Comment on the Regulatory Determination on
PFOA and PFOS under the Safe Drinking Water Act

Docket ID: EPA-HQ-OW-2019-0583

On behalf of our members and supporters, the undersigned organizations support the preliminary regulatory determination to regulate perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) under the Safe Drinking Water Act (SDWA). The Environmental Protection Agency should finalize the regulatory determination and begin the process of setting a national primary drinking water regulation (NPDWR) that protects public health, including the health of vulnerable populations, from the well-established health risks from PFAS chemicals.[1] EPA should expand the regulatory determination and the ultimate NPDWR should address the risks from more than just PFOA and PFOS. The best approach would be to make a regulatory determination and ultimately establish an NPDWR for PFAS as a class. EPA has established class-based standards for haloacetic acids, polychlorinated biphenyls (PCBs), total trihalomethanes (TTHM), and total coliform bacteria, for example. However, at a minimum, EPA should make a regulatory determination and address the risks from PFAS for which EPA or the Agency for Toxic Substances and Disease Registry (ATSDR) has established a toxicity value, PFAS that have proposed or final drinking water standards in states, and PFAS tested for and detected in public water systems or in groundwater under the UCMR3, or state, DOD, USGS or other monitoring programs.

Finalizing a positive regulatory determination is consistent with the EPA PFAS Action Plan. EPA committed to regulate PFAS under the Safe Drinking Water Act in the PFAS Action Plan stating "the EPA will make a final determination for PFOA and PFOS, and as appropriate, other PFAS and take the appropriate next regulatory steps under the SDWA. In the interim, the Agency intends to prioritize prevention and remediation programs to support local communities currently facing PFAS challenges and will exercise its SDWA authorities where necessary and appropriate."[2]

PFOA, PFOS, and other PFAS chemicals, clearly meet the statutory criteria in the Safe Drinking Water Act for a positive regulatory determination. The Safe Drinking Water Act has three factors for determinations to regulate contaminants in drinking water. EPA should regulate a contaminant if it determines that 1) the contaminant may have an adverse effect on the

[1] Any SDWA NPDWR for PFAS chemicals must protect vulnerable populations. However, because of the past actions of current EPA management and the regrettable history of implementation of the current statute as amended in 1996 (such as the perchlorate decision, for example) we are highly skeptical that a final NPDWR will be protective of vulnerable populations.

[2] Envtl. Prot. Agency, EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan, www.EPA.gov/PFAS, 23 (Feb. 2019), www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf.

health of persons; 2) the contaminant is known to occur or there is a substantial likelihood that the contaminant occurs in public water systems with a frequency and at levels of public health concern; and 3) regulation presents a meaningful opportunity for health risk reduction.[3]

The health risks of PFAS, especially PFOA and PFOS, are well-established. One of the largest epidemiological studies in history[4] found probable links between PFOA and six diseases: kidney and testicular cancer, ulcerative colitis, preeclampsia, thyroid disease and high cholesterol. PFOS exposure is also associated with toxicity to the liver, thyroid, heart, lung, and kidneys.[5] Other significant health effects associated with PFOA and PFOS exposure include reproductive and developmental harms[6] and reduced effectiveness of vaccines.[7]

An emerging body of evidence also shows that other PFAS chemicals are associated with the same or similar toxic effects.[8] The Agency for Toxic Substances and Disease Registry did a comprehensive study of 14 PFAS in 2018[9] and found several health effects associated with various PFAS, detailed in the chart below. ATSDR developed minimum risk levels for four PFAS: PFOA, PFOS, PFNA, and PFHxS. EPA has also developed draft toxicity values for GenX and PFBS[10] and is in the process of developing toxicity values for PFBA, PFHxA, PFHxS, and PFDA.[11]

[3] 42 U.S.C. § 300g-1(b)(1)(A).
[4] C8 Sci. Panel, C8 Probable Link Reports, www.C8sciencepanel.org, http://www.c8sciencepanel.org/prob_link.html (last updated Oct. 29, 2012).
[5] Zhuotong Zeng et al., Assessing the human health risks of perfluorooctane sulfonate by in vivo and in vitro studies, 126 Env't Int'l 598 (2019), https://www.sciencedirect.com/science/article/pii/S0160412018331507.
[6] Dr. Alexis Temkin, PFAS and Developmental and Reproductive Toxicity: An EWG Fact Sheet, EWG News and Analysis (Sept. 19, 2019), https://www.ewg.org/news-and-analysis/2019/09/pfas-and-developmental-and-reproductive-toxicity-ewg-fact-sheet.
[7] Dr. Tasha Stoiber, PFAS Chemicals Harm the Immune System, Decrease Response to Vaccines, New EWG Review Finds, EWG News and Analysis (June 21, 2019), https://www.ewg.org/news-and-analysis/2019/06/pfas-chemicals-harm-immune-system-decrease-response-vaccines-new-ewg
[8] Cheryl Hogue, Short-chain and long-chain PFAS show similar toxicity, US National Toxicology Program says, American Chemical Society Chemical & Engineering News (Aug. 24, 2019), https://cen.acs.org/environment/persistent-pollutants/Short-chain-long-chain-PFAS/97/i33.
[9] Agency for Toxic Substances and Disease Registry (ATDSR), Toxicological Profile for Perfluoroalkyls Draft for Public Comment, U.S. Dep't of Health and Human Servs. Pub. Health Serv. (2018), https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=1117&tid=237.
[10] Envtl. Prot. Agency, GenX and PFBS Draft Toxicity Assessments, www.EPA.gov/PFAS (2019), https://www.epa.gov/pfas/genx-and-pfbs-draft-toxicity-assessments.
[11] Envtl. Prot. Agency, Systematic Review Protocol for the Pfas IRIS Assessments, www.EPA.gov/iris (2019), https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=345065.

Summary of ATSDR's Findings on Health Effects from PFAS Exposure

	Immune e.g. decreased antibody response, decreased response to vaccines, increased risk of asthma diagnosis	**Developmental & Reproductive** e.g. pregnancy-induced hypertension/pre-eclampsia, decreased fertility, small decreases in birth weight, developmental toxicity	**Lipids** e.g. increases in serum lipids, particularly total cholesterol and low-density lipoprotein	**Liver** e.g. increases in serum enzymes and decreases in serum bilirubin levels	**Endocrine** e.g. increased risk of thyroid disease, endocrine disruption	**Body Weight** e.g. decreased body weight	**Blood** e.g. decreased red blood cell count, decreased hemoglobin and hematocrit levels
PFOA	✕	✕	✕	✕	✕	✕	✕
PFOS	✕	✕	✕	✕	✕	✕	✕
PFHxS	✕	✕		✕	✕		✕
PFNA	✕	✕	✕	✕	✕	✕	
PFDeA	✕	✕	✕	✕	✕	✕	
PFDoA	✕	✕		✕		✕	
PFUA	✕	✕		✕		✕	✕
PFHxA		✕		✕			✕
PFBA		✕		✕	✕		✕
PFBS				✕			✕

This table, prepared by the Natural Resources Defense Council, summarizes ATSDR's findings on the associations between PFAS exposure and health outcomes in human and animal studies (not an exhaustive list of health outcomes, includes both "serious" and "less serious" effects, as defined by ATSDR). Note x's in black represent PFAS for which ATSDR considers their liver effects to be specific to animals.[12]

States have also determined that there is adequate health information to propose or finalize rules limiting various kinds of PFAS in drinking water including PFOA, PFOS, GenX, PFBS, PFHpA, PFHxS, PFHxA, PFNA, and PFDA.[13]

PFAS contamination is widespread in drinking water systems. EPA collected data on the occurrence of six PFAS chemicals (PFOS, PFOA, PFNA, PFHxS, PFHpA, and PFBS) in public water systems under the Unregulated Contaminant Monitoring Rule 3.[14] Based on the data made publicly available under the UCMR 3, one analysis found that the drinking water for 6 million people exceeded EPA's lifetime health advisory for PFOA and PFOS.[15] However, a subsequent

[12] A prior version of the table is available in Anna Reade et al., Scientific and Policy Assessment for Addressing Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water, NRDC, 17 (Apr. 2019), https://www.nrdc.org/sites/default/files/media-uploads/nrdc_pfas_report.pdf.

[13] Am. Water Works Ass'n (AWWA), Per- and Polyfluoroalkyl Substances (PFAS) Summary of State Regulation to Protect Drinking Water (May 01, 2020), https://www.awwa.org/Portals/0/AWWA/ETS/Resources/SummaryStateRegulationPFASDrinkingWaterFeb2020.pdf?ver=2020-02-03-091914-153

[14] Envtl. Prot. Agency, Third Unregulated Contaminant Monitoring Rule, www.EPA.gov/dwucmr (2012), https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule.

[15] Xindi C. Hu 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, 3 Envtl. Sci. and Tech. Letters 344 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5062567/.

analysis of aggregated results from the lab that conducted most of the UCMR testing, including detections below EPA's reporting levels, found that water systems serving nearly 110 million Americans are likely impacted.[16] Contamination of ground and surface water is also widespread. The Environmental Working Group maintains and regularly updates a map with more than 1,500 sites contaminated with PFAS.[17] EWG has found that groundwater at military installations are frequently contaminated with 8 different kinds of PFAS: PFOA, PFOS, PFBS, PFHxS, PFHpA, PFHxA, PFDA, and PFNA.[18] Several states have also conducted testing or are currently testing water systems for PFAS including California,[19] Michigan,[20] New Jersey,[21] Pennsylvania,[22] Ohio,[23] Kentucky,[24] and more. These state monitoring efforts involve other PFAS in addition to PFOA and PFOS.

Regulating PFAS presents a meaningful opportunity for health risk reduction. The health risks from PFAS chemicals are well documented. Drinking water is a major exposure pathway for PFAS chemicals. Treating PFAS in drinking water presents a meaningful opportunity to reduce exposure and reduce health risk, particularly for vulnerable populations. Studies show that children face a higher risk of multiple health impacts from PFAS, including immune effects, infection, asthma, cardio-metabolic, neurodevelopmental, thyroid, renal, and puberty onset.[25]

EPA should treat PFAS as a class and adopt a treatment technique that will clean up the class of PFAS. EPA should make a regulatory determination for PFAS as a class. The 2014

[16] David Andrews, Report: Up to 110 million Americans Could Have PFAS-Contaminated Drinking Water, EWG (May 22, 2018), https://www.ewg.org/research/report-110-million-americans-could-have-pfas-contaminated-drinking-water.
[17] Envtl. Working Grp. (EWG), Mapping the PFAS Contamination Crisis: New Data Show 1,582 Sites in 49 States (May 4, 2020), https://www.ewg.org/interactive-maps/pfas_contamination/.
[18] Melanie Benesh, The Pentagon Should Address All Types of PFAS on Military Bases, EWG News and Analysis (May 26, 2020), https://www.ewg.org/news-and-analysis/2020/05/pentagon-should-address-all-types-pfas-military-bases
[19] The Cal. Water Boards, Per- and Polyfluoroalkyl Substances (PFAS), State of Cal., https://www.waterboards.ca.gov/pfas/ (last updated June 8, 2020).
[20] Mich. PFAS Action Response Team, Statewide Testing Initiative, Mich. Dept. of Env't., Great Lakes, and Energy (last visited June 9, 2020), https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_87918-464299--,00.html
[21] N.J. Dept. of Envtl. Prot., New Jersey Drinking Water Watch, NJDEP (last updated Aug. 13, 2019), https://www9.state.nj.us/DEP_WaterWatch_public/index.jsp.
[22] Pa. Dept. of Envtl. Prot., PFAS in Pennsylvania, Pa. DEP (last visited June 9, 2020), https://www.dep.pa.gov/Citizens/My-Water/drinking_water/PFAS/Pages/default.aspx.
[23] Ohio Envtl. Prot. Agency, Ohio PFAS Sampling, Ohio EPA Div. of Drinking and Ground Waters (Feb. 21, 2020), https://epa.ohio.gov/Portals/28/documents/pfas/2-21-2020-Webinar-Slides.pdf.
[24] Ky. Dept. for Envtl. Prot., Evaluation of Kentucky Community Drinking Water for Per- & Poly-Fluoroalkyl Substances, Ky. EPA, Division of Water (Nov. 18, 2019) https://eec.ky.gov/Documents%20for%20URLs/PFAS%20Drinking%20Water%20Report%20Final.pdf
[25] Kristen M. Rappazzo et al., Exposure to Perfluorinated Alkyl Substances and Health Outcomes in Children: A Systematic Review of the Epidemiologic Literature, 14(7) Int'l Journal of Envtl. Research and Pub. Health 691 (2017), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5551129/.

Helsingør[26] and 2015 Madrid[27] Statements, based upon extensive reviews of the scientific literature, provided consensus from more than 200 scientists on the potential for harm associated with the entire class of PFAS. And the departing director of the National Institute for Environmental Health Science, in testimony before the Senate Environment and Public Works Committee in March 2019, advised that "[a]pproaching PFAS as a class for assessing exposure and biological impact is the most prudent approach to protect public health."[28] The most efficient way for EPA to address the health risks from all PFAS would be to set a treatment technique that addresses PFAS as a class. The Natural Resources Defense Council has found that reverse osmosis treatment is the most efficient and cost-effective treatment technique over time for multiple PFAS.[29]

Any MCL adopted by EPA should be health protective of vulnerable populations. Should EPA elect to adopt a maximum contaminant level as a NPDWR it should ensure that any MCL set is protective not only for the general population, but also vulnerable populations like children, workers, and the elderly. To protect vulnerable populations, the MCL should be lower than EPA's 2016 lifetime health advisory of 70 parts per trillion. New Jersey, Vermont, and New Hampshire have already adopted MCLs for PFOA, PFOS, and other PFAS chemicals that take vulnerable populations into account and are much lower than 70 ppt.[30] Several other states have proposed MCLs much lower than 70 ppt as well, taking into account vulnerable populations. Leading experts have suggested that a standard of 1ppt is needed to protect public health.[31] EPA must commit to establishing the most stringent standard for PFAS that is feasible, as that term is defined at SDWA§1412(b)(4)(D).

EPA must take other steps to protect us from toxic PFAS. Getting PFAS out of drinking water is just one step that EPA must take to protect Americans from PFAS chemicals. EPA must also limit PFAS discharges into the environment by enforcing existing prohibitions on

[26] Martin Scheringera et al., Helsingør Statement on poly- and perfluorinated alkyl substances (PFASs), 114 Chemosphere, 337-339 (2014), https://www.sciencedirect.com/science/article/pii/S000456351400678X.
[27] Arlene Blum et al., The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs), 123(5) Envtl. Health Perspectives A107–A111 (2015), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4421777/.
[28] Testimony of Linda S. Birnbaum, Examining the Federal Response to the Risks Associated with Per- and Polyfluoroalkyl Substances (PFAS), Hearing Before the S. Comm. on Env't & Pub. Works, 116th Cong., 13 (Mar. 28, 2019), https://www.epw.senate.gov/public/index.cfm/hearings?Id=918A6066-C1F1-4D81-A5A0-F08BBE06D40B&Statement_id=D2255C99-7544-42CA-B9DC-0D4F11CCB964.
[29] Dr. Anna Reade et al., PFAS in Drinking Water 2019: Scientific and Policy Assessment for Addressing Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water, NRDC, __ (Apr. 12, 2019) https://www.nrdc.org/sites/default/files/media-uploads/nrdc_pfas_report.pdf.
[30] AWWA, supra note 13.
[31] See Philippe Grandjean & Esben Budtz-Jørgensen, Immunotoxicity of perfluorinated alkylates: calculation of benchmark doses based on serum concentrations in children, 12 Envtl. Health 35 (2013), https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-12-35; Sharon Lerner, Teflon Toxin Safety Level Should Be 700 Times Lower Than Current EPA Guideline, The Intercept (June 18, 2019) https://theintercept.com/2019/06/18/pfoa-pfas-teflon-epa-limit/.

unpermitted PFAS discharges under the Clean Water Act; listing PFAS as toxic pollutants under Clean Water Act section 307; establishing effluent limitations, permit limits, pretreatment standards, and sewage sludge standards for PFAS under the Clean Water Act; regulating PFAS as Hazardous Air Pollutants under the Clean Air Act; listing PFAS as hazardous waste under the Resource Conservation and Recovery Act; requiring tracking and disclosure of PFAS releases under the Emergency Planning and Community Right to Know Act; and phasing out current PFAS and stopping the pipeline of new PFAS and new uses of PFAS under the Toxic Substances Control Act. EPA should also prioritize cleanup of contaminated communities by designating PFAS as "hazardous substances" under CERCLA.

Signed,

Alaska Community Action on Toxics
Alaska PIRG
Alliance for a Healthy Tomorrow
Asbestos Disease Awareness Organization (ADAO)
Audubon Naturalist Society
Audubon Society of Rhode Island
Breast Cancer Prevention Partners
Buxmont Coalition for Safer Water
California Coastkeeper Alliance
California Product Stewardship Council
Center for Environmental Health
Center for Public Environmental Oversight
Chozen Consulting, LLC
Citizens Campaign for the Environment
Citizens for Safe Water Around Badger (CSWAB)
Clean and Healthy New York
Clean Cape Fear
Clean Haw River
Clean Production Action
Clean Water Action/Clean Water Fund
Coalition for Smarter Growth
ConnectiCOSH
Connecticut Nurses' Association
Conservation Law Foundation
Earthjustice
Environment America
Environmental Health Strategy Center
Environmental Justice Task Force-Tucson
Environmental Working Group
Fairlawn Citizens Association
Fight For Zero
Friends of the North Fork of the Shenandoah River, Inc
Green Futures
Green Science Policy Institute
HealthLink, Inc
IAFF Local F88
LDA of Illinois Kane/Kendall Chapter
League of Conservation Voters
Learning Disabilities Association of America
Learning Disabilities Association of Illinois
Learning Disabilities Association of Maine
Learning Disabilities Association of New Jersey
Learning Disabilities Association of South Carolina
Learning Disabilities Association of Tennessee
Learning Disabilities Association of Wisconsin
Massachusetts Breast Cancer Coalition
Merrimack Citizens for Clean Water
National Stewardship Action Council
Natural Resources Defense Council
NC Conservation Network
Northeastern Environmental Justice Research Collaborative
Oregon Environmental Council
PfoaProjectNY
Rockbridge Area Conservation Council
Safer Chemicals Healthy Families

Safer States
Save The Sound
SC Idle No More-SCIAC
Science and Environmental Health Network
Second Look
Social Science Environmental Health Research
Institute, Northeastern University
Southern Environmental Law Center
Testing for Pease
Toxic-Free Future
Toxics Action Center
U.S. PIRG
Union of Concerned Scientists
UPSTREAM
Vermont Conservation Voters
Vermont Public Interest Research Group
Virginia Conservation Network
Washington Parks & People
Waterkeepers Chesapeake
Women for a Healthy Environment
Women's Voices for the Earth
Wurtsmith Community RAB
Your Turnout Gear and PFOA
Zero Waste Washington