



POTOMAC
RIVERKEEPER®
NETWORK

3070 M Street, NW
Washington, DC 20007
202.888.2037 (main)
www.prknetwork.org

April 19, 2018

Amanda Gray
Virginia Department of Environmental Quality
Water Quality Assessment Coordinator
P.O. Box 1105
Richmond, Virginia 23218
Via electronic mail
amanda.gray@deq.virginia.gov

Re: Potomac Riverkeeper Network and Shenandoah Riverkeeper Comments on DEQ Draft Water Quality Assessment Guidance Manual

Dear Ms. Gray,

Please accept the following comments on behalf of Potomac Riverkeeper Network and Shenandoah Riverkeeper (“Commenters”) regarding the above-referenced Guidance Manual. Commenters appreciate the opportunity to provide our perspective on the adequacy and applicability of the manual to assessing persistent pollution problems in the Shenandoah River watershed which continue to negatively affect and impair the public’s ability to recreate in and on the Shenandoah River. We also acknowledge DEQ’s effort to develop an assessment methodology for measuring algal blooms and potential impairment of the Shenandoah River for recreational use. Our comments focus on Appendix I of the draft Guidance.

Based on our review, Commenters are concerned that the draft does not provide adequate guidance that will enable the Department of Environmental Quality (DEQ) staff to properly assess the nature and extent of algal blooms and other forms of nuisance aquatic plant life, or to fully and properly assess their impacts on recreational use of the Shenandoah River. The following comments and questions are intended to provide recommendations on how to improve the guidance, to give DEQ staff the best possible tool for assessing these recurring impacts.

In its description of the use of the Surber tool to collect the algae samples, DEQ admits that it can only capture their Surber samples in depths less than one-half meter. This means any algae residing at a depth of greater than 19.7" would not be captured utilizing only the Surber sample method. The draft Guidance does not provide a rationale as to why or how it determined that this method would be adequate to fully assess algal blooms, except to note that “Current algal monitoring techniques are appropriate for wadeable or marginally boatable systems only.” Draft Guidance at 114. The Guidance fails to explain whether other methods could be developed for assessing algae growth in deeper water, nor does it acknowledge that impacts to recreation from algal blooms can and do occur in deeper sections of the river. Paddlers, anglers, and swimmers no doubt recreate in the Shenandoah in areas deeper than “wadeable or marginally boatable” sections. DEQ’s reliance on this limited scope of study area severely limits the usefulness of the Surber method as the



Potomac Riverkeeper Network is trade name of Potomac Riverkeeper, Inc., a 501(c)3 tax-exempt nonprofit organization.
Recognized as “one of the best small nonprofits” by the Catalogue for Philanthropy
EarthShare # 87828 * CFC # 87828



sole sampling approach. In simple terms, a 2 year study using the Surber sampling method, only taking samples in very shallow water, will not capture the true extent of impacts to recreational use from algal blooms, and thus will fail to adequately assess whether impairment is occurring.

The Draft Guidance references other states' use of the *chlorophyll a* 150 mg/m² standard for algal biomass, which if reached or exceeded would indicate recreational impairment. However, the Guidance does not provide any photos or visual depictions of what this level of algae biomass in a river system looks like, thus making it difficult for the public to comment on whether this is the right standard to use. In its final Guidance, DEQ should provide photos of a range of chlorophyll a biomass levels, e.g. 150-200 mg/m², to provide the public with a better understanding of what level of algal density in the water column is deemed impairment by the agency. Focus on the 150mg/m² threshold also suggests that DEQ is proceeding under a very narrow interpretation of the recreational designated use and related water quality standards, an interpretation not supported by the text of those standards. This is inconsistent with the need to support all forms of recreational use of the Shenandoah River. For example, paddlers (kayakers/canoists/tubers) may find the algal levels to be within their acceptable recreational usage level for paddling while anglers may find the same levels to be completely unacceptable for their recreational enjoyment, in that every cast brings backs thick strands of filamentous algae on their lures or flies. One way to address this on the Shenandoah would be to provide the public with visual depictions (ideally photos) of a range of algal biomass levels, and conduct a survey of the full range of recreational users to get a better sense of how wide the range of acceptability is.

The Draft Guidance and proposed Monitoring and Assessment only examines filamentous algae, despite the fact that both planktonic algae and blue/green algae have been reported to DEQ by regular Shenandoah River recreational users, and both can significantly impair both recreational uses of the river, degrade water quality, and present public health risks. Given the high level of public interest and concern about algae impairment of the Shenandoah, and the documented occurrence of planktonic and blue/green algal blooms in the river in past years, DEQ should invest sufficient resources to develop an assessment methodology that looks at all types of algal blooms occurring in the river that have the potential to impair recreational use. Relying solely on assessment of filamentous algae to figure out whether impairment is occurring suffers from the same defect as relying solely on the Surber sample method. Limited, overly restrictive assessment will result in an incomplete, inadequate and factually deficient determination on impairment.

The Draft Guidance proposes that DEQ's regional offices should prioritize monitoring based upon available resources. This is disingenuous for two reasons. First, it does not appear that the DEQ Valley Regional office has any available resources for this methodology study. Second, DEQ appears to be relying heavily on citizen science monitoring groups to monitor and document algal blooms. A \$1,000 grant for the purchase of cameras, while possibly well-intentioned, will not get the job done. Moreover, as the draft notes, Citizen groups have reported that although they feel confident making estimates of algal cover from the bank, they are not confident in their ability to take Surber measurements.

Commenters disagree with the proposal to only monitor in response to citizen complaints. This approach presumes that people will be out recreating throughout the watershed, and well informed enough to know to report nuisance algal blooms when they encounter them. It's a reactive approach that seems predetermined to put the burden on public reporting of algal blooms, rather than adopting a proactive, scientific approach designed to assess what extent of

the Shenandoah River is regularly affected by algal blooms during the May-October season. The Guidance also fails to explain how DEQ will determine where the 4 monthly samples will be taken in its Assessment Path forward section. Has DEQ identified 4 locations that it believes provide a representative sampling of the entire Shenandoah River watershed that is regularly used for recreation? This lack of information on where samples will be taken, how DEQ determined the frequency, and how DEQ's sampling and response to citizen complaints will work renders the draft Guidance incomplete at best, and makes it very difficult for the public to comment on whether the sampling approach is adequate and scientifically defensible. DEQ should be aware that algae tends to repeatedly grow on the bottom in certain stretches of river and not in others, based on the bottom composition, flow speed and sunlight duration (shading). If DEQ is not aware of this, it could obtain this information from a range of sources, including outfitters, fishing guides, local river advocacy groups and others who know the river well.

In its reference to other states' standards, DEQ could have included information on the sampling and monitoring methodology adopted by those states. Commenters suggest that DEQ consider the following questions regarding the sampling and monitoring approach;

- When a citizen submits an algal complaint is the first response going to be coming from the citizen science group or from a DEQ technician? What is the response time going to be?
- Will DEQ increase its sampling frequency in response to citizen complaints of algal blooms? For example, if a regularly scheduled sample is collected one day, and a complaint is filed the next day, will DEQ conduct additional sampling in the area the complaint was filed, or wait until the next scheduled sampling event?
- Regarding the Lakes assessment protocols, Commenters request that DEQ report on whether the Shenandoah River would have received a "Good Year" or "Bad Year" rating in 2017 when DEQ conducted its pilot study.

Thank you for providing us with the opportunity to comment on the Draft Guidance. Please contact me by phone at 202-888-4929, or email at phillip@prknetwork.org if you have any questions regarding our comments.

Respectfully,



Phillip Musegaas
Vice President of Programs and Litigation
Potomac Riverkeeper Network
3070 M Street NW
Washington, DC 20007



Mark Frondorf
Shenandoah Riverkeeper