



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
11/7/2005

Richard Eskin, Director
Technical and Regulatory Services Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 450
Baltimore, Maryland 21230-1718

Dear Dr. Eskin:

The Environmental Protection Agency (EPA) Region III, has reviewed the report "Water Quality Analysis of Arsenic, Cadmium and Silver in Back Creek, Cecil County, Maryland," which was submitted by the Maryland Department of Environment (MDE) for final agency review on August 31, 2005.

EPA agrees with MDE that the current data show that arsenic, cadmium and silver TMDLs are not necessary for Back Creek. Back Creek was listed by Maryland on its 1996, 1998, and 2002 Section 303(d) lists as impaired by nutrients, suspended sediments, arsenic, cadmium and silver.

The monitoring data collected demonstrated that arsenic, cadmium and silver concentrations consistently remained below each pollutant's respective water quality criterion. Arsenic concentrations ranged from $As = 0.20$ to $0.69 \mu\text{g/L}$, cadmium concentrations ranged from $Cd = 0.01$ to $0.02 \mu\text{g/L}$, and silver concentrations were below detection limits. For all samples, hardness ranged from 58 mg/L to 491 mg/L . Each pollutant's concentration range was well below the associated fresh water aquatic life chronic Hardness Adjusted Criteria (HAC) and did not exceed their respective criteria in any of the samples. Furthermore, bottom sediment samples used for bioassay toxicity tests inferred that it is unlikely that arsenic, cadmium and silver impact survival and reproduction. Additionally, sediment chemistry analysis demonstrated that arsenic concentrations at Station CD4 were slightly greater than the ERL, TEL, and TEC. However, considering the certainty of SQC's and the favorable comparisons made between concentrations found in the water column and porewater with the more rigorous water quality criteria, the evidence suggests that arsenic does not impact aquatic life use criteria.

Thank you for the opportunity to review the Water Quality Analysis. If you should have any questions, please contact Thomas Henry at 215-814-5752.

Sincerely,

Signed

Jon M. Capacasa, Director
Water Protection Division

cc: Melissa Chatham, MDE-TARSA