



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
2/21/2007

Dr. Richard Eskin, Ph.D., Director
Technical and Regulatory Services Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 450
Baltimore, MD 21230

Dear Dr. Eskin:

The U.S. Environmental Protection Agency (EPA), Region III, has reviewed the report, "Water Quality Analysis of Eutrophication for the Patuxent River Upper Watershed, Anne Arundel, Prince George's and Howard Counties, Maryland," which was submitted by the Maryland Department of the Environment (MDE) for final Agency review on December 1, 2006.

EPA agrees with MDE's determination that recent data show that nutrient Total Maximum Daily Loads (TMDLs) are not necessary for the Patuxent River Upper Watershed. The Patuxent River Upper Watershed (basin code 02131104) was first listed by Maryland on its 1996 Section 303(d) list of water-quality limited segments as impaired by nutrients and sediments with impacts to biological communities added in 2002. In 2004, Cash Lake, an impoundment within the watershed, was listed as impaired for mercury. The water quality analysis addresses only the nutrient impairment in the non-tidal portion of the Patuxent River Upper Watershed. The listings for sediments, impacts to biological communities, and mercury will be addressed at a future date.

The water column data collected during January 1998 through December 2004, at ten monitoring stations shows that dissolved oxygen (DO) concentrations ranged from 5.9 mg/L to 21.0 mg/L. The data shows that none of the values fell below the criterion of 5 mg/L during the entire sampling period. Additionally, chlorophyll *a*, total phosphorus (TP), and total nitrogen (TN) data were collected at ten monitoring stations during January 1998 through December 2004. Biological oxygen demand (BOD) was also collected at two stations during March 2000 through September 2000, covering the algal growing season. BOD concentrations ranged from 1.3 mg/L to 6.1 mg/L. TP concentrations ranged from 0.026 mg/L to 0.57 mg/L. TN concentrations ranged from and 1.23 mg/L to 4.09 mg/L. Chlorophyll *a* concentrations were low and did not reach levels higher than 9.97 µg/L. The low chlorophyll *a* concentrations found in Patuxent River Upper Watershed suggest that chlorophyll *a* photosynthesis and respiration will have no significant effect on observed DO values. As a result of comments received during the public comment period, MDE staff collected additional sample data at two monitoring stations during September and October 2006. This additional data shows that DO concentrations ranged from 6.9 mg/L to 8.6 mg/L, which is not below the criterion of 5 mg/L.



If future evidence suggests that nutrients deriving from the Patuxent River Upper Watershed are contributing to water-quality problems, then MDE will need to readdress the nutrient impairment.

If you have any questions or comments regarding these reports, please contact Mr. Thomas Henry, TMDL Program Manager, at (215) 814-5752.

Sincerely,

Signed

Jon M. Capacasa, Director
Water Protection Division

cc: Melissa Chatham, MDE-TARSA
Nauth Panday, MDE-TARSA

2/27/07

Errata: 1. MDE staff collected addition samples at three monitoring stations, not two.

