

# Comments of Federal Water Quality Coalition on SCDHEC Proposed Updates of Water Quality Criteria

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To: Edwards, Andrew <EDWARDAJ@dhec.sc.gov>;

2 attachments (271 KB)

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Mr. Edwards: We are submitting these comments, on behalf of the Federal Water Quality Coalition, concerning the Department's proposed updates to water quality criteria. The FWQC is a group of industrial companies, municipal entities, agricultural parties, and trade associations that are directly affected, or which have members that are directly affected, by regulatory decisions made by the EPA and States under the federal Clean Water Act. The FWQC membership includes entities in the aluminum, agricultural, automobile, chemical, coke and coal chemicals, electric utility, home building, iron and steel, mining, municipal, paper, petroleum, pharmaceutical, rubber, and other sectors. Some of the FWQC members own and operate facilities that are located in South Carolina.

We understand that the Department is considering adopting the water quality criteria for protection of human health that were recently issued as guidance by USEPA. We have voiced concerns about those criteria to EPA. While some of those concerns have been addressed in the final Federal criteria, others remain outstanding. The FWQC's concerns have been set forth in the attached documents. We ask that the Department consider these issues carefully before it takes final action.

Thank you for the opportunity to submit these comments. If you have any questions, or would like any additional information regarding the issues that we are raising, just let me know.

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*Federal Water Quality Coalition*

**COMMENTS OF FEDERAL WATER QUALITY COALITION ON EPA NOTICE OF AVAILABILITY OF UPDATED NATIONAL RECOMMENDED WATER QUALITY CRITERIA FOR THE PROTECTION OF HUMAN HEALTH**

The Federal Water Quality Coalition (the “Coalition” or the “FWQC”) hereby submits the following comments on EPA’s Notice of Availability of Updated National Recommended Water Quality Criteria for the Protection of Human Health (the “Criteria Notice”). (79 Fed. Reg. 27303, May 13, 2014).

The Coalition is a group of industrial companies, municipal entities, property owners, and trade associations that are directly affected, or have members that are directly affected, by regulatory and policy decisions made pursuant to the Federal Water Pollution Control Act (the Clean Water Act). Coalition members for purposes of these comments are as follows: Alcoa, Inc., American Chemistry Council, American Coke and Coal Chemicals Institute, American Forest & Paper Association, American Iron and Steel Institute, American Petroleum Institute, Association of Idaho Cities, Auto Industry Water Quality Coalition, City of Superior (WI), Edison Electric Institute, Freeport-McMoRan Copper & Gold, Inc., General Electric Company, Hecla Mining Company, Indiana Coal Council, Kennecott Utah Copper LLC, Mid America CropLife Association, Monsanto Company, National Association of Home Builders, Orange County Sanitation District, Pharmaceutical Research and Manufacturers of America, Rayonier Corporation, Rubber Manufacturers Association, Shell, Utility Water Act Group, Western Coalition of Arid States, Western States Petroleum Association, and Weyerhaeuser Company.

FWQC member entities or their members own and operate facilities throughout this country. Those facilities operate pursuant to NPDES permits that impose control requirements with respect to wastewater discharges. Many of those permits include effluent limits based on water quality criteria developed for the protection of human health. The recommended criteria being developed by EPA will be used by many States and authorized Tribes as they adopt new or revised human health water quality standards. In turn, those standards will determine the effluent limits in permits for FWQC members. The FWQC therefore has a direct interest in the recommended criteria being developed by EPA.

The Coalition appreciates the opportunity to submit these comments. However, we are concerned that the public comment period of 90 days was much too short to allow for effective review of the background materials supporting the Criteria



Notice and development of comprehensive comments regarding the scientific issues raised by those documents. As set forth below, our initial review has identified serious scientific concerns regarding the methodology used to derive the new recommended criteria. We urge the Agency to allow additional time for public review and comment concerning the criteria, to ensure that the new criteria truly reflect sound scientific conclusions as to the levels that are necessary to protect public health.

In reviewing the Criteria Notice and the background scientific materials, the Coalition has worked with scientific experts from two organizations: ARCADIS and the National Council for Air and Stream Improvement (“NCASI”). Detailed reports from those two organizations are attached to these comments, and are incorporated by reference. Based on those two reports, and its own review of the criteria and background documents, the Coalition has identified several overall concerns regarding the criteria, as well as a series of specific problems as to particular elements of EPA’s methodology. These issues need to be addressed before the Agency finalizes any new recommended criteria.

### **GENERAL COMMENTS**

- The methodology used to develop the new criteria reflects significant changes from EPA’s own adopted Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (<http://water.epa.gov/scitech/swguidance/standards/criteria/health/methodology/index.cfm>). It is improper to develop new criteria using a methodology that differs from EPA-adopted procedures. Before adopting new criteria, EPA should propose revisions to its own methodology, so the public can comment on those methodology changes before reviewing new criteria that are developed using the new process.
- Many of the changes in the new criteria process are the result of policy changes, rather than being due to new science. This is true, for example, in how the Agency addresses marine fish in determining fish consumption rates, in the use of a single default Relative Source Contribution (RSC) value, in the use of Great Lakes-specific model parameters for waters outside of the Great Lakes Basin, and in the use of a model that limits the ability to develop site-specific solutions. These policy changes should be made transparent in a new draft methodology, which is opened to public review and comment, before criteria are developed (and implemented) that are based on the new policies.
- The record supporting the new criteria lacks sufficient technical detail to allow stakeholders to determine if many of the changes are scientifically justified.
- EPA has not addressed issues raised by its own Science Advisory Board regarding the Agency’s method for developing criteria. Those concerns should be considered, and appropriate revisions made, before new criteria are adopted using this approach.
- EPA has used a deterministic procedure, and selected upper-percentile values for nearly all of the parameters in the criteria derivation equation. This has resulted



in criteria that are far more stringent than is necessary to protect public health. Use of a probabilistic approach, which provides much more realistic estimates of risk, is feasible to use and should be seriously considered by the Agency for use in developing scientifically sound, realistic water quality criteria.

- EPA has just released a Risk Assessment Forum White Paper on probabilistic risk assessment (PRA). (<http://www.gpo.gov/fdsys/pkg/FR-2014-08-12/pdf/2014-19065.pdf>.) 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.
- A number of regulated parties, including FWQC members, have supported development of a statistical tool that will enable agencies to readily calculate water quality criteria using a PRA approach. That tool has been presented to EPA, and the FWQC supports its use. EPA should use that tool to develop PRA-based criteria, and it should allow States to use the tool as well.
- The new criteria are, in general, much more stringent than EPA’s existing recommended criteria, and are not scientifically justified. Moreover, some of the criteria are set at levels that are considerably lower than measured ambient concentrations in waterbodies. (An example is the Ohio River, where ambient levels for various organics are much greater than the new criteria: [www.orsanco.org/organics-detection-system-84](http://www.orsanco.org/organics-detection-system-84).) Use of the new numbers will result in many new impaired waters, many new total maximum daily loads (TMDLs), many new, stringent permit limits, and resulting high compliance costs for regulated facilities, with little or no public health benefit.
- EPA’s use of compounded conservative assumptions in developing the new criteria is not only improper as a scientific matter; it is also contrary to EPA’s own policy documents, which recognize that the Agency does not need to use excessively conservative input values on all equation parameters in order to yield adequately protective regulations.

### **SPECIFIC COMMENTS**

- The method used by EPA to derive fish consumption rates (FCRs) has not been adequately peer-reviewed by experts outside of the Agency, and the data and supporting documentation needed to allow an external review have not been made publicly available.
- EPA has not provided an adequate rationale for the use of its unvalidated FCR method instead of the recognized method established by the National Cancer Institute (NCI).
- In deriving FCRs, EPA has improperly factored in marine species that are not



- exposed to pollutant levels in local waters for significant periods of time.
- EPA's assumption that people drink 3 liters of water per day has no relation to the actual amounts of untreated surface water ingested by humans, and contributes to an unrealistic exposure scenario that is used to develop the criteria.
  - EPA has not adequately justified use of a Relative Source Contribution (RSC) value in its criteria equation, which inappropriately compensates for sources of the pollutant unrelated to fish and water exposure by reducing the water quality criteria levels.
  - If an RSC value is to be used, EPA's default RSC value is unnecessarily conservative and contributes to an inaccurate risk calculation. Data-based RSC values have been derived for many substances, and they are generally much higher than EPA's 20% value.
  - EPA assumes that all fish and shellfish that are consumed are caught in local waters, so that the water quality criteria for those waters must reflect high consumption of the fish and shellfish that are present. This assumption has no basis – over 90% of seafood consumed in the U.S. is imported.
  - For pollutants whose toxicity is based on developmental effects, EPA's use of adult exposure parameters (i.e., assuming lifetime exposure) in deriving criteria results in levels that are lower than the actual toxicity data justify.
  - In calculating the criteria, EPA uses fish lipid levels that are much higher than the lipid levels seen in most species present in U.S. waters. Again, this assumption contributes to unrealistically low criteria.
  - For all water quality criteria updates, the Agency should ensure that it uses the best available science. For example, the criteria updates for chloroform, 1,2-dichloroethane, and toluene all use data from dated Integrated Risk Information System (IRIS) assessments that are more than a decade old. EPA should be mindful that these dated assessments may not be the most relevant or up-to-date sources of data for the revision of these criteria. In addition, IRIS is undergoing significant reforms, especially in its Problem Formulation, Evidence Integration, and Uncertainty Assessment areas. These elements of systematic review should be acknowledged and provided for in developing water quality criteria.
  - The model and methodology used by EPA to derive bioaccumulation factors (BAFs) have substantial problems, when used to derive criteria, which bring into question the scientific basis for those criteria. Some of those problems are:
    - The model is based on the Great Lakes food web, so it overstates bioaccumulation in waters in other areas of the country.
    - The model does not account for metabolism of substances in the gut, which plays an important role in determining the extent to which those substances will actually bioaccumulate in the food web.
    - EPA has ignored cautions stated by the SAB as to whether the model used here, without further consideration of bioaccumulation, is appropriate to be used in developing criteria.
    - EPA appears to have consistently chosen high default values for the input values in its equation, resulting in a high bias in the derived BAFs (and

- correspondingly low criteria values).
- The EPA model derives estimates of bioaccumulation that are far higher than if water column and fish levels of a substance are measured directly. As a result, the new approach treats substances as bioaccumulative, needing stringent criteria, that show little or no evidence of actual bioaccumulation in the food web.
  - The model used by EPA is not conducive to recalculations using site-specific food web data, so it will be difficult to develop site-specific BAFs and criteria that more accurately reflect real-world situations. This is inconsistent with existing EPA policy, which indicates a preference for site-specific BAFs.
  - Other ways of estimating bioaccumulation are available, which EPA should evaluate to determine if they can provide more defensible estimates than the model chosen by EPA.

## **CONCLUSION**

The FWQC appreciates the opportunity to review the proposed human health criteria, and the methodology that was used to develop those criteria. In these comments and the supporting reports, we have identified major scientific and other concerns with the proposed criteria and the methodology. In addition, we are concerned that the time allowed for public comment has not been sufficient to allow for a careful review and the development of fully informed comments. Therefore, we recommend that EPA pursue the following course of action:

- First, EPA needs to develop new criteria using a probabilistic risk assessment (PRA) approach. It also needs to 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.
- After those actions have been taken, and a new, final methodology is in place, EPA can develop new recommended human health water quality criteria, which should also be issued for public review and comment.

We look forward to continuing to work with the Agency on these important issues. If there are any questions regarding the issues and recommendations contained in these comments, please feel free to contact the FWQC Coordinator, Fred Andes, at 312/214-8310 or [fandes@btlaw.com](mailto:fandes@btlaw.com).

**August 13, 2014**



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*Federal Water Quality Coalition*

March 13, 2015

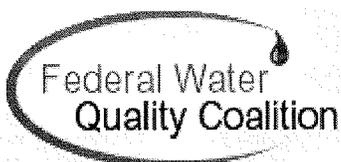
Ms. Elizabeth Southerland  
Director, Office of Science and Technology  
U.S. Environmental Protection Agency (MC4301T)  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460

Re: Meeting on Human Health Criteria

Dear Betsy:

Thank you again for meeting with the FWQC regarding our comments on the human health criteria proposal. We appreciate the fact that the Agency has been reviewing comments carefully and making some adjustments to its approach to address concerns raised, including on the drinking water intake value and the relative source contribution (RSC) value. There are several other technical and policy issues that were discussed at the meeting on which we continue to have concerns, and we are writing to mention some important aspects of those issues that we believe EPA should address before it issues final criteria.

First, on the issue of using marine fish in the fish consumption rate calculations, EPA indicated at the meeting that there is documentation in the docket to support use of marine fish. Agency staff also stated that most or all of the data used were from shrimp, not from other marine species. Since the meeting, we have reviewed the record, and based on that review, we believe that neither of those EPA statements is accurate. As to the species considered, data in the record clearly shows that many non-shrimp species were considered, including clams, crabs, halibut, herring, mackerel pompano, salmon, scallops, sea bass, squid and whitefish. In addition, we found no information in the record that supports EPA's choices as to which fish were included in the calculations. There are classifications of various species as either "marine" or "near shore," but no basis is provided for those classifications other than a notation that the assignments "were completed by a fisheries biologist." Moreover, we could not review and verify EPA's calculations, because all of the data needed to do so have not been made available. Indeed, it is this lack of publicly available data, as well as the lack of transparency in the method used for calculating the fish consumption rate, that make it impossible for the public to determine the overall effect that including certain marine



species has on the calculated fish consumption rate. For all of these reasons, we believe that EPA should take the marine fish out of the calculations – and it should make all of the data available for public review, so stakeholders can determine, and comment on, the basis for the criteria.

Second, on bioaccumulation factors (BAFs), EPA stated that it is reviewing all available, high-quality bioaccumulation-related data, including field-measured BAFs, laboratory-derived BCFs with food-chain multipliers, and modeling methods such as EPISuite. We commend the Agency for performing that review, which is similar to the review that EPA is conducting as to RSC data. However, what EPA will do with the BAF data is not the same as what it is doing with the RSC data. On RSCs, EPA will use the RSC value that is appropriate for a particular pollutant. With BAFs, on the other hand, EPA has said that it is looking for one approach that presents the “best fit,” and will use that approach for all pollutants. That approach is simply not appropriate. The best available science should be used for each pollutant, and if that means using a field BAF for one pollutant and a BCF/FCM combination for another pollutant, then that is the proper scientific decision to make. Uniformity should not be imposed if the science does not support it.

Third, EPA has now decided that people should be able to safely consume from local waters the amount of fish they would normally consume from all waters. In doing so, EPA is adopting a new policy, which makes a substantial change in approach from the process set forth in the human health criteria methodology that it adopted in 2000. The new policy effectively assumes that people residing near a waterbody will get all of their fish intake from those waters, over their entire lifetimes. We know that this assumption is false for the great majority of Americans. Over ninety percent of the seafood that we eat is imported. ([http://www.fishwatch.gov/features/top10seafoods\\_and\\_sources\\_10\\_10\\_12.html](http://www.fishwatch.gov/features/top10seafoods_and_sources_10_10_12.html) ) The new EPA policy was not included in the 2000 methodology, and we have not found it in any other EPA guidance regarding human health criteria. The first statement of this new policy is in the FAQ document that was dated January 18, 2013 and posted on EPA’s website, without any notice to the public or opportunity for comment on the change in policy. The new policy will likely make the criteria much more stringent. The new methodology should be subjected to full public review and comment before EPA develops criteria using this approach. Further, that new policy should be subject to OMB review before issuance.

This new policy, as well as other statements and communications we and others have had with the Agency regarding the human health criteria proposal, raise fundamental questions as to the basis on which the agency is deriving updates for the 94 criteria and addressing human health criteria derivation across the country. As you know, EPA and state human health criteria are derived on an extremely conservative basis. This approach results in water quality standards that are far more stringent than necessary to reach the acceptable risk levels that are defined in EPA’s own guidance. EPA’s new policy of assuming that all fish eaten are locally caught will only make the criteria even

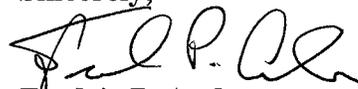
more stringent, without improving protection of public health.

To assure that the level of protection afforded by criteria is consistent with the Agency's own acceptable risk levels, we believe that EPA should use a Probabilistic Risk Assessment (PRA) approach to its criteria derivation. We are encouraged that EPA is supportive of moving in this direction eventually. However, the Agency's current position is that it will not develop PRA-based criteria at this time, because it needs to complete the criteria that are currently proposed first, and then it can consider other approaches. Given that EPA needs to reevaluate its criteria methodology before it can issue new criteria, we recommend that EPA go ahead and revise its methodology using a PRA approach, and then update the human health criteria, instead of updating the criteria now using a deterministic, overly conservative approach and then updating them again using a PRA approach.

We understand that the Agency is characterizing the new criteria as nothing more than plugging new values into the criteria derivation equation that was adopted in 2000. Again, we must emphasize that that is simply not correct. The approach that EPA is taking departs significantly from established Agency policy. If adopted here and applied more broadly across the Agency, this policy would drive extremely stringent water permit limits, waste site cleanups, and other regulatory outcomes that are impossible or extremely expensive to attain, without providing significant risk reduction or improvement in public health.

Again, we appreciate the opportunity to meet with you and your staff regarding the human health criteria. We believe that EPA's human health criteria approach raise very significant issues that need to be addressed before EPA moves forward with its criteria update. Please feel free to call me if you or your staff have any further questions or would like any additional information.

Sincerely,



Fredric P. Andes

FWQC Coordinator

Cc: Ken Kopocis, Office of Water  
Gregory Peck, Office of Water  
Jim Laity, OMB  
Kevin Bromberg, SBA

