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OFFICE OF
WATER AND WATERSHEDS

January 12, 2016

Jason Pappani
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

RE: EPA's Comments on Idaho's Preliminary Draft Rule, Docket No. 58-0102-1502, Updating Idaho's Freshwater Aquatic Life Criteria for Copper

Dear Jason:

EPA appreciates the opportunity to provide comments to the Idaho Department of Environmental Quality (DEQ) on the preliminary draft rule language (October 9, 2015) for updating Idaho's aquatic life copper criteria. EPA is encouraged that DEQ is embarking on revising copper criteria at this time and supports this endeavor. The draft rule language proposes adoption of the EPA's current 304(a) criteria recommendation for freshwater acute and chronic copper which is based on the Biotic Ligand Model (BLM). Because EPA and Idaho share a common interest in promoting transparency and public participation, there are a number of points EPA would like DEQ to be aware of regarding adoption of appropriate rule language as well as the necessity to provide specificity on key considerations related to implementation of the criteria. EPA offers the following information and suggestions for your consideration.

EPA's aquatic life criteria recommendation for copper incorporates use of a BLM, which is a metal bioavailability model that uses receiving waterbody characteristics to develop water quality criteria on a site-specific basis.[1] It is important to note that the BLM requires ten input variables/parameters from the ambient water to calculate a freshwater copper criterion (temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity). Along with the criteria recommendations, EPA released supplementary materials related to using the BLM on a site-specific basis to derive criteria. The training materials that EPA released in 2007 discussed considerations such as the need for collecting sufficient data to account for spatial and temporal variability in the waterbody, properly defining waterbody segments to which the BLM-derived criteria apply, reconciling multiple model runs, and estimating input parameters when site-specific data are lacking.[2] At that time, the EPA recommended States and Tribes choose either the incremental or statewide approach to adopting copper criteria.

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[1] USEPA. 2007. *Aquatic Life Ambient Freshwater Quality Criteria - Copper*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-R-07-001. http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/copper/upload/2009_04_27_criteria_copper_2007_criteria-full.pdf.

[2] USEPA. 2007. *Copper Aquatic Life Criteria: Supplementary Training Materials*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/copper/faq_index.cfm. See "Data Requirements."

The incremental approach, as articulated in the 2007 training materials document, involves "quickly" adopting the BLM methodology into standards to allow for the availability of the latest available science in site-specific criteria development. EPA thinking, at that time, was that States and Tribes would retain their hardness-based criteria and systematically develop site-specific criteria using the BLM. EPA recommended states and tribes either adopt a paragraph into their standards noting that copper SSC be developed on a case-by-case basis using the BLM, or that they include a footnote in their criteria table "indicating that if a site-specific criterion is generated using the BLM, the BLM-derived value becomes the site-specific copper criterion (see 40 CFR §131.36(b) (2) for an example)." The incremental approach was intended to be used to enable the States or Tribes time to collect the monitoring data needed to use the BLM. The retention of hardness-based criteria was not to provide an option to use one over the other indefinitely.

EPA's thinking on adoption and implementation of the copper criteria has evolved in the years since the recommendations were first published. As EPA works through Water Effect Ratio (WER) issues in New Hampshire and Alaska, and copper regulatory language in Kansas, North Carolina, and Oregon, EPA is finding that the increased complexity of BLMs may require a more involved approach to criteria adoption than the Agency previously considered. In addition, the previous thinking of a footnote (similar to the one in the NTR allowing for site-specific criteria based on WERs) treated WERs and BLMs as the same, even though they are not interchangeable. The BLM is not just a different method for deriving site-specific copper criteria; it incorporates an expanded toxicity sensitivity distribution and increased understanding of the interaction between water chemistry and copper toxicity, representing a significant improvement over the old, 1995 recommended copper criteria.

EPA's understanding is that DEQ is proposing to adopt the copper BLM as statewide criteria. Additionally, it is EPA's understanding that data for the ten input variables/parameters to calculate freshwater copper criteria (temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity) on a waterbody specific basis in Idaho may be currently limited and or non-existent. Therefore, it is particularly important for DEQ to provide binding default values for the input parameters to be used in the absence of ambient data. These defaults will provide clarity to the regulated community, permit writers, the public, and other stakeholders as to what the appropriate criteria should be at any given location. In the near future, EPA will be publishing materials to help states determine the appropriate ecoregional defaults for the majority of the BLM's input parameters. DEQ should consider including the applicable defaults in its draft criteria table or incorporating by reference the relevant portions of EPA's upcoming technical support document.

Idaho's current draft rule provides example calculated values for acute and chronic copper criteria along with a footnote describing the model inputs that were used to derive the example values in Idaho's water quality standards table of toxic criteria. This approach may be misleading as the table values could be interpreted as the default values to use in situations where model input data are not available. Therefore, EPA suggests DEQ consider not including a comparative value in the table and, instead, replace those example values with default values for the model input parameters.

DEQ should also consider developing associated implementation methods for state-wide copper BLM based criteria, and referencing those methods in its rule. Implementation methods are critical for model-derived criteria because of the importance of a scientifically-sound approach to determine protective and representative input parameters. Development of additional materials on implementation will also assist the public and regulated community in having a more thorough understanding of DEQ's approach to model-derived criteria for copper. Implementation methods should address the key considerations such as model inputs and outputs, as well as when use of default values is appropriate. Furthermore, such methods should consider site selection and characterization of critical conditions and include defining minimum data requirements, recommendations for sampling locations, and methodology for data screening, data processing, and model output interpretation. EPA strongly recommends collection of site-specific measurements of DOC if possible because copper toxicity and BLM predictions are highly sensitive to DOC concentrations. In addition, because organisms are more sensitive to copper when corresponding DOC and pH levels are low, it is important to ensure that sufficient data are collected for the input parameters such that there is a high degree of confidence that critical conditions are adequately characterized. Colorado's Draft Copper BLM Guidance is an example implementation document that EPA suggests DEQ take into consideration when developing Idaho's implementation procedures.[3] Please note, however, that Colorado submits all copper BLM criteria to the EPA for approval because they use a site-specific criteria approach.

Given DEQ is in the midst of developing IPDES guidance as part of seeking delegation of the NPDES program, we recommend DEQ consider incorporation of BLM implementation procedures, specifically for permitting, into DEQ's IPDES guidance. In addition, BLM implementation procedures would be valuable if incorporated into DEQ's integrated surface water quality report guidance used in the state's surface water quality assessment and listing programs. EPA recommends that development of any implementation methods, whether it be incorporated in rule or elsewhere, coincide with the negotiated rulemaking process and final adoption of revised copper criteria, and ultimately be included as part of DEQ's submittal to EPA.

EPA appreciates DEQ's commitment to update Idaho's aquatic life copper criteria based on the most current science and is willing to provide assistance to DEQ on development of implementation procedures. If you have any questions or would like to discuss these comments further, please contact me at (206) 553-1834.

Sincerely,

Lisa Macchio
Water Quality Standards Coordinator

[3]See:ftp://ft.dphe.state.co.us/wqc/wqcc/TemporaryModificationsRMH_2014/ProponentsPrehearingStatements/UTSDexB.pdf