

US EPA ARCHIVE DOCUMENT

DECISION ON PETITION FOR RULEMAKING TO ADDRESS NUTRIENT POLLUTION FROM SIGNIFICANT POINT SOURCES IN THE CHESAPEAKE BAY WATERSHED

On December 1, 2003, the Chesapeake Bay Foundation (hereafter CBF or Petitioner) submitted a Petition to the United States Environmental Protection Agency (hereafter EPA or Agency) requesting in general that EPA promulgate a number of new rules to address nutrient pollution from significant point sources in the Chesapeake Bay watershed. As described below, EPA has given careful consideration to the issues raised in the Petition and the relief requested and is hereby denying in part and granting in part the Petition for the reasons set forth below.

Petition for Rulemaking

On December 1, 2003, CBF submitted a Petition requesting that “EPA issue, amend, or repeal rules and take corrective action relating to the regulation, control, and permitting of point source discharges of nutrients (nitrogen and phosphorus) from significant sewage and industrial treatment plants in the Chesapeake Bay watershed” (Petition jurisdictions). The Petition jurisdiction includes all those portions of the Chesapeake Bay watershed in New York, Pennsylvania, Delaware, Maryland, Virginia, West Virginia and the District of Columbia (the Petition jurisdictions). CBF submitted this Petition pursuant to Section 553(e) of the Administrative Procedure Act (APA), 5 USC § 553(e).

The Petitioner summarizes its requests for relief in Section IV of the Petition as follows:

CBF respectfully requests that EPA take the following actions as expeditiously as possible, but in no case later than June 15, 2004:

- A. Update Secondary Treatment Requirements** - Issue a rule amending the secondary treatment regulations at 40 CFR Part 133 to redefine secondary treatment to include a requirement that POTWs in the Chesapeake Bay watershed achieve effluent limits of 3mg/l of total nitrogen (annual average).
- B. Update Effluent Limit Guidelines** - Issue a rule amending the regulations at 40 CFR Subchapter N to establish an overarching Best Conventional Technology (BCT) Effluent Limit Guideline (ELG) of 3 mg/l of total nitrogen (annual average) for industrial point source dischargers in the Chesapeake Bay watershed.
- C. Require Implementation of Adequate, Enforceable Effluent Limitations for Existing Discharges of Total Nitrogen and Total Phosphorous in NPDES Permits for Point Sources in the Chesapeake Bay Watershed** - Issue a rule requiring that Chesapeake Bay watershed States include adequate, enforceable effluent limits for total nitrogen (annual average) and total phosphorous (annual average) that attain water quality standards, and are consistent with implementation measures necessary to achieve the agreed-to allocations for nitrogen and phosphorous when the State takes action to renew, reissue, modify, or amend an existing NPDES permit of a point source that discharges nitrogen and/or phosphorous in the Chesapeake Bay watershed.
- D. Require That No NPDES Permit be Issued by Chesapeake Bay Watershed States for a New or Expanded Discharge of Nutrients Unless Several Conditions are Met -**

Issue a rule specifying that no NPDES permit may be issued by a Chesapeake Bay watershed State that authorizes a new or expanded discharge of nutrients into, or otherwise affecting, an impaired water segment, unless: (1) the permit contains an enforceable effluent limit of zero nutrient load for the pollutants causing the impairment, (2) the State re-opens the permits of existing NPDES-permitted dischargers of nutrients and inserts compliance schedules for nutrient reductions designed to bring the segment into compliance with water quality standards, and (3) the State has completed a TMDL for nutrients for the impaired segment.

- E. Review State NPDES Permit Actions on Requests for New or Expanded Discharges of Nutrients From Point Sources Into the Chesapeake Bay Watershed** - Adopt a rule specifying that EPA will review State NPDES permit actions to ensure that no new or expanded nutrient discharge load is authorized into nutrient impaired waters from new or expanding point sources in the Chesapeake Bay watershed unless: (1) the permit contains an enforceable effluent limit of zero nutrient load for the pollutants causing the impairment, (2) the State re-opens the permits of existing NPDES-permitted dischargers of nutrients and inserts compliance schedules for nutrient reductions designed to bring the segment into compliance with water quality standards, and (3) the State has completed a TMDL for nutrients for the impaired segment. The rule must further specify that if the State-issued permit fails to meet these conditions, EPA will object to the issuance of the permit by the State.
- F. Review All State NPDES Permit Actions in the Chesapeake Bay Watershed to Ensure That Adequate, Enforceable Effluent Limits for Total Nitrogen and Total Phosphorous That Attain Water Quality Standards Are Included in the Permit** - Issue or amend a rule providing that EPA will review State NPDES permit actions in the Chesapeake Bay watershed, and object to State-issued NPDES permits for significant industrial and sewage discharges into or otherwise affecting waters impaired by excessive nutrients in the Chesapeake Bay watershed that fail to contain adequate, enforceable effluent limits for total nitrogen and total phosphorous that attain water quality standards.
- G. Review All State NPDES Permit Actions in The Chesapeake Bay Watershed to Assure Consistency With The Chesapeake Executive Council Bay Allocation Agreement** - Adopt a rule providing that it will review NPDES permit actions in the Chesapeake Bay watershed to ascertain if the permit includes adequate, enforceable effluent limits for total nitrogen and total phosphorous consistent with implementation measures necessary to achieve the agreed-to allocations for nitrogen and phosphorous. The rule must also specify that EPA will object to State-issued NPDES permits that fail to contain such limits.
- H. Review State NPDES Permit Actions in The Chesapeake Bay Watershed to Ensure That Any Discharge of Nutrients Does Not Adversely Affect Waters of Another State** - Issue a rule providing that it will review State NPDES permit actions in the Chesapeake Bay watershed and object to State-issued NPDES permits for significant industrial and sewage discharges where nutrients in the discharge may adversely affect waters of another State.
- I. Rescind the EPA Review Waiver for Any NPDES Permit in The Chesapeake Bay Watershed That Involves the Discharge of Nutrients That May Affect Waters of Another State** - Issue a rule notifying Bay watershed States that any waivers of review given by EPA to the State for a point source discharge that may involve the discharge of

nitrogen or phosphorous, where the nutrients may affect waters of another State, are hereby rescinded.

- J. Revisit MOAs With Chesapeake Bay Watershed Jurisdictions to Ensure That Review of Any State Permit Action That Involves the Discharge of Nutrients That May Affect Waters of Another State is Not Waived by EPA** - Revisit Memoranda of Agreement (MOAs) with Chesapeake Bay watershed jurisdictions to ensure that the MOAs do not waive the review of any State NPDES permit action in the Chesapeake Bay watershed that does not restrict the discharge of nutrients where that discharge may adversely affect the waters of another State.
- K. Revise TMDL Completion Schedules for Maryland and Virginia** - Issue a rule establishing TMDL schedules for Maryland and Virginia providing that TMDLs for impaired waters in the Bay watershed be completed by June 15, 2004. The rule must also provide that NPDES permits shall not be issued in the Maryland and Virginia portions of the Chesapeake Bay watershed until TMDLs have been completed by Maryland and Virginia.
- L. Require That States Use at Least 25% of Section 106 Funds for Nutrient Reduction Measures** - Adopt a rule specifying that Chesapeake Bay watershed State program plans shall include a component for using 25% or more of the Section 106 grant money in each Bay watershed State for the implementation of nutrient reduction measures by sewage treatment plants in the watershed.
- M. Carry Out Its Duties Under Section 117(g)(1) of the Clean Water Act (CWA)** - Issue a rule that specifies that it will engage in implementation oversight efforts to fulfill its statutory duty under Section 117(g)(1) to ensure that management plans are developed and implementation is begun by the Bay watershed States by specifying that EPA will review all State-issued NPDES permits in the watershed to ensure that such permits contain adequate, enforceable effluent limitations for total nitrogen and total phosphorous that are consistent with the agreed-to Bay allocations for nitrogen and phosphorous, and objects to permits that fail to contain such limits.
- N. Require Chesapeake Bay Watershed States to Take Necessary Measures and Use Necessary Means to Attain Nutrient Reductions From Point Sources** - Issue a rule specifying that Chesapeake Bay watershed States must use all necessary means and take all necessary measures, including the use of Section 106 grant funds, to attain nutrient reductions that attain water quality standards and are consistent with implementation measures needed to achieve the agreed-to allocations for nitrogen and phosphorous. The rule must detail extended federal oversight efforts over State permit and program actions that involve nutrient loadings to the Chesapeake Bay watershed.
- O. Withdraw NPDES Program Delegation to Chesapeake Bay Watershed States That Fail to Issue NPDES Permits With Adequate, Enforceable Effluent Limitations for Nitrogen and Phosphorous** - Issue a rule providing that the failure of Chesapeake Bay watershed States to issue NPDES permits to significant point source dischargers of nutrients with adequate, enforceable effluent limits for total nitrogen and total phosphorous will result in withdrawal of the State's delegated authority to administer the NPDES program within its jurisdiction.
- P. Grant Other Relief** - By June 15, 2004, grant such other relief as may be appropriate.

Documents Considered by EPA in Responding to the Petition

In developing this response, EPA considered many documents, including but not limited to the following statutes, regulations and key documents: the CWA; implementing regulations including 40 CFR Parts 122-135 and 401-471; Agency guidance; the *Chesapeake 2000* Agreement; Ambient Water Quality Criteria for Chesapeake Bay and Tidal Tributaries (EPA, 2003, 2004 addendum); Technical Support Document for Identification of Attainment of Designated Uses in the Chesapeake Bay and Tidal Tributaries (EPA, 2003, 2004 Addendum); the National Pollutant Discharge Elimination System (NPDES) State programs and associated Memoranda of Agreement (MOAs) for the Petition jurisdictions. The following discusses EPA's approach to placing nutrient limits in NPDES permits in the Chesapeake Bay watershed and our general response to the requested actions for relief.

CBF's Request for New or Revised Regulations to Support Nutrient Point Source Controls in the Chesapeake Bay Watershed

The Petition calls on EPA to promulgate roughly sixteen additions or modifications to EPA's regulations, as well as modify the effluent guidelines for potentially 55 industrial categories including as many as 450 subcategories to address nutrient pollution from significant point sources in the Chesapeake Bay watershed. These regulations would largely be directed at the overarching objective of: **watershed protection of the Chesapeake Bay through issuance of NPDES permits with adequate nutrient effluent limits for all significant facilities within the Chesapeake Bay.** The Petitioner defines significant point sources as those identified as such by EPA's Chesapeake Bay Program (CBP).¹ The Petitioner states, "of the nutrient loadings entering the Bay annually, sewage and industrial point sources constitute the second largest source of nutrient pollution (behind only agriculture) in the Chesapeake Bay Watershed."

EPA has concluded that existing authority provided by the Clean Water Act and implementing regulations is fully adequate to support permitting of nutrients within the Bay watershed. Moreover, as we describe herein, within the framework of the statute and existing regulatory program, EPA and its partner States are rapidly developing updated tools necessary to establish and defend adequate and enforceable limits for nutrients in the Bay. Thus EPA has determined in general that there is no need for new or revised regulations. EPA and the States have already included nutrient limits in many NPDES permits within the Bay watershed. As of July 2004, 174 of the permits of the significant facilities within the Bay watershed had limits for phosphorus.² The fact that these limits are in place demonstrates that the statutory and regulatory basis for these limits was sufficient to support including them in permits.

EPA also notes that the multiple rulemaking requests for relief in the Petition would represent an enormous regulatory undertaking.³ For example, the technical evaluation and

¹ EPA CBP identifies those approximately 429 facilities at:

http://www.chesapeakebay.net/data/query1.cfm?DB=CBP_PSDB

² Letter from Mr. Donald Welsh to Mr. Roy Hoagland, July 16, 2004

³ The rulemaking process typically involves a commitment of extensive Agency time and resources. To develop new rules, EPA typically begins by convening a workgroup of staff from each interested office within the Agency. Any necessary research and data gathering and analysis would follow. Policy options would then be developed for the new regulations and Agency management would select the options to be proposed. The workgroup would then prepare a notice of proposed rulemaking, consisting of the draft regulations under consideration and a preamble that

administrative process for a single effluent guideline typically takes five to seven years. The significant agency resources to complete the multiple rulemakings requested in this Petition would need to be redirected from other important matters. In addition, proposed rules are often significantly modified through EPA's public process and final rules may change after court challenges to the rule. Such actions consume more time, more agency resources, and may result in a rule that is quite different from the originally proposed rule.

Accordingly, and for the reasons explained more fully below, EPA concludes that additional rulemaking to support achieving appropriate nutrient controls in permits for point sources within the Chesapeake Bay is unnecessary and would be an unwise investment of limited agency resources. Instead, EPA will direct its efforts to utilizing the existing laws and regulations to attain the goal of reduced loadings of nutrients being discharged to the Chesapeake Bay.

EPA's Approach of Using Existing Regulations to Support Nutrient Point Source Controls in the Chesapeake Bay Watershed

The State-EPA relationship under the CWA is one of "cooperative federalism." United States Dep't of Energy v. Ohio, 503 U.S. 607, 633 (White, J., concurring). Through it, the States, with EPA oversight, bear primary responsibility for the important means of achieving the CWA's goals: establishment of water quality standards, implementation of the NPDES program, and establishment of Total Maximum Daily Loads under Section 303(d) of the Act.

Within this framework, EPA and the Bay watershed's jurisdictions have been pursuing a number of activities over the past several years to restore Bay water quality and address nutrient pollution. EPA has been working to ensure that each step of the process is based on sound science and consistent with the CWA in order to guide EPA and the Bay States in placing defensible nutrient limits in NPDES permits.

EPA agrees with the Petitioner's overarching goal of ensuring adequate NPDES point source effluent controls on nutrients from significant point sources. The Chesapeake Bay Program (CBP) has been working simultaneously on refining the aquatic life uses and the water quality criteria necessary to protect the Bay's living resources. Part of EPA's response to this Petition therefore will reference the recent and ongoing actions being carried out through the CBP partnership.

fully explains EPA's basis and purpose for the proposed new rules, and would create a public docket of the data and other information that EPA relied on in formulating the proposal. The proposed rule package would need to be reviewed at a number of levels within the Agency and in other parts of the Executive Branch. EPA would then publish the notice of proposed rulemaking and solicit comments from the public. After the close of a public comment period that typically can take two or three months, during which time the Agency may also decide to conduct public hearings on the proposed rules, the workgroup would start to prepare the final rulemaking package, beginning by fully considering the public comments received. It would then develop the final regulatory options, followed by a final rulemaking package and supporting documents for the record. During this time, EPA may also find the need to publish for public comment one or more supplemental notices of data availability if the Agency has received new information since the proposal from the public or otherwise.

CBP is Implementing a Comprehensive Plan for the Restoration of the Chesapeake Bay

The Chesapeake Bay is North America's largest and most biologically diverse estuary, home to more than 3,600 species of plant, fish and animals. The Bay and its tributaries have sustained the region's economy and defined its traditions and culture. The origin of the current CBP stems from federally funded research study of the Bay from the mid-1970s that resulted in a final report issued in 1983.⁴ Based on the study's findings regarding the historic decline of Bay water quality and living resources, the governors of the States of Virginia, Maryland, and Pennsylvania, the Mayor of the District of Columbia, the Chesapeake Bay Commission (a tri-State legislative body) and the Administrator of the U.S. Environmental Protection Agency, representing the federal government, signed an agreement that established the CBP.⁵ The 1987 amendments to the CWA included Section 117 authorizing the CBP and an EPA programmatic role.

The CWA defines the "Chesapeake Bay Agreement" as the "formal voluntary agreements executed to achieve the goal of restoring and protecting the Chesapeake Bay ecosystem and the living resources of the Chesapeake Bay ecosystem and signed by the Chesapeake Executive Council (EC)."⁶ The EC is defined as the signatories (interchangeable with the signatory jurisdictions) of the Chesapeake Bay Agreement.⁷ The signatory jurisdictions signed a more comprehensive Chesapeake Bay Agreement in 1987 that among other goals, committed the jurisdictions to reduce nutrient loadings to the Bay from both point and nonpoint sources by 40% by the year 2000.⁸ In June 2000, the CBP partners adopted the *Chesapeake 2000* Agreement, which outlines the current plan for restoring the Bay. Also in 2000, Congress reauthorized Section 117 of the CWA.⁹ Through a Memorandum of Understanding signed in 2002, the partnership expanded to include commitments from the governors of Delaware, New York and West Virginia "to achieve the nutrient and sediment reduction targets that we agree are necessary to achieve the goals of a clean Chesapeake Bay by 2010."¹⁰ The partnership is stronger and more encompassing today than it has ever been.

Since, the CBP is a partnership leading and directing the protection and restoration of the Chesapeake Bay, the EPA's role is to provide management, offices and some staff as outlined in Section 117 of the CWA. Many other federal agencies and partner organizations provide staff and resources to further the programs and activities of the CBP. The day-to-day work of this partnership brings together scientific and technical experts from all over the watershed. The Program works with researchers, policymakers and resource managers from universities, conservation organizations, business and industry, and local, State and federal government

⁴ U.S. EPA. 1983. Chesapeake Bay Program: Findings and Recommendations. Region 3, Philadelphia, PA. 48 pp; U.S. EPA. 1983. Chesapeake Bay: A Framework for Action. Region 3, Philadelphia, PA. 186 pp; U.S. EPA. 1983. Chesapeake Bay: A Framework for Action--Appendices. Region 3, Philadelphia, P; and, U.S. EPA. 1983. Chesapeake Bay: A Profile of Environmental Change. Region 3, Philadelphia, PA. 200 pp.

⁵ 1983 Chesapeake Bay Agreement, December 9, 1983.

⁶ Section 117(a)(2) of the CWA

⁷ Section 117(a)(4) & (6) of the CWA

⁸ 1987 Chesapeake Bay Agreement, December 15, 1987.

⁹ Chesapeake Bay Restoration Act of 2000 amending Section 117 of the CWA

¹⁰ Memorandum of Understanding regarding Cooperative Efforts for the Protection of the Chesapeake Bay and Its Rivers, October 31, 2002.

agencies. Through subcommittees, partners discuss actions and make decisions encouraging public participation to meet the over one hundred discrete commitments in the *Chesapeake 2000* Agreement.

The *Chesapeake 2000* Agreement is the strategic plan to restore the Chesapeake Bay. The Agreement was the result of a comprehensive three-year stakeholder-driven process involving more than 300 scientists, resource managers, policymakers and citizens from all parts of the Bay watershed including the Petitioner. *Chesapeake 2000* contains comprehensive commitments that outline Bay restoration efforts well into the 21st century. It provides a vision that includes abundant, diverse populations of living resources, fed by healthy streams and rivers, sustaining strong local and regional economies, and a unique quality of life. *Chesapeake 2000* is one of the most aggressive and comprehensive watershed restoration plans ever developed. To implement the various commitments, the Bay partners have identified a variety of voluntary and regulatory tools.

To restore an ecosystem as complex as the Chesapeake Bay, *Chesapeake 2000* provides nearly one hundred commitments important to Bay restoration, organized into five strategic focus areas:

Protecting and Restoring Living Resources - *Chesapeake 2000* aims to restore, enhance and protect the finfish, shellfish and other living resources, their habitats and ecological relationships to sustain all fisheries and provide for a balanced ecosystem.

Protecting and Restoring Vital Habitats - The Bay Program aims to preserve, protect and restore those habitats and natural areas that are vital to the survival and diversity of the living resources of the Bay and its rivers.

Improving Water Quality - Improving water quality in the Bay and its rivers is the most critical element in ensuring the future health of the Chesapeake Bay.

Managing Lands Soundly - Because pollutants on land are easily washed into streams and rivers, our actions on land ultimately affect the Bay.

Engaging Individuals and Local Communities - To contribute to Bay restoration, we have to first be concerned about resource stewardship in our own communities, homes and backyards.

Chesapeake 2000 specifically outlines many actions that the EPA through the CBP has taken and intends to take in order to achieve and maintain the water quality necessary to support the aquatic living resources of the Bay and its tributaries and to protect human health. Due to EPA's general mission, the role it plays in the CBP is to facilitate the improvement of water quality by correcting the nutrient and sediment related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters under the CWA by 2010. In order to achieve this goal, *Chesapeake 2000* outlines the following steps:

1. Define the water quality conditions necessary to protect aquatic living resources and then assign load reductions for nitrogen and phosphorus to each major tributary;

2. Using a process parallel to that established for nutrients, determine the sediment load reductions necessary to achieve the water quality conditions that protect aquatic living resources, and assign load reductions for sediment to each major tributary by 2001;
3. Complete a public process to develop and begin implementation of revised Tributary Strategies to achieve and maintain the assigned loading goals; and,
4. The jurisdictions with tidal waters will use their best efforts to adopt new or revised water quality standards consistent with the defined water quality conditions. Once adopted by the jurisdictions, the Environmental Protection Agency will work expeditiously to review the new or revised standards, which will then be used as the basis for removing the Bay and its tidal rivers from the list of impaired waters.

CBP has Provided New Understanding of the Impairment of the Chesapeake Bay

The CWA requires each State to adopt water quality standards.¹¹ Water quality standards define the designated and existing beneficial uses of a waterbody, the narrative or numeric criteria sufficient to protect each use, and an antidegradation policy.¹² Examples of beneficial uses are aquatic life, recreation and drinking water. An existing use is any use actually attained on or after November 28, 1975. A designated use is that use specified in the water quality standards whether or not it is being attained. Virginia and Maryland have historically designated the Chesapeake Bay's mainstem and its tidal tributaries for general aquatic life and recreational uses.

The Bay is a complex ecosystem. One of the most important contributions of the CBP is its comprehensive water monitoring and assessment program for Bay waters. The Chesapeake Bay Monitoring Program, begun in 1984 by the CBP Executive Council, is a Bay-wide EPA/State cooperative effort. Comprising over 165 stations below the fall line¹³, the program combines efforts of Maryland, Pennsylvania, Virginia, District of Columbia, several federal agencies, 10 institutions, and over 30 scientists. Nineteen physical, chemical and biological characteristics are monitored 20 times a year in the mainstem and many tributaries. A volunteer citizen monitoring program was started in 1985. The following parameters are monitored because they are key indicators of the Bay's health: nutrients, sediment, toxics, plankton, benthos, finfish and shellfish, bay grasses (SAV), freshwater flows, water temperature, salinity, circulation and oxygen. The CBP has also compiled the historical records of water quality conditions and used those records in its decision making process to determine existing uses. In addition to numeric water quality criteria provided by approved State water quality standards, CBP has developed approximately 100 indicators to assess the health of the Bay and the restoration effort.¹⁴ Most of these indicators are based on monitored data.¹⁵ Based on this

¹¹ Section 303(c) of the CWA.

¹² 40 CFR 131.2 & 131.3(i).

¹³ The fall line forms the geological boundary between the Piedmont Plateau and the Atlantic Coastal Plain. Ranging from 15 to 90 miles west of the Bay, it is marked by waterfalls and rapids.

¹⁴ U.S. Environmental Protection Agency, Chesapeake Bay Program Office,. 2004. *The State of the Chesapeake Bay and Its Watershed: A Report to the Citizens of the Bay Region*. CBP/TRS 273/05 EPA-903-R-04-009. Annapolis, Maryland. <http://www.chesapeakebay.net/SOTB04/sotb2004.pdf>

¹⁵ U.S. Environmental Protection Agency, Chesapeake Bay Program Office. 1989. *Chesapeake Bay Basin Monitoring Program Atlas: Volume I - Water Quality and Other Physiochemical Monitoring Programs*. CBP/TRS 34/89. , Annapolis, Maryland.

wealth of monitoring data, the CBP has developed one of the worlds most sophisticated and accurate water quality models in the world.¹⁶ Both the monitoring data and the modeling results provide an enhanced understanding of the complexities of nutrient pollution and how that pollution degrades water quality and living resources in the Bay.

The identification of Virginia and Maryland's main stem and tidal tributary waters as impaired on their State Section 303(d) lists was made based on CBP monitoring data. Under Section 303(d) of the Clean Water Act, States are required to develop a list of impaired segments (i.e., stream segments and lakes) in that State. The waterbodies are determined to be impaired if they do not meet the State water quality standards, even after technology-based pollution controls have been implemented. The law requires that the States place these impaired segments on a list called the 303(d) list and develop TMDLs for the waterbodies on that list. States must use "all existing and readily available water quality-related information" when developing their 303(d) lists. The Chesapeake Bay remains on both Virginia and Maryland's most recent 2004 list of impaired waters for low dissolved oxygen and failure to attain appropriate aquatic life uses. Nutrients, along with sediment, were the primary causes of impairments to the Chesapeake Bay and its tidal tributaries. To meet the objectives of the CWA, the EPA's implementing regulations specify that States must adopt criteria that contain sufficient parameters to protect existing and designated uses. Until 2003, the EPA had not published recommended quantitative water quality criteria for nutrients that States could adopt to protect uses. The following discussion elaborates why dissolved oxygen is better for controlling nutrient impairments than setting total nitrogen and phosphorus criteria.

EPA Has Published New Refined Aquatic Life Uses and Water Quality Criteria Appropriate for the Protection of the Chesapeake Bay

In April 2003, EPA published guidance entitled *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries EPA Bay Criteria Guidance*¹⁷ to assist the Petition jurisdictions in adopting revised water quality standards to address nutrient and sediment-based pollution in the Chesapeake Bay and its tidal tributaries. The criteria for these parameters are superior to criteria for total nitrogen and total phosphorus, because levels of dissolved oxygen, water clarity, and chlorophyll *a* are a reflection of how nutrients express themselves as problems in the natural environment. That is, the nutrients promote nuisance amounts and species of algae, thus the chlorophyll *a* criteria (chlorophyll is an indicator of algae). The clarity criteria stem from the fact that these algae, along with sediments, cloud the water making it difficult for submerged aquatic vegetation growth. Finally, the dissolved oxygen criteria reflect the fact that as the algae die and settle to the bottom of the Bay, they decay, reducing oxygen levels. The US EPA developed the *EPA Bay Criteria Guidance* in accordance with CWA requirements based on the latest scientific knowledge. These criteria represent the nutrient criteria consistent with EPA's *National Strategy*

¹⁶ Cerco, Carl F.; Noel, Mark R., 2004. *The 2002 Chesapeake Bay Eutrophication Model Final Model Documentation*, U.S. EPA Chesapeake Bay Program Office, Annapolis, MD 349 pages.
http://www.chesapeakebay.net/pubs/subcommittee/mdsc/doc-2002_Eutrophication_Model.pdf

¹⁷ U.S. Environmental Protection Agency Region 3, Chesapeake Bay Program Office. April 2003. *Ambient Water Quality Criteria For Dissolved Oxygen, Water Clarity and Chlorophyll a for Chesapeake Bay and its Tidal Tributaries*,

for the Development of Regional Nutrient Criteria.¹⁸ These criteria are based on data and scientific judgments on pollutant concentrations and environmental effects. The water quality criteria and refined tidal-water aquatic life uses presented by EPA in this document are the product of a collaborative process by the CBP partners, including representatives from the CBF who participated in the criteria development. They represent a scientific consensus based on the best available scientific findings and technical information defining the water quality conditions necessary to protect Chesapeake Bay aquatic living resources from effects due to nutrient and sediment over-enrichment.

The current water quality dissolved oxygen criteria adopted by the Petition jurisdictions for the Chesapeake Bay and its tidal tributaries were based upon national guidance for estuarine waterbodies for general aquatic life use protection.¹⁹ The Petition jurisdictions do not currently have numeric criteria for nutrients to protect aquatic life uses. Based upon recent scientific studies and modeling it became apparent that the adopted dissolved oxygen water quality standards were not entirely appropriate for the Chesapeake Bay. Specifically, because of limited mixing of water in the Bay due to natural stratification, the dissolved oxygen criteria are not achievable and never were achievable in the deepest waters.²⁰ Upon further research, “EPA identified and described five refined aquatic life uses (or habitats) that when adequately protected will ensure the protection of the living resources of the Bay and its tidal tributaries.”²¹ Those refined designated uses (or habitats) are (1) migratory and spawning use; (2) shallow water use; (3) open-water and shellfish use; (4) deep-water seasonal and shellfish use; and (5) deep-channel seasonal refuge use. The *EPA Bay Criteria Guidance* sets forth the specific criteria sufficient to protect those uses from the effects of nutrient pollution. Because the current water quality criteria are not completely attainable or appropriate in all areas of the Bay, and because EPA has identified more appropriate refined uses and criteria sufficient to achieve a restored ecosystem, EPA recommended that the Petition jurisdictions update the State water quality standards to reflect this guidance.

In the *EPA Bay Criteria Guidance*, EPA recommends and anticipates that the numerical criteria and refined designated uses will be considered by and appropriately incorporated into the water quality standards of the Chesapeake Bay jurisdictions with tidal waters – Maryland, Virginia, Delaware and the District of Columbia. The recommended criteria are in the forms of dissolved oxygen (DO), water clarity and chlorophyll *a*. In some cases, the DO criteria for the refined use is more stringent than the current DO criteria (e.g., migratory and spawning use); in other cases the refined DO criteria would be less stringent than the current DO criteria (e.g., deep channel seasonal refuge use). In all cases, the refined criteria are protective of the associated refined aquatic life use and moreover, provide adequate protection for species identified as endangered under the federal Endangered Species Act (ESA). Using existing State authority and

¹⁸ U.S. Environmental Protection Agency. 1998. *National Strategy for the Development of Regional Nutrient Criteria*.

¹⁹ U.S. EPA. 1986. *Ambient Water Quality Criteria for Dissolved Oxygen (Freshwater)*. EPA 440/5/86-003.

²⁰ U.S. Environmental Protection Agency, Chesapeake Bay Program Office. April 2003. *Ambient Water Quality Criteria For Dissolved Oxygen, Water Clarity and Chlorophyll *a* for Chesapeake Bay and its Tidal Tributaries*.

²¹ U.S. Environmental Protection Agency, Chesapeake Bay Program Office. April 2003. *Ambient Water Quality Criteria For Dissolved Oxygen, Water Clarity and Chlorophyll *a* for Chesapeake Bay and its Tidal Tributaries. Chapter 1 and Appendix A*. See also U.S. Environmental Protection Agency, Chesapeake Bay Program Office. April 2003. *Technical Support Document for Identifying Chesapeake Bay Designated Uses and Attainability*.

public process, each jurisdiction is expected to consider and propose criteria and appropriate designated uses, subject to review and approval by EPA, that are consistent with the requirements of the CWA. EPA will consider the *EPA Bay Criteria Guidance* in reviewing any State submission regarding this issue.

Part of the jurisdictions' water quality standards development process may be to conduct use attainability analyses (UAAs) as described in 40 CFR 131.10(g) regarding the attainability of any current designated use, especially for those deep waters of the Bay watershed. The US EPA developed the *Technical Support Document for Identifying Chesapeake Bay Designated Uses and Attainability (TSD)*²² to assist the Petition jurisdictions in developing their individual UAAs. The UAA process is traditionally conducted by individual States. However, the multi-stakeholder body that guided the development of the water quality criteria for the Chesapeake Bay, the Water Quality Steering Committee, determined that providing UAA-related information on a watershed-wide scale would help promote coordination and consistency across all jurisdictions. To that end, the *TSD* provides a compilation of the basinwide analyses assimilated collaboratively by the affected jurisdictions. The *TSD* is not a regulation or a mandatory requirement. Rather, the EPA encourages the jurisdictions to use the information in this document and, when appropriate, to perform additional analyses tailored to each jurisdiction during their respective water quality standards development processes.

In providing technical background information for the Bay jurisdictions to use in their own UAAs, the *TSD* explains and documents why it appears that the current designated uses for aquatic life protection cannot be attained in all parts of the Chesapeake Bay and its tidal tributaries. The *TSD* provides scientific data and analysis showing where natural and human-caused conditions that cannot be remedied.²³ States may use that data and analysis as the basis for proposing refined designated uses and to modify designated uses in accordance with the CWA during the reevaluation of Bay water quality standards currently underway. The *TSD* also provides scientific data indicating that the refined designated uses protect existing aquatic life uses in many areas of the Chesapeake Bay and its tidal tributaries.²⁴ In other areas that would not currently be able to achieve the refined designated uses, the *TSD* demonstrates how attainment of such refined designated uses is feasible.²⁵ Finally, the document briefly summarizes economic analyses performed by the CBP, including estimates of the cost of implementing three of the four levels of control scenarios.²⁶

The *TSD* identifies two factors that may prevent current designated uses in the Chesapeake Bay and its tidal tributaries from being attainable in all parts of the Bay: (1) natural causes (including the physical properties of the water body) and (2) human-caused conditions that cannot be remedied. These two factors are among the criteria identified in EPA regulations as supporting modification or removal of designated uses.²⁷ Output from model-simulated

²² US EPA. *Technical Support Document for the Identification of Chesapeake Bay Designated Uses and Attainability*, US EPA Region 3 Chesapeake Bay Program Office, August 2003 as amended by TSD Addendum (EPA, October 2004), ("TSD").

²³ *Id.*, Chapter III.

²⁴ *Id.*, Chapter IV.

²⁵ *Id.*, Chapter V.

²⁶ *Id.*, Chapter VI.

²⁷ 40 CFR 131.10(g).

scenarios as well as the paleoecological record of the Chesapeake Bay ecosystem both provides evidence that these two conditions prevent attainment of current designated uses.²⁸ Current designated uses for the Chesapeake Bay and its tidal tributaries do not fully reflect natural conditions, and may be too broad in their definition of use to support the adoption of more habitat-specific aquatic life water quality criteria. The current uses also change across jurisdictional borders within the same water body. Therefore, in the ongoing process to reevaluate and refine the tidal-water designated uses and criteria, the tidal jurisdictions (Maryland, Virginia, Delaware, and the District of Columbia) will be considering five principal factors:

- Habitats used in common by sets of species and during particular life stages should be delineated as separate designated uses;
- Natural variations in water quality should be accounted for by the designated uses;
- Seasonal uses of different habitats should be factored into the designated uses;
- The *EPA Bay Criteria Guidance* for dissolved oxygen, water clarity and chlorophyll *a* should be tailored to support each designated use; and
- The refined designated uses applied to the Chesapeake Bay and its tidal tributary waters will continue to support the federal CWA goals and State goals for uses existing in these waters since 1975.

The CBP, under the leadership of the EPA, assessed attainability for the refined designated uses based on dissolved oxygen for the migratory and spawning, open-water, deep-water and deep-channel designated uses.²⁹ Attainability for the shallow-water designated use was assessed based on historic and recent data on the existence of underwater bay grass acreage. For the refined designated uses to which the dissolved oxygen criteria apply, the CBP evaluated attainability by comparing the modeled water quality response to a series of technology-based nutrient reduction scenarios.

The CBP used the Watershed Model and Water Quality Model to determine the water quality response to the pollutant reductions in each scenario and then compared these modeled water quality observations within the five refined designated uses to determine the spatial and temporal extent of nonattainment with the respective dissolved oxygen criteria.³⁰ Specifically, comparison of model results for dissolved oxygen were made to a monthly average dissolved oxygen concentration of 6 mg/l for the migratory and spawning use, 5 mg/l for the open-water use, 3 mg/l for the deep-water use and 1 mg/l for the deep-channel use. In establishing the refined designated uses, the CBP took explicit steps in developing the requirements and boundaries to ensure that existing aquatic life uses would continue to be protected as the EPA Water Quality Standards Regulation require.³¹

States Are Adopting Revised Water Quality Standards Appropriate for the Protection of the Chesapeake Bay

²⁸ See TSD, Chapter III.

²⁹ See TSD, Chapter V and Appendix A.

³⁰ U.S. Environmental Protection Agency. 2003. Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads. EPA-903-R-03-007. Chesapeake Bay Program Office, Annapolis, Maryland. Appendix D.

³¹ Section 303(c) of the CWA.

As discussed above, the Petition jurisdictions are now in the process of reexamining and proposing revisions to their waters quality standards considering the published EPA Bay guidance on refined aquatic life uses and associated water quality criteria. Delaware has adopted changes to their water quality standards and submitted the revised standards to EPA by letter dated September 17, 2004, which were subsequently approved by EPA Region 3 on December 16, 2004. In accordance with Section 303(c) of the CWA, EPA approved those changes and found, among other things, that the criteria were in accordance with EPA Bay guidance. District of Columbia has proposed changes to their water quality standards and anticipates final adoption in June, 2005. EPA comments³² on the District's proposed changes reflect that the proposed changes are consistent with EPA guidance. Maryland has also proposed revisions and anticipates adoption and submission to EPA in the summer of 2005. EPA comments dated February 17, 2005 indicate that the Maryland Bay standards proposed are consistent with EPA Bay guidance. Furthermore, Virginia is also nearing revisions to their water quality standards for the Chesapeake Bay and its tidal tributaries. In March, the Virginia State Water Control Board approved for adoption State Water Quality Standards that are based on the EPA criteria. These adopted revisions are scheduled to be submitted to EPA for action in June, 2005.

For purposes of the CWA, such modifications of water quality standards are not in effect until approved by EPA.³³ EPA and the Petition jurisdictions have been working closely on the standards so that EPA will be able make its final decision promptly.

The Chesapeake Bay Program Established Cap Load Allocations for Nitrogen and Phosphorus for each Major Tributary Basin to the Chesapeake Bay

Building on the scientific basis and EPA recommendations set forth in the *EPA Bay Criteria Guidance* and *TSD*, the CBP also has identified pollutant loading caps for nutrients (nitrogen and phosphorous) and sediment sufficient to restore the water quality and living resources of the Bay in accordance with the water quality commitments in *Chesapeake 2000*. The Bay Program has defined total loading caps for the Bay as a whole, and further refined those gross allocations to allocations of pollutant loads by major tributary basin and jurisdiction. The successful allocation of nutrient and sediment cap loads to each jurisdiction by major tributary basin in the Chesapeake Bay watershed was made possible through a collaborative process, utilizing technical tools and innovative approaches as discussed in *Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads*.³⁴ The allocations for nutrients were developed to address the low dissolved oxygen problems in the deeper parts of the upper bay region during the summer months. In April 2003, using the best scientific information available, the CBP partners agreed to cap annual nitrogen loads delivered to the Bay's tidal waters at 175 million pounds and annual phosphorus loads at 12.8 million pounds.³⁵ It is estimated that these allocations will require reductions, from 2000 levels, in nitrogen pollution by 110 million pounds

³² Letter from Garrison Miller to Jerusalem Bekele, May 3, 2005.

³³ 40 CFR 131.21

³⁴ US EPA Region 3 Chesapeake Bay Program Office, *Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads*, December 2003.

³⁵ "Summary of Decisions Regarding Nutrient and Sediment Load Allocations and New Submerged Aquatic Vegetation (SAV) Restoration Goals" – Memo from Tayloe Murphy, Chair, to the CBP Principles' Staff Committee Members and Representatives of the Chesapeake Bay "Headwater" States. April 28, 2003.

and phosphorus by 6.3 million pounds. Cap load allocations for sediment were also set, but will not be discussed in depth in this response since point sources are a minor source of sediment. These load reductions are based upon the Water Quality Model projections of attainment of EPA recommended dissolved oxygen criteria applied to the refined Bay tidal water designated uses.

The jurisdictions agreed to distribute the basinwide cap loads for nitrogen and phosphorus by major tributary basin and jurisdiction based upon three principles:

1. Tributary basins with the highest impact on Chesapeake Bay tidal water quality would be allocated the highest reductions of nutrient;
2. States without tidal waters – Pennsylvania, New York and West Virginia – would be provided some relief from Principle 1 since they benefit less directly from improved water quality in the Chesapeake Bay and its tidal tributaries; and,
3. Nutrient reductions achieved prior to 2000 would be credited towards achievement of the cap load allocations.

The nine major tributary basins were separated into three categories based upon their impact on Bay tidal water quality. Each basin within an individual category was assigned the same percent reduction of anthropogenic, or human-caused, load. Consequently, basins with the highest impact on tidal water quality were assigned the highest percentage reduction of anthropogenic load.³⁶ According to the Bay water quality model, each pound of nutrient from the York and James Rivers in Virginia have less impact on the Bay than a pound of nutrients from any other river basin.³⁷ The reason is that the primary direction of water flow (and nutrients) for these tributaries is out to the Atlantic Ocean. Therefore, reduction of nutrients from these tributaries has a minimal benefit to the water quality of the Chesapeake Bay. For this reason the nutrient allocations for these rivers were based on protecting the local water quality within the tidal portions of those rivers.

The Chesapeake Bay Program Provides State of the Art Understanding of the Chesapeake Bay through Modeling

Due to the complexity of the nutrient and sediment dynamics in the Chesapeake Bay and in order to establish the scientific basis required to develop the water quality criteria, refined designated uses and cap load allocations, the EPA applied several coupled models of the Chesapeake Bay ecosystem:

- The Chesapeake Bay Airshed Model provided simulations of air sources of nutrients and air deposition onto the Chesapeake Bay watershed and the tidal surface waters;
- The Chesapeake Bay Watershed Model (Watershed Model) tracked loadings from all sources of nutrients and sediments in the watershed and simulated pollutant transport down to the Chesapeake Bay and its tidal tributaries;

³⁶ US EPA Region 3 Chesapeake Bay Program Office, *Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads*, Appendix C. December 2003.

³⁷ US EPA Region 3, Chesapeake Bay Program Office, *Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads*, EPA 903-R-03-007, December 2003, Pgs 93-97.

- The Chesapeake Bay Water Quality Model (Water Quality Model) is an aggregate of several models—hydrodynamic, water quality, bottom sediment, benthic community and SAV community—which combined effectively, simulated the effects of nutrient and sediment pollutant loadings on the water quality of the Chesapeake Bay and its tidal tributaries.

The CBP has used these environmental models for more than 23 years and has refined and upgraded each of the models several times.³⁸ Results from the integrated airshed, watershed and estuarine models are used to elucidate complexities like eutrophication of the Chesapeake Bay or to closely examine sediment sources to assess their impacts on water quality and living resources in tidal waters. Together, these linked simulations provide a system to estimate dissolved oxygen, water clarity and chlorophyll *a* conditions in 35 major segments of the Chesapeake Bay and its tidal tributaries.³⁹

The watershed and airshed models are loading models. The purpose of these models is to calculate the loads of nutrients and sediments going into the tidal Chesapeake Bay from different types of land-use and other various sources. As such, it is a planning tool that provides estimates of the impacts of management actions through air emission controls, agricultural and urban best management practices, and point source technologies that will reduce nutrient or sediment loads to the Chesapeake Bay tidal waters. The advantage of using loading models is that the full simulation through different hydrology periods (i.e., wet, dry and average) can be simulated on existing or hypothetical land use patterns. All of the CBP models used in this system simulate the same 10-year period from 1985 to 1994. The model simulates nutrient and sediment loads for each day of the ten-year period and reports the results as an average annual load. Using a ten-year average allows for a simulation representative of the loads that would occur during an average hydrology year. Average hydrology provides a consistent hydrology condition against which reductions in nutrients and sediment resulting from management actions are measured. The models are linked together so that the output of one simulation provides input data for another model. For example, the nitrogen output from the Regional Acid Deposition Model (RADM) affects the nitrogen input from atmospheric deposition to the Watershed Model. The Watershed Model, in turn, transports the total nutrient and sediment loads, including the contributions from atmospheric deposition, to the Chesapeake Bay and its tidal tributaries through the boundary of the watershed and estuarine domains. The Water Quality Model examines the effects of the loads generated by the Watershed Model, as well as the effects of direct atmospheric deposition, on Bay water quality and living resources.

The models used by the CBP focus on quantifiable outcomes, such as reductions in estimated nutrient and sediment loads resulting from integrated point source, nonpoint source and air emission management actions, rather than a pollutant reduction strategy based on a single medium. For CBP decision-makers, model results are options to be examined, analyzed and further developed through an iterative process with the model practitioners. The CBP took full advantage of modeling tools and results in the process to determine cap load allocations.

³⁸ Linker, Shenk, et. al. U.S. Environmental Protection Agency, Chesapeake Bay Program Office. *A Short History of Chesapeake Bay Modeling and the Next Generation of Watershed and Estuarine Models*. October 2001.

³⁹ U.S. Environmental Protection Agency, Chesapeake Bay Program Office. *Ambient Water Quality Criteria For Dissolved Oxygen, Water Clarity and Chlorophyll *a* for Chesapeake Bay and its Tidal Tributaries*. April 2003.

States Are Developing Management Plans (or “Tributary Strategies”) to Meet the Cap Load Allocations

The cap loads, allocated by major tributary basin and by State jurisdiction, serve as the basis for each Petition jurisdiction’s Tributary Strategies that, when completed, will describe local implementation actions to reduce nutrients from both point and nonpoint sources necessary to meet the cap load allocations. These Tributary Strategies are the management plans referenced in Section 117(g)(1) of the CWA. (For further discussion on this, see EPA’s response to Request M.) Each jurisdiction’s plans tackle nutrient and sediment pollution in the most efficient way possible for that part of the Bay watershed. There is no “one-size-fits-all” strategy for the entire Bay watershed. Each Tributary Strategy is designed to address the unique land-use characteristics of the watershed in each of the Petition jurisdictions. Pollution reduction actions needed in rural watersheds to manage nutrients from nonpoint sources, for example, vary greatly from those needed to manage nutrients from both point and nonpoint sources in more urban areas. Regardless of the type of watershed, however, every strategy is based on the specific nitrogen, phosphorus and sediment allocations discussed above. While much of the work described in the Tributary Strategies focuses on the implementation of best management practices (BMPs) on agricultural lands, EPA expects each Tributary Strategy to identify specific allocations to each significant point source of nutrients to the Bay.⁴⁰

EPA plays a critical role in providing technical and financial assistance to the Petition jurisdictions in implementing the point and nonpoint source reductions outlined in the Tributary Strategies. The following oversight activities also assist in the implementation of the Tributary Strategies:

- EPA oversight of implementation of the *NPDES Permitting Approach for Discharges of Nutrients in the Chesapeake Bay Watershed*;
- EPA oversight and approval of Maryland, Virginia, Delaware and the District of Columbia’s adoption of State Chesapeake Bay water quality standards regulations and NPDES program modifications;
- EPA award and management of over \$8 million in grants to all seven Petition jurisdictions that mainly support on-the-ground implementation of nonpoint source BMPs outlined in the Tributary Strategies.

Because of the importance of non-tidal areas in the health of the Bay, the CBP in partnership with agencies including the USGS and the Susquehanna River Basin Commission measures water flow and nutrient concentration, load and yield. These measurements are made at the fall lines of each of the major rivers, as well as at a few stations farther up into the non-tidal portion of each tributary, and they help the Bay partners in making management decisions. The Chesapeake Bay Nontidal Watershed Water-Quality Network is a critical tool for measuring the nutrient and sediment concentrations and loads in the watershed and for assessing water-quality changes and progress toward meeting water-quality criteria in the Chesapeake Bay by

⁴⁰ *NPDES Permitting Approach for Discharges of Nutrients in the Chesapeake Bay Watershed*. December 29, 2004.

2010.⁴¹ The Chesapeake Bay Nontidal Watershed Water-Quality Network will be designed so that data are collected within Tributary Strategy basins and therefore, meet the objectives of the network. The goal is to have all stations meet the requirement for a “load” station. At any load station where there will be a stream gauge, 20 samples a year will be collected over a range of flow, including storms, and samples will be analyzed for total nitrogen, total phosphorus, and sediment. Multiple sources of funding will be needed to implement the network. However, the primary approach is to utilize and enhance existing water-quality monitoring and stream-gauge programs. Through the CBP’s discussions with EPA Regions 2 and 3 as well as each Petition jurisdictions’ Water-Quality Program Coordinator, each jurisdiction agreed to directly consider the Chesapeake Bay Nontidal Watershed Water-Quality Network as they revise their own water-quality monitoring strategies and networks that are funded with CWA Section 106 grants.

Through the integrated application of coupled airshed, watershed and tidal-water quality Chesapeake Bay models and long-term tidal water quality monitoring data records, the reductions in air, land and water-based loadings of nitrogen, phosphorus and sediments required to attain the criteria-defined ambient tidal-water concentrations of dissolved oxygen, water clarity and chlorophyll *a* can be directly determined. In effect, the conditions necessary for attaining the three sets of Chesapeake Bay water quality criteria can be effectively and reliably translated into watershed-based caps on nutrient and sediment loadings and further allocated to specific sources and locations within those watersheds.

In the Petition, CBF criticized the allocations agreed to by the Bay partners, suggesting that the cap load allocations will not achieve water quality standards, in particular in some of the deep waters in the Bay. In response, these allocated loads were not based on attaining existing water quality standards (if that is what CBF had in mind) but on attaining the water quality goals for the Chesapeake Bay identified in the recent *EPA Bay Criteria Guidance*. Our modeling analysis showed that it was particularly difficult to achieve the EPA dissolved oxygen criteria in all parts of the Bay for the deep waters in the middle of the Bay in the summer months. For this reason, EPA conducted extensive analysis on the feasibility of achieving the proposed EPA criteria in all parts of the Bay at all times. These feasibility analyses support a water quality standards variance for the deep water criteria for the summertime. Maryland has proposed such a water quality standards variance as part of its proposal to adopt EPA criteria for the Bay. Our best information is that allocations would be consistent with water quality standards that include such a variance.

CBF also criticized the assumptions underlying the estimates of nutrient removals that will be achieved from air reductions and some Best Management Practices. But that is an issue not of the allocations themselves but rather of what control actions are needed to achieve the allocations. The allocations were based on information on the effectiveness of control measures available at the time the allocations were developed – model-simulated reductions in nutrients and sediment needed to meet the Bay criteria applicable within the respective tidal water designated use habitats. The Chesapeake Bay Program is constantly updating the models and information being used as a basis of these decisions. Recognizing that information continues to change and improve, the Bay partners have agreed to a re-evaluation of the allocations and other

⁴¹ Chesapeake Bay Program Nontidal Water Quality Monitoring Workgroup. *Establishing a Chesapeake Bay Nontidal Watershed Water-Quality Network*. September 2004.

important aspects of the Bay water quality objective in 2007. At this time, EPA suggests that it is important to direct energies to implementing the existing allocations, but will continue to conduct periodic re-evaluations with the watershed partners to factor in new information and new science as is planned for 2007.

EPA and the States Have Agreed to an NPDES Permitting Approach for the Chesapeake Bay

EPA and the Petition jurisdictions developed and finalized an agreement on a consistent approach to permitting of nutrients for the entire Chesapeake Bay watershed during 2004.⁴² EPA announced this *NPDES Permitting Approach for Discharges of Nutrients in the Chesapeake Bay Watershed (Permitting Approach)* on December 29, 2004.

The *Permitting Approach* recognizes that the anticipated revisions to the Maryland water quality standards provide a scientifically defensible basis for the development of NPDES permit effluent limits for nutrients. The *Permitting Approach* states that after the Maryland water quality standards are revised, expired NPDES permits are to be re-issued with nutrient limits that are sufficient to achieve the Bay water quality standards. The *Permitting Approach* also specifies that the individual permit limits are to be based upon the loadings identified for each individual facility in the State Tributary Strategies. The *Permitting Approach* also contains additional specific provisions for permitting of nutrients in the Bay, including:

- Annual load limits – EPA’s regulations require NPDES permits to have effluent limits expressed as monthly and weekly or daily limits, unless the NPDES permitting authority determines that those averaging periods are impracticable. 40 CFR 122.45(d). In the case of the Chesapeake Bay permitting for nutrients, EPA has made the determination that because of the long hydraulic durations times in the Bay, expression of nutrient effluent limits in short time periods was impracticable and that such effluent limits may be expressed as annual load to control nutrients for the Bay. EPA has approved the use of annual load limits for permits for nutrient in the Bay.⁴³ Allowing flexibility to use annual load limits may significantly decrease the cost of construction and operation of the treatment systems.
- Compliance Schedules – In most cases the new nutrient limits will require the construction of additional treatment systems. For this reason, a schedule leading to the compliance of the permit limits may be necessary. The *Permitting Approach* allows the use of compliance schedules where necessary, appropriate and allowed by State water quality standards.
- Watershed permits/trading – the *Permitting Approach* encourages the use of watershed permits which would accommodate nutrient trading. Again, with watershed permits/trading, the goals for Bay nutrient reductions may be met at a much reduced cost.

⁴² Letter from Jon Capacasa to State Water Directors regarding *NPDES Permitting Approach for Discharges of Nutrients in the Chesapeake Bay Watershed*. December 29, 2004.

⁴³ Memo from J. Hanlon to J. Capacasa. Annual Permit Limits for Nitrogen and Phosphorus for Permits Designed to Protect the Chesapeake Bay and its tidal tributaries from Excess Nutrient Loading under the National Pollutant Discharge Elimination System (March 3, 2004).

Since the development of the *Permitting Approach*, the EPA and the Petition jurisdictions have been diligently developing procedures for the preparation of NPDES permits with nutrient limits for the protection of the Bay.

In Virginia, for example, State legislation has been passed that requires the development of a watershed permit for nutrients for the protection of the Bay by January 1, 2006. Virginia has also proposed several individual NPDES permits with nutrient limits (nitrogen and phosphorus) for the protection of the Bay in advance of the revised Maryland WQS being in effect. In these cases the State reached agreement with the permittee. It should be noted that numerous facilities within the Bay watershed currently have NPDES permits that contain limits for nutrients. That is, the States and EPA (the permitting authorities) have utilized existing authorities to limit nutrients to protect local waters. In fact, as of July 2004, 174 of the permits for significant facilities in the Bay watershed have phosphorus limits in those permits to protect local waters. In addition, twelve of the permits for significant facilities have total nitrogen limits.⁴⁴

The Chesapeake Bay Watershed Blue Ribbon Panel Recommends a Greater, Sustained Financial Investment to Restore the Chesapeake Bay

The Chesapeake Bay watershed partners realized that meeting the water quality goals stated in *Chesapeake 2000* and implementing the specific best management practice levels outlined in the Tributary Strategies would require a significant financial investment from the Bay jurisdictions. The Chesapeake Executive Council Directive 03-02 directed the CBP “to establish and convene a Chesapeake Bay Watershed Blue Ribbon Panel to consider funding sources to implement the Tributary Strategies basinwide and to make recommendations regarding other actions at the federal, State and local level to the Executive Council.”⁴⁵ In its 40-page report, *Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay*, the panel praised the work of the CBP for its “unparalleled cooperative efforts and pioneer[ing] clean-up strategies that have resulted in measured gains in reducing the flow of pollutants into the Bay.” But it also concluded that “The Program cannot meet the future challenges of restoring the Bay because it lacks the funds to do so.”⁴⁶ The most up-to-date estimated cost of implementing all the actions identified in the strategies is \$28 billion in total upfront capital costs and \$2.7 billion in annual costs such as operation and maintenance, incentives, and land rentals. Of this, it is estimated that \$5.7 billion of total upfront capital is necessary to upgrade wastewater treatment plants in order to meet the point source load allocations. As of 2002, point sources represented approximately 20% of the total nitrogen and phosphorus load delivered to the Chesapeake Bay, and the CBP determined they represent only 5% of the total Strategy cost. It is clear that the costs are exponentially greater than EPA’s current budget for the cleanup of the Chesapeake Bay. The report dedicated most of its focus on proposing the creation of a regional Financing Authority that would:

- be funded through a 80/20 ratio of federal and State funds – resulting in a \$12 billion

⁴⁴ Letter to Roy Hoagland from EPA Region 3 Administrator Don Welsh, July 16, 2004.

⁴⁵ Chesapeake Executive Council Directive 03-02 Meeting the Nutrient and Sediment Reduction Goals, December 9, 2003, Chesapeake Bay Program.

⁴⁶ *Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay*, October 27, 2004, Chesapeake Bay Watershed Blue Ribbon Panel.

- investment from the federal government and \$3 billion from Bay watershed States;
- generate sustainable revenue streams to adequately fund long-term Bay restoration programs;
- provide funds to all sectors of Bay pollution, but specifically address agriculture and wastewater treatment; and,
- prioritize and distribute funds across State boundaries in all parts of the Bay watershed.

The Panel concluded that, “the restoration of the Chesapeake Bay and its watershed depends on a strong regional financing mechanism aimed at coordinated funding and implementation of concrete clean-up plans, built on the State’s Tributary Strategies and based on coordinated timing and performance.” The Panel reached an early and strong consensus, however, that simply improving existing programs alone will provide too little and will take too long to restore Bay water quality by 2010. Something more substantive and dramatic will be required, which is why an initial investment of \$15 billion was recommended. EPA’s CBP provided administrative and technical support to the Blue Ribbon Panel as part of its oversight activities under Section 117(g)(1) to ensure that the adequate financial resources are available for the implementation of the Tributary Strategies. The Bay Program will continue to use its limited resources in a cost effective manner.

CBP Has Committed to a “Re-evaluation” of Cap Load Allocations in 2007

As can be seen, the CBP has been progressing down several parallel tracks that are necessary to realize a restored Chesapeake Bay. With the understanding that science is constantly being improved, the CBP Principal’s Staff Committee agreed to a re-evaluation of the cap load allocations no later than 2007⁴⁷ in order to:

- Reflect the adoption of the final State water quality standards;
- Take the planned Bay model refinements into consideration, which will include estimating water quality benefits from filter feeding resources (e.g. oysters and menhaden) and a better understanding of the sources and effects of sediment. These model upgrades will allow us in this same year to confirm and/or revise the nutrient allocations assigned to each major basin within the Bay.
- Explore nitrogen equivalents, an action that results in the same water quality benefits as removing nitrogen. These include but are not limited to: seasonal fluctuations for biological nutrient removal implementation; nutrient reduction benefits from shoreline erosion reductions; implementation of enhanced nutrient removal at large wastewater treatment plants; and trade-offs between nitrogen and phosphorus.

In addition to the programmatic re-evaluations described above, the *Permitting Approach* will be assessed – and modified if necessary – during 2007 to determine its effectiveness in putting nutrient limits in permits and defending those limits. Also, the *Permitting Approach* references an assessment to be done during 2007 on whether development of a Total Maximum

⁴⁷ “Summary of Decisions Regarding Nutrient and Sediment Load Allocations and New Submerged Aquatic Vegetation (SAV) Restoration Goals” - Memo dated April 28, 2003 from Tayloe Murphy, Chair of the Principle Staff Committee (PSC) of the CBP to PSC Members and Representatives of the Chesapeake Bay Headwater States

Daily Load (TMDL) should be accelerated to promote faster implementation of the needed nutrient controls.

Summary

EPA concludes that the programs, tools, and recent and ongoing activities described above represent the best course for ensuring that adequate and enforceable permit limits for nutrient discharges into the Bay are established on a timely basis. As explained further in the following responses to each itemized section of the Petition, EPA does not believe that initiating additional rulemaking as requested by CBF is the appropriate course to pursue. However, as also explained below, EPA is granting CBF's Requests J and P (which do not request rulemaking).

Issues Identified by Petitioner and EPA's Response

A. Update Secondary Treatment Requirements

Petitioner's Request

In section A of the Petition, CBF requests that EPA amend the secondary treatment regulations at 40 CFR Part 133 to specify technology-based effluent limitations for total nitrogen of 3 mg/l (annual average). CBF believes this action is necessary to adequately address nitrogen discharges from publicly owned treatment works (POTWs) into the Chesapeake Bay.

CBF asserts that this is both achievable and affordable, citing EPA's *Draft Technical Support Document for the Identification of Chesapeake Bay Designated Uses and Attainability Report* from 2002. CBF also cites EPA's *Economic Guidance for Water Quality Standards Report* from 1995, asserting that since the "total annual pollution control cost per household, divided by median household income, and multiplied by 100, is less than 1-2%", therefore the capital, operational, and maintenance costs for the installation and operation of these technologies are affordable for POTWs in many communities in the Bay watershed.

CBF maintains that current effluent quality required to meet secondary treatment is inadequate in removing nutrients such as nitrogen from POTW effluent. The Petition suggests "secondary treatment" needs to be redefined by the EPA to specifically include total nitrogen. CBF further states there have been numerous developments in wastewater treatment technology that enable POTWs to feasibly and cost-effectively reduce total nitrogen in effluents by applying nutrient reduction technology (NRT).

EPA's Response

For the reasons provided below, EPA concludes that it is unnecessary to amend the secondary treatment regulations to specify technology-based effluent limitations for total nitrogen of 3 mg/l. Therefore, EPA denies this request.

Background and Legal Framework

A. Statutory Provisions

The Clean Water Act, 33 U.S.C. §1251 et seq., is a comprehensive statute designed “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters” through reduction and eventual elimination of the discharge of pollutants into those waters.⁴⁸ As the primary means toward achieving this goal, Congress prohibited the point source discharge of any pollutant unless that discharge complies with the requirements of the Act.⁴⁹ Such compliance may be achieved by obtaining and complying with a permit pursuant to Section 402 of the Act, which establishes the NPDES permit program.⁵⁰ NPDES permits incorporate technology-based controls for wastewater discharges which can be achieved using various levels of pollution control technology. The Act also directs the States to establish water quality standards. NPDES permits must incorporate permit conditions to assure compliance with these water quality standards.⁵¹

For a publicly owned treatment works (POTW), CWA section 301(b)(1)(B) specifies the applicable technology-based control standard as “secondary treatment,” as defined by the Administrator.⁵² Unlike special limitations applicable to “new source” industrial dischargers, secondary treatment regulations are universally applicable to all POTWs, whether existing or new. Section 304(d) provides that the Administrator is to publish “information on the degree of effluent reduction attainable through the application of secondary treatment.”⁵³ Secondary treatment is not otherwise defined in the Act, although legislative history from 1972 does indicate secondary treatment (1) involves a range of removals of suspended solids and BOD,⁵⁴ (2) secondary treatment involves removal efficiencies between 50% and 90%,⁵⁵ and (3) the definition of secondary treatment is to be technology-based rather than water quality-based.⁵⁶ Finally, POTWs are required to meet any more stringent limitations pursuant to State law or regulation, including those necessary to meet applicable water quality standards.⁵⁷

Secondary treatment represents the initial technology-based level of effluent reduction specified by Congress for POTWs. The requirement that POTWs attain secondary treatment under CWA section 301(b)(1)(B), therefore, is similar to the requirement that industrial

⁴⁸ Section 101(a), 33 U.S.C. § 1251(a)

⁴⁹ Section 301(a), 33 U.S.C. § 1311(a)

⁵⁰ 33 U.S.C. § 1342

⁵¹ 33 U.S.C. § 1311(b)(1)(C)

⁵² 33 U.S.C. § 1311(b)(1)(B)

⁵³ 33 U.S.C. § 1314(d)(1)

⁵⁴ “Secondary treatment as considered in the context of a [POTW] is generally concerned with suspended solids and biologically degradable, oxygen demanding material.” H. Rep. 92-111, 92d Cong., 2s Sess. 101, 1 Legislative History of the Water Pollution Control Act Amendments of 1972 (Legis. Hist.) 788.

⁵⁵ “In primary treatment of sewage, between 30 percent and 50 percent of organic pollution is removed. With secondary treatment between 50% and 90% is removed.” S. Rep. 92-414, 92d Cong., 1st Sess. 6, 2 Legis. Hist. 1244.

⁵⁶ “The application of Phase I technology to industrial point sources is based on the control technologies for those sources and to [POTWs] is based on secondary treatment. It is not based upon ambient water quality considerations.” S. Rep. 92-414, 92d Cong., 1st Sess. 43, 2 Legis. Hist. 1461.

⁵⁷ 33 U.S.C. § 1311(b)(1)(C).

discharges attain effluent reductions representing application of the “best practicable control technology currently available (BPT)” under CWA section 301(b)(1)(A). As the Act was written in 1972, Congress required additional, higher levels of technology-based effluent reduction-- “best available technology economically achievable” for industrial discharges pursuant to section 301(b)(2)(A) and “best practicable waste treatment technology” (BPWTT) pursuant to section 301(b)(2)(B) for POTWs.⁵⁸

In the Municipal Wastewater Treatment Construction Grants Amendments of 1981,⁵⁹ Congress repealed the requirement of section 301(b)(2)(B) that all POTWs meet the higher level of technology-based requirements, BPWTT.⁶⁰ The legislative history indicates Congressional concern with the effect of fiscal constraints on municipalities attempting to attain secondary treatment at POTWs, as well as difficulties encountered through federal funding mechanisms. Senate Report 97-204(1981) states that:

The 1972 Act originally required municipal plants to comply with effluent limitations based on secondary treatment by 1977. This deadline proved to be difficult, and in many cases impossible to meet, largely because of insufficient funding. The 1977 amendments, therefore, permitted extension of the deadline to municipalities acting in good faith which were unable to meet this requirement. Such extensions were to be in no case later than July 1, 1983.

With the projected shortfall in Federal expenditures, and the reduced Federal share for the construction grant program, it is once more apparent that many communities will be unable to meet the 1983 deadline. This legislation thus extends the deadline to 1988 for communities which cannot meet earlier deadlines because Federal funds are not available. The Committee emphasizes that the same good faith requirements now in existing law are also extended facilities seeking the new extension.

For the same reasons, this section also amends section 301(b)(2) to remove the 1983 deadline for achievement of best practical waste treatment technology standards for municipalities. No new deadline is substituted.⁶²

⁵⁸ Section 301(b)(2)(B) provided that, by July 1, 1983, POTWs were required to meet the requirements of section 201(g)(2)(A). 33 U.S.C. § 1311(b)(2)(B). Section 201(g)(2)(A), in turn, describes the effluent reduction standard of BPWTT. 33 U.S.C. § 1281 (g)(2)(A). Pursuant to section 201(g)(2)(A), applicants for construction grants are required to demonstrate the POTW will provide for the application of BPWTT over the life of the POTW.

⁵⁹ Pub. L. No. 97-117, § 219b, 95 Stat. 1623, 1632 (1981).

⁶⁰ Section 201(g)(2)(A) which specifies BPWTT for grant applicants, however, was not similarly repealed. The 1981 amendments also amended CWA section 304 to specify that certain biological treatment facilities, such as oxidation ponds, lagoons, and ditches and trickling filters, are deemed the equivalent of secondary treatment under CWA section 304(d)(4). 33 U.S.C. § 1314(d)(4). Under that section, EPA was to provide guidance on design criteria for such facilities taking into account pollutant removal efficiencies and assuring that water quality will not be adversely affected by deeming such facilities to be the equivalent of secondary treatment. EPA did provide such guidance. 48 FR 52258 (Nov. 16, 1983)(proposed); 49 FR 36986 (Sept. 20, 1984)(final).

⁶² S. Rep. 97-204, § 19, p. 17 (1981).

⁶⁴ Section 303(c) of the Clean Water Act provides the statutory basis for the water quality standards program. The regulatory requirements governing the program, the *Water Quality Standards Regulation*, are published at 40 CFR Part 131. 40 CFR Part 131 (Subpart B) Establishment of Water Quality Standards contains the regulatory

The technology-based secondary treatment regulations achieve significant reductions in pollutants to the nation's waters, but those regulations are but one tool available for this purpose. The CWA utilizes both water quality standards and technology-based effluent limitations to protect water quality. The technology-based standards are specific numeric limitations applied to all POTWs through their discharge permits. Where limits based on secondary treatment are insufficient to protect the quality of a waterbody, POTWs are also required to meet more stringent water-quality based limits necessary to attain EPA-approved State water quality standards. The water quality standards are standards for the overall quality of a particular waterbody. They consist of the designated beneficial uses of a water body (recreation, water supply, industrial, or other), and the narrative or numeric criteria sufficient to protect the uses and an antidegradation policy.⁶⁴

The CWA requires each State to establish water quality standards for all bodies of water in the State that come under the jurisdiction of the CWA. These standards serve as a supplemental level of control to the federally established technology-based requirements by providing authority to require additional pollutant controls where the technology-based requirements are insufficient to achieve the overall goals of the CWA. In those waters where technology-based effluent limitations have been met but water quality standards have not been achieved, dischargers are required to meet any more stringent water quality-based pollution control requirements.

While the CWA sets forth minimum federal NPDES program requirements for EPA, EPA also may authorize a State to administer the NPDES permit program in that State.⁶⁵ States that have received EPA authorization to administer the NPDES permit program issue the NPDES permits under State law and have primary enforcement authority. EPA has authorized forty-five States to administer the NPDES permit program including Virginia, Maryland, Pennsylvania, Delaware, West Virginia and New York. EPA continues to administer the NPDES permits program in the District of Columbia.

B. Regulatory Provisions

EPA first promulgated secondary treatment regulations in 1973, and later revised those regulations in 1976, 1977, 1984, and 1985.⁶⁶ Currently, the regulations require POTWs to meet certain "end-of-pipe" limitations for biochemical oxygen demand (as measured over a five day

requirements that must be included in water quality standards: designated uses (section 131.10), criteria that protect the designated uses (section 131.11), and an antidegradation policy that protects existing uses and high water quality (section 131.12). Subpart B also provides for the State discretionary policies, such as mixing zones and water quality standards variances (section 131.13).

⁶⁵ Section 402 of the CWA and 40 CFR Parts 122 and 123.

⁶⁶ 38 FR 22298 (Aug. 17, 1973)(initial regulations); 41 FR 30786 (July 26, 1976) (deleting limitations on fecal coliforms and limiting applicability of pH limitation); 42 FR 54664 (Oct. 7, 1977)(allowing upward adjustment of suspended solids limitation for certain POTWS); 49 FR 36986 (Sept. 20, 1984)(allowing substitution of CBOD5 test for BOD5 test); 50 FR 23383 (June 3, 1985)(modifying percent removal requirement).

period)(“BOD5”)⁶⁷ and total suspended solids, on both a monthly and weekly basis. The regulations also generally require POTWs to remove 85 percent (on a monthly basis) of BOD5 and total suspended solids and to maintain an effluent pH between 6.0 and 9.0.⁶⁸ Chemical oxygen demand (COD) or total organic carbon (TOC) may be substituted for BOD5 when a long-term BOD:COD or BOD:TOC correlation has been established.⁶⁹

When EPA first promulgated the secondary treatment regulations in 1973, the “degree of effluent reduction attainable by secondary treatment” was expressed in terms of biochemical demand, suspended solids, fecal coliform bacteria, and pH.⁷⁰ Like BPT limitations for industrial dischargers, which EPA customarily determines based on the “average of the best” facilities within the industrial category under scrutiny, secondary treatment was based on the capabilities of existing secondary treatment processes.⁷¹ Historically, EPA distinguishes between “primary” or “secondary” treatment processes based on pollutants removed and the means by which pollutant removal was accomplished.⁷² Primary treatment removes pollutants through liquid-solid separation techniques. Secondary treatment, in turn, biologically removes degradable organic materials from wastewater and became synonymous with the biological treatment of wastewater for the removal of carbonaceous organic material.⁷³ “Nutrients,” such as phosphorus and nitrates (NO₃), were not specified for inclusion as pollutant parameters to be regulated under secondary treatment because, under normal conditions, secondary treatment does not effectively or consistently remove them.⁷⁴

In addition to the secondary treatment regulations, EPA did publish a BPWTT guidance document in 1975 captioned “Alternative Waste Management Techniques for Practicable Waste Treatment.”⁷⁵ Pursuant to section 304(d)(2), that document was intended to provide information to grant applicants about practicable waste treatment techniques available to implement section 201(g)(2)(A). Current EPA grant regulations include a description of the BPWTT, which in turn is defined at 35.2005(b)(7). BPWTT is defined as the cost-effective technology that can treat wastewater to meet, in relevant part, the secondary treatment provisions of 40 CFR Part 133 and any more stringent water quality standards pursuant to 40 CFR 122.44(d).⁷⁶

C. 1993 Petition to Amend Secondary Treatment

In 1993, EPA received a petition on behalf of a private party, Mr. Peter Maier, seeking rulemaking to include controls on nitrogenous biochemical oxygen demand (NOD) in the

⁶⁷ BOD5 may be substituted with CBOD5 under certain circumstances in the discretion of the permitting authority. 40 CFR 133.102(a)(4).

⁶⁸ 40 CFR 133.102.

⁶⁹ 40 CFR 133.104.

⁷⁰ The 1976 rulemaking deleted the fecal coliform limitation and limited the applicability of the pH limitation.

⁷¹ 38 FR 22298 (Aug. 17, 1973).

⁷² 40 FR 34522 (Aug. 15, 1975).

⁷³ Id.

⁷⁴ 48 FR 52272, 52273 (Nov. 16, 1983).

⁷⁵ EPA-430/9-75-013, Oct. 1975

⁷⁶ 40 CFR 35.2005(b)(7)(i)&(iii).

definition of secondary treatment.⁷⁷ EPA denied the petition, largely on the grounds that the impact of NOD is highly variable and dependent on site-specific factors, and that this justifies control of this parameter through case-by-case permitting rather than through generally applicable regulations.⁷⁸ Furthermore, EPA denied the petition because existing water quality-based permit regulations adequately addressed water quality impairments associated with nitrogen, nitrogen compounds, and phosphates, for which the petition requested rulemaking relief. In addition, EPA responded that there may be some POTWs where imposition of the permit conditions requested in the petition would be unnecessary.

The petitioner challenged EPA's petition denial in a lawsuit brought before the U.S. Court of Appeals for the Tenth Circuit. The court upheld the denial and agreed with EPA that the CWA does not on its face require the Agency's generally applicable effluent limitations to address *all* pollutants that might be reduced by secondary treatment.⁷⁹ Rather, it was within EPA's discretion to determine whether it should promulgate *generally applicable* effluent limitations for specific pollutants. In this case, the court found that EPA's decision to control NOD and nutrients through individual permits rather than through categorical rulemaking was supported by EPA's reliance on two factual predicates that were within the Agency's expertise to determine: 1) that the impact of NOD and nutrients on water quality is highly variable with the characteristics of the receiving body of water; and 2) that control of NOD by permit adequately protects water quality where necessary. The court also noted that EPA and authorized States routinely did impose NOD and nutrient limitations on POTWs on a case-by-case basis by permit.

Discussion

As EPA noted in its response to the 1993 petition filed by Peter Maier, the impact of nutrients on water quality is highly variable with the characteristics of the receiving body of water. Many waters under certain temperature, flow, and other conditions exhibit low nitrogenous oxygen demand (NOD) (e.g., nitrification). Some waters exhibit little or no NOD regardless of the conditions that exist. Therefore, as the Agency explained, the determination that nitrogen (particularly NOD) reduction is required is best determined on a case-by-case basis for each receiving water segment rather than across the board.

Because the effect of any nutrients (including phosphorus as well as nitrogen compounds) on water quality varies greatly with the characteristics of the receiving water, the water quality-based approach described above will provide a more well-tailored response to the water quality issues in the Bay watershed than would technology-based regulations that would be promulgated on a general, categorical basis (i.e., Bay-wide or even nationwide). EPA also notes that in-stream dissolved oxygen concerns due to POTW nitrogen loads *are*, in fact, currently being addressed at POTWs on a case-by-case basis through water quality-based limits. More than 64 percent of major POTWs nationwide have permit limits for ammonia nitrogen, and another 32

⁷⁷ Petition from Peter Maier, Intermountain Water Alliance, Utah Chapter of the Sierra Club, Southern Utah Wilderness Alliance, Western Colorado Congress, Stone Fly Society Chapter of Trout Unlimited and the Federation of Fly Fishers, and Utah Wilderness Society. Submitted by Matthew Kenna on August 6, 1993.

⁷⁸ Letter dated Feb 6, 1995, from Robert Perciasepe, Assistant Administrator, to Matthew Kenna, denying petition for rulemaking submitted by Matthew Kenna on behalf of Peter Maier, et. al.

⁷⁹ Maier, et.al, v. US EPA, 114 F.3d 1032 (10th Cir. 1997)

⁸¹ (PCSLoads 2002 database).

percent with no ammonia nitrogen limits are still required to monitor for nitrogen compounds⁸¹ In fact, as of July 2004, 174 of the permits for “significant” facilities in the Chesapeake Bay watershed have phosphorus limits in those permits to protect local waters.

EPA thus believes that categorical technology-based regulations for nitrogen applicable to POTWs, as requested by CBF, are not warranted. For example, a categorical rulemaking as requested by CBF might result in additional controls and expenses being imposed on some POTWs that are not needed to ensure that applicable water quality standards are achieved. EPA is not precluded from deciding that certain technologically attainable standards are necessary and appropriate only for some POTWs.⁸² In Maier, et.al, v. US EPA, the court agreed that EPA need not develop generally applicable parameters based on the use of new technology in the face of the agency’s reasoned judgment that the use of this technology is irrelevant to the attainment of water quality standards in many circumstances. Moreover, the court upheld EPA’s judgment not to develop generally applicable regulations even where such new technology existed and was cost-effective – which is *not* the case here with respect to CBF’s request, as discussed below. In addition to EPA’s finding that the type of categorical technology-based regulation sought by CBF is unnecessary, EPA also finds that it would not be an appropriate use of the Agency’s limited time and resources to pursue such a rulemaking. EPA discusses above and elsewhere in this Response how EPA is using those limited resources to restore and maintain the Bay from the effects of nutrient pollution including those discharges of nutrients from significant point sources.

EPA has explained above why, in the Agency’s judgment, it is not appropriate to pursue a generally applicable technology-based regulation that would add a limit for total nitrogen to the secondary treatment requirements applicable to POTWs. Significantly, however, even if EPA were to decide that it *should* pursue such a generally applicable regulation, based on the record information currently available to EPA, EPA concludes that it would *not* be appropriate on a technological or economic basis to begin a rulemaking process to add a limit of 3 mg/L for total nitrogen to the definition of secondary treatment.

Current nutrient reduction technology (NRT) is generally considered to be any method employed to remove nitrogen and phosphorus from wastewaters including, but not limited, to Biological Nutrient Reduction (BNR).⁸⁵ The Petition refers to an evaluation of wastewater treatment plants for BNR retrofits, but has not made it clear that the reference is specific to nitrogen controls.⁸⁶ The distinction between nitrogen and phosphorus is important, as the same BNR technologies employed for removal of nitrogen may be employed to reduce phosphorus (or

⁸² Letter dated Feb 6, 1995, from Robert Perciasepe, Assistant Administrator, to Matthew Kenna, denying petition for rulemaking submitted on behalf of Peter Maier, et. al.

⁸⁵ BNR is a technique using controlled biological systems to remove nutrients from wastewater.

⁸⁶ BNR may be used to control nitrogen, as CBF explained in its petition, but BNR is also used to control phosphorus. Biological Nutrient Removal (BNR) technologies specific for nitrogen removal include varied technologies such as the Four-Stage Bardenpho process, the Modified Ludzack-Ettinger (MLE) process, sequencing batch reactor (SBR) processes, and the step-feed configuration.

both nutrients), but the technologies are designed and operated differently.⁸⁷ The Petition cites Cliff Randall's "*Final Report: Evaluation of Wastewater Treatment Plants for BNR Retrofits Using Advances in Technology retrofits for wastewater plants*" (*Final Report*) as evidence that using BNR to achieve 3 mg/L TN is feasible because it is within the limit of technology (LOT).⁸⁸ What the results show is a very wide variation in the recommended plant modifications⁸⁹ and their projected costs. However, the scope of the *Final Report* was enhancement of nitrogen removal where the desired effluent TN concentration was 8 mg/L or less. The primary reference for the *Final Report*, (*Performance and Economics of BNR Plants in the Chesapeake Bay Watershed*) reports only on five treatment plants (and one chemical plant) with BNR technologies installed in the Chesapeake Bay watershed. This reference largely discusses performance of BNR technologies as they relate to phosphorus at these five selected plants, with limited description of BNR technology performance for total nitrogen. The paper states that BNR technologies installed achieved discharges of 6.5 to 8 mg/l TN annual average⁹⁰, and not 3 mg/l TN. None of the references cited in the Petition actually evaluates a 3 mg/L TN limit. The Petition provides no other information pertaining to NRT's ability to meet 3 mg/l total nitrogen.

EPA notes that in the *Final Report*, suggested modifications include conversion to BNR processes that, according to current technology reviews discussed above, are not capable of achieving 3 mg/l TN (such as the MLE and step-feed processes). There are some cases where other technologies can meet 3 mg/l TN only on a *seasonal* basis, but this level may not be achievable year-round. Of the many BNR systems commonly employed, current literature concerning the performance of nutrient reduction technologies suggests *only* one technology (the Bardenpho process) is capable of meeting 3 mg/l TN, and not without numerous caveats.⁹¹ EPA therefore believes a technological basis does not currently exist to warrant initiating a process to propose adding a limit of 3 mg/L for total nitrogen

Further, even if these technologies could meet a 3 mg/L limit, the costs of achieving low nitrogen limits may well be very significant for many facilities. On one hand, the costs and efficiencies of nutrient removal technologies in general have been improving in recent years, due

⁸⁷ BNR also refers to Enhanced Biological Phosphorus Removal (EBPR) to bioaccumulate phosphorus as a means of phosphorus removal. Combined nitrogen and phosphorus BNR processes include the A2O process, the Modified University of Cape Town process, the Five-Stage Bardenpho, the Johannesburg configuration, and oxidation ditches. In general, these processes employ phosphorus-storing bacteria to remove most of the excess phosphorus from wastewater; the phosphorus-rich biomass is then removed for final disposal (e.g., as sludge). If needed, simultaneous or subsequent chemical precipitation can further trim the phosphorus concentration in the effluent.

⁸⁸ Clifford Randall. "Final Report: Evaluation of Wastewater Treatment Plants for BNR Retrofits Using Advances in Technology retrofits for wastewater plants."

⁸⁹ Table 3 (suggesting treatment process modifications for improved nutrient removal). "Final Report: Evaluation of Wastewater Treatment Plants for BNR Retrofits Using Advances in Technology retrofits for wastewater plants".

⁹⁰ See Water Science and Technology 41(9): 21-28). See also Randall, C., Z. Kisoglu, D. Sen, P. Mitta, and U. Erdal.

⁹¹ Unlike secondary systems, nutrient removal processes are extremely sensitive to influent conditions. POTWs optimizing nitrification and denitrification controls in their combined processes often need chemical addition to accomplish their desired phosphorus removals. Additional operational considerations including temperature and aeration control are essential to obtain nutrient removals. Sam Jeyanayagan, "True Confessions of the Biological Nutrient Removal Process". Florida Water Resources Journal. January 2005; pp 37 – 46.

in large part to advancements in BNR technologies.⁹² In the last 10 years, costs for nitrogen reduction have decreased from \$35 per pound to less than \$10 per pound. Nevertheless, for many individual facilities, the costs that would be incurred to achieve the specific limit of 3 mg/L sought by the Petitioners may be very high. As noted above, references in the Petition for technology capabilities do not address a 3 mg/L limit (in fact, they address higher limits), and the cited projected costs do not reflect achieving a 3 mg/L limit. The *Final Report* reflects the costs for modifying some existing facilities that currently operate under reduced intake flow conditions to achieve nitrogen reductions⁹³ and do not reflect any future increases in intake flow (i.e. increased flows much closer to the plant's maximum capacity) which may preclude them from continuing with the operational modifications that would reduce N discharges. The costs assigned to these plants also do not reflect the maximum design flow of the POTW, and do not address the capital costs of additional BNR technology that would be incurred by the plant. EPA also notes that the *Final Report* acknowledges that some plants would have to upgrade the facility before they can even install BNR. Since only one NRT that could meet a 3 mg/L limit is shown as even possibly available for POTWs, the report's projected costs do not support any further economic evaluation of a 3 mg/L TN limit.

EPA's data further suggest that the Petition's cost projections may be understated. In 2002, the CBP collected the site-specific incremental costs from Chesapeake Bay facilities in Maryland, Virginia, and Pennsylvania to achieve BNR with a final effluent nitrogen concentration of 8 mg/l TN.⁹⁴ Moving from the first stage level of BNR treatment (8 mg/l TN) to the limit of technology level of treatment (3 mg/l TN) would have a relative cost increase of at least an order of magnitude.⁹⁵

Finally, many POTWs will have additional costs in the near future beyond nitrogen controls, e.g., plant upgrades, new homeland security measures, etc., that CBF did not account for. If EPA were to initiate a secondary treatment regulation rulemaking, EPA would look at the full universe of expenses incurred by POTWs (i.e. "baseline" operating conditions) prior to any additional costs of controls. These baseline conditions would need to be considered along with any incremental costs of additional treatment controls. In short, based on the limited amount of data that EPA has currently, it appears that adding nitrogen controls to achieve the level of 3 mg/L requested by CBF would be very expensive to certain individual POTWs.

This current information about the lack of technologies to consistently meet a limit of 3 mg/L and the possible very high costs to many communities to achieve this level, when

⁹² Chesapeake Bay Commission, Cost-Effective Strategies for the Bay, December 2004. In the last 10 years, costs for nitrogen reduction have decreased from \$35 per pound to less than \$10 per pound.

⁹³ To the extent POTWs are far below their maximum design capacity, the POTW can alter retention times and modify operation of the plant to reduce nitrogen discharges.

⁹⁴ Information on the cost to obtain a final effluent concentration of 3 mg/l TN was also collected where available (Appendices to Nutrient Removal Technology Cost Estimation for Point Sources in the Chesapeake Bay Watershed, November 2002). The Chesapeake Bay Program's statistical analysis reports the median cost was \$1,020,901 per million gallons per day (MGD) per facility. The capital costs to achieve a final effluent nitrogen concentration of 3 mg/l TN were revised in May 2002, with the incremental capital cost reported at \$2.7 billion for the 304 significant municipal facilities (which generally are municipal wastewater treatment plants that discharge flows of equal or greater than 0.5 MGD) evaluated.

⁹⁵ Ibid.

considered together with the fact that EPA is pursuing a water quality-based approach that we believe will be effective in reducing nutrients, makes it all the more unnecessary and inappropriate in EPA's view to pursue a generally applicable technology-based regulation to add a limit of 3 mg/l of TN to the secondary treatment regulations. For all the above reasons, EPA denies the request in this section of the Petition.

B. Update Effluent Limit Guidelines

Petitioner's Request

CBF petitions EPA to amend its effluent limitations guidelines to specify a Best Conventional Pollutant Control Technology (BCT) limit of 3 mg/l for total nitrogen in order to adequately address nitrogen discharges from industrial point sources into the Chesapeake Bay watershed. CBF indicates that an overarching BCT limit should be applicable to all previously promulgated effluent limitation guidelines (ELGs) point source categories.⁹⁶

EPA Response

EPA finds that the Petitioner's request for EPA to revise our effluent guidelines to include a total nitrogen requirement of 3 mg/l is unnecessary and an inappropriate use of limited agency resources for the reasons cited below. EPA therefore denies the requested relief.

Legal framework

EPA has broad discretion under section 304(b) of the CWA to determine whether and when to revise its existing national categorical effluent guidelines for industrial dischargers. Specifically, section 304(b) requires EPA to publish regulations "providing guidelines for effluent limitations, and at least annually thereafter, revise if appropriate, such regulations." This language specifies an annual review obligation, but it does not specify the factors that EPA must take into account when performing that review. Instead, the text explicitly imposes on EPA a broad statutory mandate to revise its effluent guidelines when "appropriate" and leaves implementation of that mandate to EPA's discretion.⁹⁸

Historical background

In the case of three specific industrial categories – Concentrated Aquatic Animal Production (CAAP) operations, Concentrated Animal Feeding Operations (CAFOs), and Meat and Poultry Products (MPPs) – where nutrients have been found in the past to be a pollutant of concern, EPA has recently promulgated ELGs for those categories that contain appropriate technology-based limitations for nutrients. On February 26, 2004, EPA set effluent limitations

⁹⁶ (40 CFR § 401-471).

⁹⁸ See *Norton v. Southern Utah Wilderness Alliance et. al.*, 124 S. Ct. 2373, 2381 (2004) (finding that statutory mandate at issue was not sufficiently specific to require agency to consider certain factors in its planning decisions).

for the MPP Industry.⁹⁹ The MPP regulation affects about 170 facilities that discharge wastewater from slaughtering, rendering, and other processes such as cleaning, cutting, and smoking. Nitrogen occurs in MPP discharges in several forms, including ammonia and nitrate. The new rule reduces discharges of conventional pollutants, ammonia, and nitrogen by setting nitrogen limits for wastewater discharges for ammonia (as nitrogen) and total nitrogen. On August 23, 2004, the Agency set narrative limits for the CAAP point source category (Part 451) for the control of numerous pollutants including the two nutrients nitrogen and phosphorous. In addition, on February 12, 2003, EPA issued the final CAFO ELGs. The CAFO ELGs require all permitted operations to have Nutrient Management Plans (NMPs), including requirements to assess manure application fields for the potential for nitrogen and phosphorus transport, as well as a requirement to minimize nitrogen and phosphorus movement to surface waters.¹⁰⁰

During EPA's most recent review of effluent guidelines under CWA section 304(b) in 2004, EPA reviewed all industrial categories (including CAAPs, CAFOs and MPP) to determine whether revising ELGs would be appropriate. In performing this review of existing guidelines, EPA considered a number of factors to assist the Agency in evaluating when it might be "appropriate" to revise an effluent guideline.¹⁰¹ For example, EPA considered the extent of hazard posed by the pollutant discharges from each industrial category that remain in the facilities' effluent after taking into account treatment technologies and practices currently in place. EPA's assessment of hazard was based on the toxic potential of pollutants discharged by an industrial category – calculated by multiplying the amount of each pollutant discharged by a "toxic weighting factor" for each pollutant.¹⁰² To be clear, EPA did not conduct a separate analysis of nutrients discharged from each industrial category; rather, EPA considered nutrient discharges only insofar as they contributed to the toxicity of pollutant discharges from the category. However, EPA conducted an in-depth Nutrient Discharge Analysis of two high-hazard industrial categories that it reviewed in detail as part of its 2004 annual review – Organic Chemicals, Plastics and Synthetic Fibers ("OCPSF"), and Petroleum Refining.¹⁰³ We learned that most of the nutrient discharges and hazard in both categories came from just a few facilities: 19 OCPSF and 12 Petroleum Refining facilities out of more than 1,650 total facilities. EPA stated, that based on this screening analysis, the discharge of nutrients from neither OCPSF nor petroleum refining facilities appeared to support the development of national categorical effluent limitations for nutrients at that time.¹⁰⁴ However, based largely on its hazard assessment, EPA identified a subcategory of OCPSF (Vinyl Chloride) and a related subcategory of Inorganic Chemicals (Chlor-Alkali) for possible effluent guidelines rulemaking, and will further evaluate nutrient discharges from these industries in the context of this rulemaking. In addition, EPA will continue to evaluate methods for incorporating nutrient discharge analyses into its hazard assessment of existing categories as part of its future annual reviews.¹⁰⁵

By considering nutrients in this way as part of its 2004 annual review, EPA was able to focus its review efforts on those categories that present the greatest opportunity for meaningful

⁹⁹ 40 CFR 432

¹⁰⁰ 40 CFR 412, 68 FR 7270.

¹⁰¹ 69 FR 53705, 53708-17 (Sept. 2, 2004).

¹⁰² 69 FR 53710.

¹⁰³ See 69 FR at 53713, 53715.

¹⁰⁴ See 69 FR at 53713, 53715 (Sept. 2, 2004).

¹⁰⁵ See Comment Response Document for 2004 Effluent Guidelines Plan at 3-29.

reductions in pollutant discharges. Such consideration is appropriate in the context of effluent guidelines decision making.¹⁰⁶ EPA is evaluating data sources and methodologies for how it may improve the consideration of environmental impacts associated with nutrient discharges within its hazard assessment in future annual reviews. This iterative approach is consistent with section 304(b) which – by prescribing an *annual* review – contemplates that EPA will continually gather information in an ongoing process, building on information available in each previous annual review.

Discussion

Following receipt of CBF's Petition, EPA examined the data and analyses that were prepared as part of EPA's 304(b) review in 2004. Based on this examination, EPA believes an across-the-board revision of all ELGs to address nutrients would not be warranted at this time.¹⁰⁷ However, EPA will further evaluate nutrient discharges, as appropriate, from the industries selected for effluent guidelines rulemaking in the 2004 Plan: Vinyl Chloride and Chlor-Alkali.¹⁰⁸ In addition, EPA believes each annual review of point source categories with existing ELGs can and should influence succeeding annual reviews, e.g., by indicating data gaps, identifying new hazards or technologies, or otherwise highlighting industrial categories for more detailed scrutiny in subsequent years.¹⁰⁹

Several additional factors also lead EPA to the conclusion that it is not appropriate to revise the existing universe of effluent guidelines to include a nutrient limit of 3 mg/L for total nitrogen. First, as noted above, EPA has already recently addressed nutrients in effluent guidelines where it appeared to be warranted and appropriate (i.e., CAFOs, CAAPs and MPPs).

In addition, CBF has identified no specific industrial category for which they believe that nutrients should be addressed through ELGs. The Petition also provides no data or information to support its request, that is, no information to suggest that candidate technologies do exist that can achieve the nutrient reduction level recommended by CBF or that these technologies would be available across the various industries and would pass the economic impact tests for each industry as required under the statute. In fact, EPA's best information is that of the current BNR

¹⁰⁶ See *Waterkeeper Alliance v. EPA*, 2005 U.S. App. LEXIS 3395 at *77-82 (2nd Cir. Feb. 28, 2005) (upholding EPA's decision not to establish groundwater-related requirements as part of national categorical effluent limitations guideline, where such requirements would "not likely... result in any significant reduction in groundwater pollution"). EPA's hazard review was based on the best data reasonably available to EPA for purposes of conducting a screening level review of all existing effluent guidelines, as required under section 304(b). Specifically, EPA relied on two databases: Toxics Release Inventory (TRI) and Permit Compliance System (PCS). Because these two databases were national in scope and cumulatively included hazard-related data on the vast majority of industrial categories, EPA determined that these were the best available data sources for conducting a screening-level review of all industrial categories, as required by section 304(b). EPA was unable to find a comparable screening level tool to assess discharges on the basis of other factors, such as the availability and affordability of pollutant reduction technologies. See 69 FR at 53710; Technical Support Document at 4-4, 4-7 to 408.

¹⁰⁷ EPA focused its efforts on collecting and analyzing screening-level data to identify industrial categories whose pollutant discharges pose the greatest hazard or risk to human health because of their magnitude and toxicity according to toxic-weighted pound equivalent or TWPE. See 69 FR at 53710.

¹⁰⁸ See Comment Response Document for 2004 Effluent Guidelines Plan at 3-29.

¹⁰⁹ See 69 FR at 53709.

technologies cited elsewhere in the Petition (see Section A requesting that EPA amend secondary treatment requirements), only one technology seems potentially capable of achieving 3 mg/L, and even then, not at all facilities or in all circumstances. Also, while N controls could reduce BOD, specifically the fraction of BOD derived from nitrogenous oxygen demand (NOD), the fraction of BOD from N is small to begin with. In sum, EPA has neither technological nor economic information on which it would be appropriate to grant this request and commit to issuing proposed effluent guidelines that achieve the nutrient reduction level sought by CBF.¹¹⁰ For additional support, please refer back to the discussion of these same issues in EPA's response to Request A.

Moreover, developing new effluent guidelines would require an evaluation of best technologies in use and economically achievable by each existing industrial category nationwide. Although CBF seeks new effluent guidelines only for facilities in the Bay watershed area (as is made clear in a separate letter sent by CBF following the Petition), it has not suggested a basis on which EPA could create subcategories of industrial dischargers for only those facilities. It is therefore possible that revising the effluent guidelines for all industries as CBF requests would need to be on a nationwide basis. EPA believes, however, that nutrient discharges into the Bay are a localized, site-specific problem that can be best addressed either through water quality-based permitting mechanisms or through site-specific technology-based limits (termed "best professional judgment" limits)¹¹¹ rather than through national categorical effluent guidelines (as further discussed in Section A of this response). In the Introductory section of this Petition response, EPA has explained how it has developed and is pursuing a local, largely water quality-based approach that we believe will be effective in reducing the discharge of nutrients into the Bay watershed.

EPA has long recognized, in fact, that some discharges of pollutants are best addressed on a site-specific basis rather than through national categorical effluent guidelines, and courts have upheld this approach.¹¹² Here, it is especially appropriate to rely on more localized mechanisms rather than on national categorical regulations in light of the current lack of information and uncertainty over whether there are technologies that are available that would support new categorical effluent guidelines establishing a limit of 3 mg/L of total nitrogen. And as stated in the response to Section A above, site-specific NRT controls for nitrogen have already been adopted at more than 50% of major POTWs.

Reviewing and revising the effluent guidelines for all 55 industrial categories and as many as 450 subcategories for the potential for additional nutrient controls would also be a very large undertaking that would require enormous amounts of Agency time and resources to

¹¹⁰ EPA could not commit in any circumstances to issuing final ELGs, as the Petition appears to request, because of the requirement under the Administrative Procedure Act for the Agency to solicit and respond to comments, and any new information that commenters submit, on proposed regulations.

¹¹¹ See 40CFR 125.3.

¹¹² See *Nat'l Wildlife Fed'n v. EPA*, 286 F. 3d 554, 566 (D.C. 2002) (upholding EPA's decision not to revise the Pulp and Paper effluent guideline to include a BAT limitation for color where EPA concluded that reductions would be more effectively achieved through site-specific limits, including water quality-based effluent limits); *Waterkeeper Alliance v. EPA*, 2005 U.S. App. LEXIS 3395 (Feb. 28, 2005) at *76-77 (upholding on same grounds EPA's authority to decline to select a groundwater-related control technology as BAT for certain animal feedlots).

accomplish¹¹³. These time and resource commitments would involve both technical work, i.e. data collection and engineering analyses, and the lengthy process of administrative rulemaking that typically takes five to seven years to produce a final effluent guideline.¹¹⁴ There is every potential that this enormous effort would produce little significant value and benefit, given that EPA already has a process in place that we believe will be effective in controlling nutrient pollution in the Bay, as described earlier in this Petition response.

EPA also notes that it would be inappropriate to grant the Petition's request to consider nitrogen to be a conventional pollutant and to issue new technology-based limitations for nitrogen as Best Conventional Technology ("BCT") effluent guidelines. BCT is not an additional limitation, but replaces BAT for control of conventional pollutants. BCT limitations are applicable to conventional pollutants only, and may not be less stringent than the limitations based on "Best Practicable Control Technology Currently Available" (BPT). Total nitrogen is not a conventional pollutant under EPA's regulations,¹¹⁵ and nothing in the Petition suggests why EPA should now treat nitrogen as a conventional pollutant. Both nitrogen and phosphorus in water may exhibit BOD, but BOD is already regulated as a conventional pollutant. Nitrogenous oxygen demand (NOD) may account for the majority of oxygen demand once secondary treatment is achieved, but the level of NOD in receiving waters depends on the characteristics of those waters as well as the ammonia concentration of the effluent. Ammonia in wastewater may potentially exert significant NOD, but many waters under certain temperatures, flow, and other conditions exhibit low NOD, and some waters exhibit little or no NOD under any conditions. As the Agency explained previously¹¹⁶ the need for NOD reduction is more appropriately determined on a case-by-case basis for individual receiving water segments rather than through an across-the-board technology-based regulation. Also as noted in the response to Section A above, in-stream dissolved oxygen concerns due to NOD can be (and have been) addressed on a case-by-case basis, and more than half of the major POTWs in the Bay watershed in fact already have limits for nitrogen.

Even if EPA were to consider nitrogen as a conventional pollutant, Section 304(b)(4)(B) of the CWA requires that EPA establish BCT limitations only after consideration of a two-part "cost reasonableness" test. This test addresses "the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived, and the comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources" (CWA 304(b)(4)(B)). As implemented by EPA, the BCT cost

¹¹³ Resources expended by the Office of Science and Technology alone are on the order of 4 to 5 FTEs and \$1 to \$1.5 million annually over the 5 to 7 year period typical of a single ELG rulemaking.

¹¹⁴ For example, EPA began its effort to revise the CAFO regulations in the late 1990's, proposed new CAFO regulations in January, 2001, and issued final regulations in February, 2003. The regulations were challenged and a decision by the U.S. Court of Appeals for the Second Circuit in February, 2005, vacated and remanded portions of the rule.

¹¹⁵ Section 304(a)(4) designates the following as conventional pollutants: biochemical oxygen demand (BOD), total suspended solids, fecal coliform, pH, and any additional pollutants designated by the Administrator. The Administrator designated oil and grease as an additional conventional pollutant on July 30, 1979 (44 FR 44501).

¹¹⁶ See 49 FR at 36999. Also see letter dated Feb 6, 1995, from Robert Perciasepe, Assistant Administrator, to Matthew Kenna, denying petition for rulemaking submitted on behalf of Peter Maier, et. al.

methodology examines whether it is “cost-reasonable” for industry to control conventional pollutants at a level more stringent than BPT limitations already require. See, e.g., the analysis in 69 FR 54476 (effluent guidelines for the meat producing industry). A cost comparison to removal of conventional pollutants by POTWs constitutes the basic measure of “reasonableness,” and the BCT test compares this POTW cost to the cost for industry to remove equivalent pounds of conventional pollutants. Establishing BCT effluent limitations for an industrial category or subcategory begins by identifying technology options that provide additional conventional pollutant control beyond that provided by application of BPT technologies. EPA would need to evaluate a candidate technology by applying the two-part BCT cost test. To pass the POTW test, the cost per pound of conventional pollutant removed by discharges in upgrading from BPT to the candidate BCT must be equal to or less than the cost per pound of conventional pollutant removed in upgrading POTWs from secondary treatment to advanced secondary treatment. The two conventional pollutants used in calculating the POTW pollutant removal are BOD and TSS¹¹⁷. Given the currently available information on the high costs of BNR technologies described earlier, in relation to any relatively small incremental conventional pollutant removals that would be projected, this information indicates that BNR technologies, to the extent they are even available,¹¹⁸ would be unlikely to pass these tests. These are further reasons why EPA does not believe it is appropriate to initiate a rulemaking as requested by CBF to establish an overarching BCT limit of 3 mg/L of total nitrogen in ELGs for industrial point source dischargers in the Bay watershed.

Given that nutrient discharges are best addressed through localized mechanisms (as discussed in the response to Section A above), and the fact that EPA is proceeding with concerted efforts to address nutrients through the localized mechanisms outlined in the *Permitting Approach* and earlier in this response, and for the other reasons outlined above on why pursuing a revision to all ELGs to add a limit of 3 mg/L of total nitrogen would be unwarranted, EPA finds that it would be an inappropriate use of its limited time and resources to revise the ELGs for all industrial categories to include the requested limitation. For all of these reasons, EPA today denies the request in this section of the Petition.

C. Require Implementation of Adequate, Enforceable Effluent Limitations for Existing Discharges of Total Nitrogen and Total Phosphorous in NPDES Permits for Point Sources in the Chesapeake Bay Watershed

Petitioners Request

CBF requests that EPA adopt a rule that would require Chesapeake Bay watershed States reissuing or modifying an existing NPDES permit for a point source discharging nitrogen and/or phosphorus in the Chesapeake Bay watershed to include in such permits adequate, enforceable

¹¹⁷ Oil and grease may be included when appropriate in context of the industry and technology being evaluated. Fecal coliform and pH are not measurable as “pounds removed,” and are not included in these calculations.

¹¹⁸ As discussed earlier in this section, current information is that only one candidate technology – the Bardenpho process – could even potentially meet a 3 mg/l TN limit at only some locations, and even then only with numerous qualifications.

¹²⁰ 40 CFR 122.44(d)(1)

effluent limitations for total nitrogen (annual average) and total phosphorus (annual average) that will attain water quality standards and that are consistent with implementation measures necessary to achieve agreed-to allocations for nitrogen and phosphorus.

EPA Response

EPA shares CBF's overarching goal of ensuring that appropriate water quality-based effluent limitations for total nitrogen and total phosphorus are included in NPDES permits for point sources in the Bay watershed. However, for the reasons provided below, EPA concludes that it is unnecessary to adopt an additional rule to specifically require that existing permits be issued with nutrient limits adequate to protect the Chesapeake Bay. Existing rules are already in place to meet this goal. Therefore, EPA denies this request.

Legal Framework

Section 301 of the CWA generally prohibits the discharge of any pollutant from a point source unless authorized by a permit. Section 402 of the CWA authorizes EPA (and such States as authorized by EPA) to issue such permits. Among other requirements set forth in Section 402(a)(1) is the requirement to comply with Section 301 of the CWA. Section 301(b)(1)(C) requires, among other things, that permits include "any more stringent limitation, including those necessary to meet water quality standards...established pursuant to a State law or regulation..." EPA has adopted implementing regulations for these provisions including the requirement that each NPDES permit contain effluent limitations necessary to achieve applicable water quality standards: *"In addition to the conditions established under Sec. 122.44, each NPDES permit shall include conditions meeting the following requirements when applicable...(d) Water quality standards and State requirements: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to: . . . (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."*¹²⁰ This regulation is applicable to authorized State NPDES programs pursuant to 40 CFR 123.25.

Consistent with the CWA requirements set forth in Section 402(b) of the CWA and 40 CFR Part 123, EPA has authorized the States of Virginia, Maryland, Pennsylvania, New York, West Virginia and Delaware to administer the NPDES permitting program. EPA continues to oversee each of those NPDES permit programs to ensure that the States implement their programs in accordance with the requirements of the CWA.¹²¹ That oversight includes EPA's discretionary authority to review proposed State NPDES permits and object to any permit that fails to satisfy the requirements of 40 CFR 122.44(d). 40 § CFR 123.44(c)(8). EPA is the NPDES permitting authority for point sources discharging in the District of Columbia.

Discussion

As discussed earlier, EPA and the Bay State partners, in the *Chesapeake 2000* Agreement, have established a strategic plan to restore the Chesapeake Bay. The *Chesapeake 2000* Agreement sets forth specific commitments for control of nutrients. EPA, State and local

¹²¹ See generally, CWA §402; 40 CFR Part 123

partners committed to: define the water quality conditions necessary to protect the aquatic resources; develop and assign load reductions for nitrogen and phosphorous to each major tributary sufficient to achieve those conditions; and develop and begin implementation of revised Tributary Strategies to achieve and maintain the necessary loading goals and the water quality standards.

The States are well on their way to adopting new or revised water quality standards based on EPA's *EPA Bay Criteria Guidance*. Delaware adopted on September 17, 2004 final revised water quality standards, that EPA Region 3 approved on December 16, 2004. Virginia, Maryland and the District of Columbia have all proposed revisions of their respective State water quality standards that are consistent with the *EPA Bay Criteria Guidance*. For each proposed Bay State water quality standard revision, EPA has provided detailed and timely comments during the respective public comment period for each State reflecting the requirements of the CWA and EPA recommendations of the *EPA Bay Criteria Guidance*. EPA will continue to work with each State in accordance with Section 303(c) of the CWA regarding the adoption of such revisions.

As discussed above, the CWA and NPDES permitting regulations already impose an obligation to include water quality-based limits in permits where necessary. EPA retains discretionary authority to object to any NPDES permit issued by a State that does not contain such a limit.

To further help achieve appropriate permitting of nutrients and as part of its NPDES permitting oversight, EPA and the permitting authorities of the Chesapeake Bay watershed States agreed to a *Permitting Approach* for nutrients for the Bay¹²² as discussed in more detail above. This approach calls for permit limits for nitrogen and phosphorus to be placed in permits based on the revisions to Maryland's water quality standards. Because Maryland's portion of the Bay is the most critically impaired section, Maryland's water quality standards are the key trigger for the nutrient allocations created for the Bay. EPA has also committed to review proposed NPDES permits for each significant source of nutrients throughout the Bay watershed. EPA currently expects Maryland to adopt final revised water quality standards consistent with EPA recommendations in 2005.

EPA has concluded that the focus of current efforts should continue to be on revising and implementing State water quality standards for the Chesapeake Bay based on the best, up to date science. The current NPDES regulations are adequate to ensure that permits in the Bay watershed will include appropriate limits for nutrients based on those revised standards.¹²³ EPA notes also that NPDES permitting authorities will have additional information set forth in the applicable Tributary Strategies and Bay model point source allocations developed in accordance with *Chesapeake 2000* from which to derive appropriate effluent limitations. Therefore, EPA believes there is no need for, and would be no benefit from, new regulations that would specifically require appropriate nutrient limits in permits.

In sum, while EPA shares CBF's goal of ensuring that appropriate limitations for nutrients are included in NPDES permits in the Bay watershed, EPA already has an appropriate

¹²² "NPDES Permitting Approach for Discharge of Nutrients in the Chesapeake Bay Watershed"

¹²³ 40 CFR 122.44(d)(1)(vii).

regulatory framework in place to achieve this objective. Moreover, the ongoing adoption of new or revised Bay water quality standards along with the implementation of additional *Chesapeake 2000* actions and the *Permitting Approach* are significant recent developments that will greatly assist the process for assuring that appropriate nutrient limits are established in NPDES permits for all significant point sources. EPA does not believe at this time that there would be any value to adopting additional regulations that would require the adoption of permit limits for nutrients. CBF has not identified any reason why additional regulations are necessary or why existing regulations are not sufficient. Thus, promulgating additional regulations here would not be an effective or appropriate use of agency resources. Accordingly, EPA denies this request.

D. Require That No NPDES Permit be Issued by a Chesapeake Bay Watershed States for a New or Expanded Discharge of Nutrients Unless Several Conditions are Met

Petitioner's Position

CBF requested that EPA issue a rule specifying that NPDES permits in the Bay Watershed shall not be issued for new or expanded discharge of nutrients unless:

1. the permit contains a zero discharge effluent limit for total nitrogen and total phosphorous;
2. the State re-opens the permits of existing discharges and inserts compliance schedules for nutrient reductions designed to bring the segment into compliance with water quality standards; and
3. the State has completed a TMDL for nutrients for the impaired segment in which the discharge is proposed.

As to the first condition (zero discharge), CBF asserts that EPA's current permitting regulation at 40 CFR 122.4(i) provides that any new source or new discharge must demonstrate that there are sufficient remaining pollutant load allocations remaining and that existing dischargers into the segment are subject to compliance schedules. CBF proposes that one way to address these requirements is for EPA to issue a rule allowing a permit to be issued to a new source or new discharger with an effluent limit of zero for the pollutants causing a water quality standard impairment. (Petition at 17-18).

As to the second condition (compliance schedules), CBF again asserts that 40 CFR 122.4(i) requires that before authorizing a discharge of a pollutant for which a segment is not attaining standards, the State must ensure that permits for all existing dischargers of that pollutant include compliance schedules. CBF states that the only way to ensure that this provision is complied with by the States is for EPA to review and object to permits for new sources or new discharges if the States have failed to include compliance schedules in permits for existing dischargers. (Petition at 18).

Finally, as to the third condition (TMDL development), CBF asserts that 40 CFR 122.4(i) and case law support the proposition that Maryland and Virginia are prohibited from issuing NPDES permits for a new source or new discharger of nutrients unless a TMDL has been completed for the impaired segment for which the discharge is proposed. (Petition at 18). CBF

states that one way EPA could address this situation is by issuing a rule prohibiting the issuance of new point source discharge permits into impaired waters prior to completion of a TMDL for nutrients for the impaired segment in which the discharge is proposed. CBF asserts that this will ensure that EPA properly exercises its federal oversight authority. (Petition at 19).

EPA Response

EPA does not agree that EPA's current permitting regulations at 40 CFR 122.4(i) or relevant case law prohibit the issuance of permits to new sources or new dischargers (or expanding dischargers) unless the three conditions in CBF's Petition are met. Furthermore, EPA does not believe that a rule requiring such a result is warranted. Therefore, EPA is denying CBF's requested rule.

Legal Framework

As discussed earlier in Section C of this Response, Section 301(a) of the CWA authorizes the discharge of pollutants as long as such a discharge occurs pursuant to a permit issued under Section 402. Section 402(a) grants the EPA Administrator the authority to issue NPDES permits for the discharge of pollutants into navigable waters and to establish permit conditions.¹²⁴ Insofar as Section D of the Petition Request arises, as a general matter, under the permit program created by section 402 of the CWA, the legal framework governing Section D is identical to the framework detailed above in Section C.

The CWA and EPA's implementing regulations require that any permit include effluent limits as stringent as necessary to meet State water quality standards.¹²⁵ The implementing regulations also prohibit the issuance of permits to new sources or new dischargers if the discharge would cause or contribute to a violation of water quality standards. 40 CFR 122.4(i). This regulation provides further that *after* a State develops a pollutant(s) load allocation (i.e., TMDL), additional conditions to ensure sufficient remaining pollutant load allocations and the imposition of compliance schedules for existing dischargers are required. This regulation in its entirety states¹²⁶:

No permit may be issued (i) To a new source or a new discharger, if the discharge from its construction or operation *will cause or contribute* to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent limitations

¹²⁴ CWA, 33 U.S.C. § 301(a); *See also*, *Arkansas v. Oklahoma* 503 U.S. 91 at 105 (1992) ("Congress has vested in the Administrator broad discretion to establish conditions for NPDES permits.")

¹²⁵ *See* Section 301(b)(1)(C) of the CWA; 40 CFR 122.4(d) ("No permit may be issued ...[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states."); 122.44(d)(1).

¹²⁶ 40 CFR 122.4(i) (emphasis added).

required by sections 301(b)(1)(A) and 301(b)(1)(B) of the CWA, and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the public comment period that:

- (1) There are sufficient remaining pollutant load allocations to allow for the discharge; and
- (2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards. The Director may waive the submission of information by the new source or new discharger required by paragraph (i) of this section if the Director determines that the Director already has adequate information to evaluate the request. An explanation of the development of limitations to meet the criteria of this paragraph (i)(2) is to be included in the fact sheet to the permit under 124.56(b)(1) of this chapter.

Discussion

As discussed above, 40 CFR 122.4(i) includes two distinct requirements. The opening sentence of 40 CFR 122.4(i) prohibits the issuance of permits for new sources or new discharges if the discharges “will cause or contribute” to a violation of existing water quality standards. The determination of whether a new discharge will cause or contribute to a violation of water quality standards is done on a case-by-case basis. In current practice, permitting has occurred in at least three situations that are consistent with the CWA:

1. Permits have been issued to dischargers whose discharges do not contain the pollutant causing the impairment. EPA does not consider this category of dischargers to “cause or contribute to the violation of water quality standards.”
2. Permits have been issued to dischargers with effluent limitations at or below either the numeric water quality criteria or a quantification of a narrative water quality criterion. These kinds of dischargers are also not considered by the EPA to “cause or contribute to the violation of water quality standards.”
3. Permits can also be issued for dischargers who have demonstrated that other pollutant source reductions will offset the discharge in a manner consistent with water quality standards with the ultimate result that there is a net decrease in the loadings of the pollutant of concern. Discharges in this case would not be considered to cause or contribute to a violation of water quality standards.

EPA believes that issuance of permits for new sources or new dischargers under any of these conditions would satisfy the requirement of the first sentence of 40 CFR 122.4(i). The regulation includes additional requirements after the development of a TMDL.

The rule also requires in regard to new sources or new dischargers that if they seek to “discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent limitations required by sections 301(b)(1)(A) and 301(b)(1)(B) of CWA, and for which the State or interstate agency has

performed a pollutant load allocation for the pollutant to be discharged, they must demonstrate...”, among other things, that “[t]he existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.”¹²⁷ Petitioners are asking for a rule requiring immediate compliance with this aspect of the regulation in the Chesapeake Bay watershed. However, there has not been a TMDL or equivalent pollutant loads allocation developed for the Chesapeake Bay waters. Thus, this part of 122.4(i) is not currently applicable in the Chesapeake Bay watershed.

Turning to the first condition requested in CBF’s Petition (zero discharge), it is important to understand that neither the CWA nor EPA’s implementing regulations or case law currently compel such a result. The Supreme Court in *Arkansas v. Oklahoma* stated with regard to a similar request for a ban on discharges that “[a]lthough the Act contains several provisions directing compliance with State water quality standards, *see, e.g.*, §1311(b)(1)(C), the parties have pointed to nothing [in the Act] that mandates a complete ban on discharges....The statute does, however contain provisions designed to remedy existing water quality violations and to allocate the burden of reducing undesirable discharges between existing sources and new sources.”¹²⁸ In addition the Court found that “what matters is not the river’s current status, but rather whether the proposed discharge will have a ‘detectable effect’ on that status.”¹²⁹

EPA further declines CBF’s invitation to adopt a new regulation that would impose a zero discharge requirement on new sources and new dischargers of nutrients to the Bay watershed. EPA believes that the current statutory and regulatory requirements are adequate to ensure that permits for such dischargers will include effluent limitations as stringent as necessary to meet water quality standards even if those effluent limitations are not zero. No permits for new sources or dischargers are authorized unless the permits include effluent limitations to ensure that the discharge will not cause or contribute to a violation of water quality standards. The *Permitting Approach* sets forth commitments by the Bay permitting authorities designed to ensure effluent limitations in all permits that will meet water quality standards. New discharges would be limited so that the net effect is such that there will be no increase in nutrient loadings into the Bay. The *Permitting Approach* provides that new or increased dischargers of nutrients may be permitted if the applicable Tributary Strategy provides a mechanism (such as a growth allocation) to accommodate any such new loading of nutrients. In instances where an applicable Tributary Strategy does not explicitly allow for new nutrient loading, these new or expanded discharges are expected to be offset through additional reductions in loads from other sources in the same tributary basin (beyond the reductions contemplated in the Tributary Strategy). By providing for such an offset, the Tributary Strategies will ensure that there is adequate assimilative capacity for any such new loading.

In a recent decision by EPA’s Environmental Appeals Board, *In re Carlota Copper Company*, 2004 EPA App. LEXIS 35 (EAB 2004), the Board concluded that such offsets are consistent with the CWA as well as with current regulatory requirements in 122.4(i).¹³⁰ The Board concluded that a discharge from Carlota Copper Company, a new source, was permitted

¹²⁷ 40 CFR 122.4(i)(2).

¹²⁸ *Arkansas v. Oklahoma*, 503 U.S. at 108.

¹²⁹ *Id.* at 113.

¹³⁰ *Carlota Copper*, 2004 EPA App. LEXIS at *191.

because any possible effects of the discharge on water quality would be offset by remediation efforts occurring at another site. The Board found that the remediation reduced the pollutant load sufficiently to offset Carlota's discharge.¹³¹ Thus, the method described in the Bay Permitting Approach for addressing new and increased discharges is consistent with the requirements of 122.4(i) and the CWA. The *Permitting Approach* intends permits to be issued consistent with the applicable water quality standards as well as consistent with the applicable Tributary Strategy, to achieve the reductions from point sources necessary to achieve the Tributary Strategy nutrient load allocations.

There is no need, therefore, for a regulation to require zero discharge limits for total nitrogen and phosphorous in all cases in order for permits to have limits as stringent as necessary to meet water quality standards. The Petitioner's request for this type of rule is therefore denied.

The second condition suggested by CBF is that permits for new or expanded discharges of nutrients shall not be issued unless Bay watershed States re-open existing NPDES permits with nutrient discharges and insert enforceable compliance schedules containing adequate, enforceable effluent limitations for total nitrogen and total phosphorous into the existing permits. In light of the requirements of the statute and EPA's existing regulations, EPA does not believe that a change to the current regulatory system is warranted.

First, as discussed above, 40 CFR 122.4(i) requires that permits issued for a new source or new discharger must include conditions that ensure that the discharge will not cause or contribute to a violation of water quality standards. Furthermore, all permits (including any expanding discharger that may not be a new source or new discharger) must include effluent limitations as stringent as necessary to meet water quality standards. CWA section 301(b)(1)(C). Therefore, any discharge of nutrients by a new or expanded source that is authorized under a permit may not cause or contribute to any ongoing impairment of Bay waters due to nutrients. Accordingly, there is no need to further restrict the issuance of permits to new or expanding sources based on reopening permits for existing sources as suggested by CBF. Further, because permit terms are limited to five years (CWA section 402), all existing dischargers will need to apply for permit reissuance over the next five years. When those permits are reissued, they will need to reflect the revised and improved water quality standards that Bay watershed States are now in the process of adopting, as described earlier. CWA section 301(b)(1)(C). At the time of reissuance, the permitting authority may include a compliance schedule in the permit where appropriate and warranted. In the absence of a compliance schedule, the permittee is required to comply with the limits in the permit immediately. Given these existing regulatory requirements for permit terms that will ensure compliance by both new and existing sources with water quality standards and the States' current and ongoing adoption of new standards, EPA finds there is no need to adopt this additional regulatory requirement suggested by CBF that would prohibit permit issuance to new sources or new dischargers unless the permits for existing sources are reopened to add compliance schedules. We also note that the Permitting Approach indicates the intention of EPA and States to incorporate a Bay specific re-opener clause in permits for significant point sources, if the existing re-opener clause is insufficient.

¹³¹ *Id.* at *145.

In addition, in the Permitting Approach, EPA and the State permitting authorities agree to consider watershed permits as a mechanism to regulate nutrient discharges. Potential benefits of a watershed-based permitting approach include synchronization of permit issuance across a watershed for all significant dischargers of nutrients, which will likely expedite issuance of permits for all facilities with appropriate limits and compliance schedules where necessary and appropriate. For example, the State of Virginia recently enacted legislation to provide authority to issue a single watershed-based permit that will establish appropriate nutrient limits for new sources and compliance schedules as appropriate for the 140 significant point source discharges of nutrients in the Virginia portion of the Chesapeake Bay watershed.¹³² The legislation contemplates that the State will issue such a permit in January 2006. EPA is also working with the other States in the watershed at exploring similar watershed-based permitting approaches as well. EPA believes that potential watershed approaches will be more efficient at establishing limits and compliance schedules where appropriate for all significant point sources in the watershed than would the rulemaking that CBF has requested.

CBF seems to base its request for rulemaking on 40 CFR 122.4(i), but reliance on this regulation is misplaced. As discussed above, because TMDLs have not been developed for the Bay waters, EPA does not interpret the provisions in this regulation related to compliance schedules to apply at this time. Furthermore, EPA does not believe that imposing such a requirement prior to TMDL development is warranted. The Chesapeake 2000 Agreement is premised on the commitment of all stakeholders to do what is necessary to bring the Bay into compliance with water quality standards, thereby obviating the need for development of a TMDL. As discussed elsewhere in this Petition Response, this is a choice that the States are allowed to make when scheduling development of TMDLs. For the reasons discussed above, the Petitioner's request for a federal rule requiring the re-opening of all existing NPDES permits with nutrient discharges and the insertion of compliance schedules is denied.

Finally, the third condition suggested by CBF is that NPDES permits for a new or expanded discharge into an impaired water body shall not be issued until a TMDL has been completed for the impaired segment. For the reasons described in Section K, Petitioner's request for a ban on the issuance of permits for new and increased discharges until a TMDL is completed is denied.

For all the reasons discussed above, Petitioner's request for a federal rule as described in Section D of the Petition is denied.

E. Review State NPDES Permit Actions on Requests for New or Expanded Discharges of Nutrients From Point Sources Into the Chesapeake Bay Watershed

¹³² Nutrient Credit Exchange Program, Senate Bill 1275 (enacted March 24, 2005).

¹⁴³ See CWA 402(a)(5) and 40 CFR 123.44 ("EPA may make objections to proposed permits...")

Petitioner's Request

CBF requests that EPA adopt a rule specifying that EPA will review and object to State NPDES permits to ensure that no new or expanded nutrient discharge load is authorized into nutrient impaired waters from new or expanding point sources in the Chesapeake Bay watershed unless:

1. the permit contains an enforceable effluent limit of zero nutrient load for the pollutants causing the impairment;
2. the State re-opens the permits of existing NPDES-permitted discharges of nutrients and inserts compliance schedules for nutrient reductions designed to bring the segment into compliance with water quality standards; and
3. the State has completed a TMDL for nutrients for the impaired water segment. The rule must further specify that if the State-issued permit fails to meet these conditions, EPA will object to the issuance of the permit by the State.

EPA Response

This request is closely related to CBF's Request D. There, CBF requested that EPA issue a rule specifying that no permit may be issued that authorizes a new or expanded discharge of nutrients into or affecting an impaired water segment unless three conditions were met. Here, in Request E, CBF requests a rule specifying that EPA will review and object as necessary to State permits that are being issued to ensure that no new or expanded nutrient discharge is authorized into nutrient impaired waters in the Bay watershed unless these same three conditions are met.

EPA is denying this request for rulemaking for generally the same reasons that are explained above for the denial of Request D. EPA's authority to review and object to permits is discretionary, not mandatory, under the CWA.¹⁴³ In the *Permitting Approach*, EPA has announced its intention to exercise this authority by reviewing the State-issued permits for all "significant" point sources that are identified as contributing nutrients to the Chesapeake Bay and its tidal tributaries.¹⁴⁴ CBF itself agrees that it is appropriate for EPA, in responding to this Petition, to focus on the significant dischargers.¹⁴⁵

As EPA has done in the past, we intend to object to those permits that, in our judgment, do not fulfill the obligations of the CWA.¹⁴⁶ To the extent the three conditions outlined by CBF are focused on ensuring that appropriate limits for nutrients are included in permits for facilities

¹⁴⁴ In section J of today's response, EPA has agreed to rescind its agreement with Bay watershed States to waive review of certain permits, in order to remove any inconsistencies with EPA's expressed intention to review the permits for all significant point sources.

¹⁴⁵ See CBF letter of March 30, 2004 from Roy Hoagland to Robert Koroncai ("In light of the large number of dischargers in the watershed, we acknowledge that from a practical perspective the relief requested can be appropriately focused on existing or new 'significant' dischargers").

¹⁴⁶ EPA has exercised this discretionary authority in the past when we have deemed it appropriate. For example, from fiscal year 2002 through 2004, EPA Region III objected to 27 permits. In all of these cases, the issues were resolved to EPA's satisfaction, in many cases through modification of the proposed permit, and EPA concluded that it could remove its objection to the permit.

in the Bay watershed, EPA agrees with that objective as we have stated throughout this response document. However, there is no statutory basis for asserting that the three conditions outlined by CBF are conditions that, in every instance where they are not met, *require* EPA to object to a permit on the grounds that the permit does not meet the requirements of the Act and regulations. Further, EPA does not believe that there is a basis to say categorically that it would be appropriate, in the Agency's discretion, to object to a permit each time that these three conditions are not present. We have explained in the response to Request D above why permits may not be objectionable even in the absence of the three conditions outlined by CBF.

Moreover, even if EPA deemed it appropriate to object categorically in every case where these three conditions are not met, a new regulation to require the Agency to object in these instances would be unnecessary. EPA has discretionary authority to review permits and in the *Permitting Approach*, EPA has announced its intention to ensure that appropriate nutrient limits are included in permits. Therefore, further rulemaking to bind EPA's discretion in these matters is unnecessary and would be of no additional benefit, and therefore would not be an effective use of the Agency's limited time and resources. Accordingly, there is no need for new regulations that would require EPA to object to permits in every instance in which the three conditions outlined by CBF are not met. Instead, EPA intends to follow the *Permitting Approach* by exercising its discretion to review permits for significant point sources of nutrients in the Bay watershed and to object as appropriate to ensure compliance with the CWA¹⁴⁷ and regulations. Accordingly, EPA denies this request for rulemaking.

F. Review All State NPDES Permit Actions in the Chesapeake Bay Watershed to Ensure That Adequate, Enforceable Effluent Limits for Total Nitrogen and Total Phosphorous That Attain Water Quality Standards Are Included in the Permit

Petitioner's Request

Petitioner requests that EPA issue or amend a rule providing that EPA will review State NPDES permit actions in the Chesapeake Bay watershed, and object to State-issued NPDES permits for significant industrial and sewage discharges into or otherwise affecting waters impaired by excessive nutrients in the Chesapeake Bay watershed that fail to contain adequate, enforceable effluent limits for total nitrogen and total phosphorus that attain water quality standards.

EPA Response

For reasons similar to those explained in the response to Request E above, as well as the response to Request D, EPA concludes that it is unnecessary and would not be warranted as an expenditure of Agency resources to adopt the type of rule requested in Request F.

¹⁴⁷ CWA section 402(a)(5) provides that States may implement the NPDES permit program and issue permits themselves where authorized by EPA, but that "[e]ach such permit shall be subject to such conditions as the Administrator determines are necessary to carry out the provisions of this chapter. No such permit shall issue if the Administrator objects to such issuance." 33 U.S.C. 1342(a)(5).

As we have noted, EPA fully shares CBF's desire to ensure that permits for significant point source dischargers into the Bay waters and tributaries contain necessary and appropriate limits to control the discharge of nutrients into those waters. As discussed above, EPA has adequate discretion whether to review and, where appropriate, object to State issued NPDES permits that do not contain effluent limits that ensure compliance with applicable water quality standards.¹⁴⁸ Through the actions described in the *Permitting Approach*, and our decision to rescind the review waiver for minor permits that are nevertheless significant dischargers, we believe we will accomplish this common objective. Request F of the Petition (as later clarified by CBF), however, asks EPA to issue additional regulations that would bind the Agency's discretion to review and object, as necessary, to the permits for significant dischargers to ensure that adequate effluent limits for total nitrogen and total phosphorus have been included. EPA finds that this specific relief is unnecessary to accomplish EPA and CBF's common goals. Given that EPA already has full discretionary authority to review and object to permits, and in light of EPA's revocation of existing waiver agreements with States that will allow EPA to review the permits for all significant dischargers into the Bay, there is no need to initiate the rulemaking requested in the Petition. Rulemaking would consume a large amount of Agency time and resources without any foreseeable benefit, since EPA has already committed to review the permits for significant dischargers into the Bay. The time and resources that would be involved could be better devoted to other EPA activities. Therefore, EPA denies the request for rulemaking in Request F of the Petition.

G. Review All State NPDES Permit Actions in The Chesapeake Bay Watershed to Assure Consistency With The Chesapeake Executive Council Bay Allocation Agreement

Petitioner's Request

Petitioner requests EPA to adopt a rule providing that EPA will review NPDES permit actions in the Chesapeake Bay Watershed to ascertain if the permit includes adequate, enforceable effluent limits for total nitrogen and total phosphorus consistent with implementation measures necessary to achieve the agreed-to allocations for nitrogen and phosphorus. The rule must also specify that EPA will object to State-issued NPDES permits that fail to contain such limits.

EPA Response

EPA concludes that it is unnecessary to adopt a rule requiring EPA to review and object to permits that do not comply with the "agreed-to allocations for nitrogen and phosphorus" specified for significant industrial and sewage discharges.

This relief is redundant to the relief sought in Requests E and F and therefore the arguments provided under the discussions on those parts also apply here. By way of summary, while EPA agrees that review of State-proposed permits is a good tool to assure appropriate limits are placed in permits, EPA already has adequate discretionary authority to review permits and object to those permits on any provisions that do not achieve the requirements of the CWA.

¹⁴⁸ 40 CFR 122.4(d)

¹⁵⁰ Chesapeake Bay Executive Council, Directive No. 03-02, *Meeting the Nutrient and Sediment Reduction Goals*

Furthermore, EPA has expanded its review of permits to include all ‘significant permits’ as sought in Request J.

This part of the Petition is referring to the allocations endorsed by the Executive Council in December 2003.¹⁵⁰ All of the Bay States and EPA agreed to allowable loadings of 175 million pounds per year total nitrogen and 12.8 million pounds per year total phosphorus for the entire Bay watershed. The States and EPA also agreed to allocation of these loadings among the major basins within the Bay watershed. These allocated loads were established based upon attaining the water quality goals for the Chesapeake Bay identified in the *EPA Bay Criteria Guidance*. Through EPA’s ongoing activities as discussed above, including those outlined in the *Permitting Approach*, EPA is ensuring consistency with the allocation agreement. The *Permitting Approach* indicates EPA’s intention to monitor States’ progress in placing appropriate limits in permits, by closely reviewing the nutrient reduction requirements in those permits submitted to EPA. Furthermore, after the revised Maryland water quality standards become effective, EPA will review NPDES permits for the approximately 450 significant point sources as identified by the CBP as contributing nutrients to the Chesapeake Bay and its tidal tributaries.

EPA therefore believes it would not be an effective use of its limited resources to initiate the rulemaking requested here. For these reasons, EPA denies the request for rulemaking in Request G of the Petition.

H. Review State NPDES Permit Actions in The Chesapeake Bay Watershed to Ensure That Any Discharge of Nutrients Does Not Adversely Affect Waters of Another State

Petitioner’s Request

Petitioner requests that EPA issue a rule providing that it will review State NPDES permit actions in the Chesapeake Bay watershed and object to State-issued NPDES permits for significant industrial and sewage discharges where nutrients in the discharge may adversely affect waters in another State.

EPA Response

EPA concludes that it is unnecessary to adopt a rule requiring EPA to review and object to permits for significant industrial and sewage discharges that may adversely affect the waters of another State. Therefore, EPA denies the requested relief.

The CWA¹⁵¹ and EPA’s existing regulations¹⁵² clearly provide that permits shall be written to assure compliance with downstream States’ water quality standards. Furthermore the Supreme Court has upheld such authority.¹⁵³ Thus, the permitting authority needs to issue

¹⁵¹ Clean Water Act, Section 402 (b)(5)

¹⁵² 40 CFR 122.4(d), No permit may be issued...when the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states. *See also*, 40 CFR §123.44(c)(2) (which identifies one of the bases for EPA to object to a state-issued permit as “[i]n the case of a proposed permit for which notification to the Administrator is required under Section 402(b)(5) of the CWA....”)

¹⁵³ *Arkansas v. Oklahoma*, 503 U.S. 91 (1992)

permits with appropriate limits to assure that downstream States' water quality standards are attained.

With respect to EPA review and objection to permits for the failure of the permitting authority to include requirements in the NPDES permit which assure that water quality standards for downstream States are attained, this request for relief is redundant to that sought under Requests E through G. While EPA believes it important to assure that interstate water quality standards are protected, EPA does not believe that further rulemaking is appropriate or necessary. The response to Requests E through G and the additional discussion above adequately provides the basis of EPA's position. Therefore, EPA denies the request for rulemaking in Request H of the Petition.

I. Rescind the EPA Review Waiver for Any NPDES Permit in The Chesapeake Bay Watershed That Involves the Discharge of Nutrients That May Affect Waters of Another State

Petitioner's Request

The Petitioner requests a rule notifying Bay watershed States that any waivers of review given by EPA to the State for a point source discharge that may involve the discharge of nitrogen or phosphorus, where nutrients may affect waters of another State, are hereby rescinded."

EPA Response

EPA agrees that it would be appropriate to remove existing waivers of EPA's review of permits for significant dischargers. EPA commits to review significant permits as requested in Request I and has achieved this by revoking the waivers of review that currently exist in MOAs with the States – see the response to section J below. EPA denies Request I because it asks for rulemaking to revoke our waiver to review permits for facilities where their nutrient discharge may affect waters of another State. EPA concludes that additional rulemaking is unnecessary.

It is clear that in Request I (and subsequent correspondence from CBF), the "point source discharge" refers to significant point source discharges of nutrients to the Chesapeake Bay watershed. Request I therefore seeks to have EPA revoke its waiver for review of significant dischargers within the Chesapeake Bay watershed. Thus, the relief sought in Request I has the same objective as the relief sought in Request J. The remaining distinction between these parts is that Request I seeks such relief in the form of rulemaking whereas Request J seeks relief in the form of modification to the Memorandum of Agreement (MOA) with the Petition jurisdictions. To revoke a waiver by rulemaking may take significant time and agency resources. EPA already has adequate authority to revoke its waiver of review of permits by modifying the MOAs with the States. Such action requires far less resources and would have equal effect. Therefore, EPA denies the relief sought in Request I in that this request would cause excessive delays in achieving the objective for EPA to review significant permits within the Bay watershed and is otherwise redundant to the relief that EPA is granting for Request J.

J. Revisit MOAs With Chesapeake Bay Watershed Jurisdictions to Ensure That Review of Any State Permit Action That Involves the Discharge of Nutrients That May Affect Waters of Another State is Not Waived by EPA

Petitioner's Request

The Petitioner requests that EPA revisit Memoranda of Agreements (MOA's) with the Chesapeake Bay watershed jurisdictions to ensure that the MOA's do not waive the review of any State NPDES permit action in the Chesapeake Bay Watershed that does not restrict the discharge of nutrients where that discharge may adversely affect the waters of another State.

EPA Response

EPA agrees with CBF that its review of State-issued permits is an important tool in assuring that appropriate limits are placed in NPDES permits for the protection of the Chesapeake Bay. EPA also agrees with CBF that EPA review should be expanded to 'significant dischargers' to the Chesapeake Bay.¹⁵⁴ Therefore, EPA is granting this requested relief.

The process for authorized States sharing information with EPA, including proposed permits for EPA review is described in the CWA¹⁵⁵ and EPA regulations.¹⁵⁶ This regulation establishes a Memorandum of Agreement between the State Director and the Regional Administrator as the document which defines, among other things, which permits are subject to EPA review. The process for revoking EPA's waiver of minor permits is simply a letter from EPA to the authorized States clearly identifying the permits which will be subject to review. By the terms of the MOA and the regulations, this letter therefore acts as a modification to the Memorandum of Agreement.

In the past, EPA has on occasion rescinded its waiver for minor permits. A notable example is that Region 3 rescinded its waiver for review of minor permits discharging to all those streams where TMDLs are completed. Since 2000, this resulted in the submittal and review of an additional 220 minor permits beyond the 748 major permits that are routinely submitted by the States for review in Region III. EPA's purpose was to assure that these permits were written consistent with TMDL's developed for the waterbody receiving wastewater from the permitted discharge. The *Permitting Approach* states:

"To monitor States' progress in placing appropriate limits in permits, EPA will closely review the nutrient reduction requirements in those permits submitted to EPA. Furthermore, after the revised Maryland WQS become effective, EPA will review NPDES permits for significant point sources as identified by the CBP as contributing nutrients to the Chesapeake Bay and its tidal tributaries."^{157,158}

¹⁵⁴ Memorandum from Roy Hoagland, representing CBF, to Bob Koroncai, March 30, 2004.

¹⁵⁵ Section 402 (d) of the Clean Water Act

¹⁵⁶ 40 CFR 123.24

¹⁵⁷ Correspondence from Jon Capacasa, Director Water Protection Division, EPA III to State Water Directors, December 29, 2004

¹⁵⁸ NPDES Permitting Approach for Discharges of Nutrients in the Chesapeake Bay Watershed, December 2004

Thus, EPA intends to review permits for significant point sources (both major and significant minor permits) of nutrients within the Chesapeake Bay watershed. In the *Permitting Approach*, EPA has expressed its intention to review the permits of ‘significant dischargers’ into the Bay watershed consistent with the expressed intent of Request J. That is, using the provisions to modify the existing MOA’s with the authorized States, EPA has rescinded its waiver of review of “minor” permits that are identified as ‘significant discharges’ by the States in their Tributary Strategies.

Based on the above, EPA is granting Request J and has rescinded its waiver for review of minor permits to allow EPA to review permits for facilities with significant discharges of nutrients to the Chesapeake Bay.

K. Revise TMDL Completion Schedules for Maryland and Virginia

Petitioner’s Request

The Petitioner requests that EPA issue a rule establishing TMDL schedules for Maryland and Virginia providing that TMDLs for impaired waters in the Bay watershed be completed by June 15, 2004. The rule must also provide that NPDES permits shall not be issued in the Maryland and Virginia portions of the Chesapeake Bay watershed until TMDLs have been completed by Maryland and Virginia.

The Petitioner further states as follows:

“Under the CWA and federal regulations, States must establish TMDLs for those waters included on the section 303(d) list of impaired waters. Although there is no precise date specified in the CWA as to when a TMDL must be developed, case law has held that TMDLs must be prepared in a reasonable timeframe after listing. EPA has allowed Maryland and Virginia until 2011 to prepare TMDLs for the Bay and its tidal tributaries. This time frame is not reasonable. By allowing TMDLs for Maryland and Virginia to be delayed until 2011, EPA is giving its imprimatur to further delay. EPA has violated the CWA and APA by failing to require the jurisdictions of Maryland and Virginia to prepare TMDLs for waters of the mainstem Bay and its tidal tributaries that are on the Section 303(d) list of impaired waters within a reasonable timeframe.”

The Petition further requests that the rule must also provide that no NPDES permits for new or expanded discharges can be issued in Bay watershed States until TMDLs have been completed by Maryland and Virginia.”

EPA Response

For the reasons provided below, EPA concludes that it is unnecessary to promulgate a rule establishing TMDL schedules for Maryland and Virginia requiring TMDLs for impaired waters in the Bay watershed be completed by June 15, 2004. EPA therefore denies such

rulemaking. Also, as discussed below, EPA denies the Petitioner's request for a rule that NPDES permits for new or expanding discharges shall not be issued in the Maryland or Virginia portion of the Chesapeake Bay watershed for new or expanded dischargers until TMDLs are completed.

Discussion

The CWA at section 303(d)(1)(A) requires "each State shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters." In addition, the CWA requires States to establish TMDLs for waters listed on their section 303(d) list of impaired waters and submit them for EPA review and approval from time to time.¹⁶⁰

Although the CWA does not identify specific times for submittal of the lists of impaired waters for EPA review and approval, EPA has established deadlines for State submittals of lists in federal regulation 40 CFR 130.7(d)(1), which requires "Each State shall submit biennially to the Regional Administrator beginning in 1992 the list of waters, pollutants causing impairment, and the priority ranking including waters targeted for TMDL development within the next two years ... shall submit to EPA lists required...on April 1 of every even-numbered year." Both Maryland and Virginia have met this requirement with respect to the Chesapeake Bay and its tributaries. The most recent lists include the Chesapeake Bay in Maryland for nutrient impairment, and in Virginia for dissolved oxygen and nutrients.

In 1996, Maryland included both the mainstem Bay and major tributaries on the list that was submitted for EPA approval.¹⁶¹ The major tributaries were listed solely because they contributed load to the Bay and not based on evidence that the major tributaries were themselves failing to support applicable WQS. In 2002, with EPA's approval, Maryland de-listed the major tributaries to the extent that they were listed solely based on their contributions to the Bay. Instead, Maryland now lists the Bay tributaries if the tributaries themselves are failing to support the applicable WQS after imposition of applicable technology-based controls. Maryland continues to list the mainstem portions of the Bay itself on the current (2004) 303(d) list of impaired waters.¹⁶² Virginia's lists through 1998 did not include the Bay waters. However, EPA took action in 1999 to add to Virginia's list the Chesapeake Bay and its tributaries as impaired for nutrients. Virginia has since included the Chesapeake Bay on its 2004 list of impaired waters.¹⁶³

Neither the CWA nor the federal regulations implementing section 303(d) of the CWA require States to submit TMDLs on a specific schedule. In fact, the regulations at 40 CFR 130.7(d)(1) state that "Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." Further direction on TMDL development schedules was given by

¹⁶⁰ CWA Section 303(d)(2)

¹⁶¹ http://www.mde.state.md.us/assets/document/1996_1998list.pdf

¹⁶² http://www.mde.state.md.us/Programs/WaterPrograms/TMDL/Maryland%20303%20dlist/final_2004_303dlist.asp

¹⁶³ <http://www.deq.state.va.us/wqa/ir2004.html>

EPA through a policy statement.¹⁶⁴ This policy statement addresses several development issues as discussed below.

The policy recognizes the States' role in the scheduling and development of TMDLs – “States have primary responsibility for developing lists and TMDLs under section 303(d). Section 303(d)(1)(A) and the implementing regulations (at 40 CFR 130.7(b)) provide States with the latitude to determine their own priorities for developing and implementing TMDLs. In particular, the flexibility to States offered by the priority ranking process of section 303(d)(1)(A) is a good opportunity for incorporating rotating basin or watershed approaches into the TMDL process.”

To assist the States in scheduling TMDL development, the policy provides a general guideline for timing of TMDL establishment. “State schedules should be expeditious and normally extend from eight to thirteen years in length [from the date of first listing], but could be shorter or slightly longer depending on State-specific factors.” The policy memorandum lists the following seven representative factors:

1. number of impaired segments;
2. length of river miles, lakes or other waterbodies for which TMDLs are needed;
3. proximity of listed waters to each other within a watershed;
4. number and relative complexity of the TMDLs;
5. number and similarities or differences among the source categories to be allocated;
6. availability of monitoring data or models; and,
7. relative significance of the environmental harm or threat.

The policy memorandum further directs each region to “secure a specific written agreement with each State in the Region establishing an appropriate schedule for the establishment of TMDLs for all waters on the most recent section 303(d) lists, beginning with the 1998 list.”

In *Chesapeake 2000*, the States committed to taking actions to meet water quality goals in the Chesapeake Bay by 2010. Development of TMDLs would serve as a backup if standards are not achieved by 2010. The Agreement states that “We have agreed to the goal of improving water quality in the Bay and its tributaries so that these waters may be removed from the impaired waters list prior to the time when regulatory mechanisms under Section 303(d) of the CWA would apply.”

In Virginia, the commitment for development of TMDLs (including TMDLs for the Bay and its tributaries) is included in a consent decree resolving a case concerning development of TMDLs for Virginia's impaired waters.¹⁶⁵ The commitments for TMDL development in the consent decree reflected agreements between Virginia and EPA in a Memorandum of Understanding dated November 1998. The schedule in the consent decree requires development of TMDLs over a period of 12 years from the approval date of the 1998 section 303(d) list of

¹⁶⁴ *New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDL's)*, Robert Perciasepe, Assistant Administrator for Water, August 8, 1997.

¹⁶⁵ *American Canoe Ass'n, Inc., et al. v. EPA*, et al., No. 98-979-A (E.D. Va. 1999).

impaired waters. This schedule is within the guidelines of eight to thirteen years provided for in the EPA memo of 1997. The consent decree provides that if Virginia does not develop TMDLs in accordance with the schedule in the decree, EPA commits to establish those TMDLs.

The consent decree did not include specific completion dates for particular waters. Virginia, in accordance with the recognition of the latitude to develop their own specific schedule as discussed above, has established a multi-year development schedule. This schedule provides for TMDL development for nutrients for the Chesapeake Bay and its tributaries by 2010 (or 2011 if EPA establishes the TMDL as a backstop to the State). EPA believes this is a reasonable schedule and is fully consistent with the law, regulations and policies discussed above. It takes into consideration the complexities of the waters, the evolving model development and availability, and the preference for a watershed-based approach to addressing impairments, including the areas in West Virginia, Pennsylvania, and Maryland. It also recognizes the long-standing environmental work that is on-going in the Bay drainage system and the advantages of building upon the successes of the *Chesapeake 2000* Agreement. *Chesapeake 2000* also recognizes that if the Bay water quality standards are not met by 2010, the States will develop a TMDL by 2010 (or 2011 if EPA completes the TMDL). Any TMDL developed by 2010 would draw heavily on the various CBP models and other science developed by the CBP partnership.

Maryland and EPA signed a Memorandum of Agreement in 1998 setting forth the commitments of Maryland and EPA for developing TMDLs for those waters identified on Maryland's 1996 and 1998 Section 303(d) lists of impaired waters. The basic commitments were to have all TMDLs on Maryland's 1998 Section 303(d) List established on or before December 2008, subject to available resources. EPA and Maryland also acknowledged that the MOU schedule represented Maryland's good faith effort to identify the timing and pace of TMDL development, recognizing that Maryland at that time had limited experience developing TMDLs. Accordingly, EPA and Maryland agreed that if Maryland was unable to establish any TMDLs in accordance with the work plan then a reasonable extension could be negotiated.

After several years of TMDL development experience, both EPA and Maryland found it appropriate to make adjustments to the MOU schedule based on the complexities encountered in developing TMDLs. This resulted in revisions to the MOU that Maryland and EPA agreed to on November 1, 2004. One result of the revisions was to extend the establishment date for those waters listed on the 1998 section 303(d) list of impaired waters to September 2011. The schedule for developing TMDLs for the Bay and its tributaries in Maryland was set to be consistent with the Chesapeake Bay Agreement and with Virginia's schedule for TMDL development. EPA believes that the extension of development time is achievable by Maryland, consistent with the CWA, previously discussed Agency policy and federal regulations and sees no compelling reasons to modify the schedule as set forth in the revised MOU.

Based on the discussion above, EPA believes that the requested establishment of a rule providing for TMDLs for impaired waters in the Bay watershed be completed by June 15, 2004, is not necessary and would be counterproductive to the ongoing efforts to meet water quality standards. The 2010 TMDL establishment date is: within the Agency guidelines; consistent with the *Chesapeake 2000* Agreement; consistent with the watershed approach for developing

TMDLs across State boundaries; encourages short-term implementation by both point sources and nonpoint sources; does not delay any implementation action that would be required under a TMDL; and, relies on evolving Bay modeling and data. EPA sees no justification for the issuance of such a rule because the States' actions pertaining to TMDL schedules and the establishment of TMDLs is consistent with the CWA, federal regulations and EPA policies. Finally, rulemaking by EPA is an extensive and time consuming activity and a rulemaking in this situation would not promote the goals of improving water quality as quickly as the approach established by EPA and the Petition jurisdictions.

As stated above, the Petitioner also has requested that EPA promulgate a rule that would provide that no NPDES permits for new or expanded discharges may be issued in Bay watershed States until TMDLs have been completed by Maryland and Virginia. For the reasons discussed below, EPA has concluded that it is unnecessary and inadvisable to promulgate such a rule. EPA does not believe that such a rule is either compelled by the CWA or would it be consistent with the timely issuance and reissuance of NPDES permits with necessary water quality-based effluent limits.

EPA's response to Petitioners' request is guided by the Supreme Court's decision in *Arkansas v. Oklahoma*.¹⁶⁶ The Supreme Court recognized that TMDLs were one way to remedy existing water quality violations, but did not find that a TMDL was required prior to permitting discharges into an impaired waterbody. "Rather than establishing the categorical ban . . . which might frustrate the construction of new plants that would improve existing conditions . . . the CWA vests the EPA and States broad authority to develop long-range, areawide programs to alleviate and eliminate pollution."¹⁶⁷

EPA's longstanding position has been that NPDES permitting should not be delayed pending the development of TMDLs. Indeed, in 1979, when EPA published its notice of pollutants suitable for TMDL development, the Agency itself recognized that the NPDES process would continue, given that, "State development of TMDL's and wasteload allocations for all water quality limited segments will be a lengthy process. Water quality standards will continue to be enforced during this process. Development of TMDL's pursuant to section 303(d) is not a necessary prerequisite to adoption or enforcement of water quality standards[.]"¹⁶⁸

Accordingly, determining whether a new discharge will cause or contribute to a violation of water quality standards should be, and is, done on a case-by-case basis. EPA has existing NPDES regulations¹⁶⁹ designed to ensure that NPDES permits include limits that meet the statutory requirement in section 301(b)(1)(C) that permits include limits as stringent as necessary to meet water quality standards.

EPA also believes that a rule as requested by Petitioners could result in delays in the issuance of permits with more stringent controls on nutrient discharges. The *Permitting Approach* is intended to lead to the issuance of NPDES permits for new point sources and

¹⁶⁶ *Arkansas v. Oklahoma* 503 U.S. 91 (1992).

¹⁶⁷ See, e.g., section 1288(b)(2)(a); 503 U.S. at 108.

¹⁶⁸ 43 FR 60662, 60665 (Dec. 28, 1979).

¹⁶⁹ 40 CFR 122.4(d), (i) and 122.44(d)

reissuance of NPDES permits for existing sources that will include water quality-based effluent limitations for nutrients. In addition, NPDES permits are issued for many pollutants other than nutrients. Therefore, the rule Petitioners seek could cause delays in potential environmental gains for those other pollutants by prohibiting the issuance of an NPDES permit until the TMDL is developed. Furthermore, the States and EPA have worked hard to reduce backlogs of unissued permits and keep those backlogs low. EPA Region III States have been leaders on this issue effort. To prohibit the issuance of permits to new or expanded discharges until TMDLs are developed could cause substantial delays in issuance of many permits and therefore create substantial backlogs.

The *Permitting Approach* recommends that permits incorporate a Bay specific re-opener clause for significant point sources if existing re-opener clauses are insufficient. The permitting authorities would have the authority to promptly place TMDL allocations into permits when those TMDL's are developed. Furthermore, permit authorities have demonstrated a willingness to use that authority when circumstances merit. Specifically, numerous permits were reopened to include limits required under the toxics program of section 304(l) of the CWA.

For all of these reasons, EPA denies the Petitioner's request that EPA promulgate a rule that would provide that no NPDES permits for new or expanded discharges can be issued in Bay watershed States until TMDLs have been completed by Maryland and Virginia.

L. Require That States Use at Least 25% of Section 106 Funds for Nutrient Reduction Measures

Petitioner's Request

The Petitioner requests that EPA adopt a rule specifying that Chesapeake Bay watershed State program plans shall include a component for using 25% or more of the Section 106 grant money in each Bay watershed State for the implementation of nutrient reduction measures by sewage treatment plants in the watershed.

EPA Response

The Petition seeks a rule directing States to use 25% or more of their Section 106 grant money for the implementation of nutrient reduction measures by sewage treatment plant. EPA finds, however, that it would not be appropriate to require this use of Section 106 funds. Therefore, EPA denies the requested relief.

Section 106 (a) provides for grants to States, Interstate Agencies, and eligible Tribes "to assist them in administering programs for the prevention, reduction, and elimination of pollution." Water quality planning and management program activities that may be funded through Section 106 grants include water quality planning and standards setting; monitoring and assessments; inspections and enforcement; permitting; training; advice and assistance to local agencies; and providing public information. The language of Section 106 is not reasonably construed to extend to grants for sewage treatment plants themselves, for construction activities, or any other activities to implement nutrient reduction measures. Indeed, since the enactment of

CWA going back several decades, EPA has never interpreted the language of Section 106 as authorizing grants to fund treatment works themselves for pollution control measures. In sum, the upgrading of treatment works or implementation of other nutrient reduction measures by sewage treatment plants are not eligible costs under Section 106 grants because such costs do not qualify as grants to States, Interstate Agencies, and eligible Tribes to assist them in administering a water pollution control program.

Supporting EPA's reading of Section 106 is the fact that Congress clearly did authorize funds for the construction of treatment works in a different part of the statute, namely, Section 601 et seq., which provides for the funding of construction of treatment works under the Clean Water State Revolving Fund (CWSRF). The purpose of the CWSRF is to establish a water pollution control revolving fund for providing assistance, in part, for the "construction of treatment works . . . which are publicly owned . . ."¹⁷⁰ Accordingly, EPA denies Request L of the Petition.

M. Carry Out Its Duties Under Section 117(g)(1) of the CWA

Petitioner's Request

CBF states, "EPA has maintained a hands-off approach to implementation, and has left such matters entirely to the Bay watershed States [and] this lack of federal oversight contravenes the language of Section 117(g)(1)(A) and (B)." CBF therefore calls for EPA to issue a rule that specifies how it will engage in implementation oversight efforts to fulfill its statutory duty to ensure that management plans are developed and implementation occurs in the Bay watershed States. Furthermore, these rules must specify that EPA will review all State-issued NPDES permits in the watershed to ensure that such permits contain adequate, enforceable effluent limitations for total nitrogen and total phosphorus that are consistent with the agreed-to Bay allocations for nitrogen and phosphorus, and that EPA will object to permits that fail to contain such limits.

EPA Response

For the reasons provided below and elsewhere in this Petition response, EPA concludes that additional regulations to carry out CWA section 117 (g)(1) by specifying that EPA will oversee State-issued permits to ensure that they include adequate, enforceable limits for total nitrogen and phosphorus are unnecessary and would not be an effective or appropriate use of the Agency's resources. Therefore, EPA denies this request.

Legal Framework

Section 117(g)(1) of the 1987 Amendments to the CWA states that the EPA CBP, in coordination with the members of the Chesapeake Executive Council, "shall ensure that management plans are developed and implementation is begun by signatories of the Chesapeake Bay Agreement to achieve and maintain: (A) the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its

¹⁷⁰ CWA Section 601(a).

watershed; [and] (B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem..."

Discussion

The EPA CBP has been overseeing the implementation of Tributary Strategies since caps on nitrogen and phosphorus loads were allocated to each of the ten major tributary basins through the 1992 Amendments to the Chesapeake Bay Agreement.¹⁷¹ This process has led to significant nutrient reduction progress over the past 12 years. Between 1985 and 2002, annual phosphorus loads delivered to the Bay from the entire watershed were reduced by 7.6 million pounds. During this same time period, annual nitrogen loads were reduced by approximately 60 million pounds and sediment loads by 0.8 million tons. The reductions obtained between 1985 and 2002 include off-setting significant potential increases in loadings due to population growth.

Section 117(g) requires the development of "management plans." As explained below, EPA has consistently interpreted this term to include Tributary Strategies developed under the Bay program. This interpretation has been ratified by the Chesapeake Bay Executive Council. There are several references throughout subsection 117(g)(1) to the "Chesapeake Bay Agreement", which is defined at 117(a)(2) as the "voluntary agreements executed to achieve the goal of restoring and protecting" the Bay and its ecosystem. This includes the *Chesapeake 2000* Agreement (C2K), and many of the references in 117(g)(1) are to specific elements of C2K. Of special note is the reference in (a) to "the nutrient goals of the Chesapeake Bay Agreement".

In C2K, the section dealing with this goal specifies that the partners agree to "complete a public process to develop and begin implementation of revised Tributary Strategies to achieve and maintain the assigned loading goals..."¹⁷² Because of the references in the law to the specific goals enumerated in C2K and because the management plans are clearly identified in C2K as Tributary Strategies, it is reasonable to assume that Congress understood that the partnership intended the Tributary Strategies to function as the management plans called for in section 117(g).

In addition, in Section 117(b)(2)(B)(iii), the Administrator, through the CBP, is directed to work in cooperation with the "signatories to the Chesapeake Bay Agreement in developing and implementing specific action plans to carry out the responsibilities of the signatories to the Chesapeake Bay Agreement." In other words, the law recognizes that "plans" for implementing the law are the kind of efforts embodied in the Tributary Strategies, i.e., a management plan designed to help the partnership achieve its collective goals.

The partnership has used this terminology consistently. See, for example, Directive 03-02, Meeting the Nutrient and Sediment Reduction Goals, signed on December 9, 2003, in which the partners reaffirmed their commitment "to complete the Tributary Strategies." See also Directive 04-1, Funding the Restoration of the Chesapeake Bay Watershed, which refers to the funds needed to implement "the necessary management measures." By context, it is clear that

¹⁷¹ 1992 Amendments to the Chesapeake Bay Agreement, August 12, 1992, Chesapeake Bay Program.

¹⁷² The *Chesapeake 2000* Agreement (C2K), June 28, 2000, page 6, #3.

these management measures refer to the Tributary Strategies, which were the base management plans used to cost out the Bay restoration funding needs.

Finally, Chesapeake Bay Agreement(s) are defined as "the formal, voluntary agreements" signed by the Executive Council (EC) members.¹⁷³ Management strategies are defined by the EC as stated above. The EC has stated consistently, that its management plans for achieving and maintaining the goals of the Bay Agreements are called Tributary Strategies.¹⁷⁴ The directive for management plans in Section 117 is satisfied by the ongoing development of the Tributary Strategies by each Petition jurisdiction for each sub-watershed in the Chesapeake Bay basin.

As each jurisdiction prepares their Tributary Strategies based upon the agreed-to cap load allocations, the EPA CBP, under its implementation oversight authority set forth in Section 117(g)(1) utilizes the Chesapeake Bay Watershed Model and Water Quality Model to confirm that each Tributary Strategy meets its cap load allocation. Once fully implemented, the Tributary Strategies would achieve the water quality criteria for the mainstem of the Bay. Specifically, each State is expected to provide the EPA CBP Office with data for the Watershed Model called an 'input deck,' which contains a detailed accounting of all planned best management practices, wastewater treatment technology upgrades and any other nutrient and sediment reduction implementation actions contained within their Tributary Strategy. EPA configures the Watershed Model to analyze each States' Tributary Strategy 'input deck' to confirm that the projected reductions in nutrients and sediment upon full implementation of that jurisdiction's strategy matches with their assigned nitrogen, phosphorus and sediment cap load allocations. EPA then runs those Watershed Model outputs as inputs to the Chesapeake Bay Water Quality Model to simulate tidal water quality conditions upon full implementation of the jurisdictions' Tributary Strategies. EPA compares those Water Quality Model simulated conditions with the *EPA Bay Criteria Guidance* applied to ensure the tidal water designated uses are achieved. EPA then provides the results of those model-based analyses to the respective jurisdictions with a clear statement of whether that jurisdiction's Tributary Strategy upon full implementation will meet both their assigned cap load allocations and the *EPA Bay Criteria Guidance* throughout the tidal waters.

EPA has taken a leadership role and has provided extensive guidance and oversight not only in the development of water quality criteria, designated uses, cap load allocations, scientific models, Tributary Strategies, etc., but continues to provide direction in the implementation of the Tributary Strategies that meet the directives of Section 117(g)(1). Our current actions are consistent with the first part of the relief requested by CBF above. Accordingly, because through all of the actions described above, EPA is already adequately ensuring that management plans are developed and implemented, EPA has determined that it does not need to amend its rules. Further, as to the additional request for EPA to amend its rules to ensure that it will review all State-issued permits, EPA already has the authority to review NPDES permits under the CWA 402(a)(5)¹⁷⁵ and implementing regulations and does not need any additional rule to clarify its

¹⁷³ CWA Section 117(a)(2)

¹⁷⁴ Chesapeake Executive Council Directive No. 03-02, *Meeting the Nutrient and Sediment Reduction Goals* at http://www.chesapeakebay.net/info/pressreleases/ec2003/nutrient_directive_03-02.pdf

¹⁷⁵ CWA section 402(a)(5) provides that States may implement the NPDES permit program and issue permits themselves where authorized by EPA, but that "[e]ach such permit shall be subject to such conditions as the

discretionary authority. As discussed earlier, as part of the *Permitting Approach*, following adoption of revised Maryland water quality standards, EPA intends to review significant NPDES permits in the watershed to ensure that such permits contain adequate, enforceable effluent limitations for total nitrogen and total phosphorus that are consistent with the agreed-to Bay allocations for nitrogen and phosphorous. For further explanation of why it is unnecessary and would not be an effective use of Agency resources for EPA to adopt new or revised regulations to ensure that adequate, enforceable limitations for nitrogen and phosphorus are included in permits for dischargers in the Bay watershed, see the response to Requests C-H above. For all the reasons outlined above, EPA denies this request.

N. Require Chesapeake Bay Watershed States to Take Necessary Measures and Use Necessary Means to Attain Nutrient Reductions From Point Sources

Petitioner's Request

The Petitioner requests that EPA issue a rule specifying that Chesapeake Bay watershed States must use all necessary means and take all necessary measures, including the use of Section 106 grant funds, to attain nutrient reductions that attain water quality standards and are consistent with implementation measures needed to achieve the agree-to allocations for nitrogen and phosphorus. The rule must detail extended federal oversight efforts over State permit and program actions that involve nutrient loadings to the Chesapeake Bay watershed.

EPA Response

This relief request is redundant to many of the specific relief requests already addressed above (see EPA's response to Requests E, F, G, H, I, J and L). Due to the reasons stated in other parts of this response, EPA is denying this request.

O. Withdraw NPDES Program Delegation to Chesapeake Bay Watershed States That Fail to Issue NPDES Permits With Adequate, Enforceable Effluent Limitations for Nitrogen and Phosphorous

Petitioner's Request

The Petitioner requests that EPA issue a rule providing that the failure of Chesapeake Bay watershed States to issue NPDES permits to significant point source dischargers of nutrients with adequate, enforceable effluent limits for total nitrogen and total phosphorus will result in withdrawal of the State's authorization to administer the NPDES program within its jurisdiction.

EPA Response

In earlier sections of the Petition, CBF seeks new rules to ensure that States issue permits in the Bay watershed that contain appropriate limits for nutrients. Here, CBF would have EPA

Administrator determines are necessary to carry out the provisions of this chapter. No such permit shall issue if the Administrator objects to such issuance." 33 U.S.C. 1342(a)(5).

issue a new rule stating that when States have not issued permits that contain appropriate limits for nutrients, the Agency will withdraw NPDES program authorization. EPA finds that it is unnecessary to issue such a rule and therefore denies this request.

EPA's authority to initiate withdrawal of program authorization is discretionary under the CWA¹⁷⁶ and EPA regulations.¹⁷⁷ In exercising this discretion, EPA looks at all aspects of the State's program to determine whether the State is administering its program in compliance with the requirements of the Act and regulations. Each case presents a unique set of facts and circumstances. EPA exercises its statutory discretion to consider these factors as a whole in determining whether the State's program continues to meet the requirements for authorization. If nutrients were not adequately controlled in State-issued permits, EPA would want to consider the level of the deficiency – for example, whether just one permit is deficient or many permits, and the extent to which the permits are deficient. Likewise, the Agency may determine that use of its permit objection authority may be a more appropriate and effective response.¹⁷⁸ The Petition, however, does not give a reason why an across-the-board regulatory requirement that eliminates EPA's ability to consider the facts and circumstances of each situation would be appropriate in this case or consistent with the statutory factors set forth in section 402(c). The Petition also does not attempt to define how many and what types of permit deficiencies regarding nutrient controls should lead to a withdrawal determination. These are the types of factors that are appropriate for EPA to consider in the context of each unique case.

In short, issuing a binding regulation, as advocated by CBF, would do away with the discretion afforded to EPA under the statute and regulations to make determinations of State program sufficiency based on the unique circumstances of each case. CBF has provided neither a reason to remove that discretion with respect to the issue of nutrients nor suggested a basis for how EPA would do so (how many permit deficiencies would trigger withdrawal, etc.). Accordingly, EPA finds no reason with respect to the issue of nutrient controls to pre-judge the sufficiency of State programs by setting conditions that would require the initiation of withdrawal in every case, rather than allowing the Agency to weigh all of the relevant factors in its discretion.

A further reason why it would be inappropriate to issue a rule requiring program withdrawal is that it is unnecessary in light of EPA's ongoing activities in the Bay. As we have explained above, EPA has issued new water quality criteria for nutrients, new State water quality standards are being developed based on these criteria, and EPA has issued the *Permitting Approach* to put into place permits that will reflect the revised water quality standards. EPA also has modified MOAs with the States to be consistent with EPA's intent to reviews permits for all significant dischargers of nutrients. Thus we anticipate being able to achieve our common goal with CBF of assuring that appropriate limits for nutrients will be included in State-issued permits

¹⁷⁶ See CWA 402(c)

¹⁷⁷ 40 CFR 123.64 (giving EPA discretion to determine that a State is not administering its authorized NPDES program in accordance with the requirements of the Act and, where EPA has made this determination, establishing a process for the Agency to initiate program withdrawal)

¹⁷⁸ See 40 CFR 123.44(c)(6).

¹⁸² U.S. Environmental Protection Agency Region 3, Chesapeake Bay Program Office. April 2003. *Ambient Water Quality Criteria For Dissolved Oxygen, Water Clarity and Chlorophyll a for Chesapeake Bay and its Tidal Tributaries*.

in the Bay watershed on a timely basis. Accordingly, EPA believes that promulgating a new rule to bind the Agency's discretion to initiate withdrawal based on the control of nutrients in permits would not be an effective or appropriate use of the Agency's limited time and resources. For all the reasons noted above, EPA denies CBF's request in Section O.

P. Grant Other Relief

Petitioner's Request

The Petitioner requests that EPA grant "such other relief as may be appropriate."

EPA Response

The stated intent of the Petition is to seek "corrective action addressing nitrogen and phosphorus pollution in the Chesapeake Bay....on point sources..." EPA agrees with this objective and thus grants the relief requested above in the form of the actions identified below. These actions are appropriate to achieve our shared vision of a restored Chesapeake Bay, in part, by providing for adequate and enforceable nutrient controls through NPDES permits for significant point sources throughout the Chesapeake Bay watershed.

All States in the Chesapeake Bay watershed are authorized to administer the NPDES permit program. In the District of Columbia, EPA is the permitting authority. Because the States are the permit authorities, EPA and the Petition jurisdictions together developed the *Permitting Approach*. This approach is based upon existing NPDES regulations and State authorities in order to place nutrient limits in permits.

The *Permitting Approach*, and effective water quality-based permitting generally, are dependent on the adoption of scientifically sound water quality standards. The permit must contain limits so that the permitted facility does not cause or contribute to an exceedence of the water quality standards. The previous water quality standards for the Chesapeake Bay and its tidal tributaries were not appropriate for these waters as explained earlier in this response. EPA CBP modeling showed that the water quality standards created in the 1970's for the Bay were not based on the best science available and would never be attained in certain locations in the Bay due to the natural dynamics in the Bay estuarine system. This along with a lack of understanding of the far-field effects of nutrient pollution has made the establishment of defensible water quality-based permit limits difficult. Therefore, the State permitting authorities in the Bay watershed concluded and EPA agreed that to best support nutrient limits in NPDES permits, it was important for the tidal water States to promptly update their water quality standards to be consistent with *EPA Bay Criteria Guidance*.

In order for the Petition jurisdictions to most effectively utilize their existing NPDES authorities to establish and defend nutrient permit limits, it was imperative for them to have sound legal and scientific support not only to understand the need for limits but to create the actual limits. This need is heightened knowing the high costs and environmental implications of regulating nutrients for the Chesapeake Bay. Over the past three years, EPA and the Petition jurisdictions have been building the legal and scientific foundation for developing and, when

necessary, defending nutrient permit limits for significant discharges to the Chesapeake Bay watershed. EPA's response to this relief request outlines EPA's actions to support nutrient controls. These actions were also enumerated at the beginning of this response (See EPA's Approach of Using Existing Regulations to Support Nutrient Point Source Controls in the Chesapeake Bay Watershed). Combined with EPA's current statutory and regulatory provisions, these actions will lead to adequate and enforceable nitrogen and phosphorus limits placed in NPDES permits for significant discharges to the Chesapeake Bay watershed. Therefore, EPA is granting relief to many of the concerns and issues raised in the Petition, not through the requested additional rulemakings but through the actions outlined below.

- **In April 2003, EPA published recommended water quality criteria, appropriate to the Chesapeake Bay for nutrients.**¹⁸² EPA modeling demonstrated that the pre-existing water quality standards in certain parts of the Bay were not achievable at anytime in the past or future. Therefore it was critical to identify scientifically defensible water quality criteria for the Chesapeake Bay. These water quality criteria relate the expected designated uses of the Chesapeake Bay with the water quality necessary to protect those uses to support the Bay's living resources. These water quality criteria established the scientific basis for the State water quality standards, the nutrient allocations, and ultimately the nutrient limits that will be placed in the NPDES permits of all significant point sources in all the Petition jurisdictions.
- **EPA continues to support the tidal water States in their adoption of Bay-appropriate water quality standards for nutrients and sediment.** The tidal bay States are updating their water quality standards to be consistent with the recent EPA criteria. Since the water quality standards provide the legal and scientific foundation for water quality-based permitting as provided in Section 301(b)(1)(C) of the CWA, it is critical that these standards be scientifically defensible and appropriate for the waterbody (in this case the Chesapeake Bay and its tidal tributaries). While all tidal water States have completed or are completing the revisions to their Bay standards, the Maryland standards are the most important in providing the basis for permit limits. That is, with the exception of the James and York Rivers in Virginia, the allocations that have been developed within the Bay watershed are based on achieving the proposed water quality standards within Maryland's waters. Approval of these Maryland standards (expected to be adopted in the summer of 2005) will complete the significant actions of EPA and the States to provide for a vastly improved scientific and legal framework for establishing and defending permit limits for nutrients within the Chesapeake Bay watershed.
- **In 2003, EPA and the States agreed to nutrient and sediment allocations for the major tributaries to the Chesapeake Bay.**¹⁸³ These allocations were intended to provide adequate water quality attainment of the new water quality criteria. EPA is assisting the Bay States in the development and implementation of Tributary Strategies, which will identify the controls necessary to achieve the nutrient allocations for each

¹⁸³ "Summary of Decisions Regarding Nutrient and Sediment Load Allocations and New Submerged Aquatic Vegetation (SAV) Restoration Goals" – Memo from Tayloe Murphy, Chair, to the CBP Principles' Staff Committee Members and Representatives of the Chesapeake Bay "Headwater" States. April 28, 2003.

major basin in the Bay watershed. These strategies will also identify the allowable point source loading for each significant discharger in the watershed.

- **In December 2004, EPA, on behalf of the Petition jurisdictions, released the *Permitting Approach*.** This document outlines a unified approach to permitting nutrients, which will be used by all the permitting authorities throughout the Chesapeake Bay watershed. This approach relies on existing NPDES regulations to place limits in permits. For this reason, EPA believes this approach will result in nutrient controls being placed in permits sooner and more consistently than an approach that relies on changes to our existing regulations or adoptions of new permitting regulations. EPA is also providing significant technical support (e.g. guidance for watershed permitting) to the Petition jurisdictions in their efforts to issue permits for nutrients for the protection of the Chesapeake Bay. To fulfill one of its commitments in the *Permitting Approach*, EPA Regions 2 and 3 have revoked their review waiver for all significant NPDES permits within the Chesapeake Bay watershed. This action is further discussed above under EPA's response to Request J. While EPA has confidence that the States will place nutrient limits in permits consistent with the *Permitting Approach*, we believe it is important that we verify that such limits are placed in the permits. Therefore, EPA Regions 2 and 3 are increasing our oversight of the NPDES permit program by expanding our review of NPDES permits to include all significant permits. EPA will conduct reviews and issue objections to permits under its discretionary authority.

While not directly related to the Permitting Approach, EPA has also partnered with Virginia in a strategy to enhance the stormwater program within the Chesapeake Bay. This strategy uses enforcement, permitting, and incentive tools to yield improvements in stormwater controls for the protection of the Chesapeake Bay in Virginia.

- **EPA and the Petition jurisdictions have committed to move forward on key funding recommendations of the Chesapeake Bay Watershed Blue Ribbon Panel.**¹⁸⁵ The Blue Ribbon Panel concluded that a significant financial investment is required to implement both the point and nonpoint source controls contemplated by the Tributary Strategies. In recent directives signed by the Chesapeake Bay EC¹⁸⁶, EPA and its Bay partners committed to further explore the funding needs for Bay restoration activities by:
 - Developing a proposal for the establishment of the Chesapeake Bay Finance Committee;
 - Determining funding priorities; Increasing the participation of the Department of Agriculture;
 - Finding opportunities in the 2007 Farm Bill to further nutrient and sediment reduction in the Chesapeake Bay watershed; and,

¹⁸⁵ Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay, October 27, 2004, Chesapeake Bay Watershed Blue Ribbon Panel.

¹⁸⁶ *Funding the Restoration of the Chesapeake Bay Watershed*, Chesapeake Executive Council, Directive No. 04-1, January 10, 2005. *Meeting the Nutrient and Sediment Reduction Goals*, Chesapeake Executive Council, Directive No. 04-2, January 10, 2005.

- o Establishing a Watershed Funding Network to coordinate existing funding streams.
- **In 2007, EPA will assess the need to accelerate the development of Chesapeake Bay TMDLs.** EPA and the Petition jurisdictions have agreed to conduct an assessment in 2007 of the progress of their program and nutrient reduction efforts. If delays in permitting of nutrients occur, EPA and its State partners have agreed to reevaluate the NPDES permitting practices identified in the *Permitting Approach* in 2007. As part of that reevaluation, EPA and its State partners will also assess the merits of establishing a TMDL on an accelerated schedule (i.e. earlier than 2011) for the Chesapeake Bay.