sup>21</sup> 42 USC §300g-1(b)(4)(D)

<sup>22</sup> 42 USC §300g-1(b)(6)(A)

EPA acknowledged that it did not calculate the co-benefits of reducing nitrates and other contaminants when treating for perchlorate.

On the other hand, the costs associated with regulation are readily obtainable and quantifiable. Consequently, EPA's decision to purportedly withdraw its determination to regulate perchlorate is apparently in part based on the cost of regulation (which EPA calculates as between \$9.5M to \$17M) seeming to outweigh the benefits (\$0.4 M to \$6.6M).<sup>23</sup> Even though EPA acknowledged the significant limitations in its benefits calculation and its failure to quantify or monetize innumerable benefits, it relied on those quantifiable amounts to state that the benefits of the regulation do not justify the potential costs.

Looking forward to the PFOA and PFOS regulatory process, there are similar concerns. As EPA embarks on development of a primary drinking water regulation for PFOA and PFOS, how will EPA calculate the benefits of preventing ulcerative colitis (one adverse health effect of PFOA and PFOS)? EPA won't be able to calculate how much it would be worth to prevent other people from struggling with what my friend Gary is going through right now. EPA can't calculate the monetary value of being unable to walk without pain because of being on steroid medication for 18 years instead of getting surgery. The agency won't quantify the value of a twenty-year-old being able to finish college without delay and be able to have a normal social life, nor the value of avoiding a parent having to watch their eight-year-old child undergo multiple surgeries. The difficulty in quantifying these intangibles means the benefit of preventing these diseases remain undercounted. And we risk either having no regulation of these contaminants or potentially ineffectively weak standards. Either way, public health suffers, and polluters can continue to harm us with impunity.

### **Who Warrants Protection? Vulnerable Populations Are Left Unprotected.**

One group that is particularly hurt by the focus on cost benefit analysis are vulnerable populations – those groups of people who are particularly harmed by drinking water contaminants. Congress meant for EPA to consider these populations. “The language in this bill

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<sup>23</sup> These figures are included in EPA's perchlorate proposal for standards ranging from 18 ppb to 90 ppb, using a 3 percent discount rate. See 84 Fed. Reg. 30524, 30555, Table XII-14 (June 26, 2019).

requires that EPA drinking water standards be set at levels that take into account the special vulnerability of our children, our infants, pregnant women, our elderly, the chronically ill, and other groups that are at substantially higher risk than the average healthy adult.”<sup>24</sup>

The SDWA requires the MCLG to be set at a level that allows “adequate margin of safety.”<sup>25</sup> An adequate margin of safety must protect both the general population and the vulnerable subpopulations that Congress identified in 1996. EPA needs more explicit instructions to not only *consider* but to *protect* vulnerable subpopulations in setting its standards – and to ensure that it sets standards that are as stringent as feasible to protect pregnant women, infants, children and other susceptible populations.

### **The Whack-A-Mole Approach Doesn’t Work**

Per- and polyfluoroalkyl substances (PFAS) encompass more than 7,000 chemical cousins that are used in our everyday products and have been found to contaminate drinking water all over the country. More than 2000 locations in 49 states have known or suspected PFAS contamination.<sup>26</sup> We know that at least 6 million Americans’ drinking water systems have detected just two PFAS (PFOA and PFOS) at levels above EPA’s Health Advisory<sup>27</sup>, and more comprehensive testing in many states is demonstrating that this is a gross underestimate of the extent of the problem.

A broad range of adverse health outcomes have been linked to PFAS exposure, including kidney and testicular cancer, elevated cholesterol, liver disease, decreased fertility, thyroid problems, changes in hormone functioning, changes in the immune system, ulcerative colitis, and adverse developmental effects. Often referred to as “toxic forever chemicals” because they do not break down (or do so very slowly under natural conditions), PFAS are persistent and quickly move and accumulate throughout the environment.

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<sup>24</sup> 42 U.S.C. § 300g-1(b)(3)(C)(i)(V); 142 Cong. Rec. 21,472–73 (1996)

<sup>25</sup> 42 U.S.C. § 300g-1(b)(4)(A)

<sup>26</sup> Environmental Working Group, *PFAS Contamination in the U.S.* [https://www.ewg.org/interactive-maps/pfas\\_contamination/](https://www.ewg.org/interactive-maps/pfas_contamination/).

<sup>27</sup> Hu XC, Andrews DQ, Lindstrom AB, et al. *Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants.* *Environ Sci Technol Lett.* 2016;3(10):344-350.

As noted earlier, EPA recently made a preliminary regulatory determination to set drinking water standards for two PFAS: PFOA and PFOS. These two are the most well-studied of the PFAS, and they have been linked to adverse health impacts, including ulcerative colitis, kidney and testicular cancer, and many others.<sup>28</sup> These legacy PFAS are considered “long chain” PFAS. After the recent phase-out of by major U.S. producers<sup>29</sup> of PFOA and PFOS, the manufacturers turned to structurally similar replacements, including smaller versions of these legacy chemicals known as “short chain” PFAS. Though billed as safer alternatives, evidence is growing that short-chain PFAS are associated with similar adverse health effects as the long-chain, legacy PFAS that they have replaced. Of further concern, they, too, are persistent in the environment, more mobile, and more difficult to remove from drinking water. They can bioaccumulate in humans, animals and plants, and levels of these chemicals are quickly increasing in the environment.

So just focusing on PFOA and PFOS will not control the widespread exposure to PFAS. Going one by one (or even two by two) in the face of thousands of similarly behaving contaminants means that we are centuries away from seeing comprehensive protections on our drinking water.

EPA must regulate classes of contaminants like PFAS— that are structurally similar, behave similarly, or can be treated with the same technology. EPA has done this in the past, for polychlorinated biphenyls (“PCBs”) and for small classes of disinfection byproducts, but the agency has shown no appetite or inclination to do so for other classes of contaminants. Regulating by class will provide significant efficiencies that even water systems will appreciate – rather than continuing to play whack a mole, and potentially spending millions for one treatment system only to find out that they must invest in another for separate, yet similar contaminants, as would be the case for long-chain and short-chain PFAS.

Years ago, EPA tried to implement a class-based approach to regulating drinking water contaminants. It established MCLs for the class of PCBs and for subclasses of disinfection byproducts (trihalomethanes and haloacetic acids). But EPA eventually abandoned consideration

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<sup>28</sup> See generally, Kwiatkowski, C, et al. *Scientific Basis for Managing PFAS as a Chemical Class* Environ. Sci. Technol. Lett. 2020.

<sup>29</sup> It is important to note that PFOA and PFOS are still manufactured outside of the United States. There appears to be no prohibition on importing articles containing PFOA and PFOS into our country. See e.g. U.S. Environmental Protection Agency “Fact Sheet: 2010/2015 PFOA Stewardship Program” available at <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program>, last visited July 24, 2020.

of regulating many other organic chemicals as a class because of pushback from regulated interests and the inherent difficulties with implementing such an approach under the statute. Still, the agency could and should consider establishing treatment techniques for certain key classes of contaminants, such as PFAS, that can be treated using a technology such as reverse osmosis that will reduce or eliminate levels of the entire class of compounds.

## **Conclusion**

The Safe Drinking Water Act is due for an update. Fixing the parts of the statute that have allowed EPA to avoid setting regulations for many toxic contaminants that are showing up in the water all over the country has to be a priority. EPA needs to get back into the business of protecting our drinking water.