UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUL 1 9 2016

The Honorable Randy C. Huffman, Secretary
West Virginia Department
of Environmental Protection
601 57th Street, S.E.
Charleston, WV 25304

Dear Secretary Huffman:

On March 12, 2015, the West Virginia Legislature approved revisions to the State's water quality standards rule (47CSR2 Requirements Governing Water Quality Standards). Those revisions were then signed by the Governor on March 31, 2015. The West Virginia Department of Environmental Protection's (WVDEP) General Counsel certified on June 9, 2015 that the regulations were duly adopted in accordance with State law. In accordance with Section 303(c)(2)(A) of the Clean Water Act (CWA), 33 U.S.C. §1313(c)(2)(A), and 40 CFR §131.20(c), WVDEP forwarded the amended regulation to the Environmental Protection Agency, Region III, (EPA) on June 25, 2015, and we received it on July 6, 2015.

Part of that submission[1] was a copper Water Effect Ratio (WER) for the Sanitary Board of the City of Charleston (CSB) wastewater treatment plant discharge to the Kanawha River, Zone 1 (47CSR2 §7.2.d.19.2). CSB developed the copper WER of 5.62 using the EPA guidance document "Streamlined Water-Effect Ratio Procedure for Discharges of Copper" (EPA-822-R-01-005, March 2001). EPA reviewed the WER to determine if it met the CWA requirements as set forth in EPA's implementing water quality standards regulations. Those regulations provide that States must adopt water quality criteria that protect the designated use (40 CFR 131.11(a)(1)). EPA has completed its review of the WER and has determined that, based on the available information, the site specific criteria resulting from the application of the WER to West Virginia's current copper criteria found at 47CSR2 §§ 8.10.1 and 8.10.2 would not be protective of West Virginia's Category B1 designated use (i.e., propagation and maintenance of fish and other aquatic life/warm water fishery streams) in the Kanawha River. EPA is therefore disapproving the WER found at 47CSR §7.2.d.19.2 under its authority at CWA §303(c)(3) and 40 CFR §131.21(a)(2).

[1] West Virginia's June 25, 2015 submittal also included the Kanawha River Zone 1 Category A exemption removal. That revision was approved by EPA on October 2, 2015.

EPA's "Streamlined Water-Effect Ratio Procedure for Dischargers of Copper" (EPA-822-R-01-005 March 2001) offers a process that a state or discharger could use to analyze dissolved and/or total copper concentration and hardness for the calculation of the WER. The protocol includes the measurement of alkalinity, pH, dissolved organic carbon (DOC), and total suspended solids (TSS). *Streamlined Water-Effect Ratio Procedure for Dischargers of Copper* at 4-5, 11, 15. The Streamlined WER procedure explains that the analysis of alkalinity, pH, DOC and TSS data are to provide ancillary information for understanding the chemistry influencing the observed WER results and for providing a link with the Biotic Ligand Model (BLM) "which is ultimately intended to replace the WER toxicity test procedures for copper." *Id.* at 5.

In 1984, EPA first issued its recommendations for developing hardness-based metals criteria, including copper. Starting in 1994, EPA issued associated WER guidance for developing site specific metals criteria. In the years since EPA issued its hardness-based criteria recommendations, new data have become available on copper toxicity and its effects on aquatic life. Since 2007, the BLM, a metal bioavailability model that uses receiving water body characteristics to develop site-specific water quality criteria, has been EPA's national recommended freshwater aquatic life criteria for copper [Aquatic Life Ambient Freshwater Quality Criteria – Copper 2007 Revision (EPA-822-R-07-001, February 2007)]. The BLM represents the best current and available science, and EPA's scientific judgment is that application of this model is the best way to ensure that resulting criteria will be protective of aquatic life designated uses.

Because the magnitude of the CSB WER exceeded a value of 5, a level above which EPA considers needing further investigation, EPA derived criteria using the BLM (as the best available science) to evaluate the protectiveness of the CSB WER. EPA compared these BLM-derived criteria to the site-specific criteria calculated using the State's current copper criteria and the WER of 5.62. The enclosure to this letter provides the data and analysis that EPA conducted to evaluate the protectiveness of the CSB WER. Based on the available data, especially the identified levels of dissolved organic carbon at the CSB site, EPA concluded that that CSB's WER-based site-specific criteria will not be protective of the state's designated use and is therefore disapproving pursuant to CWA section 303(c). EPA's disapproval of the WER means that it is not effective for CWA purposes, including but not limited to the issuance of National Pollutant Discharge Elimination System (NPDES) permits.

Under 40 CFR §131.21(a)(2), when disapproving state-submitted new or revised water quality standards, EPA must specify the changes needed to assure compliance with the requirements of the CWA and its implementing regulations. Because the disapproved provision is an exception to West Virginia's current EPA-approved copper criteria, that current copper criteria remains effective for purposes of the CWA. EPA recommends that West Virginia delete Section 7.2.d.19.2 in its entirety.

We understand that in May 2016, WVDEP conducted a survey in the vicinity of the CSB discharge that identified a threatened and endangered mussel species, the snuffbox (*Epioblasma triquetra*). Should WVDEP choose to resubmit any future revisions to the copper criteria specific to this discharge, determining whether those criteria are protective of the aquatic life designated use at this site will need to take into consideration whether such criteria would be protective of this aquatic species.

If you have any questions regarding this action, please do not hesitate to contact me or have your staff contact Mark Ferrell, EPA's West Virginia Liaison, at (304)542-0231.

Sincerely,

Shawn M. Garvin
Regional Administrator

Enclosure

Enclosure

Decision Document of the United States Environmental Protection Agency Review of West Virginia's 2015 Submission of a Water Effect Ratio for Copper Applicable to a Segment of the Kanawha River Under Section 303(c) of the Clean Water Act

I. Introduction

In a letter dated June 25, 2015, the West Virginia Department of Environmental Protection (WVDEP) submitted new and revised water quality standards (WQS) for review under Section 303(c) of the Clean Water Act (CWA or Act). The U.S. Environmental Protection Agency (EPA) received the original signed package for review from WVDEP on July 6, 2015.

The June 25, 2015 submittal included two new or revised provisions: the Kanawha River Zone 1 Category A Exemption Removal; and Kanawha River Copper Water-Effect Ratio for the Sanitary Board of the City of Charleston, WV (CSB). EPA took its CWA Section 303(c) action on the Kanawha River Zone 1 Category A exemption removal on October 2, 2015. This action will only address the Water-Effect Ratio for the Sanitary Board of the City of Charleston.

II. Clean Water Act Requirements

Section 303 of the CWA, 33 U.S.C. § 1313, requires states to establish WQS and to submit any new or revised standards to the EPA for review and approval or disapproval. The CWA implementing regulation require states to adopt water quality criteria that protect the designated use. See 40 CFR §131.1 l(a). Such criteria must be based on a sound scientific rationale.

III. Kanawha River Copper Water-Effect Ratio for the Sanitary Board of the City of Charleston

A. Overview of Water Quality Criteria for Copper to Protect Aquatic Life Designated Uses

1. General Recommended Approach for Deriving Aquatic Life Criteria

Under EPA's CWA section 304(a) authority, EPA develops and publishes methodologies and recommended water quality criteria to protect aquatic life and human health (referred to as 304(a) criteria recommendations), and periodically reviews and revises those methodologies and criteria. The methodologies and criteria are subject to public as well as expert scientific review before EPA issues them as formal agency recommendations for states to consider when developing and adopting water quality criteria pursuant to CWA Section 303(c).

To derive criteria for the protection of aquatic life, EPA follows its *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* ("*1985 Guidelines*"). These guidelines describe an objective way to estimate the highest concentration of a substance in water that will not present a significant risk to the aquatic organisms in the water. Numeric criteria derived using EPA's *1985 Guidelines* are expressed as short-term (acute) and long-term (chronic) values. The combination of a criteria maximum concentration (CMC), a one-hour average value, and a criteria continuous concentration (CCC), a four-day average value, are intended to protect aquatic life from acute and chronic toxicity, respectively. Neither value is to be exceeded more than once in three years. When EPA revises previous 304(a) criteria recommendations, it incorporates new data about species chronic and acute sensitivity as well as new scientific knowledge about toxicity pathways.

The *1985 Guidelines* specify that it is necessary to have toxicity test data from a minimum of eight families of aquatic organisms to derive criteria. These families are intended to be representative of a wide spectrum of aquatic life, and act as surrogates for untested species. Therefore, the specific test organisms do not need to be present in the water(s) where the criteria will apply. However, states may develop site-specific criteria using species residing at the site if they maintain similar broad taxonomic representation. EPA derives acute criteria from 48- to 96-hour tests of lethality or immobilization. EPA derives chronic criteria from longer term (often longer than 28-day) tests that measure survival, growth, or reproduction. If sufficient chronic toxicity data are not available, chronic criteria are set by determining a ratio of acutely toxic to chronically toxic concentrations. Where appropriate, EPA recommends that criteria are lowered to protect commercially or recreationally important species. For more detailed information on how EPA derives protective aquatic life criteria, see the *1985 Guidelines*.

2. Metals Criteria

Criteria may be based on certain water characteristics (e.g., pH, temperature, hardness, dissolved organic carbon (DOC), etc.), since water chemistry can influence a pollutant's bioavailability and toxicity. For metals in particular, EPA recommends expressing the criteria as functions of chemical constituents of the water, because those constituents can form complexes with metals and render the metals biologically unavailable, or compete with metals for binding sites on aquatic organisms. (60 FR 22229) Additionally, in 1993, EPA recommended that criteria for metals be expressed as dissolved (rather than total) metal concentrations, since the concentration of dissolved metal better approximates the toxic fraction (Prothro, 1993).

EPA aquatic life criteria for metals historically addressed the reported effects of hardness on metal toxicity using empirical regressions of toxic concentrations versus hardness for available toxicity data across a wide range of hardness values. Such regressions provided the relative amount by which the criteria change with hardness, but have certain limitations. The regressions incorporated not just hardness, but any other factor that was correlated with hardness in the toxicity data set used for the regressions, particularly pH and alkalinity. Although these regressions therefore address more bioavailability issues than hardness alone, they best apply to waters in which the correlations among hardness, pH, and alkalinity are similar to the data used in the regressions. The separate effects of these factors are not addressed for exposure conditions in which these correlations are different. In addition, some physicochemical factors affecting metal toxicity, such as organic carbon, are not addressed at all. *See Aquatic Life Ambient Freshwater Quality Criteria – Copper, 2007 Revision* ("*BLM Criteria Document*") at 4.

3. National 304(a) Recommended Criteria for Copper

Because of the limitations of these past approaches for addressing bioavailability in metals criteria, EPA recognized a need for an approach that (1) explicitly and quantitatively accounted for the effect of individual water quality parameters that modify metal toxicity and (2) could be applied more cost-effectively and easily, and hence more frequently across spatial and temporal scales. To meet those goals, EPA developed and issued the 2007 revised recommended copper criteria using the biotic ligand model (BLM) (See *BLM Criteria Document*). In addition to better accounting for the effects of individual parameters while at the same time reducing costs, the *BLM Criteria Document* also incorporated the latest scientific information, including updated toxicity information for six sensitive species (*Ceriodaphnia dubia, Lithoglyphus virens, Scapholeberis sp., Actinonaias pectorosa, Hyalella azteca, and Juga plicifera)*, which include a freshwater mussel. It can also be used to develop site-specific criteria for copper.

B. Site-Specific Criteria (SSC) for Copper

1. EPA Guidance

The application of metals criteria to specific sites is complex due to the site-specific nature of metals toxicity. Factors to be considered include: toxicity specific to effluent chemistry; toxicity specific to ambient water chemistry; different patterns of toxicity for different metals; evolution of the state of the science of metals toxicity, fate, and transport; resource limitations for monitoring, analysis, implementation, and research functions; concerns regarding some of the analytical data currently on record due to possible sampling and analytical contamination; and lack of standardized protocols for clean and ultraclean metals analysis (Prothro, 1993). States have the key role in the risk management process of balancing these factors in the management of water programs, but EPA has provided guidance since the 1990s to assist them in adjusting national recommended criteria site-specifically.

EPA has developed several procedures that states may use for deriving site-specific aquatic life copper criteria. These procedures may be used by states that have adopted hardness-based copper criteria and include: The 1994 *Interim Guidance on Determination and Use of Water-Effect Ratios for Metals* ("*Interim WER Guidance*") which includes as an appendix the option of a Recalculation Procedure; the subsequent EPA memorandum (in 1997) titled "Modifications to Guidance Site-Specific Criteria" which provided three clarifying documents on the recalculation procedure and use of the water-effect ratio (WER) procedure with hardness equations (Wiltse, 1997); and the 2013 *Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria.* The Recalculation Procedure (or derivation of a SSC) is intended to take into account relevant differences between the sensitivities of the aquatic organisms in the national dataset that EPA used in developing its recommendations for hardness-based criteria as compared to the sensitivities of organisms that occur at the site. The WER, on the other hand, characterizes the bioavailability of metals at a site. EPA also published the *Streamlined Water-Effect Ratio Procedure for Discharges of Copper* ("*Streamlined WER Procedure*") as a complement to the *Interim WER Guidance*, but only recommended its use when copper concentrations are elevated primarily due to continuous point source effluent.

EPA issued the WER method to address more accurately than the hardness regressions the modifying effects of water quality on bioavailability of copper. The WER is a biological method that accounts for any difference that exists between the toxicity of a pollutant in laboratory dilution water and its toxicity in site water. A WER is calculated by dividing the acute toxicity of the metal in site water, by the toxicity of the metal determined in a standard laboratory water. The standard laboratory water toxicity is used as the denominator to reflect that this toxicity is measured in test water that has water quality characteristics representative of the test waters used to develop the water quality criteria toxicity database, at least as a good approximation. The State's hardness-based acute criterion concentration is then multiplied by this ratio (i.e., the WER) to establish a site-specific criterion that reflects the effect of site water characteristics on toxicity. However, a WER accounts only for interactions of water quality parameters and their effects on metal toxicity to the species tested and in the water sample collected at a specific location and at a specific time (*BLM Criteria Document*, at 4).

The BLM is also used to characterize the bioavailability of metals at a site. EPA's Science Advisory Board (SAB) concluded in its 2000 review of the BLM that the BLM can "significantly improve predictions of the acute toxicity of certain metals across an expanded range of water chemistry parameters compared to the WER." *See Review of the Biotic Ligand Model of the Acute Toxicity of Metals* ("*SAB Report*"), p. 1. Following the SAB's issuance of its report, EPA further refined the BLM and incorporated it into its most recent 304(a) criteria recommendation for copper: the 2007 *BLM Criteria Document*.

Since 2007, EPA has recommended the use of the BLM over the use of the WER for deriving freshwater site-specific aquatic life criteria for copper. As EPA has explained above, the BLM is a metal bioavailability and toxicity model that uses comprehensive information on water chemistry conditions and parameters in a water body to calculate site-specific criteria. This makes the BLM more scientifically defensible than older procedures to derive site-specific criteria that are protective of aquatic life. The BLM also considers the influence of both biotic and abiotic (organic and inorganic) ligands in the calculation of the bioavailability of metals to aquatic organisms. Thus, the BLM better accounts for site-specific conditions affecting copper bioavailability and toxicity. *BLM Criteria Document* at 4-5, 16-17 (describing the limitations of hardness-based and WER copper criteria in comparison with the BLM).

2. Comparison of WER and BLM

As discussed above, before the BLM was developed, the Agency recommended the WER for copper to provide for site-specific adjustments to account for variations in water chemistry other than hardness. The WER involves site-specific toxicity testing which can be resource-intensive and difficult to conduct for all relevant environmental conditions. Also, the hardness-based equation is less accurate because it accounts for only one of the many variables affecting bioavailability of copper in real world conditions, and that variable (hardness) is less strongly predictive of bioavailability than dissolved organic carbon content. Furthermore, WER outcomes are subject to the many and various uncertainties inherent in extrapolating limited laboratory results with cultured lab test species to field scale protection of a resident aquatic community assemblage. In WER tests a few unusual results can have a large impact on conclusions about potential copper toxicity at a site. The WER represents the water chemistry present at a site only at the time the samples were collected and in practicality and general application is limited to collecting just a few representative points. In contrast, the BLM is capable of predicting protective levels for criteria-setting across a wide range of conditions (e.g., variations in pH, organic carbon, hardness, etc.) using multiple samples integrated over time.

For this reason, EPA stated in the *Interim WER Guidance* that WERs greater than 5 should be subject to further investigation because they could represent anomalies (*Interim WER Guidance*, p. 61). The magnitude of the WER developed by the Sanitary Board of Charleston (CSB) indicated that the Agency needed to investigate the WER results further, including a comparison with the results to EPA's most recent criteria recommendation that reflect the current best available science.

In contrast to the WER, the BLM can address a broad range of environmental variables across a given site over the course of time. This has the benefit of providing confidence and understanding of why a particular result is obtained in a manner consistent with a scientific understanding of water chemistry and its effects on biota, and that can be replicated across sites to explain both commonalities and differences in observed outcomes. The SAB stated that the BLM's "predictiveness over a wide range of environmental conditions makes the BLM a more versatile and effective tool for deriving site-specific WQC than the WER." (*SAB Report, p. 12).*

C. EPA's Scientific Evaluation of the WER Submitted by WV for Segment of Kanawha River

As discussed above, EPA's guidance has highlighted that WER ratios greater than 5 should be subject to particular investigation because they could represent anomalies. The WER submitted by the WVDEP for this segment of the Kanawha River was 5.62. In accordance with its guidance, EPA determined that this WER warranted careful review to ensure it would be protective of the state's aquatic life designated use, as required by EPA's water quality standards regulations at 40 CFR 131.11(a)(1). Also, consistent with both EPA's 2001 *Streamlined WER Procedure* and the 2007 *BLM Criteria Document*, part of EPA's review included a comparison of the results of the 5.62 WER against results that would be derived using the BLM. It is appropriate to make this comparison for the following reasons: 1) as described in section B. above, the BLM represents the most current and best science for evaluating whether a given copper concentration protects aquatic life; 2) as a new or revised WQS, EPA must evaluate the WER according to whether it is protective of the associated designated use, not merely whether a particular procedure was followed; and 3) the BLM allows consideration of site-specific chemical parameters that influence the expression of copper toxicity, and their variability over time, in a manner that examining WER results by themselves cannot. This latter factor is important because it helps EPA ascertain the underlying factors affecting bioavailability and toxicity of copper at a site and whether a particular WER result is plausible and protective.

Greater consideration of site-specific factors makes the BLM more accurate than the WER in predicting levels of copper that protect aquatic life.

Depending on data inputs provided and the full range of spatial and temporal variability at a site, the BLM typically produces a range of outcomes (called "instantaneous water quality criteria" or "IWQCs"). To ensure protectiveness under critical conditions, EPA could examine the range defined by the distribution of IWQCs. If the WER-derived WQC fall within or below this range, then EPA would consider this to be a plausible result indicating protectiveness under a set of site-specific conditions (although further evaluation of whether this result reflects critical conditions may be necessary). However, if the WER-derived WQC fall above this range, then this is evidence that the WER result is not protective. EPA could also compare individual point values of BLM IWQC representing conditions tested under the WER procedure to WER-derived WQC. If these BLM point value IWQCs are lower than the associated WER-derived criteria, then this is evidence that the WER is not protective. The latter approach is the one EPA took in evaluating CSB's submitted WER given that CSB only provided BLM input parameters for a single sampling date.

The first step of EPA's evaluation was to apply the submitted WER and the hardness-based equation from WV WQS to determine the intended site-specific CMC and CCC values (i.e., acute and chronic criteria). Table 1 below is presented for informational purposes to show the result of application of the WER for a variety of hardness values.

Table 1: Summary of Calculated Acute (CMC) and Chronic (CCC) Criteria Using Submitted WER and WV Hardness Equation-based Criteria for Copper (all units are µg/L)

	WV Statewide Copper Criteria		WER-derived† Copper Criteria (total)		WER-derived† Copper Criteria (dissolved‡)	
Hardness	CMC	CCC	CMC	CCC	CMC	CCC
50	7.29	5.16	40.95	29.00	39.31	27.84
100	14.00	9.33	78.67	52.43	75.53	50.33
200	26.90	16.87	151.17	94.80	145.12	91.01

†WER = 5.62

‡Conversion Factor = 0.96

CMC=exp(0.9422)*(Ln hardness)-1.7
CCC=exp(0.8545)*(Ln hardness)-1.702
SSC=Criterion*WER

EPA then calculated the BLM in order to compare the BLM results to the WER results. The most complete data set available with which to evaluate the site with respect to the BLM is the one CSB provided to WVDEP and WVDEP provided to EPA on June 14, 2016. EPA used the data for the 10-16-13 sampling event from the prepared 2:1 mixture of upstream receiving water and effluent, presumably at the critical flow dilution following EPA's *Streamlined WER Procedure.* These are the only data with measured dissolved organic carbon (DOC).There is no corresponding data for the 11-19-13 sampling event. DOC data are critical for this evaluation because DOC has a greater effect on the BLM result than the other variables.

Table 2 lists the parameters used for the BLM calculation. CSB-provided site data are presented in italics. In order to produce the highest potential criteria values and thus represent the least conservative comparison EPA could provide with available data (thereby giving the greatest opportunity to demonstrate that this WER is protective), EPA ran the BLM using the highest value CSB provided of all the spiked samples from the 10-16-13 sampling event for each parameter. For calcium (Ca) and magnesium (Mg), EPA entered concentration values in a ratio that would produce the reported hardness value provided by CSB.

To complete the data set required to run the BLM, EPA used ambient temperature data from the Kanawha River provided by WVDEP and filled in the remaining missing data with the standard assumption for percentage of humic acid (HA) in the DOC and 10th percentile ecoregional values for several ionic constituents from EPA's *Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Biotic Ligand Model* (Table 10, p. 46) for stream orders 7-9.

Table 2: Biotic Ligand Model Data Inputs

Site Label: Kanawha 70	
Sample Label: Oct 16 2013	
Parameter	**Input Value**
Temp	15
pH	*7.71*
DOC	*5.49*
HA	10
Ca	*20*
Mg	*11.95*
Na	9.8
K	1.4
SO4	44
Cl	10
Alkalinity	*95.2*

The BLM results in Table 3 below represent acute and chronic IWQC at one point in time from the 10-13-16 sampling event. These IWQC may or may not reflect critical conditions at the site. The input parameters (listed in Table 2) vary over space and time in natural waters. EPA recommends using multiple samples at different points in time to derive BLM criteria fully reflective of site variability. However, for the purpose of this analysis, the values listed in Table 3 represent the highest (least stringent) site-specific "criteria" values EPA could calculate using the data available to evaluate the WER submission. Table 4 shows the comparison of acute (CMC) and chronic (CCC) criteria values among the WV hardness equation-based criteria, site-specific WER-adjusted criteria values, and calculated BLM-based criteria at the same hardness value of 99 mg/L as CaCO3. The WER results are more than two times higher than the BLM results. In the face of this evidence, EPA cannot conclude that the submitted WER is protective of the designated use because the BLM results represent a superior indicator of protectiveness for the reasons articulated above in this enclosure.

Table 3: Results of the BLM Calculation Using the Inputs in Table 2. All values in µg/L, dissolved copper.

Site Label	Sample Label	CMC	CCC
Kanawha 70	Oct 16 2013	27.80	17.27

Table 4: Comparison of Criteria Values. All values in µg/L dissolved copper at hardness of 99 mg/L as CaCO3.

Current WV Copper Criteria		WER-derived Copper Criteria		BLM-derived Copper Criteria	
CMC	CCC	CMC	CCC	CMC	CCC
13.31	8.88	74.82	49.9	27.8	17.27

Given the same number of samples to compare, the value of the information represented by the BLM result cannot be ignored or set aside in deference to a WER value. EPA developed the BLM to reflect site-specific conditions in the receiving water that affect the expression of copper toxicity and also utilize the full toxicity database of aquatic organisms. A WER relies on transferring the result of just a few laboratory tests using site water for a limited number of species to the field. This introduces many uncertainties, such as whether the tolerance of test species in the laboratory reflects the impact to resident species in the receiving water. EPA's documented scientific judgment, expressed in criteria publications that have undergone rigorous external scientific peer review and public review, is that the BLM provides the most accurate means to assess the impact of copper toxicity under a wide range of species and site conditions. EPA's criteria derivation methodology encompasses many careful considerations to ensure protectiveness, and the Agency views a significant deviation (such as is the case with the submitted WER) as compromising the level of protection necessary to protect the associated designated use. Therefore, EPA is disapproving the adoption of the submitted WER as a water quality standard.

In conclusion, because the magnitude of the CSB WER exceeded a value of 5, a level above which EPA considers needing further scrutiny, EPA derived criteria using the BLM (as the best available science) to evaluate the protectiveness of the CSB WER. EPA compared these BLM-derived criteria to the site-specific criteria calculated using the State's current copper criteria and the WER of 5.62. This enclosure provides the data and analysis that EPA conducted to evaluate the protectiveness of the CSB WER. EPA concluded that it is implausible that CSB's WER-based criteria are protective of the state's designated use and is therefore disapproving pursuant to CWA section 303(c). The evidence suggests that site-specific criteria for this segment may be appropriate. EPA is willing to work with the State to develop protective and scientifically sound site-specific criteria, and encourages the use of the BLM for that purpose.

IV. References

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