May 30, 2023

Alexis Lan
Office of Ground Water and Drinking Water, Standards and Risk Management Division
(Mail Code 4607M)
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: WQA's Comments on Docket ID No. EPA-HQ-OW-2022-0114

Dear Alexis Lan,

On behalf of the Water Quality Association (WQA), a not-for-profit trade association representing 2500 member companies in the residential, commercial, and industrial water treatment industry, we are submitting comments in reference to the EPA's proposed National Primary Drinking Water Regulation (NPDWR) Rulemaking for six PFAS chemicals. We applaud the agency's actions in researching and taking action to improve water quality across the country and hope you will utilize us as a resource in responding to PFAS contamination.

About WQA

Since its creation in 1974, WQA and its member companies have worked tirelessly to improve water quality through sustainable technologies and services. As a leader in the point-of-use (POU) and point-of-entry (POE) drinking water treatment system industry, the association operates an American National Standards Institute National Accreditation Board (ANAB) accredited testing and certification program that evaluates and certifies water filtration products to nationally accepted industry standards for contaminant removal. The association also operates a Professional Certification Program with a rigorous continued education component that qualifies a level of knowledge to enhance the application of the certified products. WQA also offers a variety of technical skills and educational resources, many of which can serve as vital tools as the EPA aims to reduce PFAS in drinking water.

WQA's Comments to the proposed-NPDWR

Navigating drinking water challenges and regulating contaminants is a complex and difficult task. Setting Maximum Contaminant Levels (MCLs) and monitoring the nation's water supply are the first steps, but as areas of contamination are identified, residents will be looking for assurance of safe water supplies. While our association will not be providing recommendations on appropriate MCLs for PFAS chemicals, we can inform you of the current feasibility of mitigation and treatment techniques in relation to the proposed NPDWR. Most of our comments will focus on the industry's current capabilities, including information on performance standards,

lab capabilities, and available treatment technologies. However, it's important to highlight a few other considerations in direct response to the proposed MCLs.

Outlined below are WQA's comments on the preliminary regulatory determination and the proposed rule. Supporting information for WQA's comments can be found in the attached analysis.

- A review of product performance data produced by WQA's accredited laboratory suggests that the POU/POE water treatment industry may already have multiple products that can reduce PFAS chemicals to near or below the proposed MCL.
    - It should be noted that these products are tested using an extremely high influent challenge level of a combined 500 ng/L PFOA and 1000 ng/L PFOS, demonstrating their ability to reduce PFAS at very high concentrations. For comparison, the EPA's cost analysis uses significantly lower influent concentrations for small water systems, 70 ng/L and 264 ng/L.[1] It's conceivable that POU/POE products could reduce to even lower levels and possibly with larger treatment capacities if tested using lower influent concentrations.

- Treatment of PFAS to the proposed levels will introduce significant new challenges for small community water systems, and POU/POE options should remain fully available for consideration as a viable treatment solution in the final rule.
    - POU Reverse Osmosis (RO) systems, as mentioned in the proposed rulemaking, are effective in reducing PFAS. However, the EPA should also indicate that other POU and POE filtration systems, such as carbon blocks, Granular Activated Carbon Matrixes (GAC), and Anion Exchange (AIX), can also treat these contaminants. Treatment technologies used on a large-scale application are generally the same as those used in POU and POE applications.

- WQA believes that the EPA's cost analysis for deploying POU RO systems (found in Table 22 of the Federal Register notice) is high, and that actual deployment would likely be more cost-effective and affordable than the table indicates. As with central treatment solutions, no model can account for all the variable conditions that could impact the treatment solution(s) of choice to meet individual water supply needs.

- The EPA has always allowed consideration of both POU and POE as a Small Systems Compliance Technology (SSCT) for all size categories. However, Table 22 suggests that this technology should be limited to communities of 3,300 or less as it says POU RO systems are "Not Applicable" for systems that serve between 3,300 and 10,000 people. This is based on an EPA assumption due to the limits of the WBS Model. WQA requests that Tables 20 and 22[2] clarify this gap by stating in the table "Data Unavailable" and

[1] *Best Available Technologies and Small System Compliance Technologies for PFAS in Drinking Water*, EPA-822-P-23-009, p. 36. *2023g*.
[2] *Per- and Polyfluoroalkyl Substances National Primary Drinking Water Regulation*, 2023, Table 20 & Table 22. *EPA-HQ-OW-2022-0114-0027*.

encourage small water systems to conduct an analysis to determine the feasibility of this technology for any project size within that range.

- There are two existing national standards for testing and certifying POU and POE water filtration systems that offer elective claims to reduce PFAS chemicals, including PFOS and PFOA, to a cumulative 20 ppt. These standards are *NSF/ANSI 53: Drinking Water Treatment Units – Health Effects* and *NSF/ANSI 58: Reverse Osmosis Drinking Water Treatment Systems.* These standards also cover claims for several other water-related contaminants and are "reasonably anticipated" to meet parameters set by the EPA's final rule on PFAS, considering all NSF/ANSI standards either meet or exceed the EPA's MCLs set for other contaminants.[3]
    - There is already an active NSF/ANSI Drinking Water Treatment Unit Joint Committee Task Group reviewing updates to both standards based on the EPA's proposed rule and health index approach.

- EPA should consider the risks of inaccurate water sample results when measuring at 4 ppt or below, considering the extensive use of PFAS in everyday products and those used under regular laboratory testing. EPA should refer to knowledgeable, experienced stakeholders on the best methods for water testing in the field and laboratory before and after treatment to help ensure results are accurate and are not compromised by cross-contamination.

***Supporting information for WQA's comment can be found in the attached analysis.*

In summary, WQA and its members are dedicated to reducing PFAS in drinking water by continuing to develop cost-effective certified POU and POE technologies. These treatment solutions are critically important to assisting small community water systems with compliance. By implementing final barrier POU and POE technologies tailored to the specific needs of a community along with other proposed solutions, the EPA and water treatment industry, in partnership, can help ensure healthier and safer drinking water for all Americans.

Thank you in advance for considering these comments, and we welcome any opportunity to meet with you to discuss these recommendations in greater detail.

Sincerely,

Jeremy Pollack

Jeremy Pollack
Director of Government Affairs
Water Quality Association
JPollack@WQA.org

[3] NSF/ANSI 53 and 58 meet or exceed EPA's maximum contaminant levels or action levels for several contaminants such as Lead, Copper, Arsenic, Nitrates, Chromium (total), and Mercury.

WQA Analysis
Proposed National Primary Drinking Water Regulation Rulemaking for PFAS
Docket ID No. EPA-HQ-OW-2022-0114

Water treatment systems, such as POU and POE, can assist with reducing PFAS in drinking water. Many households and businesses currently utilize these final barrier technologies to improve their drinking water quality. Therefore, it is vital for the EPA to incorporate and afford public water systems the flexibility to potentially deploy these water treatment systems to address their compliance obligations under any final NPDWR for PFAS.

Industry Standards

WQA recognizes that the EPA encourages using third-party certified products to ensure that these systems function as intended to remove specific contaminants of concern. WQA offers the following information to ensure the EPA is aligned with WQA on how current industry standards compare to the proposed regulatory goals.

There are currently two existing standards for testing and certifying water filtration systems that offer elective claims to reduce PFOA and PFOS in addition to other PFAS chemicals: NSF/ANSI 53: *Drinking Water Treatment Units – Health Effects* and NSF/ANSI 58*: Reverse Osmosis Drinking Water Treatment Systems.* It's important to note that the NSF/ANSI testing procedures utilize a "challenge" or influent water that meets or exceeds 95% of the concentration levels previously found in drinking water based on a dataset compiled from the UCMR 3 data and an additional dataset from the Environmental Working Group (EWG). The challenge levels currently used in the NSF/ANSI testing procedure are:

Contaminant	Influent Challenge Level (ppt)
PFOA	500
PFOS	1,000
PFHpA	40
PFHxS	300
PFBS	260
PFDA	10
PFNA	50

Supporting documentation states that the "EPA generated costs assuming [community water], systems must meet MCLs for PFOA and PFOS of 4 nanograms per liter (ng/L) each, with initial influent concentrations of 70 ng/L and 264 ng/L, respectively."[4] This Influent Challenge Level is

[4] *Best Available Technologies and Small System Compliance Technologies for PFAS in Drinking Water*, EPA-822-P-23-009, p. 36. *2023g*.

significantly less challenging than the levels used in the standards for POU/POE water treatment systems. The standards allow for testing of a mixture of the seven contaminants listed in the table above at a total PFAS challenge level of 2,160 ppt; a mixture of PFOA and PFOS at a challenge level of 1,500 ppt, or for individual claims to be made for PFHpA, PFHxS, PFNA, PFOA, and PFOS at the influent challenge levels noted in the table above. Two PFAS compounds, PFBS and PFDA, were excluded from the individual contaminant reductions because their occurrence levels in the dataset mentioned above were found to be less than their health advisory levels at that time.

It should be noted that both standards are under continuous maintenance and are expected to be updated in advance of the EPA's promulgated regulation for PFAS. However, three gaps exist between the current standards and the EPA's proposed rule, all of which will be reviewed and expected to be revised in accordance with the final rule:

1. The current NSF/ANSI standards set the maximum effluent at 20 ppt for the total PFAS claim, for PFOA and PFOS combined, and for individual claims for PFHpA and PFHxS. PFNA's maximum effluent level is set at 6 ppt.
2. The current NSF/ANSI standards do not address GenX. The selection of 20 ppt was made based on State level activity at the time, and the exclusion of GenX was decided upon by the Joint Committee due to the lack of available occurrence data, which is needed to establish a conservative challenge level, and also because the EPA shared information with the NSF Task Group indicating that they were reviewing GenX. This data is expected to be available with the release of the UCMR 5 data. The EPA should provide ample time after the publishing of that information for water systems to review and respond in addition to working with above-standard committees and other stakeholders such as WQA to adapt accordingly.
3. The current NSF/ANSI standards include requirements for the maximum levels of certain PFAS chemicals detected during material safety/extraction testing, NSF/ANSI 53 and 58 redirects to NSF/ANSI/CAN 600: Health Effects Evaluation and Criteria for Chemicals in Drinking Water. This standard is currently using the 2016 EPA Health Advisory of 70 ppt, which requires the summation of PFOA and PFOS for materials that extract these compounds. The Task Group that maintains the health effects criteria has indicated that any EPA PFAS regulations will be proposed to the Joint Committee to supersede the existing Health Advisory for material safety/extraction evaluations.

These standards are "reasonably anticipated" to meet parameters set by the EPA's final rule considering all NSF/ANSI standards either meet or exceed the EPA's MCLs set for other contaminants. Additionally, there is already an active NSF/ANSI Drinking Water Treatment Unit Joint Committee Task Group that will be reviewing updates to both standards based on the EPA's rule and health index approach. Their recommendations will be brought to the full Joint Committee for review and approval.

Furthermore, standards developed through the American National Standards Institute (ANSI) consensus-based process are established with the representation of all interested and affected stakeholders, including manufacturers, non-profits, advocacy organizations, government representatives (such as the EPA), and academia. The development process weighs scientific research and the feasibility of treatment technology in relation to potential health and environmental risks. At this time, all NSF/ANSI Standards meet or exceed established POU and POE effluent criteria at EPA-regulated levels for all drinking water health contaminants.

Lab Capabilities

WQA, like other testing and certification agencies, has a laboratory fully accredited by the American National Standards Institute's National Accreditation Board (ANAB) and Standards Council of Canada (SCC). The laboratory provides certification of products and indicates that a third-party organization has monitored the manufacturer's operations to ensure they meet guidelines for manufacturing processes and materials used. Products are tested to ensure compliance with industry standards, performance, and certification requirements. Although current industry standards test to 20 ppt for PFAS chemicals, WQA's Laboratory has been able to review existing performance testing data to 5 ppt (PFOA, HFPO-DA, PFDA, PFHpA, PFNA) and 10 ppt (PFOS, PFBS, PFHxS). WQA can currently evaluate product testing to a reporting limit of 1 ppt for PFAS, which will increase the precision in determining the POU/POE industry's ability to assist with addressing this public health issue.

Certification of products, processes, or services provides assurance that they comply with specified requirements in standards and other normative documents. In the case of certified POU/POE products, accredited Certification Bodies (CBs) develop certification schemes that include initial product testing, initial factory inspection, and compliance with the applicable health and safety product standards, including marking and labeling requirements. CBs also require annual surveillance inspections that consider the quality management system, retesting requirements, and frequency, modifications to certified products, and revisions to product standards.

Treatment Technologies: POU/POE Strategies to Reduce PFAS in Drinking Water

Treatment technologies of RO, AIX, and those that utilize carbon have all been available for contaminant reduction applications in POU and POE for decades, as they have been for larger public water system applications. The EPA requested input specifically on the use of Granular Activated Carbon Filters (GAC Filters), which is one type of POU Filter, but often the POU Filters which are used for PFAS removal use a carbon-block technology. WQA feels that a more inclusive term to describe this technology category is "POU Filter" or "POU Filtration," and all of our comments relative to this carbon technology category should be taken in that context.

The EPA only considered POU RO systems in its analysis, but a wide array of POU and POE technologies can remove PFAS chemicals. POU technologies currently used for this purpose include Filters and RO systems. POU Filters often contain activated carbon, but typically other types of media (e.g., anion exchange media) are also added to improve the removal efficacy of

PFAS. POE treatment for PFAS can be accomplished using anion-exchange systems, whole-house filtration, and whole-house RO systems.

Many of these POU and POE systems are capable of PFAS reduction, and some have been certified for PFOA and PFOS reduction to American National Standards. All should be recognized as available solutions for public water system compliance. The determination of the best solution should be made by the public water system provider. Costs and other considerations, such as influent levels, will vary widely, as with any technology solution, whether treatment is provided at the source, tap, or some combination. Proven technologies exist, and the available options should not be unreasonably restricted by regulation. WQA recommends that various methods of POU filtration and POE (e.g., Anion Exchange) options be added to Table 20 as product categories.[5] These technologies should be referred to as best available technologies (BATs) in addition to POU RO, which is already included throughout the proposed regulation.

POU and POE products also allow leveraging of multiple technologies in a solitary product. This will enable manufacturers to maximize synergies between treatment approaches, providing a more comprehensive and longer-lasting solution. This can be accomplished while maintaining a simple installation and user experience as it is being provided in a single product. One example of this would be the addition of an activated carbon post filter to an RO-based product.

As stated previously, a review of product performance data produced by WQA's accredited laboratory suggests that the POU/POE water treatment industry may already have multiple products available that can reduce PFAS chemicals to near or below the proposed MCL. Detection limits in place at the time of testing were at 5 ppt for PFOA, HFPO-DA, PFDA, PFHpA, and PFNA and 10 ppt for PFOS, PFBS, and PFHxS, respectively. The availability and efficacy of these systems are expected to increase by the enforcement date.

Cost Analysis and Small System Compliance

WQA believes that the EPA's cost analysis for deploying POU RO systems (found in Table 22 of the Federal Register notice[6]) is conservative and that actual deployment would likely be more cost-effective than the table indicates. The association appreciates that the EPA views these systems as affordable but believes there are several factors in the analysis that led to a higher cost. This includes a slightly higher average price for a POU RO system and the absence of other POU/POE technologies that are effective and could increase savings. Additionally, since these products are certified using extremely high influent challenge levels, life expectancy for these products is expected to be longer. The analysis also doesn't account for community-wide maintenance agreements or the resources a small system may already have acquired to educate the public, including personnel.

[5] *EPA-HQ-OW-2022-0114-0027, Table 20*
[6] *EPA-HQ-OW-2022-0114-0027, Table 22*

The association understands it's difficult to consider all factors in a cost analysis and that the actual cost of implementing either POU or POE solutions will vary widely from one small system to the next. For example, a small system that is currently using POU RO to treat arsenic may only have to switch out post-filter cartridges to add in PFAS removal. The cost might be negligible if this change is phased in through the current maintenance cycle. The EPA only included cost estimates for POU RO in Table 22 of the Federal Register notice, but other technologies are also capable of meeting the proposed PFAS MCLs and may be less expensive in some situations. The EPA should encourage small systems to make their own "Fit for Purpose" analysis to determine if a POU or POE solution would be cost-effective for their situation.

Moreover, under the Safe Drinking Water Act (SDWA), POU/POE water treatment systems can only be used for compliance in small water systems (10,000 people or less), although their use is contingent on state-specific guidelines. The EPA has always allowed consideration of POU and POE as a Small Systems Compliance Technology (SSCT) for all size categories served by small systems (e.g., Arsenic SSCT - 40 CFR Section 141.62(d), Radionuclides SSCT - 40 CFR Section 141.66(h), Point-of-Use or Point-of-Entry Treatment Options for Small Drinking Water Systems - EPA 815-R-06-010). WQA recommends that Tables 20 and 22 be expanded to allow small systems to consider these options for populations up to 10,000 by replacing the term "Not Applicable" with "Data Unavailable."[7] This will help clarify that small water systems should conduct their analysis to determine the feasibility of this technology for any project size within that range and allow them to choose the best solution available.

Considering ongoing issues with compliance for other contaminants and some of the complications and limitations associated with the treatment of PFAS chemicals, these water systems are more likely to utilize POU/POE going forward. According to the EPA's Safe Drinking Water Information System (SDWIS) data, between 2008 and 2018, 2720 small community water systems experienced at least one MCL violation, with a total of 31,127 MCL violations reported. Of those, 68% were very small systems providing water to less than five people, many of which were chronic violations.[8] WQA would welcome the opportunity to work with the EPA on guidance for systems that elect to use POU/POE technology.

Water Testing and Sampling

EPA should consider the risks of inaccurate water sample results when measuring at 4 ppt or below, considering the extensive use of PFAS in everyday products and those used under regular laboratory testing. EPA should refer to knowledgeable, experienced stakeholders on the best methods for water testing in the field and laboratory before and after treatment to help ensure results are accurate and are not compromised by cross-contamination.

Collecting samples for PFAS analysis requires advance planning. Specific shipping times, chilling temperatures, and other precautions must be taken when comparing testing with other

[7] *EPA-HQ-OW-2022-0114-0027, Table 20 & 22*

[8] Lane, K., Reckhow, D., Tobiason, J., & Kumpel, E. (2023). *Triple-bottom-line approach for comparing point-of-use/point-of-entry to centralized water treatment*. AWWA Water Science, e1320. https://doi.org/10.1002/aws2.1320

contaminants to receive accurate results. It is important to note that normally sample collection, handling, storage, and testing are performed under very controlled laboratory conditions. Performing the same under field conditions as is proposed to be conducted to determine water system compliance will introduce significant challenges in producing reliable data.

Furthermore, this regulation will lead to an increase in water testing and sampling for PFAS chemicals to ensure compliance. WQA has heard concerns regarding cost, laboratory capacity, and delayed results, and the association encourages the EPA to review comments from stakeholder groups that represent that industry.