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March 16, 2017

Mr. John Ravenscroft
Health and Ecological Criteria Division
Office of Water – US EPA
1200 Pennsylvania Avenue NW
Washington, DC 20460

(Via *Regulations.gov*)

RE: Docket No. EPA-HQ-OW-2016-0715
Request for Scientific Views: Draft Human Health Recreational Ambient Water Quality Criteria and/or Swimming Advisories for Microcystins and Cylindrospermopsis

Dear Mr. Ravenscroft,

The Kentucky Division of Water (the Division) appreciates the opportunity to provide comments regarding the above request for scientific views. The Division of Water is the delegated Clean Water Act agency for the Commonwealth of Kentucky. In addition, the Division has Safe Drinking Water Act primacy for the primary drinking water rules.

In general, the Division supports EPA's timely efforts to address the issue of harmful algal blooms ("HABs") in recreational waters and acknowledges the collaboration and dialogue that has occurred between states and EPA throughout 2016 and 2017 regarding HABs and recognizes the achievements that have emerged from that collaboration. The Division appreciates the flexibility that EPA has extended to states to use the recommended values for swimming advisories only, as water quality standards, or neither. However, ACWA still has questions and concerns that it would like to raise, specifically regarding criteria implementation, monitoring, and the science behind the criteria and advisory values. As such, the Division does not support these useful thresholds as national recommended criteria at this time.

EPA states that it has published recommended cyanotoxin values "... under Clean Water Act (CWA) 304(a) for states to consider as the basis for swimming advisories for notification purposes in recreational waters to protect the public. Alternatively, states may consider using these same values when adopting new or revised water quality standards (WQS)." This statement implies that the primary purpose of developing cyanotoxin limits is to establish advisories, and that developing WQS based on these levels is optional. However, Section 304(a)(1) of the CWA does not

pertain to establishing advisory



levels, but to developing criteria for water quality. In that regard, the Division believes it is appropriate to keep these recommendations as guidance at this time.

CWA Section 304(a) also requires that any proposed criteria reflect "... the latest scientific knowledge (A) on the kind and extent of all identifiable effects on health and welfare including, but not limited to, plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation which may be expected from the presence of pollutants in any body of water ...". However, the draft document does not include any discussion of protection of uses (i.e., aquatic life, secondary contact recreation, etc.) other than primary contact recreation.

For these reasons, the Division believes it is inappropriate to publish the draft document under CWA Section 304(a) to reflect criteria for water quality. Rather, it should be published as information to the states outside of CWA Section 304(a).

The draft document recommends values for swimming advisories and/or for consideration in developing criteria which are protective of the swimming use (primary contact recreation), because incidental ingestion of water containing microcystin or cylindrospermopsin toxins may result in liver or kidney damage, respectively. Although there is limited, consistent information regarding the hazards posed by other routes of exposure (inhalation and dermal contact) for cyanobacterial cells or their toxins, the Division encourages the EPA to continue providing guidance and ultimately develop recommended advisory values that are protective of both the primary and secondary contact recreation uses for all routes of exposure, and for endpoints other than organ toxicity (dermal symptoms, eye/ear irritation, fever, gastrointestinal illness, and respiratory symptoms). In addition, the EPA should continue to investigate potential cancer-promoting effects of microcystins and provide updated recommended values as appropriate.

The Division also suggests that the EPA should provide guidance on applicability of the recommended toxin levels for different uses of water. For instance, it is unclear whether the recommended values, which are based upon protecting primary contact recreation, are appropriate to issue an advisory for a water body in which swimming is banned but secondary contact recreation is permitted. The Division urges the EPA to develop tiered advisory levels for different water uses.

The Division's experience is that cyanobacterial blooms can vary considerably in their size, frequency, and duration, which presents challenges for issuing advisories, but would be especially challenging if conducting Section 305(b) assessments and listing waterbodies pursuant to Section 303(d). EPA also acknowledges that "cyanobacterial blooms typically are seasonal events, recreational exposures are likely to be episodic, and may be short-term in nature." If the recommended values for microcystin and cylindrospermopsin toxins are adopted into state water quality standards and approved by the EPA under CWA Section 303(c)(2), the EPA should provide guidance on when 303(d) listing and TMDL development would be appropriate, and how to de-list waters for microcystin or cylindrospermopsin toxins, given that a bloom may appear one year and not be detected in subsequent years.

The EPA mentions that the location of microcystin congeners and cylindrospermopsin within the water column can vary, and that cyanobacteria and their toxins may concentrate in certain

locations (e.g., shorelines, coves, mats, etc.). The EPA should provide guidance on sample collection for assessment (e.g. should represent the average or “worst case” condition within a water, whether a single grab or composite sampling should be performed, how many samples/acre or stream mile are adequate, and at what depth samples should be collected to best represent the total microcystin or cylindrospermopsin toxin concentrations).

The EPA does provide some guidance on appropriate analytical methods to quantify microcystin or cylindrospermopsin toxins, however, analytical results received by the Division have shown great variability depending upon analytical method and sample dilution. Additionally, current analytical methods do not include all congeners of the microcystin toxins. The Division suggests that the EPA provide guidance on which microcystin congeners are most appropriate to include in analysis, and which methods are most appropriate to quantify the total microcystin and cylindrospermopsin concentrations.

A number of questions remain for the Division regarding implementation of these recommended criteria, including how to conduct assessments of waterbodies for impairment, how to calculate cyanotoxin TMDLs, and in regards to subsequent permit decisions.

The Division acknowledges the importance of nutrients in the formation of cyanobacteria blooms. EPA also suggested that the recommended criteria and presumptive subsequently listing of waterbodies may be used as a basis to include nutrient limits in discharge permits. The Division believes the appropriate management strategy is to pursue 303(d) listings for excessive nutrients rather than listings for microcystin or cylindrospermopsin toxins.

The Division believes that the published document should be released to the states as guidance for advisory levels outside of the CWA Section 304(a) process. Because of the unpredictable association of cyanobacteria cells with the prevalence of their toxins and the associated uncertainties associated with making assessments that publishing the recommended limits pursuant to CWA Section 304(a) as national recommended criteria is premature.

The Division appreciates the opportunity to submit comments regarding this draft document, and hopes that the EPA will take the time to further develop, define, and clarify its appropriate use.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Goodman', written in a cursive style.

Peter T. Goodman, Director
Division of Water