



Potomac River Smallmouth Club

February 21, 2019

Submitted via email to Sandra.Mueller@deq.virginia.gov

Sandra Mueller
Virginia Department of Environmental Quality
Office of Water Monitoring and Assessment
P.O. Box 1105
Richmond, VA 23218-1105

Re: Draft 2018 Virginia 305(b)/303(d) Water Quality Assessment Integrated Report

Dear Ms. Mueller,

Earthjustice, Potomac Riverkeeper Network, and Potomac River Smallmouth Club urge the Department of Environmental Quality ("DEQ") to fulfill its duty to identify the North Fork, South Fork, and main stem of the Shenandoah River (collectively, "Shenandoah River") as impaired (Category 5) due to widespread algae blooms fueled by uncontrolled or poorly-controlled pollutants including nitrogen, phosphorus, and sediment, as required by section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d). In order to do so, the Department must evaluate all existing and readily available water quality-related data and information concerning algae in the Shenandoah River, as required by EPA regulations.

Unfortunately, the Draft 2018 Integrated Report makes clear that DEQ has again declined to assess and list the Shenandoah River using the information already available to DEQ, which demonstrates that the consistent presence of excessive algae in different locations throughout the River interferes with the growth and survival of healthy aquatic life, and interferes with or diminishes recreational uses including swimming, wading, floating, canoeing, aesthetic enjoyment, and fishing. That information further demonstrates beyond any reasonable doubt that existing effluent limits are not stringent enough to fully implement Virginia's narrative water quality standards or designated uses relating to algae in the Shenandoah River. In light of this data and information, DEQ has a duty to identify the Shenandoah River on the list required by the Clean Water Act, 33 U.S.C. § 1313(d)(1)(A).

Most of the data and information already available to DEQ through our previous submissions falls within the proposed assessment period for the Draft 2018 Integrated Report, *i.e.* data collected from January 1, 2011 through December 31, 2016. *See* Draft 2018 Integrated Report at ES-i. We therefore re-submit the Technical Review we submitted with our comments on the 2014 and 2016 Draft Integrated Reports.

For additional context we have also attached documentation of excessive algae and its impacts on the Shenandoah River's recreation-related designated uses and water quality standards, submitted to DEQ in July and August, 2018, along with a copy of our comments on the 2018 Water Quality Assessment Guidance Manual (submitted to DEQ in April 2018). These submissions demonstrate that the problem of excess algae in the Shenandoah River is ongoing, and that DEQ's ongoing efforts toward identifying a listing threshold are not designed to capture the available and relevant information on how excessive algae causes nonattainment of the applicable water quality standards in the Shenandoah River.

I. Virginia's Mandatory Duty To Assess The Evidence Presented And Identify The Shenandoah River As Impaired

The Clean Water Act requires that "[e]ach State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of [the Act] are not stringent enough to implement any water quality standard applicable to such waters." 33 U.S.C. § 1313(d)(1)(A). Designated uses are water quality standards by definition. *Id.* § 1313(c)(2)(A). Accordingly, when evidence demonstrates that water quality standards or designated uses are not being attained despite the application of technology-based effluent limitations, the state "shall identify those waters" in its Integrated Report.

EPA regulations that govern each state's listing process further require that "[e]ach State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the [impaired waters] list..." including, "[a]t a minimum... all of the existing and readily available data and information about the following categories of ... (iii) [w]aters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions." 40 C.F.R. § 130.7(b)(5)

A. Relevant Virginia water quality standards

The water quality standards that are applicable to the Shenandoah River and relevant to excess algal growth include the following:

A. All state waters, including wetlands, are designated for the following uses: recreational uses, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish.

9 Va. Admin. Code § 25-260-10.A. (emphasis added).

A. State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.

Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including

those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. * * *

9 Va. Admin. Code § 25-260-20 (emphasis added).

When the Virginia Water Control Board enacted these water quality standards in 1981, its statement of basis and purpose made clear that the Board intended both narrative and numeric limits to be given force and effect:

Water quality standards consist of narrative statements that describe water quality requirements in general terms, and of numeric limits for specific physical, chemical, biological or radiological characteristics of water. These narrative statements and numeric limits describe water quality necessary to meet and maintain reasonable and beneficial uses such as swimming and other water based recreation, public water supply and the propagation and growth of aquatic life. Standards include general as well as specific descriptions, since not all requirements for water quality protection can be numerically defined.¹

The Court of Appeals of Virginia has confirmed that the requirement to protect designated uses has independent force and effect in addition to the requirement to implement other water quality standards. *See State Water Control Bd. v. Captain's Cove Util. Co., Inc.*, 2735-07-1, 2008 WL 2963851 (Va. Ct. App. Aug. 5, 2008) (reinstating water pollution control board's denial of discharge permit on basis that the discharge would impair recreational uses). The court noted that "9 VAC 25-260-20 is written in the disjunctive, prohibiting substances in state waters that either contravene established standards or interfere directly or indirectly with designated uses of such water." *Id.* (emphasis in original).

The available evidence demonstrates that Virginia's existing effluent limitations are insufficient to support the recreational designated use and ensure attainment of related water quality standards for the North Fork, South Fork, and main stem of the Shenandoah River. Our enclosed 2014 Technical Review sets forth extensive evidence of impairment including:

- Over one hundred and twenty citizen complaints identifying algae blooms by location and date, and describing impairment of recreational uses including primary contact recreation, boating, wading, fishing, and general aesthetic enjoyment;
- More than 1,000 photographs and videos, including information on location and date, showing excessive growth of algae;

¹ Attachment C, Commonwealth of Virginia State Water Control Board, Water Quality Standards (eff. Dec. 12, 1981) (excerpt). The current water quality standards at 9 Va. Admin Code Ch. 260 are derived from this 1981 enactment.

- Data from a summer 2012 quantitative survey of stream transects for algae conditions in the Shenandoah River; and
- Satellite images in which spectral reflective signatures of several substances in the North Fork Shenandoah River are shown, indicating high concentrations of chlorophyll and phycocyanin (the pigment in blue-green algae or cyanobacteria).

In addition, the images contained in Attachments A and H provide evidence that these conditions have persisted through today. Collectively this evidence provides an overwhelming basis for finding that excess nutrients are present in quantities that, in combination with other environmental factors, cause frequent widespread algae blooms that interfere with attainment of Virginia’s recreational designated use and related water quality standards.

B. EPA guidance on water quality assessment and listing decisions

In its 2014 guidance on Integrated Reporting the U.S. Environmental Protection Agency (EPA) provided important information that is relevant in this context.² Among other things, EPA confirmed that visual assessments provide a valid basis for listing a waterbody as impaired:

A State can determine whether a waterbody is attaining its applicable narrative nutrient or other relevant narrative criteria and designated uses by using results of visual assessments. For example, field observations of excessive algal growth, macrophyte proliferation, adverse impacts on native vegetation (e.g., eelgrass), presence or duration of harmful algal blooms, unsightly green slimes or water column color, and/or objectionable odors may be a basis to include a waterbody on the State's Section 303(d) list for failing to meet one or more applicable narrative criteria and designated uses.

In addition, EPA affirmed that a state must list waters as impaired if their designated uses are threatened, even if the precise causes are not fully known:

[I]f a designated use is not supported and the segment currently fails to meet an applicable water quality standard or is "threatened," it must be included on the State's Section 303(d) list even if the specific pollutant causing the water quality standard exceedance is not known at the time.

EPA’s Guidance for 2016 integrated reporting points back to and extends this direction to Virginia and other states for the Integrated Report process now underway, stating in particular that, “for States without nutrient-related assessment methodologies, there is

² Attachment D, U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Memorandum, Information Concerning 2014 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions; also available online at: https://www.epa.gov/sites/production/files/2015-10/documents/final_2014_memo_document.pdf (last visited Sept. 5, 2017).

still a requirement to assemble and evaluate all existing and readily available water quality-related data and information against all applicable numeric and narrative [water quality standards] to develop the CWA 303(d) list.”³ This guidance is consistent with EPA regulations requiring that Virginia “shall assemble and evaluate all existing and readily available water quality-related data and information to develop the [impaired waters] list...” 40 C.F.R. § 130.7(b)(5).

C. Relevant assessment approaches in other states

Relevant listing approaches in other states provide workable methods for assessing how excess algal growth prevents attainment of water quality standards. For example, Vermont considers water bodies to be impaired when “[a]n on-going record of public complaint concerning the algal conditions in the water has been established.”⁴ Montana’s approach is similar: “Some circumstances related to excess nutrient pollution are severe enough that a rigorous data collection effort is not required. Photo documentation will suffice.”⁵ These approaches are appropriate for assessing nonattainment of Virginia’s water quality standards, since the designated use and the general criteria prohibiting “undesirable or nuisance” both implicate visual impacts of algae.

The Technical Review re-submitted in support of these comments (Attachment B) provides additional background demonstrating the validity of visual assessments and user reports in assessing nonattainment of water quality standards for recreational and aesthetic uses.

II. DEQ’s Previous Rationale For Declining To Assess The Available Evidence Or To List These Streams Are Not Legally Or Technically Valid

DEQ rejected requests to list these waters as impaired in its 2010, 2012, 2014, and 2016 Integrated Reports, citing several technical and legal interpretations that lack merit. In September 2014 EPA approved Virginia’s 2012 Integrated Report, but expressly rejected several of DEQ’s reasons for deciding not assess the evidence and make a determination as to whether these waters are attaining or not attaining the applicable water quality standards.⁶ After DEQ again declined to evaluate the evidence or make an impairment

³ Attachment E, EPA, Office of Wetlands, Oceans, and Watersheds, Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions at 10 (Aug. 13, 2015), also available at: https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf (last visited Sept. 5, 2017) (emphasis added).

⁴ Attachment F, Vermont Surface Water Assessment and Listing Methodology at 23 (March 2016); also available online at: http://dec.vermont.gov/sites/dec/files/wsm/mapp/docs/WSMD_assessmethod_2016.pdf (last visited Sept. 5, 2017) (in addition: “For cyanobacteria (blue-green algae), regular, reliable monitoring indicates that cyanobacteria routinely exceed guidelines established by the Vermont Department of Health for recreation. Invasive non-native aquatic species are not applicable in this category.”)

⁵ Attachment G, Montana Dept. of Environmental Quality, Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus Levels (Dec. 2011); also available online at: https://www.deq.idaho.gov/media/937622-assessment_methodology_determining_wadeable_stream_impairment_excess_nitrogen_phosphorus_levels.pdf (last visited Sept. 5, 2017).

⁶ Letter and enclosures from Jon M. Capacasa, EPA Region 3 Water Protection Division, to Melanie Davenport, Div of Water Quality Programs at 5-7, VDEQ (Sept. 23, 2014).

determination in its 2014 Integrated Report, EPA again approved the Integrated Report, while at the same time expressly rejecting the bulk of the reasons DEQ offered for taking no action.⁷

Among other things, EPA in its approval of the 2014 Integrated Report stated that “the lack of a formalized methodology by itself is not a basis for a state to avoid evaluating data or information when developing its section 303(d) list.”⁸ EPA also stated that, because “the *Virginia 2014 Assessment Guidance* does not address the types of information submitted by [Shenandoah Riverkeeper] nor provide guidance as to how citizens can submit photographs, testimonials and other similar types of data,” the “lack of a State-approved [quality assurance project plan] alone should not be used to summarily reject data or assume that data is of low quality regardless of the actual quality controls that were employed.”⁹ EPA nonetheless approved the 2014 Integrated Report, reasoning that Virginia’s water quality standards present “unique challenges,” making it “challenging to identify impairments in a manner that is consistently repeatable.”¹⁰ This rationale is inconsistent with EPA’s regulations and guidance on implementing CWA § 303(d).

EPA similarly approved the 2016 Integrated Report, reasoning that it was sufficient for DEQ to identify 25 non-contiguous river miles in Virginia’s “Category 3C,” despite the fact that 3C by definition only applies when the state decides *not* to make an impairment determination under CWA § 303(d).¹¹ EPA also cited DEQ’s “commitments affirmed in an April 18, 2016 letter to EPA,” including the commitment to “[p]ropose numeric impairment threshold and assessment methods in VADEQ’s Draft 2018 Water Quality Assessment Guidance Manual”—commitments DEQ has still not fulfilled. Because EPA’s approval rationale is contrary to its own regulations and guidance, we challenged EPA’s approval of the 2014 and 2016 Integrated Reports in the U.S. District Court for the District of Columbia (Case No. 17-1023).

Notwithstanding that pending lawsuit, Virginia’s legal obligations under the Clean Water Act remain the same, as EPA stated in its guidance for the 2016 Integrated Report process: “[f]or States without nutrient-related assessment methodologies, there is still a requirement to assemble and evaluate all existing and readily available water quality-related data and information against all applicable numeric and narrative [water quality standards] to develop the CWA 303(d) list.”¹²

⁷ Letter and Enclosures from Jon Capacasa, EPA Region III Water Protection Div., to Jutta Schneider, Virginia Department of Environmental Quality (“DEQ”) Water Planning Div. at 6-8 (May 19, 2016).

⁸ 2014 Integrated Report Approval at 8.

⁹ *Id.* at 8-9.

¹⁰ *Id.* at 7.

¹¹ Letter and Enclosures from Catharine McManus, EPA Region III Water Protection Div., to Jutta Schneider, Virginia DEQ Water Planning Div. at 9-10 (March 6, 2018).

¹² Attachment D at 10.

III. DEQ's Protracted Study Of Possible Monitoring Or Assessment Methods Does Not Free Virginia From Its Duty To Evaluate Available Evidence And Make A Determination Of Attainment Or Nonattainment

For the current Integrated Report it appears that DEQ is, yet again, intent on refusing to assess the available evidence of impairment, and instead relying on its ongoing efforts to develop a listing threshold or assessment method (or both) as an excuse for refusing to assess the evidence that is currently available and that shows that the recreational use and related water quality standards in the North Fork, South Fork, and main stem of the Shenandoah River are not being met due to the presence and growth of excessive algae.¹³

DEQ's approach to sampling and evaluating data for the Shenandoah River does not provide an adequate picture of the nature and extent of algal blooms and other forms of nuisance aquatic plant life, nor does it give DEQ staff sufficient guidance on how to fully and properly assess the impacts of algae blooms on the designated uses and water quality standards for the Shenandoah River.¹⁴ Among other shortcomings, DEQ proposes using Surber sampling to measure wet-wrung biomass of filamentous algae and benthic *chlorophyll a*. But the sampling methods proposed are only compatible with capturing samples in depths less than one-half meter, an approach that overlooks algae growth in deeper water. DEQ also proposes using a *chlorophyll a* standard of 150 mg/m² as a threshold for algal biomass, without explaining how that standard captures all types and levels of algae growth that impact different aspects of the applicable water quality standards for aquatic life and recreation.

DEQ's preferred methodologies reflect a reactive rather than proactive approach that employs river-user complaints only as a trigger for additional DEQ sampling, rather than as a basis for determining impairment. Its preferred monitoring method concentrates on areas that are easily visible and convenient to access from boat ramps, rather than the actual locations where algae blooms have been photographed and pinpointed in river-user algae complaints—locations that shift over time, unlike DEQ's sampling locations.

The proposed approach also appears to give outsized weight to “good” years that are actually anomalous when viewed in context. Taking 2018 as an example, data collected by the USGS show that, with the exception of a few days in April and a few days in May, the entire watershed ran higher than the 88-year median for the entire algal growing season.¹⁵

¹³ Draft 2016 Integrated Report, Chapter 4.3, River Basin Summary at 63-64; Shenandoah River Algae, Development of Field Monitoring Methods (Dec. 2, 2016), http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/ShenAlgae/VADEQ_Shenandoah_monitoring_public.pdf?ver=2016-12-02-134505-757 (last visited Sept. 5, 2017); Shenandoah River Monitoring Plan, Algal Field Methods Development (June 2016), available at http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/ShenAlgae/Shenandoah_Algal_Monitoring_Plan.pdf (last visited Sept. 5, 2017); VA DEQ Shenandoah Algae webpage on "Shenandoah Algae," <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/ShenandoahAlgae.aspx> (last visited Sept. 5, 2017).

¹⁴ See Attachment I, Letter from Potomac Riverkeeper Network and Shenandoah Riverkeeper to Amanda Gray, Virginia DEQ, re. Comments on DEQ Draft Water Quality Assessment Guidance Manual (April 19, 2018).

¹⁵ Attachment J, U.S. Geological Service data from flow monitoring gauges for the Shenandoah River at Front Royal, VA, Strasburg, VA, and Millville, WV (retrieved on Feb. 20, 2019)

In short, DEQ's current and proposed future approach to evaluating algae impairment is designed to produce false negatives.

DEQ's justification for this approach – its desire for “a protocol that might be used on a consistent basis” – disregards the need for a protocol that is both consistent and effective at capturing algae outbreaks and their effects on recreational and aquatic life uses.¹⁶ DEQ's claim that “the high volume of algae in these shallow sections that would constitute a greater nuisance to recreational activities” lacks any factual basis, and is contrary to available information, including our public comments, showing that recreational uses occur in deeper waters. While DEQ claims that it cannot collect samples on algae where blooms actually arise because DEQ has “limited resources and property access issues,” that rationale does not apply to existing and readily-available data and information gathered and submitted by our organization, or by our members and others in the public, who regularly recreate at sites not reached by DEQ's staff. Finally, to the extent DEQ believes that the photographic evidence is inadequate if it doesn't distinguish between types of algae or between algae and underwater grasses, that position is contrary to Virginia water quality standards. The applicable standards do not distinguish between different types of algae, or between excessive growth of algae and excessive growth of native grasses; all of this excessive growth stems from related root problems including over-nutrication, and all of it impedes the Shenandoah River's ability to support a balanced array of aquatic life and robust recreational use.

While we appreciate DEQ's efforts to finally take this issue seriously, and while DEQ is free to propose regulations interpreting the designated use and narrative water quality standards, we note that those measures are not in currently place, DEQ's efforts to put them in place are far behind the schedule to which DEQ committed in 2016, and there is no legal obligation or assurance that they will be in place any time soon. In the meantime, DEQ's refusal to assess our evidence and make a determination of attainment or non-attainment is unlawful, as it frustrates and undermines the Virginia Water Control Board's authority to establish the water quality standards and designated use that the Board established in 1981.

IV. General Comments on the Draft Integrated Report

In the Executive Summary, DEQ provides a brief description of its long term trend analysis of particular waterbodies over a 20-year period (1996-2016).¹⁷ According to DEQ, it conducts a trend analysis every six years to “help understand whether a particular waterbody has gotten better or worse over the past 20 years.” *Id.* We note, however, that the trend analysis contained in the Draft Integrated Report only describes trends at the river basin level, using a certain number of fixed monitoring stations, and does not provide detailed data from specific monitoring stations. Instead, it generally determines whether there is a statistically significant trend upward or downward, denoting improving or degrading water quality, or the absence of a trend.¹⁸ We recommend that DEQ include the

¹⁶ DEQ, Draft 2018 Water Quality Assessment Guidance Public Comment – Response Document.

¹⁷ Draft IR, Executive Summary at i.

¹⁸ Draft IR, Ch. 4.7 at 163.

locations and sampling parameters for its fixed monitoring stations in the final 2018 Integrated Report, in order to provide the public and other interested stakeholders the ability to drill down and review water quality trends at particular sampling locations. The draft Integrated Report states that the Shenandoah River Basin has 18 sampling locations, but does not delineate exactly where they are, e.g. whether they are on the main stem, South or North Fork of the river, or in tributaries.¹⁹

We also note our concern regarding the long term trend analysis' acknowledgment of degrading water quality in the Shenandoah Basin due to nitrogen levels in the river. Increasing trends in nitrogen levels at 3 Shenandoah monitoring locations indicate degrading water quality, while 9 of the Shenandoah stations indicate no trend, and 6 indicate improving water quality, as measured by nitrogen levels. Draft IR Table 4.7-9 at 176. Given the history of algal blooms, fish kills and other verifiable pollution impacts to the entire Shenandoah River over at least the last fifteen years, DEQ's determination that 9 monitoring stations do not show a trend either way is of small comfort. On the contrary, this generally indicates that water quality, as measured by nitrogen levels, is not improving in these areas of the river basin as viewed from a 20-year trend perspective. This lack of improvement should be of significant concern to DEQ. Instead, the agency concludes its discussion of long term trends in Ch. 4.7 by stating that the long term trends in levels of nitrogen and other parameters symbolize a success story for state water quality as a whole.²⁰ While this may statistically be accurate based on the sample set used by DEQ, it is nearly irrelevant to local communities and public advocates who work to improve water quality at the local and river watershed level, and see local water quality trending in the wrong direction.

DEQ's process of reviewing monitoring data and regularly assessing whether state waterbodies are meeting their designated uses is intended to – and should – lead towards regulatory measures, such as impairment determinations and development and implementation of TMDLs that will lead to improved water quality, not merely management of existing impairments.

On a related note, we are also extremely concerned about the apparent lack of progress made by DEQ towards increasing the percentage of rivers in Virginia that have undergone water quality assessments. Table A in the Executive Summary notes that 78% of the state's river miles have not been assessed.²¹ Of the 21% of rivers that have been assessed, 15%, or over 2/3 of those are found to be impaired.²² The Draft Integrated Report fails to address this alarming metric, except to note that a change in the scale of mapping streams that occurred after 2014 resulted in an increase in the total number of river miles subject to assessment.²³ We find it hard to reconcile this statistic with the conclusion drawn elsewhere in the Draft Integrated Report that overall water quality trends show a success story for Virginia waterbodies. If a large majority of Virginia rivers' and streams' water

¹⁹ Draft IR, Ch. 4,7-1 at 166.

²⁰ *Id.* at 188.

²¹ Draft IR, Executive Summary at ii.

²² *Id.*

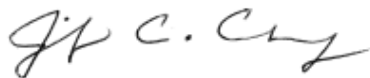
²³ *Id.*

quality has not been assessed, how can DEQ assert that overall trends are moving in the right direction? And while it may be true that much of the major river segments have been assessed, this fails to acknowledge that water quality in small headwater and feeder streams and freshwater wetlands is critically important to assess and protect or restore, both for local and downstream water uses. Relying on water quality assessment of 15% of the state's rivers and streams is simply not sufficient, and should not be acceptable to DEQ long term. We strongly urge DEQ to revise the final 2018 Integrated Report to more consistently address water quality trends, in light of the state's admission that only a small fraction of the state's rivers and streams have been assessed.

V. Conclusion

As in prior years, we have provided material evidence demonstrating that the North Fork, South Fork, and mainstem of the Shenandoah River are impaired by excessive algal growth, and that consequently those waters are failing to support their designated use for recreation, notwithstanding DEQ's ongoing efforts toward establishing a listing threshold or formal monitoring or assessment method. We therefore call on DEQ to fulfill its duty under the Clean Water Act to now list the North Fork, South Fork, and mainstem of the Shenandoah River as impaired in the final 2018 Integrated Report.

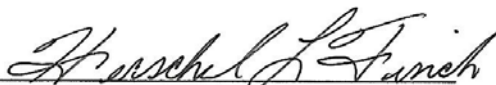
Sincerely,



Jennifer C. Chavez
Staff Attorney, Earthjustice



Phillip Musegaas
Vice President, Potomac Riverkeeper Network



Herschel L. Finch
Potomac River Smallmouth Club

CC: Bill Richardson
Office of Standards, Assessment and TMDLs
U.S. EPA Region 3
Via email to Richardson.William@epa.gov