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Draft Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity: U.S. Environmental Protection Agency Issues Pubic Review Draft

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The United States Environmental Protection Agency ("EPA") issued a Notice of Availability in the December 23rd Federal Register for a document titled:

Draft Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity ("Draft Document").

See 81 Fed. Reg. 94370.

EPA is soliciting public comments for 60 days on the *Draft Document*.

The *Draft Document* is described as a set of methods that states and tribes may use to derive field-based ecoregional ambient aquatic life criteria for ionic mixtures measured as specific conductivity ("SC"). SC is a measure of ionic concentration.

The *Draft Document* states the definition of specific SC is:

... a measure of a mixture of dissolved ions (salts) and water. As ionic concentration increases, SC increases. "Specific conductivity" indicates the measurement has been standardized to 25C. . .

Four case studies are utilized to illustrate how the federal agency believes these draft methods may be applied to develop criteria in different ecoregions with different background SC and data sets. The agency states these methods may be used to develop criteria applicable to flowing water dominated by sulfate and bicarbonate salts. The methods are stated to be based on effects observed in streams with different levels of SC and take into account natural variation and background SC and the aquatic species adapted to it.

Development of water quality criteria are a key Clean Water Act task for the states and EPA. Section 303(c) of the Clean Water Act requires that the states specify one or more uses for all waterbodies within their jurisdictions. Water quality criteria are ambient water quality conditions that are deemed protective of the designated uses established for a water body. States are required to adopt water quality criteria protective of the designated uses.

Water quality criteria generally assume three forms that include:

1. Numerical terms reflecting maximum concentration of a particular pollutant in the receiving water
2. Bioassay or biomonitoring results which reflect mortality rates of certain waterborne organisms relative to the concentrations of a particular pollutants
3. Terms narrative in nature

Water quality criteria are developed by EPA under Section 304(d) of the Clean Water Act. Further, these water quality criteria are sometimes utilized by states in establishing or advising their water quality standards. However, these water quality criteria are neither rules nor regulations. States are free to adopt and often develop their own water quality criteria. Such state derived water quality criteria must be reviewed and approved by EPA.

EPA believes the states and authorized tribes located in any region of the country may use the methods described in the *Draft Document* to develop a field-based conductivity criteria for flowing waters. However, the *Draft Document* reiterates that it provides a site assessment of ecological effects and is not a regulation.

EPA states that the *Draft Document* also describes:

1. how to derive protective field-based aquatic life criteria for specific conductivity
2. how to estimate a criterion continuous concentration for chronic exposures
3. how to estimate a maximum exposure concentration for protective of acute toxicity
4. how to assess geographic applicability and potential confounding factors
5. how to determine duration and frequency parameters

[A copy of the Federal Register Notice of Availability can be downloaded here.](#)

[Further, a link to the EPA website which contains the 215-page *Draft Document* \(along with appendices, field data sets, and external peer review reports\) can be found here.](#)