

# HALL & ASSOCIATES

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October 16, 2009

## **Via Email and U.S. Mail**

Dr. Thomas Armitage  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Ave, NW  
Mail Code 1400F  
Washington, DC 20460

Dear Dr. Armitage:

In regard to the SAB's ongoing review of EPA's recently-released guidance document entitled "*Nutrient Criteria for Water Quality - Guidance for Numeric Approaches*," we provided the Ecological Processes and Effects Committee our post-review comments on October 7, 2009. Because of new information obtained from EPA since those comments were submitted, we believe it is now necessary to supplement the original submission.

As part of the peer review the Committee members were informed, through written and oral testimony, that EPA had already utilized the new nutrient criteria derivation methodology in several Pennsylvania TMDLs. Our submission to the Board provided the TetraTech reports that used these methods to derive the nutrient endpoints in those TMDLs. The conditional probability method appeared prominently in that report as a key basis for endpoint selection.

During the hearing, EPA initially implied that the methods were not used in the TMDLs but, upon questioning from Dr. Bierman, EPA acknowledged that the methods, in fact, had been used to derive the TMDL requirements. EPA also acknowledged that it was Hall & Associates' peer review petition that led to the panel being convened. Of course, the only reason the petition was filed, as explained in detail in the petition request (also supplied to the Committee as part of our comments), was because the TMDLs employed these procedures without ever undergoing the mandatory peer review. We are certain that the Committee members recall that representatives from the communities adversely impacted by those TMDLs (Goose, Indian and Paxton Creeks) each testified to their particular circumstances and William Hall presented some of the site-specific

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information for those waters that was ignored in the TMDL and endpoint development. The testimony and written submissions discussed the following with respect to EPA's application of the new methods:

1. **Goose Creek** -- This stream was never identified as nutrient impaired prior to initiation of the TMDL process. As part of the TMDL effort, EPA collected plant growth data which confirmed plant (periphyton) growth was not excessive (the watershed is heavily canopied). The TMDL excluded that information. Two biological surveys have been conducted for Goose Creek confirming that nutrients were not the cause of any reduced invertebrate levels. This site-specific information was also ignored by the TMDL endpoint development report prepared by TetraTech.
2. **Paxton Creek** -- The lower segments of this creek were identified as nutrient impaired in 1996. Subsequent data collection conducted as part of the TMDL in 2006 confirmed plant growth was not excessive. Those data were excluded from the TMDL report. The lower sections of Paxton Creek have severely altered habitat (much concrete lined) and invertebrate losses are closely correlated with habitat alteration. Upstream segments that are not listed as nutrient impaired have TP concentrations similar to the "nutrient impaired" segments of the creek. Invertebrate levels are acceptable in the upstream sections. These site-specific data confirm nutrients are not the cause of invertebrate losses in this system. All of this site-specific information was ignored in the TMDL and nutrient endpoint development.
3. **Indian Creek** -- There are no plant growth or invertebrate data for this watershed. Diurnal DO data indicate elevated plant growth occurs in some locations specifically where tree canopy has been removed (e.g., a golf course area). The TMDL limited TP to 40 ug/l based on the contention that this value was required to protect invertebrate populations. The TMDL provides no data indicating plant growth will be controlled by imposition of the TMDL endpoint of 40 µg/L. Rather, the Tetra Tech endpoint report states that plant growth is expected to be saturated near 40 ug/l TP, thus indicating the TMDL will do nothing to limit plant growth or reduce diurnal DO variability.

Over the past two weeks EPA has suggested to representatives of our Pennsylvania Coalition that the Agency might not withdraw the Pennsylvania nutrient TMDLs that employed the methodology set forth in the guidance document currently under peer review. EPA has stated to us that as the SAB never specifically questioned EPA on the TMDL results, the SAB conclusions may not affect that decision. While a transcript is unavailable, on several occasions I certainly recall Committee members voicing concern over the methods applied in the TMDLs. In particular, I believe Drs.

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Oris and Benfield made such statements after hearing the testimony by the impacted communities. Moreover, we were told by EPA that “different people heard different things,” it was “uncertain what the SAB would do,” and that it is possible that “the TMDLs could be salvaged.” These responses are astounding as, in direct questioning from Dr. Chapman, EPA agreed that the methods under review do not establish a “cause and effect” relationship. Without this basic demonstration, it is not possible to render a scientifically-defensible criteria decision on whether and how nutrients need to be regulated in particular watersheds. On at least a dozen occasions Committee members commented on the need to fully consider site-specific information in making these decisions, rather than relying on broad correlations. (Please note that this is not a new concept as EPA’s own TMDL regulations also mandate decision-making based on site-specific information – 40 CFR 130.7(c)(1)(i) – “Development of TMDLs and individual water quality based effluent limitations...Site specific information should be used whenever possible.”)

Needless to say, these recent conversations with EPA are extremely troubling to the communities we are assisting. It appears that EPA is attempting to turn the SAB peer review into an irrelevant proceeding. While the Committee has no direct control over EPA’s decision-making, it does have the ability to be very clear and detailed in its official findings on what constitutes a scientifically defensible approach to nutrient criteria derivation and, consequently, indirectly control the manner in which EPA proceeds on future regulatory efforts. Given that no written transcript exists for the SAB proceedings, we respectfully request that certain critical statements made by the Committee members (including some made by EPA themselves in response to statements of the Committee) be memorialized in either the Committee’s final summary of the meeting or the Committee’s official findings. In particular, we request that the following statements/findings be included in the official SAB meeting summary and report to the Administrator:

1. The 2008 nutrient TMDLs developed for Pennsylvania by EPA did employ the methods that were under review;
2. The SAB review was convened due to a request by Hall & Associates on behalf of the municipal entities adversely affected by the 2008 Pennsylvania TMDLs that applied the methods under review;
3. A scientifically defensible “cause and effect” relationship is the basic requirement that must be met when developing necessary and sufficient water quality criteria, interpreting narrative standards, and issuing a TMDL based on such criteria;
4. The proposed methods are not scientifically defensible because they do not establish a cause and effect relationship between nutrients and the endpoints plotted in the regressions;

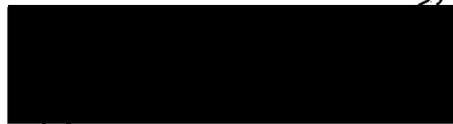
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5. EPA staff confirmed that the methods did not establish a cause and effect relationship between nutrients and the endpoints sought to be controlled; and
6. Conditional probability is not an appropriate basis to establish a scientifically defensible nutrient standard, and should only be used for data visualization.

To the extent the Committee believes the statements above have been substantively mischaracterized, we apologize. Considerable efforts were taken to avoid such inaccuracies. We do not ask the Committee to include any statement it disagrees with but rather merely request that the Committee reiterate statements we believe it has already made as well as those of EPA. Due to the short time before the draft report is to be completed, we have forwarded a copy of this letter to each of the Committee members for their convenience.

Thank you for your consideration on this matter.

Sincerely,

A large black rectangular redaction box covers the signature area.

John C. Hall

cc. SAB Committee members