American Forest & Paper Association

March 28, 2022

(Via e-mail)

Andrew Edwards
Water Quality Standards Coordinator of the Bureau of Water
S.C. Department of Health and Environmental Control
2600 Bull Street, Columbia, S.C. 29201

Re: Proposed Revisions to Section 61-68, Water Classifications and Standards, Department of Health and Environmental Control ("DHEC")

Dear Mr. Edwards:

The American Forest & Paper Association (AF&PA) appreciates the opportunity to comment on South Carolina's Department of Health and Environmental Control's proposed approach to revise its water quality standards. Our comments focus on certain policy issues associated with human health water quality criteria derivation.

AF&PA serves to advance U.S. paper and wood products manufacturers through fact-based public policy and marketplace advocacy. The forest products industry is circular by nature. AF&PA member companies make essential products from renewable and recycle resources, generate renewable bioenergy, and are committed to continuous improvement through the industry's sustainability initiative — *Better Practices, Better Planet 2030: Sustainable Products for a Sustainable Future*. The forest products industry accounts for approximately four percent of the total U.S. manufacturing GDP, manufactures nearly $300 billion in products annually and employs approximately 950,000 people. The industry meets a payroll of approximately $60 billion annually and is among the top 10 manufacturing sector employers in 45 states.

AF&PA, whose members include many South Carolina manufacturing companies, has a direct interest in South Carolina's water quality standards because those members' facilities' water permits may include limits based on the resulting standards.

I. DHEC Should Develop Human Health Water Quality Criteria Revisions Suited to the Unique Characteristics of the State's Waters

A. States Are Not Required to Adopt EPA's National HHWQC

Under Section 304 of the Clean Water Act (CWA), states have the primary responsibility to develop water quality standards, including the water quality criteria that is a key component of those standards. This is consistent with the concept of "cooperative federalism," that underlies the CWA, and the statute envisions a process by which states adopt water quality standards to address the water quality needs of its streams, lakes, and other waterbodies.

With respect to HHWQC, EPA issues national recommended HHWQC pursuant to Section 304(a) of the CWA, and states are to use these as the starting point for developing the water quality criteria in their water quality standards. However, EPA regulations (40 C.F.R. § 131.11(b)) are clear that states have three options when developing their criteria and submitting them to EPA for approval: 1) adopt the EPA national criteria; 2) modify the national criteria to reflect site-specific conditions; or, 3) develop other "scientifically defensible" criteria.

The EPA criteria are merely recommendations, they do not apply automatically, they are not binding on states, nor are they enforceable. Therefore, states are not required to adopt the national criteria or use the identical default values that EPA included in the equations to derive those national criteria. The states' criteria must protect the designated use and be based on "sound scientific rationale" (40 C.F.R. § 131.11(a)).

This provides states the opportunity to work with key stakeholders and to undertake the analysis needed to appropriately adapt national criteria to the state. Several southeastern states have deferred adopting EPA's national recommended HHWQC to undertake additional analysis.

B. State Flexibility in Adopting HHWQC

On April 4, 2019, EPA approved Idaho's HHWQC that deviated significantly from the same EPA 2015 national default criteria. In that approval, EPA reiterated and emphasized that under the CWA's foundation of cooperative federalism and EPA regulations and guidance, a state has the right and flexibility to derive human health criteria based on both sound science and policy decisions using the best available data and risk management judgments.

For example, EPA's Technical Support Document - EPA Approval of the State of Idaho's New/Revised Human Health Water Quality Criteria for Toxics and Other Water Quality Standards Provisions states:

> "The CWA and EPA's water quality regulations are structured to provide states with flexibility to adopt the criteria they believe are most appropriately protective of not only designated uses for the waterbody to which the criteria are directly applicable, but also protective of downstream use. When adopting criteria that are protective of designated uses, the federal regulations require that states have a sound scientific rationale for their decisions and, when not adopting criteria based on CWA section 304(a) guidance, criteria are based on scientifically defensible methods and/or reflect site-specific conditions. ***The regulations provide this flexibility to ensure that states can address the unique conditions and characteristics of the circumstances in their state*** and/or of the waterbody to which the criteria will apply." (Emphasis added) Pg.40.

Citing to its previous guidance, the agency states:

> "While the 2000 Human Health Methodology and the 2015 304(a) criteria provide recommended default values, it also recommends that states use the guidance to derive criteria that appropriately reflect local conditions and that states should consider developing criteria to protect highly exposed populations"

The 2000 Human Methodology[1] referenced above also articulated the discretion states may apply to HHWQC derivation:

> "Many of the components in the 2000 Human Health Methodology are an amalgam of science, science policy, and/or risk management. For example, most of the default values chosen by EPA are based on examination of scientific data and application of either science policy or risk management. This includes the default assumption of 2 liters a day of drinking water; the assumption of 70 kilograms for an adult body weight; the use of default percent lipid and particulate organic carbon/dissolved organic carbon (POC/DOC) for developing national BAFs; the default fish consumption rates for the general population and sport and subsistence anglers; and the choice of a default cancer risk level. Some decisions are more grounded in science and science policy (such as the choice of default BAFs) and others are more obviously risk management decisions (such as the determination of default fish consumption rates and cancer risk levels). Throughout the 2000 Human Health Methodology, EPA has identified the kind of decision necessary to develop defaults and what the basis for the decision was" (Pg.2-4).

Finally, EPA directly reinforces states' discretion to depart from national default criteria in their June 3, 2019 Memorandum on Policy for EPA's review and Action on Clean Water Act Submittals, where it states:

> "EPA shall not substitute its judgment for that of an authorized state or tribe or treat its CWA § 304(a) criteria and information as the only scientifically defensible method for meeting the requirements of 40 C.F.R. §§ 131.5 and 131.11" (page 3).

DHEC has the discretion to consider the costs of meeting the criteria and other social costs and benefits of their adoption, as well as other relevant factors. As it undertakes the risk management inherent in establishing its HHWQC, DHEC also should recognize the uncertainties and conservative assumptions involved in risk estimates.

C. The National HHWQC Are Unnecessarily Conservative and Based on Unrealistic Default Values

EPA's national HHWQC use very conservative default values that result in unnecessarily stringent criteria because of "compounded conservatism."[2] For example, the national HHWQC assume that every day, for 70 years, everyone drinks 2.4 liters (about 2.5 quarts) of water per day; this is more water than 90 percent of the people in the U.S. drink. The HHWQC also assume that each person is drinking water directly out of a lake or stream or other surface water — and that the water has not been filtered or treated to remove any pollutants. Additionally, the HHWQC assume that everyone is eating 22 grams of locally caught fish every day for 70 years, all of which are contaminated at the resulting criteria level and that none of the pollutants in the fish were lost due to preparation or cooking.

Compounded conservatism means that the HHWQC assume that everyone experiences these exposures and all the other default characteristics that are used to derive the national HHWQC. It is extremely unlikely that there is a significant portion of the population that experiences most or all these exposure factors, it is possible that no one experiences all these exposure factors, and it strains credulity to assume that everyone experiences all these exposure factors. Criteria developed in this way will inevitably be more conservative than stated health protection targets. Attached see AF&PA's comments on EPA's proposed national HHWQC that discuss these and other issues (Attachment A).

D. The National HHWQC Are Not Necessarily Applicable to South Carolina's Waters

As discussed above, EPA's national default exposure characteristics are extremely conservative and are not likely to reflect the population consuming water or organisms from the waters of South Carolina, or any other state for that matter. The fish consumption rate (FCR) provides a specific example of why the national default criteria are not applicable to South Carolina.

EPA's 2015 HHWQC update includes an FCR of 22.0 grams per day (g/day) (which is more fish and shellfish from inland and nearshore waters than is consumed by 90 percent of the U.S. adult population 21 years of age and older)[3]. The prior recommendations were based on a fish consumption rate of 17.5 g/day. The increase in FCRs from 17.5 to 22.0 g/d is primarily due to policy decisions such as the inclusion and exclusion of certain species and do not reflect a national trend of increasing FCRs over time.

---

1 USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). EPA-822-B-00-004. U.S. Environmental Protection Agency, Office of Water, Office of Science and Technology, Washington, DC.

2 See the comments filed by the National Council for Air and Stream Improvement (NCASI) that discuss in more detail the compounded conservatism embodied in the national HHWQC and several other issues including Fish Consumption Rate. Those comments are incorporated by reference.

3 Supra.

II. There Is a More Scientifically Advanced Way to Calculate Human Health Criteria: The Probabilistic Risk Assessment (PRA)

While the U.S. EPA has taken a deterministic approach to deriving their human health criteria recommendations, they have both endorsed and used the probabilistic approach for several years.[4] In 2014, they published a Risk Assessment Forum White Paper on PRA and their Guidelines for Human Exposure Assessment also recognizes the value of the method.[5] The traditional deterministic risk assessment approach assigns a single value from a range of possible values to each parameter in an equation that yields an HHWQC. On the other hand, PRA uses a range of values for one or more input parameters.

EPA's 2000 Methodology in Section 2.2 (Science, Science Policy, and Risk Management) indicates that:

> "An important part of risk characterization…is to make risk assessment transparent. This means that conclusions drawn from science are identified separately from policy judgements and risk management decisions, and that the use of default values or methods, as well as the use of assumptions in risk assessments, are clearly articulated." Page 2-3.

The ability of the probabilistic approach to employ the full range of values for parameters that determine HHWQC results in an output that outlines the full range of potential risk.[6] This allows for decisions about the level of protection afforded different segments of the population to be transparent, and the transparency of the distinction between science and policy is better achieved when using PRA than when using deterministic approaches.[7]

For these reasons, South Carolina's Department of Health and Environmental Control should take a probabilistic approach to deriving the HHWQC. The many benefits of this approach have been well documented by the EPA[8] and as demonstrated by the Florida Department of Environmental Protection in Draft Technical Support Document: Derivation of Human Health-Based Criteria and Risk Impact Statement (2016), the necessary inputs for key parameters are available as are the computational tools to run probabilistic analyses.

---

4 Schwartz, Jerry. "BNA Insights: Human Health Criteria, Fish Consumption Rates – More Important Policy Implications than Clean Water Rule?" Bloomberg BNA: Daily Environment Report. Issue No. 96. (2016): 2-7.

5 Supra.

6 Supra note 2.

7 Supra.

8 USEPA. 2014b. Risk Assessment Forum White Paper: Probabilistic Risk Assessment Methods and Case Studies. EPA/100/R- 14/004. Office of the Science Advisor, Risk Assessment Forum.

III. Conclusion

South Carolina's Department of Health and Environmental Control's should not adopt the national HHWQC. Instead, DHEC should take the opportunity provided under EPA regulations to develop more scientifically defensible criteria that are achievable and applicable to South Carolina's waters. DHEC also should consider the many benefits of using a probabilistic risk approach when developing all human health criteria.

Thank you for the opportunity to provide these comments. If you have any questions, please contact me at Laura_Seidman@afandpa.org.

Sincerely,

Laura Seidman
Manager, Environmental Policy
American Forest & Paper Association

Attachment

American Forest & Paper Association

August 13, 2014

(Via e-mail)

Water Docket
Environmental Protection Agency
28221T
1200 Pennsylvania Ave., N.W.
Washington D.C. 20460

Attention: Docket ID No. EPA-HQ-OW-2014-0135

Re: Updated National Recommended Water Quality Criteria for the Protection of Human Health ("Update") (79 *Fed. Reg*. 27303 (May 13, 2014))

To Whom It May Concern:

AF&PA appreciates the opportunity to comment on the above-referenced Update. AF&PA serves to advance a sustainable U.S. pulp, paper, packaging, and wood products manufacturing industry through fact-based public policy and marketplace advocacy. AF&PA member companies make products essential for everyday life from renewable and recyclable resources and are committed to continuous improvement through the industry's sustainability initiative - *Better Practices, Better Planet 2020*. The forest products industry accounts for approximately 4.5 percent of the total U.S. manufacturing GDP, manufactures approximately $200 billion in products annually, and employs nearly 900,000 men and women. The industry meets a payroll of approximately $50 billion annually and is among the top 10 manufacturing sector employers in 47 states. AF&PA members own and operate facilities required to obtain Clean Water Act (CWA) permits that would include limits derived from any final criteria adopted pursuant to the Update, and therefore have a direct interest in this action. While we appreciate EPA extending the public comment period for the Update, we believe that additional time is needed for public review and comment to address the numerous issues that are raised by the Update.

AF&PA is a member of the Federal Water Quality Coalition (FWQC) and we strongly support their comments also filed today. We would like to highlight a few of the issues raised in those comments.

General Comments

EPA has described the Update as nothing more than updating HHWQC to incorporate "the latest scientific information and current EPA policies." 79 *Fed. Reg*. 27303. However, EPA has not provided sufficient technical detail to explain how they incorporated the new science. Moreover, the agency has not adequately responded to the concerns of its own Science Advisory Board about some aspects of the criteria.

Regarding incorporating "current policies," this does not appear to be the case. As discussed below,[1] EPA has adopted several new policies in the derivation of the Update criteria.

Compounded Conservatism

EPA's choice to use a deterministic procedure to derive Human Health Water Quality Criteria (HHWQC), while continuing to select upper percentile values for nearly all of the parameters in the derivation equation is inconsistent with EPA's own documents that suggest that much less conservative approaches can provide adequate protection of public health. For example, the formula assumes that people consume water that is contaminated to the criteria level and that the exposure occurs every day at that level for 70 years. Very few, if any, people would have behaviors that represent this scenario. Also, implicit in the formula is the assumption that no loss of contaminants occurs with cooking, which again is an unrealistic assumption for many substances. These are just some of the parameters in the equation, but others are equally conservative. This extreme conservatism is "compounded" such that after 3 or 4 such parameter values are selected, virtually the whole population is protected. Adding additional extreme values for parameters does not increase health protection, but it does reduce the value of the calculated HHWQC, sometimes below the level at which they can be measured or economically achieved.

Compounding Already "Compounded Conservatism" with New Policies

As discussed above, "compounded conservatism" is inherent in the derivation of the existing HHWQC. The new criteria proposed in the Update would compound the existing "compounded conservatism" because of several agency policy choices in the Update:

- Including Fish Caught in Near Coastal Waters in the Fish Consumption Rate (FCR): Pursuant to EPA's Methodology, marine species are not included when calculating the FCR. Without sufficient justification, the Update now includes fish caught in near coastal waters in the FCR calculation.
- Relative Source Contribution (RSCs) Are Set at 0.2. RSC is used to account for non-water sources of exposure. First, we question the need for an RSC at all, and EPA's policy of assigning the burden of exposures to multiple sources of a pollutant to CWA permit holders, in light of the already conservative nature of the HHWQC derivation formula. Second, for substances without an already EPA-established RSC, EPA has frequently approved state HHWQC with an RSC of 1. The Update would change that practice and enforce the arbitraritly-establshed RSC of 0.2.
- All Fish and Shellfish are Assumed to be Caught in Local Waters and Must be Included in the Fish Consumption Rate (FCR)[2]. As indicated in the FWQC

[1] See the "Compounding Already 'Compounded Conservatism' with New Policies" section.

comments, there is no basis for this highly-conservative assumption; over 90% of seafood consumed in the U.S. is imported, and much locally-caught fish are exported.

- Using Great Lakes-Based Default Input Parameters in the BCFBAF™ Model and Limiting the Use of Regional or Site-Specific Inputs. When EPA promulgated the Great Lakes Initiative in 1995 it stressed the unique character of the Great Lakes ecosystem. By using Great-Lakes based input parameters in the BCFBAF™ Model for waters across the country, EPA is departing from its previous policy of treating the Great Lakes as unique. Further, by selecting a model limiting use of regional or site-specific inputs, EPA is changing its existing policy of using site-specific data as the preferred option for deriving Bioaccumulation Factors.

Deriving criteria on such a conservative basis may have been appropriate decades ago, when our ability to measure low levels of pollutants, identify sources of the pollutants, and understand the impacts of exposures to those pollutants was not as sophisticated as it is today. However, with our current, more advanced scientific capabilities, erring on the side of such conservatism is unwarranted and inconsistent with EPA's own risk assessment principles. It also is counterproductive, as public and private resources that could be more effectively deployed to address more pressing environmental issues are diverting to implementing and attempting to comply with unnecessarily stringent and, in some cases unattainable, criteria when the corresponding incremental health benefit is vanishingly small and perhaps non-existent.

Probabilistic Risk Assessment (PRA) Approach

We appreciate the need to occasionally update CWA criteria to incorporate new and more advanced science, as is EPA's intent with this Update. We believe that with this Update EPA has an opportunity to move beyond the compounded conservatism inherent in the deterministic approach it has used to derive criteria for many decades. A PRA approach to deriving HHWQC would begin to address compounded conservatism, link risk targets with environmental concentrations, improve transparency, and make greater use of available data.

EPA has endorsed or used a PRA approach as a general policy matter (Policy for Use of Probabilistic Analysis in Risk Assessment[3]), in the pesticides program (Initiative to Revise the Ecological Assessment Process for Pesticides[4]), and in the Superfund Program (Risk Assessment Guidance for Superfund (RAGS) Volume III - Part A: Process for Conducting Probabilistic Risk Assessment (2001))[5]. The National Research

---

[2] This new policy was announced in a "Frequently Asked Questions" document placed on EPA's website without any notice to the public or opportunity for public comment or state input before it was adopted.
[3] http://www.epa.gov/spc/2probana.htm.

[4] http://www.epa.gov/oppefed1/ecorisk/index.htm#Probabilistic.
[5] http://www.epa.gov/oswer/riskassessment/rags3adt/.

Council also recently endorsed a PRA approach (Assessing Risks to Endangered and Threatened Species from Pesticides[6]).

Finally, EPA has just released a Risk Assessment Forum White Paper on probabilistic risk assessment.[7] The White Paper identifies situations in which PRA "may be particularly useful," including situations in which "uncertainty in some aspect of the risk assessment is high, and decisions are contentious or have large resource implications," as well as situations in which "the scientific rigor and quality of the assessment is critical to the credibility of the EPA decision." The development of water quality criteria to protect human health fits well into those criteria for use of PRA, further supporting the need for the Agency to apply the PRA approach in developing these criteria.

AF&PA and other parties have supported development of a tool that would enable state agencies or EPA to develop HHWQC using a PRA approach. We appreciated having the opportunity to present the tool to EPA staff and we look forward to continuing to work with the agency as it reviews the tool to better understand it and perhaps suggest modifications. We believe that upon completion of the review and any needed modifications, EPA would be in a position to use the tool to develop PRA-based criteria that could be included in any final Update. We request that EPA also approve state HHWQC criteria that are developed using PRA techniques (assuming, of course, that the criteria are otherwise approvable).

Therefore, we recommend that EPA pursue the following course of action. First, as stated, EPA should develop new criteria using a PRA approach, using the tool discussed above. It also should address the major scientific problems raised in these comments. Once it has taken those actions, the Agency should finalize its new human health criteria methodology, issue new technical support documents (TSDs) that present the new methodology and all supporting information, and then present those TSDs for review by the Science Advisory Board (SAB) and then for public review and comment. Finally, after those actions have been taken, and a new, final methodology is in place, EPA can develop new recommended HHWQC, which should also be issued for public review and comment.

[6] http://www.nap.edu/catalog.php?record_id=18344.
[7] http://www.gpo.gov/fdsys/pkg/FR-2014-08-12/pdf/2014-19065.pdf.

Thank you for the opportunity to comment on the Update. We look forward to working with the agency as it moves forward to develop new HHWQC. If you have any questions, please contact me at (202) 463-2581 or jerry_schwartz@afandpa.org.

Sincerely,

Jerry Schwartz
Senior Director
Energy and Environmental Policy

cc: Betsy Southerland
Heidi Bethel
Betsy Behl
Elizabeth Doyle
Matt Doyle