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Regulating Drinking Water Contaminants: EPA PFAS Actions

Detections of per- and polyfluoroalkyl substances (PFAS) in drinking water supplies and uncertainty about potential health effects associated with exposure to PFAS have increased congressional attention to the U.S. Environmental Protection Agency's (EPA) efforts to address these substances in public water supplies. Over the past decade, EPA has been evaluating several PFAS under the Safe Drinking Water Act (SDWA) to determine whether national drinking water regulations may be warranted. EPA has not issued SDWA regulations for any PFAS but has taken various actions to address PFAS in drinking water.

In the 116th Congress, bills have been introduced to direct EPA to issue drinking water regulations and standards, increase monitoring and research, and take other actions to address these substances. In February 2019, EPA issued a PFAS Action Plan (EPA 823R18004), which discusses EPA's efforts to address PFAS under multiple environmental laws. This In Focus outlines the agency's PFAS-related activities using SDWA authorities, with particular focus on the process for evaluating contaminants for regulation under SDWA. (For more details, see CRS Report R45793, *PFAS and Drinking Water: Selected EPA and Congressional Actions*.)

Background

PFAS include thousands of diverse chemicals, some of which have been used for decades in an array of industrial, commercial, and U.S. military applications. The chemical characteristics of PFAS have led to the use of various PFAS for beneficial purposes (such as firefighting) and to process and manufacture numerous commercial products (e.g., stain-resistant and waterproof fabrics, nonstick cookware, and food containers). The two PFAS that have been detected in water most often are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). In 2016, EPA reported that PFOA and/or PFOS were detected in at least one public water system in 24 states. Four other PFAS were also detected in some systems. U.S. manufacturers have phased out the production and most uses of PFOA and PFOS.

SDWA provides EPA with several authorities to address unregulated contaminants in drinking water supplies and sources. As briefly discussed below, these include the authority to issue health advisories, regulate contaminants in public water supplies, and issue enforcement orders in certain emergency circumstances.

Drinking Water Health Advisories

SDWA authorizes EPA to issue health advisories for contaminants that are not regulated under the act (42 U.S.C. §300g-1(b)(1)(F)). Health advisories provide information on health effects, testing methods, and treatment techniques for unregulated contaminants of concern. They also include

nonenforceable levels to help water suppliers and others address contaminants that lack federal (or state) drinking water standards. In 2016, EPA issued Lifetime Health Advisory levels for PFOA and PFOS in drinking water at 70 parts per trillion (ppt) separately or combined. These levels are intended to protect the most sensitive population groups, with a margin of protection, over a lifetime of exposure. They replaced provisional advisory levels for short-term exposures to PFOA and PFOS that EPA had issued in 2009.

Regulating Contaminants under SDWA

SDWA authorizes EPA to regulate contaminants in water provided by public water systems and specifies a multistep process for evaluating contaminants to determine whether a national primary drinking water regulation is warranted (42 U.S.C. §300g-1). The evaluation process includes identifying contaminants of potential concern, assessing health risks, collecting occurrence data (and developing reliable analytical methods necessary to do so), and making determinations as to whether a national drinking water regulation is warranted for a contaminant.

To make a positive determination to regulate a contaminant, SDWA directs EPA to find the following: (1) a contaminant may have an adverse health effect; (2) it is known to occur or there is a substantial likelihood that it will occur in water systems at a frequency and at levels of public health concern; and (3) in the sole judgment of the Administrator, regulation of the contaminant presents a meaningful opportunity for reducing health risks. Below is an overview of each step and related EPA efforts regarding the assessment of specific PFAS.

Contaminant Selection

Every five years, EPA is required to publish a list of contaminants that are known or anticipated to occur in public water systems and may warrant regulation under the act (42 U.S.C. §300g-1(b)). In 2009, EPA placed PFOA and PFOS on the third such contaminant candidate list (CCL 3) for evaluation (74 *Federal Register* 51850). In November 2016, EPA issued CCL 4, which carried over many CCL 3 contaminants, including PFOA and PFOS, for further evaluation (81 *Federal Register* 81103).

Monitoring for Unregulated Contaminants

To generate nationwide occurrence data for unregulated contaminants, SDWA directs EPA to promulgate, every five years, an unregulated contaminant monitoring rule (UCMR) that requires water systems operators to test for no more than 30 contaminants (42 U.S.C. §300j-4). EPA generally requires monitoring by operators of all public water systems that serve more than 10,000 persons, plus a representative sample of smaller systems. (Roughly 82% of

the U.S. population is provided water from public water systems that serve more than 10,000 individuals.)

In 2012, EPA issued the UCMR 3, requiring roughly 5,000 water systems to monitor for six PFAS—including PFOA and PFOS—between January 2013 and December 2015. According to EPA, 63 water systems (1.3%) serving an estimated 5.5 million individuals detected PFOA and/or PFOS at levels above EPA’s health advisory level of 70 ppt (separately or combined). EPA did not require monitoring for any PFAS in UCMR 4, promulgated in December 2016.

Regulatory Determinations

SDWA requires EPA, every five years, to make a regulatory determination—a determination of whether or not to promulgate a national primary drinking water regulation—for at least five contaminants on the CCL.

In selecting contaminants for a regulatory determination, SDWA directs EPA to prioritize those that present the greatest health concern while considering a contaminant’s effects on subgroups that may be at greater risk of adverse health impacts from exposure to a contaminant (e.g., infants, pregnant women). SDWA directs EPA to publish a preliminary determination and seek public comment before finalizing a determination. In 2016, EPA included PFOA and PFOS on its “short list” of contaminants identified for regulatory determinations in CCL 4 (81 *Federal Register* 81103). EPA plans to propose preliminary regulatory determinations for PFOA and PFOS by the end of 2019 and to make final determinations by the end of 2020.

Developing Drinking Water Regulations

Once the Administrator determines to regulate a substance, EPA is required to propose a rule within 24 months and promulgate a national primary drinking water regulation within 18 months after the proposal. EPA may extend the deadline for up to nine months (42 U.S.C. §300g-1(b)(1)).

For each regulation, EPA is required to establish a nonenforceable maximum contaminant level goal (MCLG) at a level at which no known or anticipated adverse health effects occur, with an adequate margin of safety. For each contaminant covered by the regulation, EPA generally specifies a maximum contaminant level (MCL)—an enforceable standard applicable to public water suppliers. SDWA directs EPA to set the MCL as close to the MCLG as is “feasible” using best available technology or other means available, taking costs into consideration. SDWA requires that regulations include analytical methods and feasible treatment methods that public water systems can use to monitor for contaminants and comply with the MCL. They also include monitoring and reporting requirements (42 U.S.C. §300f(1), §300g-1).

Emergency Powers

SDWA authorizes EPA to take actions it deems necessary to abate an imminent and substantial endangerment to public health from a contaminant (regulated or unregulated) that is present in or likely to enter a public water system or an underground source of drinking water (42 U.S.C. §300i). This authority is available if state and local authorities have not acted. EPA actions may include issuing orders requiring

persons who caused or contributed to the endangerment to provide alternative water supplies or to treat contamination, among other actions. Since 2002, EPA has used this authority to require responses to PFOA and/or PFOS contamination of water supplies associated with four sites, including three Department of Defense (DOD) sites.

MCLs and Remedial Actions

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or “Superfund”), MCLs may be considered in selecting remedial actions for releases of hazardous substances, pollutants and other contaminants (42 U.S.C. §9621(d)). However, CERCLA establishes liability only for releases of hazardous substances. No PFAS has been designated as a hazardous substance.

PFAS Action Plan: Drinking Water

In addition to the actions described above, EPA’s Action Plan identifies efforts related to evaluating PFAS for potential regulation under SDWA. Among others, EPA is (1) developing new analytical test methods to support monitoring of more PFAS and at lower levels (EPA has validated test methods for 18 PFAS), (2) preparing to use new test methods to include other PFAS in the next UCMR in 2020 to assess their occurrence, and (3) expanding PFAS toxicity information and providing more information about PFAS treatment and costs.

Legislation in the 116th Congress

In the 116th Congress, numerous bills would address PFAS through various authorities and agencies, including both House and Senate versions of the National Defense Authorization Act for FY2020 (H.R. 2500 and S. 1790). Among drinking-water-related bills, H.R. 2377 and S. 1473 would direct EPA to issue an MCL for PFAS. H.R. 2800 would expand monitoring for PFAS in drinking water. Several bills (e.g., H.R. 2741, S. 611, H.R. 1417, H.R. 2533, and H.R. 2570) would authorize grants for systems and/or households to treat PFAS in drinking water.

The Senate passed a substitute amendment (modified S.Amdt. 764) to S. 1790 on June 27, 2019. As passed, the bill would address PFAS through several federal laws and agencies and includes provisions that parallel multiple introduced bills. Amending SDWA, Title LXVII, Subtitle B, would direct EPA to (1) issue MCLs for PFOA and PFOS (and potentially other PFAS) within two years of enactment, (2) require monitoring for all PFAS with validated test methods in the next UCMR, (3) issue health advisories for additional PFAS, and (4) authorize use of Drinking Water State Revolving Funds to provide grants to water systems to address PFAS and other emerging contaminants and authorize funding for this purpose. Title LXVII of S.Amdt. 764 would direct EPA to further examine health and environmental effects of PFAS, publish guidance on PFAS disposal, list certain PFAS on the Toxics Release Inventory, require manufacturers of PFAS to submit health effects and other information to EPA under the Toxic Substances Control Act, and require federal agencies to coordinate PFAS research.

Mary Tiemann, Specialist in Environmental Policy

Elena H. Humphreys, Analyst in Environmental Policy

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