



February 16, 2018

SUBMITTED ELECTRONICALLY

Pennsylvania Department of Environmental Protection  
Policy Office  
Rachel Carson State Office Building  
P.O. Box 2063  
Harrisburg, PA 171015-2063

**RE: PROPOSED STATEMENTS OF POLICY  
25 PA. CODE CHAPTER 16 – WATER QUALITY TOXICS MANAGEMENT STRATEGY**

Dear Sir or Madam:

Thank you for the opportunity to comment on the proposed amendments to PA Code Title 25, Chapter 16 – Water Quality Toxics Management Strategy. The purpose of this letter is to provide comments on the proposed changes and to ask for clarification on some of the amendments.

Evaluating water quality data and assessing compliance with water quality standards and attainment of designated uses are among the most technically daunting tasks the Department of Environmental Protection performs. The language provided in the Water Quality Toxics Management Strategy (along with Chapter 93 – Water Quality Standards) outlines certain aspects necessary in completing these tasks. In doing so, the Water Quality Toxics Management Strategy, and amendments so proposed, will have lasting impacts to not only the quality of the state's waters but also those entities that are directly related to those waters – most notably the dischargers of treated wastewater. It is our intention with these comments to assist the Department in performing these tasks by asking for clarification on the amendments. Addressing these clarifications now will allow for permitted dischargers to properly address their specific cases when permitting issues arise.

We offer the following comments:

**§ 16.24. Metals criteria**

Under this section, the Department is proposing the following language (with amendments shown in **bold** and text proposed to be removed not shown for clarity):

*(a) **Metals** criteria are established to control the toxic portion of a substance in the water column. Depending upon available data, aquatic life criteria for metals are expressed as either dissolved or total recoverable. As information develops, the chemical identifiers for the toxic portion may be added, changed or refined. The criteria form one of the bases for water quality-based effluent limitations, which are expressed as total recoverable metal. **When calculating equation-based metals criteria for determining effluent limitations, the criteria must be developed in accordance with § 93.8c (relating to human health and aquatic life criteria for toxic substances).***

*(b) Chemical translators are used to convert dissolved criteria into effluent limitations which are required by Federal regulations to be expressed as total recoverable metal. The default chemical translator used by the Department is the reciprocal of the conversion factor (listed in the Conversion Factors Table located in § 93.8b (relating to metals criteria)) that was used to determine the dissolved criterion. **If a NPDES discharger performs a chemical translator study for a dissolved criterion, the study of this site-specific translator should be conducted in accordance with the EPA's "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (June 1996), as amended and updated.***

*(c) NPDES dischargers may request alternate effluent limitations by using site-specific water quality characteristics **in a request to modify an existing water quality criterion, in accordance with § 93.8d (relating to development of site-specific water quality criteria). This may be accomplished through one or more of the following methods:***

*(1) **Recalculating a water quality criterion in accordance with the EPA's "Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals, Appendix B: The Recalculation Procedure" (February 1994), as amended and updated. The Recalculation Procedure accounts for corrections, updates and additions to the original criterion dataset to create an appropriate dataset to calculate the site-specific criterion. If the optional deletion process is used to evaluate the taxonomic composition, this process should follow the EPA's "Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria" (April 2013).***

*(2) **Developing a water quality criterion by performing a Water Effect Ratio (WER) study, which is a factor that expresses the difference between the measures of the toxicity of a substance in laboratory water and the toxicity in site water. The WER provides a mechanism to account for that portion of a metal which is toxic under certain physical, chemical or biological conditions. WERs are applicable only to certain metals, which are listed by the EPA in "Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals" (February 1994), as amended and updated.***

*(3) **Developing a water quality criterion by performing a Biotic Ligand Model (BLM) study for copper in freshwater systems. The BLM is a metal bioavailability model that uses receiving water body characteristics and monitoring data to develop site-specific water quality criteria. The BLM is used in evaluating the differences in the availability and toxicity of metals. These differences occur as a result of variation in local water chemistry. The BLM may be used to derive site-specific criteria for copper in freshwater systems. The BLM incorporates the best available science for determining site-specific water quality criteria for copper and is therefore preferred by the Department. Subject to Departmental approval of the testing and its results, the Department will evaluate the use of the BLM to establish alternate site-specific criteria. In the absence of available site data to run the BLM, estimates for missing water quality parameters may be developed using EPA's guidance "Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Application in EPA's Biotic Ligand Model" (March 2016), as amended and updated.***

**(4) Developing a water quality criterion using other guidance approved by the Department, which is based on other EPA-approved or scientifically defensible methodologies.**

**(d) The discharger may choose to conduct either the WER or BLM. Either the WER or BLM may be combined with a chemical translator study or the Recalculation Procedures. If the Recalculation Procedure is selected, the procedure requires the recalculation of the existing criterion before the WER is applied.**

Is it the Department's position that the only acceptable site-specific definition of the water quality criteria for copper is the one calculated from the Biotic Ligand Model? According to subpart (d) above, the discharger may choose to conduct either the WER or BLM. When will the Department accept a site-specific WER?

### **§ 16.51. Human health and aquatic life criteria**

Under this section, the Department is proposing the following language (with amendments shown in **bold** and removed text not shown for clarity):

**(a)** Chapter 93, Table 5 lists the human health and aquatic life criteria for toxic substances which the Department uses in development of effluent limitations in NPDES Permits and for other purposes. **The Department will maintain a table of site-specific human health and aquatic life criteria that have been developed or reviewed and approved by the Department. The approved analytical procedures and detection limits for these substances will be listed, as appropriate, in Table 2A.** The human health criteria, which include exposures from drinking water and fish consumption, are further defined as to the specific effect (that is, cancer or threshold health effects). For those aquatic life criteria which are **a function of local water quality conditions and are specified as a formula, such as several of the heavy metals, the hardness and pH values used to derive the appropriate water quality criteria will be determined by instream measurements or best estimates, representative of the median concentrations or conditions of the receiving stream for the applicable time period, and design conditions on a case-by-case basis.** Some of these criteria may be superseded for the Delaware Estuary, Ohio River Basin, Lake Erie Basin, and Genesee River Basin under interstate and international compact agreements with the Delaware River Basin Commission, Ohio River Valley Sanitation Commission and International Joint Commission, respectively. The toxics substances in Chapter 93, Table 5 without a PP NO are **State-derived** criteria. Water quality criteria for the Great Lakes System are in § 93.8e, Tables 6 and 7. **Criteria in § 93.8c, Table 5 may apply to the Great Lakes System for those substances not listed in Table 6.** Criteria may be developed for the Great Lakes System for substances other than those listed in Table 5 or 6 under the methodologies in § 16.61 (relating to special provisions for the Great Lake System).

**(b)** If the Department determines that the natural quality of a surface water segment is of lower quality than the applicable criteria listed in Chapter 93, Table 5, the natural quality shall constitute the aquatic life criterion for that segment. **Notice of all draft natural quality determinations shall be published in the Pennsylvania Bulletin and be subject to a minimum 45-day comment period. The Department will maintain a publicly available list of surface waters and parameters where this subsection applies, and will, from time to time, submit appropriate amendments to these chapters. Natural quality determinations**

***are housed in stream investigation reports or water quality criteria rationale documents.***

As the language about hardness and pH was also included in the amendments to Chapter 93 – Water Quality Standards, we have provided the following comments to those proposed amendments as well.

We would like the Department to clarify what it means by “instream measurements or best estimates, representative of the median concentrations or conditions of the receiving stream for the applicable time period and design conditions.” Is it the Department’s position that the water quality (i.e., hardness or pH) that is used to define the stream criteria should be characterized by collecting instream samples of the water quality (i.e., hardness or pH) downstream of the discharge? We also ask that the Department clarify what it means by “best estimate.” Is it the Department’s position that stream hardness will no longer be considered a default value (i.e., 100 mg/L), but rather the Department will use best judgement to estimate the stream hardness? We would also like clarification on what the Department means by “applicable time period and design conditions.”

We believe that the characterization of the water quality that is used to calculate certain aquatic life criteria should be done under the same conditions to which those criteria are applied. In other words, if the criteria are going to be applied, e.g., at the edge of the mixing zone, under critical low-flow stream and permitted treatment plant conditions, then water quality needs to be characterized under those same conditions. The only way to accomplish this is to characterize both the receiving water body (upstream of a discharge) and the discharge individually and use a mass balance approach to combine the two using the appropriate stream and discharge flows.

Thank you for the opportunity to comment on the Department’s proposed changes to Chapter 16 – Water Quality Toxics Management Strategy. Feel free to contact James Cosgrove via phone (609-454-4550) or email (JCosgrove@Kleinfelder.com) or Joseph Schwarz via phone (609-454-4559) or email (JSchwarz@Kleinfelder.com) to discuss these comments.

Sincerely,



James F. Cosgrove, Jr., P.E.  
Vice President/Principal

Sincerely,



Joseph W. Schwarz, P.E.  
Project Engineer