



# **Office of Inspector General**

---

## **Audit Report**

### **Region III Water Quality Standards, Monitoring, and Reporting**

**E1HWF7-03-0160-9100118**

**March 31, 1999**

**Inspector General Division  
Conducting the Audit**

**Mid-Atlantic Audit Division  
Philadelphia, PA**

**Region Covered:**

**Region 3**

**Program Offices Involved:**

**Office of Water**

**Region III Water Protection  
Division**

**Region III Environmental  
Services Division**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
THE INSPECTOR GENERAL

March 31, 1999

**MEMORANDUM**

**SUBJECT:** Region III Water Quality Standards, Monitoring, and Reporting  
Audit Report Number E1HWF7-03-0160-9100118

**FROM:** Michael Simmons *Michael Simmons*  
Deputy Assistant Inspector General for Internal Audits

**TO:** J. Charles Fox  
Assistant Administrator for Water (4101)

W. Michael McCabe  
Regional Administrator (3RA00)

Attached is our final audit report on *Region III Water Quality Standards, Monitoring, and Reporting*. The overall objectives of this audit were to determine: (1) whether Region III implemented effective procedures to evaluate State water quality standards, monitoring, and reporting; and, (2) whether the State of Maryland implemented procedures to develop standards, monitor its waters, and report on its water quality. This report contains recommendations to the Assistant Administrator for Water and to the Regional Administrator of Region III.

This audit report contains findings that describe problems the Office of Inspector General (OIG) has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG. Final determination on matters in this report will be made by EPA managers in accordance with established EPA audit resolution procedures. Accordingly, the findings contained in this audit report do not necessarily represent the final EPA position, and are not binding upon EPA in any enforcement proceeding brought by EPA or the Department of Justice.

**ACTION REQUIRED**

In accordance with EPA Order 2750, the action officials are required to provide us a written response to the audit report within 90 days of the date of this report. The

Assistant Administrator for Water need only address the recommendation in Chapter 2. The Region III Administrator is responsible for the remaining recommendations. These responses should address all recommendations and include milestone dates for corrective actions. This will assist us in deciding whether to close this report.

We have no objections to the further release of this report to the public. Should your staff have any questions about this report, please have them contact Michael Wall or Carl Jannetti at (215) 814-5800, or Ernie Ragland at (202) 260-8984.

Attachment

---

## EXECUTIVE SUMMARY

---

### Objectives

The objectives of our audit were to determine:

1. Whether Region III implemented effective procedures to evaluate State water quality standards, monitoring, and reporting.
2. Whether the State of Maryland implemented procedures to:

Develop standards that will protect the State's water quality,

Monitor the quality of State waters, and

Ensure reports on water quality are accurate, complete, and useful to program management.

---

### Results-In-Brief

Our audit disclosed several areas needing improvement with respect to the water quality programs in the States within Region III.

#### **Bacteria In Water Not Properly Assessed Or Reported**

Elevated bacteria levels can be hazardous to people using the water for recreational activities, such as swimming or water skiing. Bacteria can cause illnesses including sore throats, ear infections, diarrhea, gastroenteritis, meningitis, and encephalitis. The Clean Water Act requires EPA to develop and publish criteria for assessing water quality based on the latest scientific knowledge. States are then to adopt these criteria, or criteria that are at least as protective as EPA's.

In 1986, EPA published its *Ambient Water Quality Criteria for Bacteria*, which recommended *Enterococcus* and *E. coli* as bacteriological indicators of harmful pathogens. However, as of 1998, Delaware is the only State within Region III to adopt either of these two criteria. The remaining States use fecal

coliform, a criterion developed in the 1960's to assess their water quality. Thus, by not assuring that States adhere to the Clean Water Act by using criteria based on the latest scientific knowledge, the Agency implicitly allowed States to use a less protective criterion to assess the bacteriological quality of their water bodies. As a result, water bodies with bacterial contamination may remain undetected and unreported, and the public may be unknowingly exposed to harmful bacteria.

In addition to not adopting the EPA bacteriological criteria, the State of Maryland did not implement its own criteria, or follow EPA guidance when assessing and reporting water bodies impaired by bacteria.

### **Deficient Standards Were Not Corrected**

Water quality standards in Maryland, Delaware, Pennsylvania, Virginia, West Virginia and the District of Columbia, were inadequate in 1998, even though EPA identified some deficiencies as far back as 1990.

Consequently, State standards do not protect the waters in Region III as intended by the Clean Water Act, and the Agency risks being sued for not promulgating adequate water quality standards. This occurred because Region III did not fully use its authority, or fulfill its responsibility, to ensure that deficient standards were corrected. Specifically, Region III did not issue written notices to the States, or elevate these issues to the EPA Administrator, who then would have had the authority to make promulgation decisions.

### **Missed Opportunities To Correct Standards**

The Clean Water Act requires each State to: (a) hold public hearings at least every three years to review its water quality standards; and, (b) submit the results of these reviews to the Administrator of EPA. The purpose of these "Triennial Reviews" is to determine the need for additional standards or for the revision to existing standards. Thus, if hearings are not held and standards not reviewed, the public and EPA have less assurance as to the adequacy of State water quality standards. At the time of our audit, West Virginia was the only State within Region III to have

completed its Triennial Review timely. The other States did not complete their reviews because the Agency has not enforced its authority under the Clean Water Act.

### **Planning Documents Were Not Prepared Or Updated**

States in Region III did not prepare or update water quality planning documents as required by the Clean Water Act and by Federal regulations. These documents include: Continuing Planning Process Documents, Water Quality Management Plans, Monitoring Strategies, Quality Assurance Management Plans, and Quality Assurance Project Plans. Regional personnel argued that certain documents were not actually required to be submitted, or that other documents were suitable substitutes. The absence of these documents lessens confidence that States are effectively managing their programs to clean up water bodies. Moreover, the absence of Continuing Planning Process Documents has resulted in lawsuits against EPA in Delaware, Maryland, Pennsylvania, and Virginia.

From fiscal year 1995 through 1998, States in Region III received Federal funds exceeding \$35.5 million to fulfill a wide range of water quality activities required under the Clean Water Act, including: (a) developing and reviewing standards; (b) monitoring and assessing the water; and, (c) preparing the reports and documents required under the Act.

---

<b>Recommendations</b>	We recommend that the Assistant Administrator for Water work to ensure that, if States do not amend their water quality standards to include the Agency's 1986 <i>Ambient Water Quality Criteria for Bacteria</i> , appropriate action is taken to resolve the deficiency.
------------------------	--

We recommend the Region III Administrator:

Take appropriate action if Maryland does not implement its own bacterial regulations. Such action could include withholding Section 106 funding, elevating the issue to the Administrator, or disapproving the State's *Impaired List*.

Send written notices to each State in the Region clearly identifying the inadequate standards.

Coordinate with EPA Headquarters to promulgate standards if States do not correct the inadequacies identified in the written notices.

Initiate action to identify what toxic pollutant water quality criteria are necessary, if the 1999 Maryland Triennial Review fails to do so.

Request the Administrator of EPA to consider initiating Clean Water Act 303(c)(4)(B) actions against Delaware, the District of Columbia, Pennsylvania, and Virginia.

Withhold a portion of Section 106 funding from any State whose Triennial Review is overdue.

Require States receiving grants under Section 106 of the Clean Water Act to develop and/or update Monitoring Strategies and Water Quality Management Plans. When necessary, withhold funds from States that neglect to do so.



# TABLE OF CONTENTS

---

## EXECUTIVE SUMMARY

## GLOSSARY

## CHAPTER 1

INTRODUCTION .....	1
Objectives .....	1
Background .....	1
Scope and Methodology .....	4
Prior Audit Coverage .....	6

## CHAPTER 2

BACTERIA IN WATER NOT ASSESSED OR REPORTED .....	7
Conclusion .....	11
Recommendations .....	12
EPA Office of Water Response to the Draft Report .....	13
OIG Evaluation of Office of Water Response .....	14
Region III Response to the Draft Report .....	15
Maryland Response to the Draft Report .....	15
OIG Evaluation .....	16

## CHAPTER 3

DEFICIENT STANDARDS WERE NOT CORRECTED .....	19
Deficient Maryland Standards .....	20
Deficiencies in Other States Within Region III .....	22
Region III Position .....	23
Conclusion .....	24
Recommendations .....	24
Region III Response to the Draft Report .....	24
Maryland Response to the Draft Report .....	25
OIG Evaluation .....	25

## CHAPTER 4

MISSED OPPORTUNITIES TO CORRECT STANDARDS .....	27
Consequences of Late Reviews .....	29
Recommendations .....	30
Region III Response to Draft Report .....	31
Maryland Response to the Draft Report .....	31
OIG Evaluation .....	31

## CHAPTER 5

PLANNING DOCUMENTS NOT PREPARED OR UPDATED .....	33
Continuing Planning Process Documents .....	34
Water Quality Management Plans .....	34
Monitoring Strategy .....	34
Quality Assurance .....	35
Conclusion .....	36
Recommendations .....	37
Region III Response to Draft Report .....	37
Maryland Response to Draft Report .....	38
OIG Evaluation .....	39

## APPENDIX A

Office of Water Response to Draft Report .....	41
Region III Response to Draft Report .....	51
Maryland Response to Draft Report .....	77

## APPENDIX B

DISTRIBUTION .....	91
--------------------	----

# GLOSSARY

---

Anti-degradation Policy	A policy to ensure water quality is conserved, maintained, and protected.
CFR	Code of Federal Regulations.
CPP	Continuing Planning Process document.
Criteria	Numeric values or narrative statements that describe the quality needed to support a water body's designated use. Criteria are to be established in State regulations for chemicals, metals, bacteria, and other contaminants.
Designated Use	The use for a water body designated by State regulations that include: protection of aquatic life and recreation ( i.e., swimming, boating, or white water rafting) and may include such uses as drinking water protection.
Discharger	A person, company, or wastewater treatment plant that releases pollution into a water body, usually in accordance with a permit issued by EPA or a State Agency.
DNR	Maryland Department of Natural Resources.
<i>E. coli</i>	<i>Eschericia coli</i> ; one of the species of bacteria in the fecal coliform group. Its presence is considered indicative of fresh fecal contamination, and it is used as an indicator organism for the presence of pathogens.
Encephalitis	Inflammation of the brain.
Enterococci	A group of cocci bacteria that normally inhabit the intestines of people and animals. They are used as indicators of fecal contamination.
Fecal coliform	A class of bacteria found in the intestinal tract of warm-blooded animals and people. Their presence is an indicator of possible contamination by pathogens.
Gastroenteritis	Inflammation of the lining of the stomach and the intestines.

Impaired	A water body that does not fully support its designated use, because its criteria have been exceeded.
MDE	Maryland Department of the Environment.
Meningitis	Inflammation of the three membranes that envelop the brain and the spinal cord, especially as a result of infection by bacteria or viruses.
OIG	Office of the Inspector General.
Pathogen	A bacterium or virus that causes disease.
Promulgate	To make known the terms of a new regulation or to put a new regulation into effect.
Sanitary Survey	An investigation to determine the source of contamination in a water body.
Standards	Water quality standards consist of three elements: a designated use, water quality criteria, and an anti-degradation policy.
States in Region III	Maryland, Delaware, District of Columbia, Pennsylvania, Virginia, and West Virginia.
TMDL	Total Maximum Daily Load - how much pollution may be added to a water body without impacting its designated use.
Toxic Pollutants	The 126 toxic pollutants listed in Section 307(A) of the Clean Water Act. States are required to adopt specific numeric criteria for these pollutants that are at least as protective as EPA criteria recommendations, or provide a scientifically defensible rationale for less protective criteria. EPA refers to these as “priority” toxic pollutants.

---

# CHAPTER 1

## INTRODUCTION

---

### Objectives

The objectives of our audit were to determine:

1. Whether Region III implemented effective procedures to evaluate State water quality standards, monitoring, and reporting.
2. Whether the State of Maryland implemented procedures to:

Develop standards that will protect the State's water quality,

Monitor the quality of State waters, and

Ensure reports on water quality are accurate, complete, and useful to program management.

---

### Background

The Clean Water Act is the primary legislation addressing water quality programs. The principal goals of the Act are to:

Restore and maintain the chemical, physical, and biological integrity of the nation's waters,

Achieve water quality that promotes protection and propagation of fish, shellfish and wildlife, and provides for recreation in and on the water.



Water quality standards provide the foundation for accomplishing these goals. These standards are laws or regulations that States adopt to enhance the quality of their water bodies and to protect the public health and welfare. Water quality standards consist of three elements: a designated use, water quality criteria, and an anti-degradation policy.

States classify their water bodies according to how the water can be used. These “designated uses” include the protection of aquatic life and recreation, i.e., swimming, boating, and white water rafting and may also include the protection of drinking water.

Once the designated use of a water body is determined, the Act requires the State to develop water quality criteria for that use. Water quality criteria identify the amount of contamination that may be present in the water without impacting the designated use.

EPA published Federal criteria that set numerical criteria for 103 toxic pollutants and approximately 38 other pollutants. These restrictions are based on the effect the pollutants have on the water’s use. States must either adopt the Federal criteria or develop their own scientifically defensible criteria that are at least as protective.

The Clean Water Act also requires State water quality standards to include an anti-degradation policy. Title 40, Code of Federal Regulations (CFR) Part 131.12, requires States to identify the implementation methods for this policy. The purpose of an anti-degradation policy is to conserve, maintain, and protect existing water quality, including water bodies of exceptionally high quality such as those found in National and State Parks.



Section 303(c)(1) of the Clean Water Act requires each State, at least once every three years, to hold public hearings. The purpose of these hearings is to review, and, as appropriate, modify and adopt water quality standards. The results of these reviews are then to be made available to the Administrator of EPA.

Section 303(c)(4) of the Act stipulates that the Administrator of EPA shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard:

If a revised or new water quality standard submitted by a State . . . is determined to be inconsistent with the Clean Water Act, or

In any case where the Administrator determines that a revised or new standard is necessary to meet the requirements of the Act.

If a State fails to conduct these “Triennial Reviews,” the Agency is empowered to “to take appropriate action” under Section 303(c)(4)(B) of the Act.



Title 40 CFR Part 130.4 requires each State to develop a monitoring program to assess whether their water bodies meet water quality standards. Such programs generate information necessary to guide management decisions and track environmental progress. The monitoring programs must meet EPA’s quality assurance requirements. The programs must also identify the water bodies to be tested, the frequency and types of testing, and the entity to conduct the testing.



Section 305(b) of the Clean Water Act requires each State to assess and report to EPA every two years on the condition of all their water bodies. In the *Assessment Report*, the State classifies each water body as either “fully supporting,” “partially supporting,” or “not supporting” its designated use. EPA then combines all the State reports into a national report. This report is sent to Congress, and is used by the Agency to measure its performance towards achieving clean and safe water.

Section 303(d) of the Clean Water Act requires each State to prepare a prioritized *Impaired List* of water bodies that do not “fully support” their “designated use.” From this list the States are required to develop “total maximum daily loads,” which are allocations of how much pollution each “discharger” will be allowed to release into each water body.



EPA awards grant funds to States under Section 106 of the Clean Water Act. These grants subsidize a wide range of water

quality program activities, including: developing and reviewing standards; monitoring and assessing the water; and, preparing the reports and documents required under the Act.

<b>Federal Funds Awarded Under Section 106</b>					
	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>Total</b>
Maryland	\$1,295,030	\$1,269,656	\$1,269,656	\$1,452,123	\$5,286,465
Delaware	763,770	788,863	718,275	0 <sup>1</sup>	\$2,270,908
District of Columbia	661,418	641,580	664,321	483,362	\$2,450,681
Pennsylvania	3,346,399	3,245,513	3,299,768	3,651,767	\$13,543,447
Virginia	1,943,839	1,863,883	1,863,883	1,993,427	\$7,665,032
West Virginia	1,032,619	991,144	991,144	1,293,675	\$4,308,582
					\$35,525,115

1. Beginning in 1998, Delaware's Section 106 funds were included in its Performance Partnership Grant and therefore are not specifically identifiable.

---

## **Scope and Methodology**

We performed this audit according to the *Government Auditing Standards* (1994 Revision) issued by the Comptroller General of the United States as they apply to program audits. The audit included tests of the program records and other auditing procedures we considered necessary.

We began our review with a survey on August 13, 1997. As a result of the survey we began an in-depth review on February 2, 1998. We completed our audit fieldwork on September 15, 1998.

For simplicity purposes we refer to the District of Columbia as a "State," because under the Clean Water Act, the District has the same responsibilities and is subject to the same requirements as a State.



We concentrated our review on the State of Maryland's water quality program. However, as various issues arose, we determined if programs in other States within Region III had similar discrepancies.

Maryland's water quality program responsibilities are divided between the Maryland Department of the Environment (MDE) and the Maryland Department of Natural Resources (DNR). MDE fulfills most of the regulatory responsibilities, including reviewing water quality standards, conducting Triennial Reviews, preparing the *Impaired List* of water bodies, and developing the "total maximum daily loads." DNR performs the majority of the water quality monitoring responsibilities and prepares the *Assessment Report* sent to EPA.

We reviewed the Clean Water Act, the CFR, the Water Quality Standards Handbook, Guidance for Section 106 of the Clean Water Act, Monitoring Strategy Guidance, Guidelines for Preparation of 1996 State Water Quality Assessments (Section 305(b) Reports), and Maryland's Laws and Regulations applicable to its water quality program.

To accomplish our objectives, we reviewed documents and interviewed officials at: MDE, DNR, Region III's Water Protection Division and Environmental Services Division, and EPA's Office of Water.

We also reviewed correspondence between EPA and the States within Region III applicable to water quality standards, planning documents, and reports required under Sections 305(b) and 303(d) of the Clean Water Act.

We selected a sample of 20 water bodies in Maryland to evaluate the State process for sampling, assessing, and reporting the water quality. We judgmentally selected this sample to obtain a mixture of geographic location, size, and reported water quality.

We reviewed internal controls and procedures specifically related to our objectives. Although we used information from Region III's Permit Compliance System, we did not review the controls associated with the input and processing of information into this system. We also reviewed the Region's

Water Protection Division's Annual Reports on Internal Controls for fiscal years 1994 through 1997, that were prepared to comply with the Federal Manager's Financial Integrity Act. None of the issues cited in this audit were disclosed in these reports.

Due to the complexity of some water quality issues, we obtained technical assistance from the OIG Engineering and Science Staff. This technical assistance included: (1) a comparison of Maryland's water quality criteria to EPA's criteria; (2) an analysis of data from Maryland's monitoring stations; and, (3) a review of the pollutants identified in the Permit Compliance System as being contained in Maryland's pollution discharge permits.

We issued the draft report on November 25, 1998. Maryland submitted its response on February 2, 1999. Region III submitted its response on February 23, and EPA's Office of Water submitted its response on March 24, 1999. We changed the draft report where necessary, but our overall positions remained unchanged. We held an exit conference with Region III on March 16, 1999, with Maryland officials on March 24, and with EPA's Office of Water on March 25, 1999. The responses and our evaluation of these responses, are summarized at the end of Chapters 2 through 5 and provided in their entirety in Appendix A.

---

**Prior Audit Coverage**

Neither the OIG nor the U.S. General Accounting Office issued any reports related to water quality standards, monitoring, and reporting for any State in Region III. However, on January 15, 1997, Virginia's Joint Legislative Audit and Review Commission issued a comprehensive report on water enforcement in the State.

The OIG issued a report on Missouri's water quality on March 31, 1998, and is currently auditing the programs of Arkansas, Colorado, Mississippi, New Jersey, Ohio, and Oregon. The OIG issued a report on March 27, 1997, entitled *Region III Superfund Field Sampling Activities*, which identified non-compliance with the requirement to prepare a Regional Quality Management Plan. Although this Plan has since been developed, our audit identified weaknesses in its implementation. See Chapter 5 for additional details.

---

## CHAPTER 2

### BACTERIA IN WATER NOT ASSESSED OR REPORTED

---

Elevated bacterial levels can be hazardous to people using water for recreational activities, such as swimming or water skiing. Bacteria can cause illnesses including sore throats, ear infections, diarrhea, gastroenteritis, meningitis, and encephalitis. The Clean Water Act requires EPA to develop and publish criteria for assessing water quality based on the latest scientific knowledge. States are then to adopt either these criteria, or criteria that are at least as protective as EPA's. If a State does not adopt such criteria, then the Clean Water Act requires EPA to write a regulation to supersede the State's regulation and ensure that the more protective criteria are used to assess water quality.

In 1986, EPA published its *Ambient Water Quality Criteria for Bacteria*, which approved *Enterococcus* and *E. coli* as bacteriological indicators of harmful pathogens. However, as of 1998, Delaware is the only State within Region III to adopt either of these two approved Federal criteria. The remaining States use fecal coliform to assess their water quality. This occurred because the Agency implicitly allowed States to use the less protective criterion to assess the bacteriological quality of their water bodies. As a result, water bodies with harmful contamination may remain undetected and unreported, and the public may be unknowingly exposed to harmful bacteria.

In addition to not adopting the Federal criteria, the State of Maryland did not implement its own criterion, or follow EPA guidance when assessing and reporting water bodies impaired by bacteria.

The following chart shows the water quality criterion being used by each State within Region III, and whether the criterion was as protective as EPA's.

STATE	CRITERIA USED BY STATE	AS PROTECTIVE
Delaware	Enterococcus	Yes
District of Columbia	Fecal Coliform	No
Maryland	Fecal Coliform & Sanitary Surveys	No
Pennsylvania	Fecal Coliform	No
Virginia	Fecal Coliform	No
West Virginia	Fecal Coliform & Best Professional Judgement	No

Whether coincidental or not, it is interesting to note that Delaware, which did adopt a Federal criterion, reported 84 percent of its assessed water bodies as impaired by bacteria, whereas Maryland, which uses fecal coliform, reported less than 1 percent of its assessed water bodies as impaired.

	DELAWARE	MARYLAND
Assessed Miles	651	17,000
Impaired Miles	548	5
Percent Impaired	84%	.03%

### MARYLAND

The Clean Water Act requires each state to assess and report on the condition of its water bodies every two years. To fulfill this requirement each state submits to EPA an *Assessment Report* and an *Impaired List*. The *Assessment Report* describes the quality of all water bodies, including whether or not they are safe. This report is also made available to the public. The *Impaired List* prioritizes for EPA those water bodies classified as unsafe. The *Impaired List* is especially important because it identifies the bodies of water for which “total maximum daily loads” (TMDLs) must be developed in order to clean up the contamination.<sup>1</sup>

1. The TMDLs restrict the amounts of pollution that each discharger can release into a water body, and still allow it to be safe.

Accordingly, the Clean Water Act gives EPA the final approval authority over each State's *Impaired List*.

In Maryland, two state agencies use different interpretations of the State's criteria to determine if water bodies are impaired. However, neither interpretation implements the State's criteria as written, resulting in insufficient data to document impairments. Moreover, there was a difference of opinion between the State and Region III as to what constituted an impaired water body. As a result, Maryland's *Impaired List* did not include 185 water bodies that had elevated bacterial levels. Furthermore, 62 of these 185 water bodies were not identified as impaired on Maryland's *Assessment Report*.



According to Maryland's water quality standard, a body of water will be presumed contaminated:

- (a) If the fecal coliform density exceeds a log mean of 200 per 100 milliliters, based on a minimum of at least five samples taken over any 30-day period;
- (b) If 10 percent of the total number of samples taken during any 30-day period exceed 400 per 100 milliliters; or,
- (c) Except when a sanitary survey approved by the Department of the Environment discloses no significant health hazard, (a) and (b) does not apply.



Maryland's Department of Natural Resources (DNR) only considers a water body as impaired if: (1) it is a "permitted" beach closed by a local health department (in its

1996 *Assessment Report* DNR reported 25 such beaches as impaired); or, (2) a sanitary

survey<sup>2</sup> confirms the impairment. But DNR reported no water bodies as impaired due to elevated bacterial levels, despite the fact that, according to other monitoring data submitted by Maryland to Region III, there were an additional 62 water bodies impaired due to elevated bacterial levels.

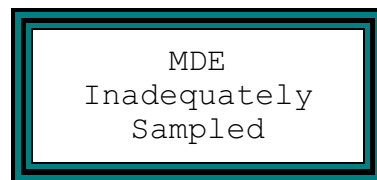
During the audit, DNR personnel explained that they did not perform sanitary surveys for elevated monthly bacterial data because: (1) fecal coliform are not harmful bacteria, but rather only an indicator of harmful bacteria; and, (2) any bacterial contamination probably came from animal waste which DNR assumed is harmless, rather than human waste which is known to be harmful. We disagree with both of DNR's explanations.

First, although fecal coliform may not be harmful to humans, they are called an indicator because they are typically found in the presence of harmful bacteria and viruses.

Furthermore, Maryland's own regulations establish fecal coliform as the criterion to be used to measure water quality.

Second, we dispute the assumption that any bacterial contamination must automatically come from an animal rather than a human source. The only fact known at this point is that bacterial contamination exists, not where it originated.

In any event, Maryland did not conduct sanitary surveys (except for permitted beaches and for the shellfish sanitation program). According to DNR, such surveys are expensive. However, each year between 1995 through 1997, Maryland performed 5000 sanitary surveys to ensure that people did not get sick from eating shellfish. Accordingly, we believe there is justification for the extra expense of an additional 62 sanitary surveys, at the locations where elevated bacterial levels were detected.



Maryland's Department of the Environment (MDE) considers a water body as impaired by bacteria only if five samples taken over the course of a month

2. A sanitary survey is an investigation to determine how fecal coliform bacteria entered a water body.

indicate elevated bacterial levels (i.e., paragraph (a) of Maryland's water quality standards). Using this measurement, MDE reported 51 water bodies as impaired by bacteria on its 1998 *Impaired List*, despite the fact that, according to other monitoring data<sup>3</sup> submitted by Maryland to Region III, there were 185 additional water bodies impaired due to elevated bacterial levels. This discrepancy occurred because Maryland does not routinely follow its own standard, i.e., to take five samples from a water body over the course of a month. Rather, it usually takes nine to twelve samples per year, usually one each month.

Region III was aware that MDE had not included contaminated water bodies on its *Impaired List*. On April 17, 1998, the Region notified MDE of 193 water bodies which should be added to the list because of bacterial contamination. However, when MDE asserted that there was insufficient data for the vast majority of the water bodies to be added to the list, the Region consented with MDE's promise to do additional testing. We disagree with this decision. We believe the Region should have insisted that 185 of the 193 water bodies be listed as impaired for bacteria<sup>4</sup> until MDE performed the additional testing as promised. In light of the fact that Maryland does not routinely follow its own standard, we do not agree that insufficient data should have been accepted as a valid excuse.

## Conclusion

Elevated bacterial levels can be hazardous to people using the water for recreational activities. It can cause various illnesses ranging from sore throats to meningitis or encephalitis. The Clean Water Act requires EPA to develop criteria for assessing water quality and requires the States to adopt these criteria, or criteria that are at least as effective. Twelve years has elapsed since EPA revised its bacterial criteria, but only one state within Region III, Delaware, has adopted the approved criteria, which is based on the latest scientific knowledge. The District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia did not. Finally, in lieu of adopting the Federal bacterial criteria, the State of

3. Other data includes MDE fecal coliform data from STorage and RETrieval System (STORET), 1995 Maryland Biological Stream Survey data, the 1996 *Assessment Report* (305b report), and the "Water Body System" database.

4. We concur that 8 of the 193 water bodies should not have been listed.

Maryland professed to follow its own. But, it did not do so. Consequently, Maryland's reports to EPA understated the number of water bodies with elevated bacterial levels, a condition that will delay the development of remedies to curtail contamination.

---

**Recommendations** We recommend that the Assistant Administrator for Water work to ensure that:

- 2.1 If States do not amend their water quality standards to include the Agency's 1986 *Ambient Water Quality Criteria for Bacteria*, appropriate action is taken to resolve the deficiency.

We recommend the Region III Administrator:

- 2.2 Ensure that Maryland completes its 1999 Triennial Review and resolves all standards issues, including bacteria.
- 2.3 Ensure that Maryland implements its bacterial standards as written. Specifically,
  - (a) DNR should either not require a sanitary survey to confirm contamination, or perform the surveys whenever testing reveals elevated bacterial levels.
  - (b) MDE should follow Maryland standards as written and assure that five samples be collected in a thirty-day period for making decisions to add water bodies to the *Impaired List*.
- 2.4 Take appropriate action if Maryland does not implement its own regulations. Such actions could include withholding Section 106 funding, elevating the issue to the Administrator, or not approving the State's *Impaired List*.



## EPA Office of Water Response to the Draft Report

### **Background**

The fecal coliform bacteria enumeration test was developed in the 1960s as a replacement for the total coliform test in sewage and in sewage-polluted ambient water. It was shown to be more specific to warm-blooded animal fecal waste than total coliform. As a result, the presence of fecal coliform bacteria was the indicator selected by the Environmental Protection Agency (EPA) and its predecessor Agency and published as part of the 1968 Water Quality Criteria and the 1976 Quality Criteria for Water. Fecal coliform is also designated a conventional pollutant in Section 304(a)(4) of the Clean Water Act. Following the enactment of the 1967 and 1972 Federal water pollution control acts and their requirements for water quality standards adoption by the States, the use of the fecal coliform test by the States was almost universal.

EPA's seminal studies of enteric disease in recreational swimmers in the 1970s were the first such studies to use epidemiological techniques to statistically demonstrate which bacterial indicators provide correlation with gastroenteritis incidence. These studies used new laboratory methods to measure *Escherichia coli*, the coliform bacteria always present in warm blooded animal feces, and enterococci, a small subgroup of 4 species which, while within the much larger fecal streptococci group, are virtually always found in warm blooded animal feces. Statistically significant correlations were determined and criteria developed that were based on swimmer illness rates as a function of indicator bacterial densities in ambient waters -- that is, on a risk basis. Moreover, it was found that fecal coliform, while a valid indicator of the presence of fecal material, did not correlate with swimmer illness rates. The 1986 criteria document used this research to present criteria that were roughly equivalent in stringency to the previously recommended fecal coliform criteria.

EPA encouraged the States to change to the new indicators to take advantage of their improved ability to base decisions on swimmer illness risks. For example, beginning with the *Federal Register* Notice announcing the availability of the criteria document that encouraged quick State adoption (51 FR 8012, March 7, 1986), to a more recent letter (January 13, 1997) from the Assistant Administrator for Water urging States to adopt the new indicators (copy attached). While a number of States have done so, more than two-thirds have not. The States that have not adopted the new criteria have cited a number of perceived problems. Among these are the following: the drinking water program still uses total coliform and fecal coliform (*E. coli* is now an option, however), making additional demands on laboratories; the enumeration methods for *E. coli* and enterococci are not in the Agency's methods at 40 CFR Part 136 and thus may pose problems if used in

NPDES permits; and they have long records using fecal coliform and do not wish to change indicators.

## **EPA's Current Plans**

OW agrees with the concerns expressed in the OIG's draft report. EPA recognizes that it is important for States to adopt microbiological water quality criteria that adequately protect designated uses. For these reasons, the President included specific provisions concerning beach protection in the Clean Water Action Plan that he issued in February 1998. In response to the Action Plan, EPA recently completed an *Action Plan for Beaches and Recreational Waters* that includes a renewed commitment to encouraging State adoption of updated criteria to protect beaches. OW will provide OIG with a copy of this *Action Plan* as soon as copies have been printed. In the *Action Plan*, EPA commits to several steps in the near future regarding water quality criteria. These steps include conducting a literature review and analysis to verify the continuing scientific soundness of the 1986 criteria; notifying the States of EPA's intention to make a finding that use of fecal coliform criteria alone will not support the primary contact designated use (presuming that position is justified by the review), and initiate a Federal promulgation to impose the 1986 *E. coli* and/or enterococci criteria in addition to or in place of outdated fecal coliform criteria where necessary. EPA is also committed to promulgating the enumeration methods for *E. coli* and enterococci into 40 CFR Part 136 prior to any Federal promulgation for a State.

## **Office of Water Summary**

OW believes that EPA's planned actions described above will achieve the OIG's recommendations on a reasonable time schedule. At the completion of the Clean Water Action Plan's and the Beach Action Plan's measures for beach protection, all of the States will have the recommended bacterial indicators in place. At that point all of the States will be capable of using *E. coli* or enterococci for purposes of section 305(b) reporting, and the draft OIG report's concern about State reporting of bacterial impairments will be moot.

## **OIG Evaluation of Office of Water Response**

As explained in the Office of Water response, the fecal coliform bacteria enumeration test was developed in the 1960's. EPA studies of enteric disease in swimmers in the 1970's using *E. coli* and Enterococci found that fecal coliform did not correlate with swimmer illness rates. Consequently, in 1986 the Agency encouraged the States to adopt these new indicators to take advantage of their improved ability. In response to a Clean Water Action Plan issued by the President in 1998, EPA completed an *Action Plan for Beaches and Recreational Waters*, and

plans to initiate a Federal promulgation to impose the 1986 *E. coli* and/or Enterococci criteria where necessary.

During the exit conference, the Office of Water provided an excerpt from the *Action Plan for Beaches and Recreational Waters*, in which it was stated that:

Where a State does not amend its water quality standards to include the 1986 criteria, EPA will act under Section 303(c) of the Clean Water Act to promulgate the criteria with the goal of assuring that the 1986 criteria apply in all States not later than 2003.

The issuance of this plan should achieve the intent of our recommendation. Thus, no further action is necessary.

### **Region III Response to the Draft Report**

The Region concurred that there were inconsistencies in the bacteria criteria adopted by Region III States, and that EPA has not taken formal action to disapprove States' standards when Enterococcus and *E. coli* were not adopted to replace fecal coliform criteria.

The Region believes that State Triennial Reviews, rather than *Impaired Lists*, are the appropriate vehicle for disputing the appropriateness of specific State water quality standards. Moreover, the Region asserted that it is appropriate for a State to base its *Impaired List* on its interpretation of its own standards, i.e., Maryland's explanation that because fecal bacteria measurements are known to be highly variable, no less than five samples per month be taken.

The Region agreed that follow-up is necessary to assist Maryland in providing resources for additional testing.

The Region did not address our recommendation that it issue a deficiency notice to Maryland based on how the State implements its standards regarding DNR performing sanitary surveys. That is why we reiterated this recommendation in the final report. Also, we added a similar recommendation regarding MDE collecting a sufficient number of samples to add water bodies to the *Impaired List*.

### **Maryland Response to the Draft Report**

Maryland agreed that the bacteriological criterion needs to be revised and that monitoring for bacteria needs to be modified to better implement the standard. Maryland disagreed that its standards are less protective than those recommended

by EPA, and that additional waters should be added to the *Impaired List*. The response contained a table showing the specific water bodies that were not listed because “there is insufficient data to determine a violation of water quality.” (See Appendix A). “However, through the current Triennial Review, Maryland will explore the feasibility of adopting a fecal coliform standard using the Enterococcus and *E. coli* indicators in primary contact waters.”

Regarding implementing its own standards, Maryland agrees that it does not do statewide sanitary surveys. However, local health Departments do conduct the surveys, both for enforcement of bathing beach standards and to survey needs with respect to septic systems.

Based on comments received from EPA in its review of the 1998 *Impaired List*, Maryland has agreed that a review of the bacterial regulations and bacterial sampling protocols is warranted and will be pursued in the ongoing Triennial Review process.

### **OIG Evaluation**

Our finding acknowledged that 25 “permitted” beaches and five miles of other water bodies were listed as impaired on the *Assessment Report*. However, these 25 beaches represent only a small portion of the State’s water bodies. Our concern is about the other 62 water bodies, which monitoring data submitted by the State indicated were also impaired. These water bodies were not included on the *Assessment Report* because there was insufficient data to confirm impairment. As explained in our finding, this lack of information arose because the State did not implement its own standards, i.e., DNR did not take the required number of samples and MDE used this lack of data as a reason to not report impairments. That is why we are recommending that the Region take other actions in the future such as withholding Section 106 funding, elevating the issue to the Administrator, or not approving the State’s *Impaired List* if Maryland continues to not implement its own bacterial standards.

In our draft report recommendations, the OIG gave the Region the option to either rescind the approval of the 1998 *Impaired List*, or to assure that the additional monitoring promised by Maryland is promptly carried out. We do not agree with the Region that the *Impaired List* is not a proper vehicle to dispute the appropriateness of specific state water quality standards. Inadequate standards (and in this case improperly implemented standards) undermine the CWA’s goal of obtaining water quality which provides for the protection of recreation in and on the water. We also do not agree that insufficient data is an appropriate justification to exclude water bodies from listing the waters as impaired, especially when other monitoring data shows impairment.

We agree the Triennial Review process provides EPA with the authority to rectify inadequate state water quality regulations. However, it should be pointed out that Maryland has not completed any Triennial Reviews since 1990, with no consequences from EPA. We understand from the responses that Maryland agrees it needs to address the issue of insufficient data to list water bodies as impaired, and that the Region agrees that it has to follow up on this issue. We also understand that Maryland has just begun a 1999 Triennial Review. To ensure that Maryland has sufficient data to list water bodies, we believe the Region should help the State address this issue and follow its standards as written.

[This page was intentionally left blank.]

---

## CHAPTER 3

### DEFICIENT STANDARDS WERE NOT CORRECTED

---

Water quality standards in Maryland, Delaware, Pennsylvania, Virginia, West Virginia and the District of Columbia were inadequate in 1998, even though some deficiencies were identified as far back as 1990. Consequently, State standards do not protect the waters in Region III as intended by the Clean Water Act, and the Agency risks being sued for not promulgating adequate water quality standards.

This occurred because Region III did not fully use its authority, or fulfill its responsibility, to ensure that deficient standards were corrected. Specifically, Region III did not notify States of their deficiencies, or elevate these issues to the EPA Administrator, who then would have had the authority to promulgate adequate standards. Despite the longstanding deficiencies, we noted only one instance where the Region issued a formal deficiency notice. Also, there was only one instance where the Region elevated a standard to the EPA Administrator for promulgation, and this occurred only because of a court order resulting from a lawsuit filed against the Agency by an environmental group.

Water quality standards consist of three elements:

- (1) A “designated use” - protection of aquatic life and recreation, and may include drinking water.
- (2) The “water quality criteria” necessary to protect the designated use.
- (3) An “anti-degradation policy” to ensure that water quality is conserved, maintained, and protected.

## Deficient Maryland Standards

Chapter 6 of EPA's *Water Quality Standards Handbook* outlines the process for promulgating new standards. The Handbook stipulates that although only the EPA Administrator may actually promulgate the standards, the Regional Offices also have a major role, i.e., to notify the States of deficiencies, or if necessary elevate the issue to the EPA Administrator.

Three deficiencies in Maryland's water quality standards remained uncorrected since 1990 (the date of the last completed Maryland Triennial Review). These deficiencies relate to: the criteria for toxic pollutants; and, anti-degradation policy and procedures.



The first deficiency regards the lack of adequate numeric water quality criteria for toxic pollutants. A numeric criterion is the level of contamination which may be present in the water body without impacting its designated use. Section 303(c)(2)(B) of the Clean Water Act requires the States to adopt criteria for all toxic pollutants pursuant Section 307(a)(1) for which EPA has published criteria under Section 304(a), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the State. Agency guidance proposed three options to meet this requirement. Maryland selected the option which only required it to adopt numeric criteria for the toxic pollutants listed in Section 307(a). According to EPA's database of permits issued by Maryland to its dischargers, there are 62 such toxic pollutants. However, although Maryland requires its dischargers to test for these pollutants, its standards provide numeric criteria for only 20 of these 62 pollutants.

According to Maryland Department of the Environment personnel, the State chose not to adopt the EPA criteria for the remaining 42 pollutants because it: (a) questioned the science EPA used to develop the criteria; and, (b) feared being sued by dischargers if the science proved to be invalid. These misgivings notwithstanding, the fact remains that the Clean Water Act mandates that each State either adopt criteria as



protective as EPA's, or develop its own scientifically defensible criteria.

Incorrect  
Criteria  
for Toxic  
Pollutant

The second deficiency is that Maryland's numeric criteria for 15 metal pollutants are set at incorrect levels. Specifically, the State set criteria at numeric levels that EPA recommends for "total recoverable" units, but then adopted these numeric levels as "dissolved" units.

The net effect is that the numeric levels set by Maryland may be less stringent than the levels currently recommended by EPA. Consequently, the State's standards may allow more pollution from metals to be present in the water than EPA has determined is appropriate to ensure aquatic life is adequately protected.

Anti-  
degradation  
Policy

The third deficiency in Maryland's standards relates to its anti-degradation policy. In accordance with Title 40 of the Code of Federal Regulations (CFR) 131.12, each State is required to develop such a policy and identify methods to implement it in

order to ensure that water quality improvements are conserved, maintained, and protected. In particular, a State's anti-degradation policy and implementing procedures must maintain and protect high quality waters which constitute an Outstanding National Resource, such as waters of National and State parks and wildlife refuges. In 1990, Region III conditionally approved Maryland's standards related to its anti-degradation policy, with the understanding that the State would revise its policy to include provisions for Outstanding National Resource waters and develop the required implementation procedures by January 1, 1991. However, as of 1998, Maryland has fulfilled neither of these conditions.

### Maryland Summary

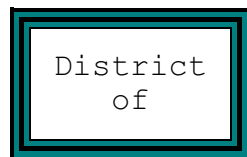
Over an eight-year period, the Region has periodically reminded Maryland personnel about deficiencies in their water quality standards requiring attention. During our field visit, Maryland personnel referred to the Region's current

letter as “EPA’s wish list,” because it neglected to prioritize or otherwise highlight which deficiencies should be remedied first. Region III personnel explained that the reminder letters were somewhat “nebulous”; they referred to “goals” that EPA “preferred” to see added to the standards, rather than to deficiencies that required correction. Consequently, we believe that the Region should send clearly written deficiency notices, separate from any letters requesting the fulfillment of optional goals.

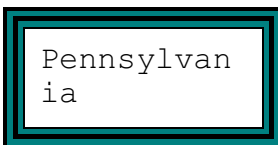
**Deficiencies in  
Other States  
Within Region III**



In 1993, EPA identified a number of deficiencies within Delaware’s water quality standards program. After five years of discussion between the State and the Region, many of the deficiencies still remain uncorrected. In April 1998, the Region notified the State that it intended to recommend that the EPA Administrator promulgate replacement standards if the State did not make recommended corrections. According to regional personnel, Delaware agreed to hold public hearings in October 1998 regarding its deficient regulations. However, as of March 1999, it has yet to schedule the hearings, and EPA has taken steps to promulgate some of the deficient standards.



Since 1994 the District of Columbia’s water quality standards contained many deficiencies. In 1998, the Region reviewed the District’s draft revisions to their standards and concluded that several, but not all, of the items had been corrected. However, the Region allowed four years to elapse, and the District’s standards have yet to be finalized.



In 1994 Region III determined that Pennsylvania’s standards were inadequate for two reasons. After two years and a lawsuit filed by an environmental group, EPA finally corrected one of these deficiencies by promulgating the required standard. However, the remaining deficiency has yet to be corrected.



Since February 1990, Virginia's water quality standards have included criteria for bacteria that are less protective than EPA's published level. This is significant because an incorrect standard may allow elevated bacterial levels (a human health threat) to go unreported and uncorrected.



In 1993 the Region identified many deficiencies with West Virginia's standards. In 1995, the State submitted its Triennial Review package which enabled the Region to approve some of the revised standards. On July 14, 1998, West Virginia submitted a new Triennial Review package. As of February 1999, the Region has completed its review of this package and is awaiting EPA Headquarters review and concurrence.

### **Region III Position**

Regional personnel offered various explanations why deficiencies in standards remained uncorrected including:

The belief that it was better to afford States the opportunity to correct their own standards.

The reluctance to encourage changes in a political environment that may have resulted in the elimination of some State standards that were more aggressive than EPA's.

A hesitancy to take action against States within Region III when similar deficiencies were being overlooked in other EPA Regions.

The opinion that in some instances, e.g., anti-degradation implementation procedures, EPA Headquarters would not know what to promulgate.

The Regions and EPA Headquarters lack personnel and funding necessary to promulgate regulations when a State fails to do so.

## **Conclusion**

Deficient State water standards within Region III remained uncorrected for as long as eight years. In our opinion, the primary reason for this situation was because the Region did not fully use its authority or fulfill its responsibility to ensure that deficient standards were corrected.

Notwithstanding the explanations provided by regional personnel, we do not believe they justify leaving standards uncorrected for years. Accordingly, the Region needs to take appropriate actions to obtain compliance by the States to better protect bodies of water as intended in the Clean Water Act. Such actions would include preparing clearly written notices to the States and elevating issues to the EPA Administrator if a State fails to correct inadequate standards.

---

## **Recommendations**

We recommend the Region III Administrator:

- 3.1 Send clearly written notices to States identifying inadequate standards.
- 3.2 Coordinate with EPA Headquarters to promulgate standards if States do not correct the inadequacies identified in the written notices.
- 3.3 Initiate action to identify what toxic pollutant water quality criteria are necessary, if the 1999 Maryland Triennial Review fails to do so.

## **Region III Response to the Draft Report**

EPA Region III agrees that the Region III States have not been timely in completing Triennial Reviews and, as a result, deficiencies now exist in standards that were previously approved. Also, EPA agrees that there are State standards which were disapproved for which EPA Region III has not pursued Federal promulgation by the Administrator. EPA Region III is aggressively pushing the States to move to correct outstanding disapprovals and to initiate Triennial Reviews. Triennial Reviews have been completed in Virginia and West Virginia, with the approval/disapproval determinations pending.

The draft report noted that EPA Region III did not elevate these issues to the EPA Administrator, who would then have the authority to pursue Federal promulgation,

although not the obligation. EPA Region III agrees with the importance of notifying the States when changes are needed and also to selective use of Federal promulgation where other efforts have failed.

### **Maryland Response to the Draft Report**

In its response, Maryland offered several arguments disputing that it needed additional criteria for toxic pollutants. These arguments included, just because a permit requires monitoring for a pollutant, it does not mean the pollutant is always present. Also, the presence of a toxic pollutant in a facility's discharge does not automatically require adoption of a criterion. Instead, professional judgement must be applied to make that determination and be confirmed by monitoring. Moreover, a pollutant may be included in a permit as a "technology-based limit" required by Federal guidelines.

Maryland also disputed that it should have corrected the criteria for metal pollutants because EPA published its "interim final rule" in 1995 and its "most recent final guidance on metal conversion factors" in 1998. Given these facts Maryland asserted that we were premature in concluding that its metals criteria is deficient.

### **OIG Evaluation**

On June 25, 1992, the Region notified Maryland that its 1993 Triennial Review needed to review additional or revised water quality criteria for toxic pollutants. In a follow-up meeting on October 21, 1992, the Region again noted that the State needed additional or revised numeric criteria for toxic pollutants. This same issue resurfaced as recently as March 2, 1998, when Region III requested the State to complete its long overdue Triennial Review.

We reviewed Maryland's arguments for not adopting EPA's criteria, or developing its own criteria for the 42 pollutants discharged into Maryland waters. We agree the State made several valid points regarding why pollutants are listed in permits. However, Maryland fails to categorically confirm that these toxic pollutants are not affecting water quality, or are not present at a level to warrant concern. This is the reason why we added a recommendation for the Regional Administrator to ensure that this issue is resolved during the 1999 Triennial Review.

Regarding Maryland's metal criteria being deficient, our position remains unchanged. Admittedly EPA took some time to formally publish its final guidance on metals. However, our conclusion that the State's metal criteria is deficient is hardly premature, in light of the fact that Region III had arrived at the same conclusion in 1990, nine years earlier.

Because Maryland agreed it would address the designation of Outstanding National Resource Waters during its 1999 Triennial Review, no further action is needed for that issue.

During our exit conference, Maryland MDE officials asserted that the State is addressing the toxicity issue with Whole Effluent Toxicity testing of permitted effluents, and an ambient toxicity program, funded by EPA's Chesapeake Bay Program, which monitors the tidal portion of the Bay and its tributaries. This notwithstanding, we still believe that the ambient toxicity testing program must be expanded to include non-tidal waters and to provide more frequent sampling.

---

## CHAPTER 4

### MISSED OPPORTUNITIES TO CORRECT STANDARDS

---

In addition to adopting water quality standards into law, the Clean Water Act requires each State to: (a) hold public hearings at least every three years to review the standards; and, (b) submit the results of these reviews to the Administrator of EPA. The purpose of these “Triennial Reviews” is to determine the need for additional standards or for the revision of existing standards. Thus if hearings are not held and standards not reviewed, the public and EPA have less assurance as to the adequacy of State water quality standards. At the time of our audit, West Virginia was the only State within Region III to have completed its Triennial Reviews. The other States did not complete their reviews because the Agency has not enforced its authority under the Clean Water Act.

The following table shows when each State conducted its last review, when its next review was due, and how many years the review is overdue as of 1998.

#### TRIENNIAL REVIEWS

STATE	LAST REVIEW	REVIEW DUE	YEARS LATE
Maryland	April 1990	April 1993	5
Delaware	February 1990	February 1993	5
District of Columbia	March 1994	March 1997	1
Pennsylvania	March 1994	March 1997	1
Virginia	May 1992	May 1995	3
West Virginia	August 1995	August 1998	0

We were given various reasons why States neglected to hold the public hearings and review their water quality standards.

Region III personnel informed us that Triennial Reviews are perceived as a low priority, EPA has a policy to work as “partners” with the States, and as long as a State makes “good progress,” the Region will not elevate the issue to EPA headquarters.



In order to fulfill its requirements, the State needed to: (a) notify the public of the review and solicit suggestions for revisions; (b) review its standards for specific Clean Water Act requirements; (c) hold public hearings on the proposed revisions; and, (d) submit the revisions to EPA for approval. Region III concluded that Maryland had missed both its 1993 and its 1996 Triennial Reviews. However, Maryland asserted it fulfilled the 1993 requirement because: (a) all State regulations, including water quality standards, are continuously open for public comment; (b) the State is required to review and evaluate all regulations every eight years; and, (c) Maryland submitted revised standards to Region III as a result of lawsuit negotiations with six industries.

We concur with the Region that Maryland did not fulfill its Triennial Review requirements. The continuous public comment period does not meet the Clean Water Act requirement for public hearings on all State’s water quality standards. In addition, the eight-year regulatory review clearly does not meet the three-year requirement of the Act. Finally, the revisions submitted by Maryland to EPA only addressed the standards revised as a consequence of the lawsuit. The Clean Water Act requires that all water quality standards be reviewed.

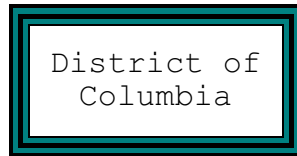
Over a five-year period (1994 through 1998), Maryland repeatedly agreed to conduct the 1996 Triennial Review, as part of activities funded by the grant EPA awarded to the State under Section 106 of the Clean Water Act. Nonetheless, even though the State received more than \$5 million during this period, it never initiated the review. In a letter dated March 30, 1998, Maryland included yet another “tentative schedule” to complete the review by August of 1999 -- the due date for the next Triennial Review.



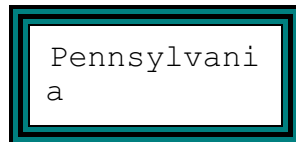
During our field visit, we were informed by Maryland Department of Environment personnel that the State was reluctant to conduct reviews in fear of being sued either by industry if water quality standards were increased, or by environmental groups if the standards were made less protective.



Similar to Maryland, Delaware also submitted certain revised standards to the Region in 1993, but again only as a result of a lawsuit. Hence, these revised standards do not satisfy the Clean Water Act requirement because public hearings were limited to the specific standards litigated.



The District completed a Triennial Review in March 1994 after not having submitted revised standards since the mid-1980s. Although the next review was due in March of 1997, the Region does not expect to receive the final revisions until fall 1999.



The Commonwealth should have submitted a Triennial Review in March 1997. According to regional personnel, Pennsylvania has been directing its resources to modifying its regulations. Upon completion, the Commonwealth intends the modified regulations to constitute fulfillment of the Triennial Review requirement.



Virginia completed its last Triennial Review in May 1992. Revisions to its water quality standards were made in 1995, but not submitted to EPA until August 1998. According to Region III personnel, the revised regulations have been submitted to EPA Headquarters for review and concurrence.

### **Consequences of Late Reviews**

The purpose of adopting water quality standards into law is to protect water bodies. The purpose of holding public hearings to review these standards at least every three years

is to determine which standards may need revision. Such revisions may be warranted for reasons including: new scientific and technical data; environmental changes; changes in laws and regulations; or, improvements to the quality of a water body that require more stringent standards to maintain the improvements. For example, as discussed in Chapter 3, since 1990, Maryland's standards have included an inadequate anti-degradation policy. Moreover, its incorrect criteria for metal pollutants may have enabled industry to discharge more pollution into Maryland waters than allowed under the Clean Water Act.

Holding public hearings and reviewing water quality standards at least every three years is not a voluntary process; it is mandated under the law, and individual States as well as EPA have been sued in the past regarding lapses of adherence to the Clean Water Act.

Section 106(e) of the Clean Water Act stipulates that EPA should not award grants if a State fails to carry out its program. Between 1995 and 1998, the Agency awarded more than \$35 million in grants funds to the States in Region III to manage their water quality programs. Section 303(c)(1) requires States to hold public hearings at least every three years to review standards. Section 303(c)(4) enables EPA to take action should a State neglect to do so. Section 303(c)(4)(B) specifies that the Administrator shall promptly prepare and publish proposed regulations . . .

In any case where the Administrator determines that a revised or new standards is necessary to meet the requirements of this Act.

---

**Recommendations** We recommend the Region III Administrator:

- 4.1 Request the Administrator of EPA to consider initiating Clean Water Act 303(c)(4)(B) actions against Delaware, the District of Columbia, Pennsylvania, and Virginia.

4.2 Withhold a portion of Section 106 funding from any State whose Triennial Review is overdue.

**Region III Response to Draft Report**

The draft report recommends that the Administrator be requested to initiate Triennial Reviews in Maryland, Delaware, the District of Columbia, Pennsylvania and Virginia. Region III believes it is more appropriate to initiate a 303(c)(4)(B) action which allows other options such as recommending that the Administrator make a finding of deficiency and promulgate appropriate standards.

The draft report recommended withholding Section 106 funding from any state whose Triennial Review is overdue. The Region is considering this and has done so in the past.

**Maryland Response to the Draft Report**

Due to the litigation that developed challenging the legality of the regulations adopted during the last Triennial Review and the subsequent revisions to water quality regulations, the schedule was disrupted with EPA's full knowledge. The State anticipates that future Triennial Reviews will be held in a timely manner. Maryland has initiated its current Triennial Review in response to a request from Region III. Hearings for the public involvement component began in mid-January, and a review in response to Region III's specific concerns is well underway.

**OIG Evaluation**

We concurred with the Regional Administrator's suggestion and adjusted our recommendation accordingly. We deleted the State of Maryland from the recommendation because it started a Triennial Review.

As the Region is still considering withholding Section 106 funding, we retained our original recommendation.

[This page was intentionally left blank.]

---

## CHAPTER 5

### PLANNING DOCUMENTS NOT PREPARED OR UPDATED

---

States in Region III did not prepare or update water quality planning documents as required by the Clean Water Act and by Federal regulations. This occurred for several reasons. Regional personnel argued that certain documents were not actually required to be submitted, or that other documents were suitable substitutes. Also, the responsibility for approving some documents shifted to regional personnel who lacked training. The absence of these documents lessens confidence that States are effectively managing their programs to clean up water bodies. As we explained in Chapter 1 of this report, Federal funds are provided by Section 106 of the Clean Water Act. These funds subsidize State programs to fulfill Clean Water Act requirements, one of which is to submit these documents. Moreover, the absence of Continuing Planning Process documents has resulted in lawsuits against EPA in Delaware, Maryland, Pennsylvania, and Virginia.

SUMMARY OF STATE COMPLIANCE					
States	Continuing Planning Process	Water Quality Management Plan	Monitoring Strategy	Quality Assurance	
				Management Plan	Project Plans
Maryland	1986	No	No	No	Yes
Delaware	1998	No	No	No	Yes
District of Columbia	No	No	1988	No	Yes
Pennsylvania	1998	No	1993	No	Yes
Virginia	1974	No	1990	1998	Yes
West Virginia	1979	No	No	No	Yes

**Continuing  
Planning Process  
Documents**

The Clean Water Act and 40 CFR Part 130.5 require States to establish and maintain a Continuing Planning Process (CPP). Also, EPA is required by the CFR to periodically review each of these documents for accuracy. Although each State in Region III did develop a CPP in the 1970s, they did not maintain them, and the Region did not review them. In four instances EPA was sued by environmental groups over deficiencies related to these documents. In response to these lawsuits, the Region attempted to review CPPs. However, regional personnel were unable to do so, because they could not locate the documents.

The purpose of a CPP is to outline the management processes for a State's water quality program. For example, such processes relate to water quality standards and Triennial Reviews, which as discussed in Chapters 3 and 4 of this report, are areas with which States have experienced problems. The CPP also addresses how a State will develop total maximum daily loads (TMDLs), i.e., the maximum amount of pollution that is acceptable in each water body. That TMDLs are essential is evidenced by the fact that the Agency has been sued by environmental groups in 35 States, because it did not develop TMDLs when States failed to do so.

**Water Quality  
Management  
Plans**

Title 40 CFR Part 130.6 requires each State to develop a Water Quality Management Plan, the purpose of which is to prioritize water quality problems, consider solutions, and recommend remedies. However, none of the States within Region III developed these plans. Moreover, the Region did not request such plans based upon the assumption that various other documents developed by the States fulfilled the requirement. We disagree with this assumption for two reasons. First, the various other documents only contain some of the elements required in a Water Quality Management Plan. Second, these documents are outdated; they were prepared in the 1970's and early 1980's.

**Monitoring  
Strategy**

The Clean Water Act requires States to establish the appropriate methods, systems, and procedures necessary to monitor and compile data on the quality of its waters. EPA's National Monitoring Guidance required States to document and submit a five-year Monitoring Strategy. Maryland,

Delaware and West Virginia have yet to develop a Monitoring Strategy document, while the other States in Region III need to update their documents.

A Monitoring Strategy delineates exactly how a State will collect data to identify impaired water bodies. It is a document that describes, for example, who will take water samples, how often samples will be taken, and what specific criteria the sampler will use, i.e., fecal coliform versus *E. coli*.

**Quality Assurance** Title 40 CFR Part 31.45 requires States to develop and implement quality assurance practices. The special conditions of the assistance agreements awarded under Section 106 of the Clean Water Act, specifically requires the States to develop (a) Quality Assurance Management Plans, and (b) Quality Assurance Project Plans.

According to EPA, quality assurance practices are critical because the Agency uses environmental data to set priorities, measure progress and compliance, target inspections, and identify needed enforcement actions. And, because the States collect much of the data used by the Agency, it is imperative EPA be assured the data was collected and recorded accurately. Confidence in the integrity of environmental data is weakened when evidence of quality assurance is absent. Therefore, EPA needs to review the specific documents that describe State policies and procedures related to quality assurance.



None of the States except Virginia developed the Quality Assurance Management Plans. However, according to regional personnel, EPA did not provide training on how to prepare these Plans until April 1998.



The Region has been slowly implementing quality assurance requirements. In 1984 the Agency required each Region to develop and implement a Regional Quality Assurance Management Plan. In fiscal years 1992 through 1995, the Agency reported its

environmental data quality as a material weakness in its Federal Managers' Financial Integrity Act Report to the President. In August 1994 the Agency's Office of Research and Development concluded the quality assurance performed by Region III was sporadic at best. In 1996 the Region completed its Quality Assurance Management Plan. In accordance with this plan, in 1998 the Region trained State personnel on how to prepare their Quality Assurance Management Plans. The next step is to have regional personnel trained on how to review State Quality Assurance Project Plans.



From fiscal year 1995 through 1998, States in Region III received Federal funds exceeding \$35.5 million to fulfill a wide range of water quality activities required under the Clean Water Act, including: (a) developing and reviewing standards; (b) monitoring and assessing the water; and, (c) preparing the reports and documents required under the Act.

## Conclusion

Although some progress has been made towards obtaining planning documents, the Region needs to do more to meet the goals of the Clean Water Act. These documents are important because adequate planning is the initial step for States to manage their water quality programs in a systematic and organized manner. Moreover, without these documents, EPA is less assured that the States are using Federal grant funds to address the highest priority water quality problems, and leaves itself vulnerable to lawsuits by environmental groups.

We believe there were several reasons why these documents have not been prepared or updated as required.

Regional personnel argued that certain documents were not actually required to be submitted.

Regional personnel deemed other documents as suitable substitutes.

Responsibility for approving documents shifted to regional personnel who lacked training.



---

**Recommendations** We recommend the Region III Administrator:

- 5.1 Require States receiving grants under Section 106 of the Clean Water Act to develop and/or update Monitoring Strategies and Water Quality Management Plans. When necessary, withhold funds from States that neglect to do so.
- 5.2 Train Region III personnel so they can fulfill their responsibilities by working with the States to help ensure the quality of environmental data.

### **Region III Response to Draft Report**

Region III agreed with the OIG's conclusion that the water quality management planning process and associated documents and processes required by the Clean Water Act are important. As part of several memoranda of agreements with the States, the Region has negotiated commitments by the States to update their Continuing Planning Processes. Region III did not, however, agree with the details in the table entitled "Summary of State Compliance."

#### **Water Quality Management Plan**

The report lists none of the States have Water Quality Management Plans. Region III strongly disagreed with this statement. The State's Water Quality Management Plan does prioritize water quality problems, consider solutions, and recommends remedies; however, Region III does not believe that it is embodied in a single document, but rather an overall process which includes many different components. In fact, all States have recently completed Unified Watershed Assessments as part of the Clean Water Action Plan to establish priorities in cooperation with a broad range of State and Federal agencies.

#### **Quality Assurance Documents/Training**

Under Quality Assurance Management Plans, Region III said it should be noted that prior to FY '97, Quality Assurance Management Plans were entitled "Quality Assurance Program Plans" (QAPPs), which all the states submitted back in the mid 1980's. These QAPPs were approved by the Region III Environmental Services Division (ESD) at that time. Sometime in the early 1990s, ESD disinvested in this review and stated that it was the Project Officer's responsibility to review Quality Assurance Program/Project Plans (QAPjPs). Project Officers in all EPA programs were in the same situation and were not provided with any training by ESD to

carry out this task. Also, it was never brought to anyone's attention that the Program Plans expired after a certain amount of time.

All of the States were represented at the Quality Assurance Management Plan training in April of 1998. Several of the States committed to send in their Quality Assurance Management Plans to the Regional Quality Assurance Manager in the ESD Annapolis Office for review by mid-December. Also, the Regional Quality Assurance Manager is planning to train the EPA Project Officers sometime in the spring on how to review a Quality Assurance Project Plan. After training of the Project Officers is complete, the Regional Quality Assurance Manager then plans to go back to the States and train them on the same review.

Up until FY 1998, according to Region III, most of the states have been sending Quality Assurance Project Plans to EPA for review. The Water Protection Division has been working with the Regional Quality Assurance Manager and the Regional Quality Assurance Council since October, 1997 to complete the above-mentioned tasks and correct the deficiencies listed in the audit report.

### Monitoring Strategy

Region III stated that monitoring strategies were requested as part of the S. 106 grant guidance and not required, although several grants were conditioned to provide a monitoring strategy. Maryland's Section 106 grant was conditioned to provide a monitoring strategy, and Region III is working through the Performance Partnership Grant Program to induce Maryland to provide a strategy document. A monitoring strategy was never requested from Delaware due to the fact that the State had already assessed all of its waters, thereby alleviating the need for a comprehensive strategy. Virginia has just recently submitted a new draft monitoring strategy, and Region III is working with West Virginia to update its Watershed Assessment Program to include a more detailed monitoring strategy.

### Maryland Response to Draft Report

The CPP has been adopted in accordance with the requirements of the Clean Water Act. MDE provided public notice on July 13, 1998 that the CPP is being revised with public participation. MDE anticipates that such revisions and review of the CPP will occur periodically in future years.

MDE will perform chemical and physical monitoring in accordance with the Cycling Strategy. Numerous monitoring plans exist and incorporate QA/QC protocols. Past 305(b) Reports have described the monitoring programs that produced the data used. MDE stated that there are well documented monitoring plans for the Chesapeake Bay and many tributaries. Detailed monitoring plans are available for

the Lower Delmarva Peninsula and the Upper Bay as part of the Watershed Cycling Strategy. Plans for the remaining parts of the State will be developed as the Watershed Cycling Strategy moves on to those areas.

DNR has been working to update the State's Water Quality Monitoring Strategy to incorporate the latest information about the State's diverse monitoring approach. DNR stated that continuing and substantial change in these programs have occurred recently and need to be addressed, including the transfer of monitoring programs between State agencies, the addition of regional TMDL-based and new Pfiesteria monitoring efforts as well as the proposed National Estuary program monitoring program. While each water quality monitoring effort has unique goals, MDE and DNR have had formal meetings to coordinate the respective monitoring efforts and Quality Assurance plans.

### **OIG Evaluation**

The Region III response regarding training project officers satisfies Recommendation 5.2.

The Region presents several arguments disputing the contents of the finding. Where we agreed with these arguments, we modified the finding. However, in most instances we still believe there were problems regarding planning documents.

### **Monitoring Strategy**

The Region asserted that monitoring strategies were requested as part of the Section 106 grant guidance, but not required (although several grants were conditioned to provide a monitoring strategy). We disagree.

Section 106 (e) of the Clean Water Act stipulates that the Administrator shall not make any grants under this Section to any State which has not provided or is not carrying out as part of its program the establishment and operation of appropriate devices, methods, systems, and procedures necessary to monitor, and to compile and analyze data ....

The Section 106 Monitoring Guidance document (dated October 17, 1994) stipulates under "Monitoring Strategy" that States should submit a current ambient monitoring program strategy with the 106 grant application.

Therefore, we recommend that the Region require the States to submit/update their monitoring strategies.

## Water Quality Management Plan

The Region asserts that this is not a single document, but rather an overall process which includes many different components. During the audit, regional personnel advanced the argument that “Basin Plans” fulfilled the Management Plan requirement. We disagreed because the Basin Plans only contained some of the Management Plan requirements. For example, according to 40 CFR Part 130.6, the first required element of a Water Quality Management Plan is “Total Maximum Daily Loads.” As this element is not contained in Basin Plans, we believe that it does not fulfill the requirement. Therefore, we recommend that the Region require that the States develop Water Quality Management Plans.

## APPENDIX A

### Office of Water Response to Draft Report

[This page was intentionally left blank.]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
WATER

March 24, 1999

**MEMORANDUM**

**SUBJECT:** OIG Draft Report on Region 3 Water Quality Standards, Monitoring and Reporting (No. FIHWF7-03-0160)

**FROM:** J. Charles  
Assistant

A handwritten signature in black ink, appearing to read "J. Charles", is written over the "FROM:" line.

**TO:** Michael I  
Deputy Assistant Inspector General for Internal Audits (2421)

The Office of Water (OW) has reviewed the Office of Inspector Generals (OIG) draft report on Region 3 Water Quality Standards, Monitoring, and Reporting. This memorandum responds to the two recommendations in the report directed to the Assistant Administrator for Water.

1. Delete the option that allows States to use fecal coliform as criteria for reporting bacteria impairments.
2. Require the use of *E. coli* and *enterococcus* tests in accordance with the Agency's 1986 Ambient Water Criteria for Bacteria.

**Background**

The fecal coliform bacteria enumeration test was developed in the 1960s as a replacement for the total coliform test in sewage and in sewage-polluted ambient water. It was shown to be more specific to warm-blooded animal fecal waste than total coliform. It was the indicator selected in the early water quality criteria recommendations produced by the Environmental Protection Agency (EPA) and its predecessor Agency: the 1968 Water Quality Criteria and the 1976 Quality Criteria for Water. It is also designated a conventional pollutant in Section 304(a)(4) of the Clean Water Act. Following the enactment of the 1967 and 1972 Federal water pollution control acts and their requirements for water quality standards adoption by the States, its use by the States was almost universal.

EPA seminal studies of enteric disease in recreational swimmers in the 1970s were the first such studies to use epidemiological techniques to statistically demonstrate which bacterial indicators provide correlation with gastroenteritis incidence. These studies used new laboratory methods to measure *Escherichia coli*, the coliform bacteria always present in warm blooded animal feces, and enterococci, a small subgroup of 4 species which, while within the much larger fecal streptococci group are virtually always found in warm blooded animal feces. Statistically significant correlations were determined and criteria developed that were based on swimmer illness rates as a function of indicator bacterial densities in ambient waters -- that is, on a risk basis. Moreover, it was found that fecal coliform, while a valid indicator of the presence of fecal material, did not correlate with swimmer illness rates. The 1986 criteria document used this research to present criteria that were roughly equivalent in stringency to the previously recommended fecal coliform criteria.

EPA encouraged the States to change to the new indicators to take advantage of their improved ability to base decisions on swimmer illness risks. For example, beginning with the *Federal Regulation Notice* announcing the availability of the criteria document that encouraged quick State adoption (51 FR 8012, March 7, 1986), to a more recent letter (January 13, 1997) from the Assistant Administrator for Water urging States to adopt the new indicators (copy attached). While a number of States have done so, more than two-thirds have not. The States that have not adopted the new criteria have cited a number of perceived problems. Among these are the following: the drinking water program still uses total coliform and fecal coliform (*E. coli* is now an option, however), making additional demands on laboratories; the enumeration methods for *E. coli* and enterococci are not in the Agency's methods at 40 CFR Part 136 and thus may pose problems if used in NPDES permits; and they have long records using Fecal coliform and do not wish to change indicators.

## **Legal Standard**

The water quality standards regulation addresses required criteria in State water quality standards in 40 CFR 131.11. This regulation provides that States should establish numerical values based on EPA's §304(a) criteria guidance, §304(a) criteria guidance modified to reflect *site-specific* conditions or other scientifically defensible methods.

## **EPA's Current Plans**

OW agrees with the concerns expressed in the OIG's draft report. EPA recognizes that it is important for States to adopt microbiological water quality criteria that adequately protect designated uses. For these reasons, the President included specific provisions concerning beach protection in the Clean Water Action Plan that he issued in February 1998. In response to the Action Plan, EPA recently completed an *Action Plan for Beaches and Recreational Waters* that includes a renewed commitment to encouraging State adoption of updated criteria to



protect beaches. We will provide you a copy of this Action Plan as soon as copies have been printed. In the Action Plan, EPA commits to several steps in the near future regarding water quality criteria. These steps include conducting a literature review and analysis to verify the continuing scientific soundness of the 1986 criteria; notifying the States of EPA's intention to make a finding that use of fecal coliform criteria alone will not support the primary contact designated use (presuming that position is justified by the review), and initiate a Federal promulgation to impose the 1986 *E. coli* and/or enterococci criteria in addition to or in place of outdated fecal coliform criteria where necessary. EPA is also committed to promulgating the enumeration methods for *E. coli* and enterococci into 40 CFR Part 136 prior to any Federal promulgation for a State.

### **Other Issues**

On page 8, second paragraph, the draft report discusses State reporting of bacteriological measures. Specifically, this paragraph states that "the Agency acquiesced to allow some States to use less stringent criteria [fecal coliform measures] to assess the quality of their water bodies." I am concerned that the paragraph may be misleading. First, it asserts that fecal coliform measures are "less protective" than EPA's 1986 criteria for enterococci and *E. coli*. Although EPA recommends the use of the 1986 criteria, rather than the older fecal coliform criteria, it is not always true that the 1986 criteria provide a higher level of protection. For a more complete description of this issue, see the 1986 criteria document [*Ambient Water Quality Criteria for Bacteria - 1986, EPA 440-5-84-002, January, 1986 at page 8*]. Second, the draft report implies that the Agency in some way lowered its reporting requirements. This is not the case. EPA's reporting guidance is that States should determine whether the designated uses and water quality criteria in their adopted water quality standards are being attained. More specifically, our reporting guidance to States, issued as *Guidelines for Preparation of the 1996 State Water Quality Assessments (305(b) Reports)*, EPA 841-B-95-001, May 1995, and reiterated in *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates*, EPA-841-B-97-002A and -002D, September 1997, provides that "States should base use support determinations on their own State criteria for bacteriological indicators." EPA 1997, page 3-34. The *Guidelines* go on to say that "EPA encourages States to adopt [the 1986 criteria]." Therefore, until a State has adopted the 1986 criteria, EPA cannot mandate the 1986 measures in State reporting, although we would prefer such reporting. We would be happy to work with your staff in revising the paragraph in the draft report.

### **Summary**

I believe that EPA's planned actions described above will achieve the OIG's recommendations on a reasonable time schedule. At the completion of the Clean Water Action Plan's and the Beach Action Plan's measures for beach protection, all of the States will have the recommended bacterial indicators in place. At that point all of the States will be capable of using *E. coli* or enterococci for purposes of section 305(b) reporting, and the draft OIG report's concern about State reporting of bacterial impairments will be moot.

If you have any further questions or if you need additional information, please call me or have your staff contact Dr. Elizabeth Southerland, Acting Director, Standards and Applied Science Division, at 202-260-3966.

Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
WATER

Jan 13, 1997

Honorable Michelle Brown  
Commissioner  
Environmental Conservation Department  
P.O. Box O  
Juneau, Alaska 99811

Dear Ms. Brown:

I am writing to share with you the U.S. Environmental Protection Agency's (EPA) concern with public health risks posed by contaminated bathing beaches and to ask for your participation and support in reducing these risks. Scientific evidence documenting the risk of infectious diseases caused by microbial organisms in recreational waters continues to grow -- for example, a recent epidemiological study in Santa Monica Bay, California, documented an increased risk of illness associated with swimming near storm drains. The Santa Monica study is only one of many. Additionally, the number of beach closures reported every year is on the rise. To counteract this growing problem and to ensure public notification when they may be at risk of illness and disease, the EPA is in the process of establishing a national program to protect public health at our nation's beaches (see Enclosure 1). I welcome and strongly encourage your participation in this effort.

The national beach program is directed towards reducing the health risks associated with recreational waters through better science and improving coordination among the various Federal, State, Tribal and local agencies responsible for reducing contamination and notifying the public of health threats. A cornerstone of the program is State and Tribal adoption of EPA's 1986 updated bacteriological ambient water quality criteria (see Federal Register Notice, Enclosure II). I strongly encourage all States and Tribes, that have not done so, to adopt these criteria as soon as possible.

The national beach program will support State, Tribal and local efforts by providing better technical assistance and improving coordination among appropriate agencies and the public. The program will focus on four specific areas:

improving the scientific and policy foundations in support of local, State and Tribal actions;

providing improved test methods and indicators to better protect the health of beach goers in a more timely and comprehensive manner;

developing better predictive models to help notify the public of potential risks; and

enhancing the public's right-to-know about the safety of their local beaches by establishing and disseminating a national beach contamination data base.

Although many of the activities will be in the making for several years, there are actions that can and should be taken immediately. We will also be inviting your agency to participate in a national conference on this subject and to contribute information to a national beach/health data base. Your agency will be notified about these as soon as they are scheduled.

In addition to the areas outlined in Enclosure 1, EPA will continue its current work with the States to control the sources of microbial pathogens. These activities include controlling urban wet weather flows such as sanitary sewer overflows, combined sewer overflows and urban storm water runoff. Currently, several Federal Advisory Committees are working with EPA to develop detailed control strategies for these sources.

As the Agency implements the national beach program outlined above, we will ask for your continued involvement and provide you with more detailed information. If you have any initial questions or comments, please feel free to contact me or have your staff call Dr. Tudor Davies, Director, Office of Science and Technology, at (202) 260-5400 or Mr. Rick Hoffmann, Beach Health Protection Team Leader, at (202) 260-0642.

Sincerely,

A handwritten signature in black ink that reads "Bob Perciasepe". The signature is written in a cursive, flowing style.

Robert Perciasepe  
Assistant Administrator

Enclosures (2)

## ENCLOSURE I

### National Beach Program

#### 1. Improved Scientific and Policy Foundation for Local State and Tribal Actions

Water Quality Criteria & Standards. To improve the scientific and policy foundation for State and local actions, the U.S. Environmental Protection Agency (EPA) is encouraging all States and Tribes to adopt updated bacteriological ambient water quality standards protective of public health. In 1986, EPA issued a revision to its bacteriological ambient water quality criteria recommendations (51 FR 8012, March 7, 1986) to protect body contact recreation. The revised criteria introduced new indicator bacteria, *E. coli* and enterococci, which provide a better correlation with swimming-associated gastrointestinal illness than the previous criteria recommendations for fecal coliform bacteria. The revised criteria are particularly useful to public health administrators because they enable quantitative estimates of illness rates associated with swimming in polluted water. Since EPA published the 1996 criteria recommendations, several States and Indian Tribes have adopted the revised criteria into State or Tribal water quality standards.

The 1986 criteria were derived from a series of epidemiological studies which established a dose-response relationship between swimming-associated illness and water quality. Moving to these criteria, therefore, will ensure that States and Tribes adopt standards that are more risk-based. Although there continues to be a residual risk associated with swimming and other body contact activities, EPA believes that the 1986 criteria provide for an increased level of protection and that the methodology allows States and Tribes to set even more stringent levels of protection, if appropriate.

As part of EPA's national program, EPA strongly encourages all States and Tribes that have *not* done so to adopt EPA's 1986 criteria to facilitate defensible risk management decisions for protection of human health in recreational waters. We offer the support of staff in EPA's Regional and Headquarter's Offices to assist your organization in adopting the 1986 criteria at the next available opportunity. If your jurisdiction has already adopted the revised standards, EPA offers its technical assistance to help implement these standards. For example, EPA could help agencies respond to circumstances where site-specific factors influence these criteria.

Policy Dialogue -- National Conference. EPA also intends to establish a policy dialogue with local, State and Tribal agencies to discuss the full range of issues related to microbiological contamination of recreational waters. To facilitate these discussions, EPA will convene a national beach and public health protection conference for representative officials. The

conference will review current beach health activities, discuss possible changes and identify specific actions to protect public health at bathing beaches and recreational waters. EPA would then update its beach health program using conference recommendation. When the initial planning is complete, we will notify appropriate agencies and interested parties of the date and location.

**2. Provide Improved Test Methods and Indicators to Better protect the Health of Beach Goers**

EPA recognizes that there is a need to provide improved test methods and monitoring guidance to responsible agencies. EPA will Provide technical assistance to State and private laboratories to implement recently developed methods for enterococcus testing. This new methodology will provide results within twenty four hours, half the time required by the old method. EPA will continue to conduct additional research to improve methods for detection and quantification of bacterial contamination. EPA will also conduct research to develop a new generation of indicators for water-borne pathogens.

**3. Develop Better Predictive Models to Help Notify the Public of Potential Risks**

EPA will work with local, State and Tribal governments and other Federal agencies to develop models that can be used to predict when bathing beach contamination events may occur. These models will assist public health officials in determining when beach warnings may be needed. EPA will initiate a multi-year effort, working with States and the National Oceanic and Atmospheric Administration, to develop, verify, and apply these models at several selected locations in both coastal and inland waters.

**4. Enhancing the Public's Right-to-know about the Safety of Their Local Beaches by Establishing and Disseminating a National Beach Contamination Data Base**

EPA believes there is a need to improve the overall quality and availability of public information about beach health protection activities; these include: monitoring and assessment activities, water quality standards, beach closures, etc. Many organizations share responsibility for these activities. Consequently, EPA will work with environmental health officials from Tribal, State, county, and city agencies, as well as from various interest groups to compile and verify this information. EPA will then input the information into a comprehensive data base and make it available on the Internet.


## Region III Response to Draft Report

[This page was intentionally left blank.]



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

SUBJECT: Draft Report of Audit on Region III Water Quality Standards, Monitoring and Reporting  
Audit Report Number E1HWF7-03-0160 February 19, 1999

FROM: W. Michael McCabe  
Regional Administrator (3) 

TO: Michael D. Simmons  
Assistant Inspector General for Internal Audits (2421)

In response to the draft audit report and recommendations, we offer the following comments. Both of the responsible Region III offices submitted comments which are summarized below and detailed in the attachments. We have also attached a set of complete responses as submitted by each of the affected EPA offices.

The Environmental Services Division (ESD) generally agreed with the draft report, but noted that some clarification is needed. Recommendation 2.1 proposed deleting the option that allows states to use fecal coliform as a criterion for reporting bacteriological impairments. ESD believes that the states should be able to use fecal coliform until a new indicator is adopted.

The Water Protection Division (WPD) generally agreed with the report findings that the states have been lax in completing timely triennial reviews and remedying EPA disapprovals; and that EPA's efforts in the past have not been successful in forcing states to move forward. The Region also agrees that the "elevation process" to request that the Administrator move to promulgate Federal standards where the states' standards are deficient has not been widely used in Region III or, as a matter of fact, in the rest of the nation. Previous efforts to improve state standards have relied on an approach which anticipated continuous improvement in state standards, while maintaining the state's prerogative to adopt its own regulations. Recent litigation, starting with a lawsuit in Pennsylvania which ordered the Administrator to promulgate Federal water quality standards for Pennsylvania, was a major step in changing EPA's role in the state's water quality programs. Region III is currently aggressively attempting to remedy outstanding water quality standards disapprovals and this has become, in fact a national priority.

**-Bacteria In Water Not Properly Assessed or Reported**

We concur that there are inconsistencies in the form of bacteria criteria adopted by Region III states and that EPA has not taken formal action to disapprove states' standards when *Enterococcus* and *E. Coli* were not adopted to replace fecal coliform criteria. We are expecting

Headquarters to address the question of EPA's position and guidance regarding bacteria.

For Maryland, in particular, we disagree with Recommendation 2.1, "Delete the option that allows states to use fecal coliform as a criteria for reporting bacteria impairments." If a state has a fecal coliform standard already in place, it would be inappropriate to base impairment decisions on a different, unadopted criterion.

The draft report recommended rescinding the approval of the Impaired List (waters exceeding fecal coliform standards). We do not concur with this recommendation. On April 17, 1998, Region III commented on MDE's draft list of impaired waters. On September 4, 1998, MDE clarified its interpretation of the fecal coliform standard, which we determined to be reasonable.

### **-Deficient Standards Were Not Corrected**

EPA Region III agrees that the Region III states have not been timely in completing triennial reviews and, as a result, deficiencies now exist in standards that were previously approved. Also, EPA agrees that there are state standards which were disapproved for which EPA Region III has not pursued Federal promulgation by the Administrator. EPA Region III is aggressively pushing the states to move to correct outstanding disapprovals and to initiate triennial reviews. Triennial reviews have been completed in Virginia and West Virginia, with the approval/disapproval determinations pending.

The report notes that EPA Region III did not issue "Notices of Deficiency" to the states or elevate these issues to the EPA Administrator, who would then have the authority to pursue Federal promulgation, although not the obligation. EPA Region III agrees with the importance of notifying the states when changes are needed and also to selective use of Federal promulgation where other efforts have failed. The report, however, implies that "Notices of Deficiency" are a formal tool available to the Region. In fact, EPA Region III sends letters to the states which identify areas to be modified or considered during the triennial review, which are more aptly called simply, notices of deficiency. If a state has not submitted revisions to the Regional Administrator for approval/disapproval, the only formal recourse to initiate change is for the Administrator to take steps to initiate a Federal promulgation in accordance with Section 303(c)(4)(b) of the Clean Water Act (CWA).

The draft report recommended that the Region coordinate with EPA Headquarters to promulgate standards if states do not correct deficiencies with 90 days as allowed by the CWA. This is technically incorrect. The CWA only requires that "disapprovals" be corrected with 90 days. There is no regulatory time limit for correction of deficiencies although the Region works to get the states to address them during the next triennial review.

### **-Missed Opportunities to Correct Standards**

The draft report recommends that the Administrator be requested to initiate triennial reviews in Maryland, Delaware, the District of Columbia, Pennsylvania and Virginia. We believe it is more appropriate to initiate a 303(c)(4)(B) action which allows other options such as recommending that the Administrator make a finding of deficiency and promulgate appropriate standards. The draft report recommended withholding Section 106 funding from any state whose triennial review is overdue. We are considering this and have done so in the past.

If you have any questions concerning this response, please contact Robert G. Reed at (215) 814-5270.

Attachment

cc: Thomas Maslany (3WP00)  
Stanley Laskowski (3ES00)  
Carl Jannetti (3AI00)  
Jonathan Fox (4101)

## **Recommendations**

As noted in the draft report, the Assistant Administrator for Water is addressing the first two recommendations in Chapter 2.

### **Recommendation 2.3**

Send a Deficiency Notice to Maryland based on how the state implements their standards. The Department of Natural Resources (DNR) should either not require a sanitary survey to confirm contamination or perform the surveys whenever testing reveals elevated bacteria levels.

Response - On February 4, 1998, the Regional Administrator wrote to the Maryland Department of Environment (MDE) requesting development of a schedule for completing a triennial review of water quality standards. On March 2, 1998, the Region wrote to MDE to provide detailed guidance on 24 items for the triennial review and to ask MDE to “provide data that shows all use I waters are meeting the criteria in accordance with 40 CFR 131.11(a).”

On March 30, 1998, MDE wrote to the Regional Administrator providing a schedule for the triennial review including final adoption of water quality standards by August 1999.

### **Recommendation 2.4**

Rescind the approval of the Impaired List or assure that the additional monitoring promised by Maryland is promptly carried out.

Response - On April 17, 1998, the Region commented on Maryland’s draft list of impaired waters pursuant to Section 303(d) of the Clean Water Act (CWA). Our comments requested an explanation as to why certain waters which exceeded the numeric criteria for fecal coliform were not on the Impaired List. In a September 4, 1998 letter, MDE clarified its interpretation of its fecal coliform standard to support the decision that their data was insufficient to determine that the water violated the fecal coliform standard.

We determined that MDE’s interpretation was reasonable, particularly in light of the state’s commitment, by letter dated August 12, 1998, to allocate additional resources to monitoring where data was insufficient to make a testing determination. We agree that follow-up is necessary to ensure that the state follows through with this commitment. We do not concur with Recommendation 2.4 that EPA should rescind its approval of Maryland’s Section 303(d) list (Impaired List).

### **Recommendation 3.1**

Send Notices of Deficiency to each state in the Region clearly identifying the inadequate standards.

Response - We recommend that “Notices of Deficiency” be changed to lower case.

**Recommendation 3.2**

Coordinate with EPA Headquarters to promulgate standards if the states do not correct the deficiencies within the 90 days allowed by the CWA.

Response - This is technically incorrect. The CWA only requires that disapprovals be corrected within 90 days. There is no time limit for correction of identified deficiencies that are not disapprovals. We will try to get the states to address these deficiencies during the next triennial review.

**Recommendation 4.1**

Request the Administrator to initiate triennial reviews in Maryland, Delaware, the District of Columbia, Pennsylvania, and Virginia.

Response - We believe it would be more appropriate to state that the Administrator initiate a 303 (c)(4)(B) action. By specifying initiation of a triennial review, we neglect other options such as simply recommending that the Administrator make a finding of deficiency and promulgate appropriate standards.

**Recommendation 4.2**

Withhold a portion of Section 106 funding from any state whose triennial review is overdue.

Response - We have certain discretionary authority to award grants that condition grant funding upon the completion of certain activities and are considering doing so, and have done so in the past.

**Recommendation 5.1**

Prioritize water quality planning documents and emphasize their importance to Region personnel.

Response - No comment

**Recommendation 5.2**

Require states receiving grants under Section 106 of the CWA to develop and/or update required planning documents. When necessary, withhold funds from states that neglect to do so.

Response - We have discretionary authority to award grants that condition funding upon completion of certain activities and are considering doing so, and have done so in the past.

### **Recommendation 5.3**

Have Region III personnel trained in their responsibilities for ensuring the quality of environmental data.

Response - No comment

### **General Comments**

In addition to those comments directly responding to each recommendation, we have comments on the other portions of the draft report.

Generally, we agree with the OIG's recommendation and observation that the states have been lax in completing timely triennial reviews and remediating EPA disapprovals of state Water Quality Standards (WQS) submittal. Region III's efforts to move the states forward have not been successful. Region III has not used the escalation process to have the Administrator move to promulgate Federal standards or find those state standards deficient in accordance with Section 303(c)(4) of the CWA. The Administrator's promulgation of WQS for Pennsylvania was a major step in changing EPA's role in the states' WQS programs. We are aggressively attempting to remedy the outstanding WQS disapprovals and, in fact, this effort is a national priority.

-The Antidegradation Policy does not target improvements but is aimed at protecting existing water quality, including waters that do not meet standards as well as high quality and pristine waters.

-Tools available to the Region to compel a full triennial review, a revision of a Continuing Planning Processes (CPP) or a revision to approved standards are very limited. The capitalization of Notice of Deficiency appears to label it as a formal tool available to EPA. EPA has notified states regarding WQS which would be considered inadequate if submitted for approval. We expect states to address these deficiencies in the next triennial review. The Administrator decides if these deficiencies are worthy of Federal promulgation.

-There seems to be a misinterpretation on page 10 of the report. Delaware is reported as having 651 assessed miles with 84 miles impaired by bacteria. The 1996 S.305b report from Delaware actually shows 801 miles assessed with 548 miles or 68 percent impaired by bacteria. The reference in the report is "impairment of aquatic life support and primary recreation."

-We believe the section beginning on page 18, Deficiencies in Other States Within Region III is inaccurate for Delaware and West Virginia. EPA disapproved portions of Delaware's WQS in April 1998 and have agreed to promulgate Federal standards for those disapproved.

Although "42" problems were cited for West Virginia the number, itself, is not as significant as the importance of the individual provisions. There are significant differences in their importance.

-Page 20, Region III Position does not reflect one very important position, resource constraints. Resources are lacking both at Headquarters and Region III to undertake a promulgation when a state does not make the required changes. Federal promulgation is usually reserved for precedent-setting situations which require a complex analysis in order to be consistent with all other states.

-The Chapter 5 discussion of planning documents not being prepared or updated should take note of the fact that monitoring strategies were requested as part of the S.106 grant guidance and were not required (as specified on page 27), although several grants were conditioned to provide a monitoring strategy. Maryland's S.106 grant was conditioned to provide a monitoring strategy. It was never requested of Delaware because they had already assessed all of their waters, thereby alleviating the need. Virginia has just recently submitted a new draft monitoring strategy and we are currently working with West Virginia to include a more detailed monitoring strategy.

-The Summary of State Compliance Table in Chapter 5 also shows the status of submitted Quality Assurance Project Plans (QAPP). Contrary to the table, QAPP's were submitted by Delaware in 1991 and Virginia in 1992. The table should be revised, as well as the first sentence on page 28.

-It is inaccurate to state that the Region has been unwilling to enforce the states' responsibilities under the CWA and Federal regulations because it considered Quality Assurance Management Plans to be a low priority. Until FY 1998 most of the states have been sending QAPP's to EPA for review. The Water Protection Division has been working with the Regional Quality Assurance Manager to correct the deficiencies listed in the report.

-We agree that the water quality management planning process and associated documents required by the CWA are important. We disagree with the details in the Summary of State Compliance Table on page 25. The report shows that none of the states have Water Quality Management Plans. We strongly disagree. We do not believe that a state's "Water Quality Management Plan" is embodied in a single document but, rather an overall process which includes many different components. All states have recently completed Unified Watershed Assessments as part of the Clean Water Action Plan to establish priorities in cooperation with a broad range of state and Federal agencies.

### **GLOSSARY COMMENTS**

- |                         |   |  |
|-------------------------|---|--|
| Anti-degradation Policy | - | The definition should be clarified to read that not just <u>improvements</u> to water quality are protected, but the existing quality.   |
| Designated Use          | - | We suggest the following change, “The use of a water body designated by state regulations that include, at a minimum, drinking water protection of aquatic life and recreation (i.e., swimming, boating or white water rafting).” The minimum uses as defined by the CWA, Section 101 are limited to fishable and swimmable uses. The drinking water use is required where the use actually occurs or can, at the discretion of state, be applied statewide. |
| Notice of Deficiency    | - | We agree with the intent but not the way it is portrayed throughout the report. The capitalization implies that it is a formal process under a statute or regulation. Failure to issue such letters should not imply a violation of statute or regulation.   |
| Toxic Pollutants        | - | The second sentence should be modified, as follows:<br>“States are required to adopt specific numeric criteria for these pollutants that are at least as stringent as EPA criteria recommendations or provide a scientifically defensible rationale for a less stringent criteria.”  |

### **Additional Specific Comments**

- |                                       |   |   |
|---------------------------------------|---|---|
| Chapter 1, Page 2, 3rd full paragraph | - | We count 102 toxic pollutants with EPA criteria recommendations. We suggest that it should be <u>38</u> other pollutants. We recommend that limits be changed to “criteria” and stringent be changed to “protective.”   |
| Chapter 3, Page 16, 1st paragraph     | - | We are concerned that the wording concerning criteria could be confusing. We suggest the following modification: “Section 303(c)(2)(B) of the Clean Water Act requires the states to adopt criteria for all toxic pollutants pursuant to Section 307(a)(1) of the Clean Water Act for which EPA has published criteria under Section 304(a ), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the state.” |



Page 17

- “Incorrect Criteria for Toxic Pollutants”  
Because of EPA revisions in 1996 some of EPA’s recommended metals criteria are now less stringent than Maryland’s criteria. We recommend that the following revision be made. “The net effect is that the numeric levels set by Maryland may be less stringent than the levels currently recommended by EPA. Consequently, the state’s standards may allow more pollution...”

Page 18, Delaware

- We recommend this section be rewritten, as follows: “In 1993, EPA identified a number of deficiencies with Delaware’s water quality standards program. After five years of discussion between the state and the Region, many of the deficiencies still remain unresolved. In April 1998, the Region finally sent a letter to the state disapproving four provisions of the standard and identifying a number of provisions that the Region intends to recommend that the EPA Administrator find deficient and promulgate replacement standards should the state not make the recommended corrections.”

Page 19, West Virginia

- We believe this misrepresents our letters to the state, especially the use of definitive numbers of “problems.” In response to the West Virginia WQS Triennial Review submitted October 12, 1993, EPA identified four sections of the West Virginia standards which were being disapproved due to inconsistencies with Federal regulations. In addition, four sections were conditionally approved and four recommendations were made to allow the state to further clarify the intentions of these sections. Recommendations made to the state are in no way considered deficiencies but are comments meant to assist the state in providing further clarification and consistency.

Based on the next Triennial Review package on August 11, 1995, EPA was able to fully remove two of four disapproved sections from 1993. Of the remaining two issues, we were able to partially remove the disapprovals.

We are currently reviewing the state’s 1998 Triennial Review and it is premature to indicate what provisions will be found deficient.

- Page 20, Region III Position - There is one position we believe was proffered during interviews that is not reflected in this section. We suggest the following be added: “The regions and Headquarters lack the resources, both in terms of personnel and funding, necessary to undertake a promulgation when the state does not make the required changes.”
- Chapter 4, Page 21,  
Triennial Reviews Chart - Two changes needed to the chart. West Virginia submitted a review package in July 1998 and Virginia submitted a package in August 1998.
- Page 23, District of Columbia - The District has informed EPA that the final triennial review package will not be submitted until at least fall '99.
- Page 23, Pennsylvania - It would be more correct to say that Pennsylvania personnel were occupied with the Regulatory Basics Initiative, including modification to the water quality standards regulations which are intended to constitute a triennial review.
- Chapter 5, Page 25,  
Summary of State Compliance  
Table - On July 13, 1998, Maryland provided public notice of its intent to revise its CPP and invited public comment. MDE agreed to update its CPP and transmit it to EPA on or before October 1, 1999.
- Page 27, Quality Assurance - Under “Management Plans” it should be noted that prior to FY '97 Quality Assurance Management Plans were entitled, “Quality Assurance Program Plans,” which were approved by the Environmental Services Division (ESD). In the early 1990's ESD disinvested in this review and it became the project officer's responsibility to review Quality Assurance Program/Project Plans. Project officers in all EPA programs were assigned responsibility, but ESD did not provide any training.

All of the states were represented at the Quality Assurance Management Plan training in April 1998. Several have committed to submit their plans for review to the ESD Annapolis Office by mid-December. Plans have been made to train EPA project officers in the states on the same review.

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

SUBJECT: Draft Report of Audit on Region III Water Quality  
Standards, Monitoring and Reporting -  
November 25, 1998

December 17, 1998

FROM: Thomas J. Maslany, Director  
Water Protection Division (3WP)



TO: Thomas J. Gallagher (3PM70)

The Water Protection Division has reviewed the subject draft report. We spent significant time with the staff from the Office of the Inspector General (OIG) on this audit and appreciate the effort spent learning the complex and challenging details of the water quality standards (WQS) program. We have a number of corrections and clarifications to the language in the report, which are included as an attachment to this memo. The comments in the attachment are arranged in the order that they appear in the report and do not reflect order of importance. We will highlight below our more significant comments.

Generally, we agree with the OIG's observation that the States have been lax in completing timely triennial reviews and remedying EPA disapprovals of State WQS submittals, and Region III's efforts to date have not been successful in moving the States forward. Likewise, EPA Region III has not used the escalation process to have the Administrator of EPA move to promulgate Federal standards or find those State standards deficient in accordance with Section 303(c)(4) of the Clean Water Act. The EPA Regional Administrator's authority is limited to approving or disapproving those water quality States which are new or revised and submitted to EPA by the State for review after formal adoption as State law. The role and importance of Federal promulgations have increased significantly over the past five years. The Administrator's promulgation of WQS for Pennsylvania was a major step in changing the nature of EPA's role in the States' water quality standards programs. We are aggressively attempting to remedy the outstanding WQS disapprovals and, in fact, this effort is a national priority.

The Antidegradation Policy is represented as a policy that protects water quality improvements. This is incorrect. The Antidegradation Policy is a three-tiered policy that is targeted at protected existing water quality from being lowered, including waters that do not meet standards as well as high quality and pristine waters.

The processes available to the Region to force the States to complete a full triennial review, submit a revised Continuing Planning Process (CPP), or revise standards that have been previously approved is very limited. The OIG uses the term “Notice of Deficiency” throughout this report. The capitalization appears to represent that the Notice of Deficiency is a formal tool available to EPA Region III through regulation or statute. As a matter of practice, EPA Region III has notified states of those areas of a State’s WQS regulations which have been approved or overlooked by EPA in the past but which would not be considered adequate if the regulations were submitted to EPA Region III for approval today. At a minimum, we would expect the States to address these deficiencies in the next triennial review. The decision on whether these deficiencies are worthy of formal action through Federal promulgation rests with the Administrator.

We believe that the section beginning on page 18 entitled “Deficiencies in Other States Within Region III,” is inaccurate, specifically for Delaware and West Virginia. EPA disapproved portions of Delaware’s WQS in April 1998 and we have reached agreement with Delaware to move ahead on a cooperative to promulgate Federal standards to replace those which were disapproved. It should be noted for West Virginia that the reference to “42 problems” implies that there is some relative weight assigned to the number of specific provisions which are considered unacceptable. In fact, there are significant differences in importance of the individual provisions. Also, the large number of items disapproved also reflects that, several years ago, EPA Region III would have acted to disapprove State WQS provisions which had been previously approved by EPA and not revised. This limitation on Regional authority has recently been clarified at the national level.

In Chapter 3 under “Region III Position,” we believe that there was one very important position, resource constraints, that was presented during interviews that is not reflected in this section. The Regions and Headquarters lack the resources, both in terms of personnel and funding, necessary to undertake a promulgation whenever the State does not make the required changes. Federal promulgation for an individual State by the Administrator also requires a complex analysis for consistency with all other States, since the Administrator’s promulgation is usually precedent-setting at a national level. Federal promulgation is usually reserved for very serious situations where the national interpretation is clear, independent of the context within individual State standards.

Regarding Maryland’s bacteria criteria and its implementation, we agree that there are concerns, but do not concur with Recommendation 2.4 that EPA should rescind its approval of Maryland’s Section 303(d) list (referred to as the Impaired List).

Recommendation 3.2 is technically incorrect. The Clean Water Act only requires that disapprovals be corrected within 90 days. There is no time limit for corrections of

identified deficiencies that are not disapprovals, although we try to get the States to address these deficiencies during the next triennial review.

Regarding Recommendation 4.1, we believe it would be more appropriate to state that the Administrator initiate an action under Section 303(c)(4)(B) of the Clean Water Act. By specifying initiation of a triennial review, we neglect other options such as recommending that the Administrator make a finding of deficiency and promulgate appropriate standards.

Regarding the adoption and implementation of bacteria criteria, we agree that there are inconsistencies among the States, but expect EPA Headquarters to address the findings and recommendations in the Report regarding bacteria.

It is inaccurate to state that the Region has been unwilling to enforce the States' responsibilities under the Clean Water Act and Federal Regulations because it considered Quality Assurance Management Plans to be a low priority. Until FY '98, most of the States have been sending Quality Assurance Project Plans to EPA for review. The Water Protection Division has been working with the Regional Quality Assurance Manager to correct the deficiencies listed in the audit report.

We agree with the OIG's conclusion that the water quality management planning process and associated documents and processes required by the Clean Water Act are important. We have, as part of several memoranda of agreements with the States, negotiated commitments by the States to update their Continuing Planning Processes. We do not, however, agree with the details in the table entitled "Summary of State Compliance" on page 25 of the report. Our comments are described in the attachment to this memorandum.

Regarding recommendations 4.2 and 5.2, we agree that we have certain discretionary authority to award grants that condition grant funding upon the completion of certain activities and are considering doing so, and have done so in the past.

Our comments do not address Recommendations 2.1 and 2.2 of the draft report. Since these recommendations are being made to the Assistant Administrator for the Office of Water, we rely on that office to provide any response to these recommendations, or the data the OIG used to make its conclusions.

We look forward to concurring on the final response to the OIG on the draft audit. We suggest that once the OIG has the opportunity to review the response that we schedule a meeting with their office so that we may discuss our comments. We did note that similar audits are being conducted in Regional offices around the country, and we would appreciate being kept apprised of the findings that the OIG is making nationally. If you have any questions regarding the Division's comments, please contact Evelyn S. MacKnight of my staff at extension 5717.

Attachment

cc: Stanley L. Laskowski (3ES00)  
Christopher Day (3RC20)  
Stefania Shamet (3RC13)  
Tudor Davies (EPA-HQ OST)  
Elizabeth Southerland (EPA-HQ OST)

**Water Protection Division**  
**Comments on the Office of Inspector General Draft Report of Audit on Region III**  
**Water Quality Standards, Monitoring, and Reporting**

Glossary

Antidegradation Policy: This definition implied that this policy ensures that water quality improvements are protected. This is incorrect, it is not just the improvements to water quality that are protected, but the existing quality. It may be necessary to clarify that “existing uses” means those uses actually attained in the water body on or after November 28, 1975.

Designated Use: We suggest the following language be substituted in order to clarify this definition: “The use for a water body designated by State regulation that include, at a minimum, protection of aquatic life and recreation (i.e., swimming, boating or white water rafting), and may include such uses as drinking water protection.” The minimum uses to be protected as defined by the Clean Water Act Section 101 are limited to “fishable and swimmable” uses. The drinking water use is required where the use actually occurs or can, at the discretion of the State, be applied Statewide.

Notice of Deficiency: The Water Protection Division agrees with the general intent of this term, but can not agree with the way the term is portrayed throughout this report. By capitalizing this term in the report (where it appears outside of the Glossary), it implies that this is a formal process under the water quality standards statute or regulation. Whereas we agree with the recommendation from the OIG that such a letter should be utilized to notify States of inadequacies in WQS regulations which should be changed, failure by the Region to issue such letters should not imply a violation of statute or regulation.

Toxic Pollutants: The second sentence should be modified to read as follows: “States are required to adopt specific numeric criteria for these pollutants that are at least as stringent as EPA criteria recommendations, or provide a scientifically defensible rationale for a less stringent criteria.

Chapter 1

Page 2, first full paragraph. This paragraph should be modified to reflect our comment on the term Designated Use above.

Page 2, third full paragraph. In the first sentence, we count 102 toxic pollutants with EPA criteria recommendations, and we would suggest that “30 other pollutants” be changed to

“approximately 38 other pollutants.” The use of the term “limits” can be confusing. “Limits” is used more often to describe the number which results when criteria are implemented in National Pollutant Discharge Elimination System (NPDES) permits, i.e., water quality-based effluent limits. We would recommend that “limits” be changed to “criteria”. In the last sentence, in order to reflect our comments on the term Toxic Pollutants above, we recommend that “stringent” be changed to “protective.”

## Chapter 2

Page 14, Recommendation 2.3. On February 4, 1998, the EPA Regional Administrator wrote to Maryland Department of the Environment (MDE) Secretary asking that MDE develop a schedule for completing a triennial review of water quality standards. On March 2, 1998, the Region provided a letter under the signature of Patricia Gleason, the chief of the MD/DC Branch in the Office of Watersheds providing to MDE guidance on 24 items for the triennial review; these items included an antidegradation policy and implementation procedures, correction of dissolved metals criteria, inclusive toxic criteria, and review of designated uses. The Region enclosed detailed guidance material on many of the 24 items. We also provided guidance for adoption of E.Coli and enterococci bacteria standards and asked for clarification of MDE’s current bacteriological water quality standards. Specifically, the March 2, 1998 letter asked MDE to provide data that shows all use I waters are meeting the criteria in accordance with 40 CFR 131.11(a).

On March 30, 1998, J. L. Hearn of MDE wrote to the Regional Administrator providing a schedule for the triennial review; this schedule called for final adoption of water quality standards by August 1999. Various conference calls were held with MDE to discuss their progress on the review from April 1998 to November 1998. On September 22, 1998, MDE wrote EPA providing responses to nine of the technical items for review. On November 18, 1998, MDE announced public hearings to be held on January 19, 21, and 26, 1999 for the purpose of reviewing applicable Water Quality Standards.

Page 14, Recommendation 2.4. On April 17, 1998, the Region provided comment on Maryland’s draft list of impaired waters pursuant to Section 303(d) of the CWA. Among other comments, EPA noted that 1995 STORET fecal coliform data indicated certain waters exceeding paragraph (b) of its numeric criteria, *i.e.*, greater than 10% exceedance of the numeric criterion of 400 MPN/100 ml. Our comments requested clarification or an explanation as to why those water bodies were not listed as impaired for fecal coliform. On September 4, 1998, in a letter from Michael S. Haire, Director of Technical and Regulatory Services Administration, MDE clarified its interpretation of its fecal coliform standard. MDE informed the Region that it interpreted paragraph (b) of its fecal coliform numeric criterion as requiring no less than five samples collected within a 30-day period,



to account for variability in sampling and statistical estimation. Where less than five samples were collected, MDE determined that the data was insufficient to support a determination that the water violated the fecal coliform standard.

Section 303(d)(1)(A) requires the State to identify waters for which technology-based limits are insufficient “to implement any water quality standard *applicable* to such waters.” In compiling its list, the State must consider existing and readily available data. Under Section 303(d)(2), EPA must approve or disapprove the list. If EPA disapproves the list, it must identify such waters to the extent necessary “to implement the water quality standards *applicable* to such waters.” Maryland considered the 1995 STORET fecal coliform data, but determined not to rely exclusively upon that data for a determination of impairment.

We believe that Section 303(d) is not an appropriate vehicle for disputing the appropriateness of specific State water quality standards. The appropriate vehicle for rectifying concerns regarding the appropriateness of a State water quality standard is EPA’s authorities under Section 303(c). We also believe, consistent with informal guidance provided by the national TMDL program, that it is appropriate for the State to base its listing determination on its interpretation of its own standard. We accepted Maryland’s interpretation that a determination of impairment should not be based on a single sample as reasonable, particularly in light of the State’s commitment, in a letter dated August 12, 1998, to allocate additional resources to monitoring where data was insufficient to make a listing determination. We agree that follow-up is necessary to ensure that the State follows through with this commitment.

### Chapter 3

Page 15, second paragraph. Please see our comments on “Notices of Deficiency” under Glossary.

Page 15, (1) under “Water quality standards consist of three elements”. Please see our comments on “Designated Use” under Glossary.

Page 15, (3) under “Water quality standards consist of three elements”. Please see our comments on “Antidegradation Policy” under Glossary. We suggest that the language here be modified to read “...to ensure that existing water quality is conserved, maintained and protected.”

Page 16, first paragraph of “Missing Criteria for Toxic Pollutants”. We are concerned that the wording concerning criteria could be confusing. In the third sentence, it reads that the Clean Water Act requires the States to have criteria at least as equal to EPA recommended criteria. This could have two meanings. One, which we believe is not the

OIG's intention in this context, is that the criteria has to be set equal to EPA criteria. The other, which would be correct, is that a state must adopt criteria for all toxic pollutants for which EPA has published criteria. If we are correct in our assumption, we suggest the following modification: "Section 303(c)(2)(B) of the Clean Water Act requires the States to adopt criteria for all toxic pollutants pursuant Section 307(a)(1) of the Clean Water Act for which EPA has published criteria under Section 304(a), the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the State." States, including Maryland, have used the lack of evidence that specific toxic pollutants would not be expected to interfere with designated uses to justify adoption of those criteria.

Page 17, "Incorrect Criteria for Toxic Pollutants". EPA published some updates to criteria in 1996, and that included revisions so that some of EPA's recommended metals criteria is now less stringent than Maryland's criteria. Because of these revisions, we recommend that starting with the third paragraph, the following changes be made: "The net effect is that the numeric levels set by Maryland may be less stringent than the levels currently recommended by EPA. Consequently, the State's standards may allow more pollution..."

Page 18, Maryland Summary. In the last sentence, we recommend that "Notices of Deficiency" be presented in lower case.

Page 18, Delaware. As written, this section is not entirely accurate. We recommend this section be rewritten as follows: "In 1993, EPA identified a number of deficiencies with Delaware's water quality standards program. After five years of discussion between the State and the Region, many of the deficiencies still remain unresolved. In April 1998, the Region finally sent a letter to the State disapproving 4 provisions of the standards, and identifying a number of provisions that the Region intends to recommend that the EPA Administrator find deficient, and promulgate replacement standards should the State not make the recommended corrections."

Page 19, West Virginia. We believe this section misrepresents our letters to the State, especially the use of definitive numbers of "problems". In response to the West Virginia Water Quality Standards Triennial Review submitted October 12, 1993, EPA identified 4 sections of the West Virginia standards which were being disapproved due to inconsistencies with Federal regulations. In addition, 4 sections were conditionally approved and 4 recommendations were made to allow the state to further clarify the intention of these sections. Recommendations made to the state are in no way considered deficiencies but are comments meant to assist the state in providing further clarification and consistency.

West Virginia submitted its next Triennial Review package on August 11, 1995. In our review, EPA was able to fully remove 2 of the 4 disapproved sections from 1993. Of the

remaining two issues, we were able to partially remove the disapprovals (e.g., the state had adopted variance, site-specific criteria and use removal policies, but the variances and site-specific criteria that existed in the standards regulation needed to be reviewed in order to assess whether these provisions met the requirements of the new policies).

We are currently reviewing the State's 1998 Triennial Review submission, and at this point it is premature to indicate what provisions will be found deficient. West Virginia did correct a number of issues that we have brought to its attention in our letters. In addition, we are unaware of what two deficiencies remain from 1993. We assume that one is Antidegradation, but we did conditionally approve the State's Antidegradation policy in 1995, approval being conditional upon submittal of an implementation procedure.

Page 20, Region III Position. There is one position that we believe was proffered during interviews that is not reflected in this section. We suggest that the following be added: "The Regions and Headquarters lack the resources, both in terms of personnel and funding, necessary to undertake a promulgation when the state does not make the required changes."

Page 20, Conclusion. In the last sentence, we recommend that "Notices of Deficiency" be changed to lower case.

Page 20, Recommendations. In Recommendation 3.1, we recommend that "Notices of Deficiency" be changed to lower case. Recommendation 3.2 is technically incorrect. The Clean Water Act only requires that disapprovals be corrected within 90 days. There is no time limit for corrections of identified deficiencies that are not disapprovals.

#### Chapter 4

Page 21, Triennial Reviews Chart. Two dates need to be updated in this chart. West Virginia submitted a triennial review package in July 1998. Virginia submitted a package in August 1998.

Page 23, District of Columbia. The District has informed us that the final triennial review package will not be submitted until at least Fall 1999.

Page 23, Pennsylvania. It would be more correct to say that Pennsylvania personnel was otherwise occupied working on the Commonwealth's Regulatory Basics Initiative (RBI), which constitutes major revisions to its environmental regulations, including the water quality standards regulation. The modifications to the water quality standards regulation are intended to constitute a triennial review.

Page 24, Recommendation 4.1. We believe it would be more appropriate to state that the Administrator initiate a 303(c)(4)(B) action. By specifying initiation of a triennial review, we neglect other options such a simply recommending that the Administrator make a finding of deficiency and promulgate appropriate standards.

## Chapter 5

Page 25, Summary of State Compliance Table, Water Quality Management Plan. The report lists none of the States have Water Quality Management Plans. We strongly disagree with this statement. The State's Water Quality Management Plan does prioritize water quality problems, consider solutions, and recommends remedies; however, we do not believe that it is embodied in a single document, but rather an overall process which includes many different components. In fact, all States have recently completed Unified Watershed Assessments as part of the Clean Water Action Plan to establish priorities in cooperation with a broad range of State and Federal agencies.

Page 25, Summary of State Compliance Table. On July 13, 1998, Maryland provided public notice of its intent to revise its CPP and invited public comment. As part of the Memorandum of Understanding between MDE and EPA Region III regarding Sections 303(d) and 303(e) of the Clean Water Act, MDE agreed to update its CPP and transmit it to EPA on or before October 1, 1999.

Page 27, Quality Assurance. Under Management Plans , it should be noted that prior to FY '97, Quality Assurance Management Plans were entitled Quality Assurance Program Plans (QAPPs), which all the states submitted back in the mid 1980's. These QAPPs were approved by the Region III Environmental Services Division (ESD) at that time. Sometime in the early 1990s, ESD disinvested in this review and stated that it was now the Project Officer's responsibility to review Quality Assurance Program/Project Plans (QAPjPs). Project Officers in **all** EPA programs were in the same situation and were not provided with any training by ESD to carry out this task. Also, it was never brought to anyone's attention that the Program Plans expired after a certain amount of time.

All of the States were represented at the Quality Assurance Management Plan training in April of 1998. Several of the States have committed to send in their Quality Assurance Management Plans to Diann Sims in our ESD Annapolis Office for review by mid-December. Also, she is planning to train the EPA Project Officers sometime in the spring on how to review a Quality Assurance Project Plan. After training of the Project Officer's is complete, she then plans to go back to the States and train them on the same review.

It is an inaccurate statement that the Region has been unwilling to enforce the States' responsibilities under the Clean Water Act and Federal Regulations because it considered these documents to be a low priority. Up until FY '98, most of the states **have been** sending in Quality Assurance Project Plans to EPA for review. The Water Protection Division has been working with Diann Sims and the Regional Quality Assurance Council **since October, 1997** to complete the above-mentioned tasks and correct the deficiencies listed in the audit report.

[This page was intentionally left blank.]

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

SUBJECT: Draft Report of Audit on Region III Water Quality  
Standards, Monitoring and Reporting

12/17/98

FROM: Stanley L. Laskowski, Dir  
Environmental Services Di



TO: Robert G. Reed, Jr., Chief  
Grants and Audit Management Branch (3PM70)

This is in response to the request from the Office of the Inspector General for comments on their draft Report of Audit on Region III Water Quality Standards, Monitoring and Reporting (Audit Report). In general, we agree with the recommendations to the Regional Administrator specified in the Audit Report. However, there did appear to be a few points which could use some clarification.

One example is Recommendation 2.1, "Delete the option that allows States to use fecal coliform as a criteria for reporting bacteria impairments." If a State has a fecal coliform standard already in place, it would be difficult to justify and probably legally indefensible to base impairment decisions for both S. 303d and 305b on a different, unadopted criterion. The State should be able to use its fecal coliform standard until a new indicator is adopted. However, every effort should be made to get the States to update their bacteriological standards.

There also seems to be a misinterpretation on page 10 of the Audit Report. Specifically, Delaware is reported as having assessed 651 miles, with 84 miles impaired by bacteria. The 1996 S. 305b report from Delaware actually shows 801 miles of streams assessed, with 548 miles, or 68%, impaired by bacteria. I believe the reference specified in the Audit Report is the impairment of aquatic life support and not primary recreation.

Other issues involve Chapter 5 which discusses planning documents not prepared or updated. It should be noted that monitoring strategies were **requested** as part of the S. 106 grant guidance and not required (as specified on page 27), although several grants were conditioned to provide a monitoring strategy. Maryland's S.106 grant was conditioned to provide a monitoring strategy, and we are currently working through the Performance Partnership Grant Program to induce Maryland to provide a strategy document. A monitoring strategy was never requested from Delaware due to the fact that they already assessed all of their waters, thereby alleviating the need for a comprehensive strategy. Virginia has just recently submitted a new draft monitoring strategy, and we are currently working with West Virginia to update their Watershed Assessment Program to include a more detailed monitoring strategy. The Summary of State Compliance Table in Chapter 5 also shows the status of submitted Quality Assurance Project Plans (QAPP). Contrary to the information shown in the table, however, QAPP's were

submitted by Delaware in 1991 and Virginia in 1992. This table, as well as the first sentence on page 28, "Delaware and Virginia did not submit Quality Assurance Project Plans," should be revised to correspond to the current status.

Overall, we agree with the conclusions and recommendations of the Audit Report. We are continuing to work on the short-comings identified.



## Maryland Response to Draft Report

[This page was intentionally left blank.]



# MARYLAND DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway Baltimore Maryland 21224  
(410)631-3000 1-800-633-6101 <http://www.mde.state.md.us>

Parris N. Glendening  
Nishida  
Governor  
Secretary

Jane T.

January 29, 1999

Mr. Carl A. Jannetti  
Divisional Inspector General for Audit  
USEPA  
Office of the Inspector General  
Mid-Atlantic Division  
1650 Arch Street  
Philadelphia PA 19103-2029

Dear Mr. Jannetti:

Thank you for the opportunity to comment on the Draft Report of Audit on Region III Water Quality Standards, Monitoring, and Reporting (EIHWF7-03-0160). Our detailed comments and concerns regarding the audit report are enclosed.

Many issues raised in the audit findings are being addressed as part of Maryland's current Triennial Review and other on-going regulatory processes. Other issues raised in the audit findings are based on incomplete information or incorrect interpretations of the information provided to the auditors and clarification is offered here.

The enclosed response to the draft audit report was developed in coordination with the Maryland Department of Natural Resources (DNR) and represents the combined comments of both agencies.

We hope that this letter and the enclosed detailed responses will be incorporated in the audit report and forwarded with the finding of the OIG to Region III. If you have any questions about our comments or plans, please call me at 410-631-3680 or Richard Eskin, of my staff at 410-631-3691.

Sincerely,

Michael S. Haire, Director  
Technical and Regulatory Services Administration

Enclosures

cc: Jane Nishida, Secretary, Maryland Department of the Environment  
Robert Hoyt, Assistant Secretary, Maryland Department of the Environment  
J.L. Hearn, Director, Water Management Administration  
Paul Massicott, Director, Resource Assessment Service, DNR  
Richard Eskin, Program Manager, Technical & Regulatory Services  
Administration, MDE

**Response by the Maryland Department of the Environment to the Draft Report of Audit  
on  
Region III Water Quality Standards, Monitoring, and Reporting  
Audit Report Number EIHWF7-03-0160**

**Chapter: Bacteria in Water Not Assessed or Reported**

There were several findings in this section related to adoption of EPA recommended criteria for bathing beaches, proper in implementation and interpretation of standards, differences between the Water Quality Inventory Report (the Report) and the List of Impaired Waters (the List), and whether waters with data not adequate to apply the standard should be listed as impaired. The section closed with recommendation to modify the standards or the current implementation and to revise the list.

Most of these issues have been addressed by better coordination and communication between MDE and DNR in the development of the Report and List, or are being addressed through the Triennial Review. We agree that the bacteriological criterion needs to be revised and that monitoring for bacteria needs to be modified to better implement the standard. We disagree with the assertion that Maryland's standards are less protective than those recommended by EPA and with the finding that additional waters should be added to the List of Impaired Waters.

**Finding: Maryland did not adopt the federal bacteriological criteria.**

**Response:** Maryland does not agree with the auditors' statement that Maryland's standard is less protective than the EPA recommended criteria. Only a few states have adopted EPA's 1986, *Ambient Water Criteria for Bacteria*, while the rest continue to use a fecal coliform standard, similar to Maryland's.

First it is important to note that EPA did not intend that the recommended criteria using the enterococcus and *E. coli* indicators be implemented in shellfish harvesting waters. EPA states "With the exception of shellfish harvesting waters which must relate to shellfish sanitation guidelines and FDA marketplace requirements, EPA believes that all other waters that are classified for primary contact could benefit from the application of the revised criteria" (Fed. Reg, Vol. 51 No. 45 p. 8013). Consequently, the areas in Maryland where this recommended criteria might be applicable are those waters designed as Use I, III, or IV waters. We are looking at the appropriateness of adopting such criteria for those waters during the current triennial review. The FDA requires that all states which deal in interstate commerce of shellfish use the fecal coliform standard that Maryland currently has in its regulations.

Furthermore, the beaches at which EPA conducted its Studies to develop the enterococcus, and *E. coli* indicators recommended in the 1986 report were subject to raw sewage from a plant serving a population of 100,000 people. Similar situations do not occur anywhere in Maryland since at least secondary and nearly always tertiary treatment has been implemented at Maryland plants. Given Maryland's record with the absence of bathing beach illness and the fact that the enterococcus and *E. coli* indicators have not been widely adopted by other states, it is not clear that the public health would be better protected by using these new indicators.

Maryland's current fecal coliform standard and EPA's 1986 criteria both utilize nonpathogenic organisms consistently present in the feces of all warm-blooded animals. As surrogates of pathogenic organisms, use of either indicator has similar limitations. Maryland has emphasized prevention as the most critical component to protect public health. The sanitary survey component of Maryland's regulations is designed to prevent and abate pollution sources of human health significance. In addition, the OIG auditors may not have understood that, in addition to sanitary surveys conducted by this Department for shellfish, local governments have delegated authority for bathing beaches and monitor for fecal coliform and conduct sanitary surveys when elevated counts are observed. In addition, sanitary surveys are conducted, generally by local health departments, to evaluate the presence of failing septic systems and the need for sewer hookups.

However, through the Triennial Review, Maryland will explore the feasibility of adopting a fecal coliform standard using the enterococcus and *E. coli* indicators in primary contact waters. MDE will discuss this issue with the County Environmental Health Directors since the counties have delegated authority for permitting beaches. MDE will use their input and experience to determine whether to implement these standards.

**Finding: Maryland did not properly implement its own standards, or follow EPA guidance when assessing and reporting impaired water bodies.**

**Response:** Maryland has consistently applied its current interpretation of the bacterial water quality regulations for many years, with the approval of EPA. Given Maryland's excellent public health record related to both bathing beaches and shellfish, this program has been protective. Nevertheless, based on comments received from EPA in its review of the 1998 List of Impaired Waters, MDE has agreed with EPA that a review of the bacterial contamination regulations and bacterial sampling protocols is warranted and will be pursued in the ongoing Triennial Review process.

Maryland's fecal coliform standard is composed of both a numerical measurement and a sanitary survey. The numerical measurement is determined by estimating the Most Probable Number (MPN) of fecal coliform. The MPN is not a direct count, but is a statistical estimation subject to a high degree of variability. The water quality standard requires a minimum of five samples taken during a 30-day period in order to account for the inherent variability of the indicator. In addition, the regulations include a provision whereby a sanitary survey that confirms the absence of a source of human pathogens can be used to supercede fecal coliform measurements. Given the inherent variability of the fecal coliform indicator, Maryland has historically relied on both sanitary surveys and fecal coliform measurements for decisions on closing the water for primary contact uses. If the closure is related to a technical problem (e.g. failing septic systems, cracked sewer line), steps are taken to correct the problem. If however, the technology-based limitations cannot correct the violation of the bacteriological standard, this closed water segment is then determined to be impaired and added to the State's 303(d) list. As noted above, although this Department does not do statewide sanitary surveys, except for shorelines, local health Departments do conduct the surveys, both for enforcement of bathing beach standards and to survey needs with respect to septic systems.

It is unclear to what the OIG is referring in reference to the statement that Maryland "[did not] follow EPA guidance when assessing and reporting water bodies." If this statement refers to the use of the fecal coliform standard, as noted above, Maryland, and most other states have not adopted EPA guidance related to their choice of indicator organisms. If the OIG means that Maryland disagreed with the Region's interpretation of the data, that is correct. This issue is explained more fully below.

**Finding: Two state agencies use different interpretations of the State's criteria to determine if water bodies are impaired. However, neither interpretation implements the State's criteria as written. As a result Maryland did not report 62 water bodies that had elevated bacteria levels on its Assessment Report or 185 bodies that had elevated bacteria levels on its Impaired list.**

**Response:** MDE is responsible for the submission of Maryland's official List of Impaired Waters that is submitted to EPA as required by Section 303(d) of the Clean Water Act, following a thorough public review procedure. Although MDE consults with DNR in the development of the list, MDE is the delegated agency in defining water quality limited segments (i.e., impairments) for Maryland. In the past, there has been some inconsistency between the agencies' interpretation of the criteria in developing the Section 305(b) Water Quality Assessment report and the 303(d) List. We are currently addressing the issue so that it will not be a problem in the future.

There also seems to be some confusion in the OIG report with regard to bacteriological standards. The audit excerpt cites the criterion for the contact recreation use (COMAR §26.08.02.03-3A(1)) and then goes on to discuss DNR's interpretation for "permitted beaches" which is addressed separately in COMAR (§26.08.09.06). The excerpt then describes the process used by approving authorities to interpret the State's water contact criterion for permitted bathing areas. The approach taken by EPA OIG is incorrect in that it confuses two different standards. In most cases the approving authorities for bathing beaches are the County Health Departments, which do both the sampling and the sanitary surveys before opening beaches. Beaches are closed if they are impaired based upon the standard found at COMAR §26.08.09.06.

**Finding: The Region notified Maryland of 185 water bodies contaminated for bacterial contamination. When Maryland asserted that there was insufficient data for these water bodies to be added to the list, the Region acquiesced with the State's promise to do additional testing.**

**Response:** MDE and the Region discussed this issue extensively. We went through the Region's concerns on a case-by-case basis and provided a decision rationale or justification in each and every case (enclosure). MDE conceded locations where the case could be made that an impairment exists and added these waters to the 1998 303(d) list. The Region conceded locations where the case for an actual impairment was not supportable. This was a positive decision that has led to improvements in Maryland's program, completely protected public health, yet did not inappropriately list water body segments as impaired if they were not. Consequently, given the thorough analysis provided, we strongly disagree with the conclusion that additional waters should be added at this time.

## Chapter: Deficient Standards Were Not Corrected

**Finding. Deficiencies in Maryland's water quality standards-Missing criteria for toxic pollutants.** According to PCS there are 62 toxic pollutants listed in Section 307(a) that are discharged, or are present in State waters and can reasonably be expected to interfere with designated uses for which dischargers are required to test, but Maryland has numeric criteria for only 20 of those pollutants.

### Response:

Maryland has evaluated the list of substances provided by the OIG. Of the 62 substances alluded to by the OIG, Maryland has water quality standards for 24 substances. For those substances for which Maryland has not adopted water quality standards, MDE generally employs EPA's recommended criteria in their decision making process. For a few facilities, MDE uses its best professional judgement for those substances for which no Maryland water quality standard or EPA recommended criteria exist. For such substances, MDE will generally evaluate the need to develop criteria in accordance with environmental and public health needs and the requirements of the Clean Water Act.

Furthermore, the OIG may have misinterpreted Section 307(a) for the following reasons;

1. Just because a permit requires monitoring for a pollutant, it does not mean the pollutant is always present. Sometimes we require monitoring by a permittee to verify that a particular pollutant is not present.
2. If the pollutant is present in an individual facility's discharge, the law does not automatically require the adoption of a criterion. Federal regulations are specific that such action must take place only if priority pollutant toxics are adversely affecting water quality or if they are present at a level, to warrant concern (CFR 131.11(a)(2)). Professional judgement must be applied to make that determination and confirmed by monitoring.
3. If a pollutant is limited in a permit, it does not mean it is a concern to water quality in Maryland waters. It may be a technology-based limit required under federal guidelines for that industry even if the pollutant is not known to be present in the permittee's wastewater or Maryland waters.
4. EPA has criteria for 99 priority pollutant toxic substances. Only 30 of these include aquatic life criteria. Maryland has criteria for 24 of these 30 substances.<sup>1</sup> The remaining six are pesticides that are not in our permitted discharges based on long-term experience with our dischargers.

---

<sup>1</sup> "PCB" in Maryland regulations applies to each of the seven PCB priority pollutants.

5. Sixty-nine of the 99 substances have criteria only for human health (drinking water and fish consumption). Almost all of these are for organic substances. While Maryland has been very conservative by adopting criteria for most of the priority pollutants with aquatic life criteria, we have not found evidence indicating a need to adopt as many for the organic pollutants based upon human health concerns. Maryland's water quality monitoring experience indicates organics are usually at nondetectable levels. Even if an organic is detected in a water sample, human health criteria involve less stringent averaging periods than the aquatic life criteria (an annual average for human health criteria versus a four-day average for chronic aquatic life criteria, for example).

**Finding: Deficiencies in Maryland's water quality standards-Maryland's numeric criteria for 15 metals are set at incorrect levels (the State set criteria at numeric Levels that EPA recommended for "total recoverable" but adopted these as "dissolved") that are less stringent than the levels recommended by EPA.**

EPA Region III approved Maryland's water quality standards in 1990. Then, EPA published in the Federal Register an "interim final rule, notice of data availability and request for comments" in May 1995. EPA published the most recent final guidance on metal conversion factors in December 1998.

Consequently, the use of the conversion factors, and subsequent change (if any) of Maryland's water quality standard is being currently addressed as part of Maryland's current Triennial Review and will then undergo the scrutiny of the public participation process. Given these facts, we believe that the OIG's conclusion that Maryland is deficient is premature and does not take into consideration the regulatory process, which is required under the Clean Water Act.

**Finding: Maryland does not have an Antidegradation policy including an ONRW.**

**Response:** MDE will address the designation of Outstanding National Resource Water during its current Triennial Review with EPA and full public participation.

**Finding: Maryland Lacks Designated Uses for wetlands and estuaries.**

**Response:** The audit findings are incorrect that there is a lack of designated uses for wetlands and estuaries. Both are waters of the State and as such are protected for Use I. COMAR §26.08.01.02A(103) describes "Waters of this State" to include the Chesapeake Bay (which is, estuarine) and tidal and nontidal wetlands.

"Fresh Water, Estuarine, and Salt Water Boundaries" are established in 26.08.02.03-IB. Uses are generally assigned in COMAR §26.08.02.07A: "All surface waters of this State shall be protected for Use I, which includes water contact recreation, fishing and protection of aquatic life and wildlife. Therefore, Use I is explicitly designated for both tidal and nontidal wetlands, and since the Chesapeake Bay is largely estuarine, to estuarine waters as well.

Uses are specifically and explicitly assigned in COMAR §26.08.02.08 for example:

§26.08.02.08B sub-basin 02-13-01; Coastal Area (2) Use II: All portions of the territorial seas and **estuarine** portions of bays and tributaries except... (**emphasis added**)



In summary, the designated use for wetlands is Use I and for estuaries is Use II (shellfish harvesting) and Use I. In addition we will evaluate the need to refine these uses during the current Triennial Review.

### **Chapter: Missed opportunities**

#### **Finding: Maryland is five years late in carrying out Its 1993 Triennial Review of Water Quality Standards.**

**Response:** Due to the litigation that developed challenging the legality of the regulations adopted during the last Triennial Review and the subsequent revisions to water quality regulations, the schedule was disrupted with EPA's full knowledge. We anticipate that future Triennial Reviews will be held in a timely manner. Maryland has initiated its current triennial review in response to a request from Region III. Hearings for the public involvement component began in mid-January, and a review in response to Region III's specific concerns is well underway.

### **Chapter: Planning Documents Not Prepared or Updated**

#### **Finding: Continuing Planning Process documents (CPP, Water Quality Management Plan, Monitoring Strategy and Quality Assurance) have not been prepared or maintained.**

**Response:** CPP has been adopted in accordance with the requirements of the Clean Water Act. MDE provided public notice on July 13, 1998 that the CPP is being revised with public participation. We anticipate that such revisions and review of the CPP will occur periodically in future years.

MDE will perform chemical and physical monitoring in accordance with the Cycling Strategy. Numerous monitoring plans exist and incorporate QA/QC protocols. Past 305(b) Reports have described the monitoring programs that produced the data used. There are well documented monitoring plans for the Chesapeake Bay and many tributaries. Detailed monitoring plans are available for the Lower Delmarva Peninsula and the Upper Bay as part of the Watershed Cycling Strategy. Plans for the remaining parts of the State will be developed as the Watershed Cycling Strategy moves on to those areas.

DNR has been working to update the State's Water Quality Monitoring Strategy to incorporate the latest information about the State's diverse monitoring approach. Continuing and substantial changes in these programs have occurred recently and need to be addressed, including the transfer of monitoring programs between State agencies, the addition of regional TMDL-based monitoring and new Pfiesteria monitoring efforts as well as the proposed National Estuary program monitoring program. While each water quality monitoring effort has unique goals, MDE and DNR have had formal meetings to coordinate our respective monitoring efforts and Quality Assurance plans.

Notes: (1) *Restricted as precautionary measure and not due to poor water quality data.* These are areas downstream from a Waste Water Treatment Plant (WWTP) that meet all water quality requirements. These areas, however, are restricted to shellfish harvesting because of the potential for treatment system failure. While water quality in these areas support the designated use, the Food and Drug Administration requires as a precautionary measure. They are not indicative of a violation of the water quality standards. These areas are monitored by MDE and meet the water quality standard for fecal coliform. If monitoring and compliance data indicate that the plant is not functioning properly, corrective actions would be immediately initiated. Since no impairment exists, the development of a TMDL is not necessary under these circumstances.

(2) *Not listed because there is insufficient data to determine a violation of water quality standards* is the same logic as listed above for Table 1.

Watershed	Water Body Segment	Justification for listing or not listing
02120101	Atlantic Ocean	Not listed. Restricted as precautionary measure and not due to poor water quality data (WWTP).
02120201	Lower Susquehanna River	Not listed because there is insufficient data to determine a violation of water quality standards.
02120202	Deer Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130206	Tangier Sound	Not listed. Restricted as precautionary measure and not due to poor water quality data (WWTP).
02130207	Big Annemessex River	Not listed. Restricted as precautionary measure and not due to poor water quality data (WWTP).
02130303	Wicomico Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130305	Nanticoke River	Added to MD 1998 303 (d) list.
02130308	Transquaking River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130404	Choptank Marine Beach	Added to 1998 303(d) list.
02130404	Lake Bonnie, Choptank	Swim closure is though to be due to sewage discharge from WWTP and therefore should not appear on 1998 303(d) list.
02130405	Tuckahoe Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130503	Wye River	Already on 1996 303(d) list.
02130601	Lower Elk River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130603	Upper Elk River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130604	Back Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130606	Big Elk Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130610	Sassafras River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130701	Bush River	Not listed. There is insufficient data to determine a violation of water quality standards.

Watershed	Water Body Segment	Justification for listing or not listing
02130702	Lower Winters Run (Bush River)	Not listed. There is insufficient data to determine a violation of water quality standards.
02130703	Atkisson Reservoir Drainage	Not listed. There is insufficient data to determine a violation of water quality standards.
02130704	Bynum Run	Not listed. There is insufficient data to determine a violation of water quality standards.
02130706	Swan Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130705	Aberdeen Proving Grounds	Not listed. There is insufficient data to determine a violation of water quality standards.
02130802	Lower Gunpowder Falls	Not listed. There is insufficient data to determine a violation of water quality standards.
02130804	Little Gunpowder Falls	Not listed. There is insufficient data to determine a violation of water quality standards.
02130805	Loch Raven Reservoir Drainage	Not listed. There is insufficient data to determine a violation of water quality standards.
02130806	Prettyboy Reservoir Drainage	Not listed. There is insufficient data to determine a violation of water quality standards.
02130901	Back River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130902	Bodkin Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02130903	Patapsco River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130903	Marley/Rock/Furnace Creeks	Added to 1998 303(d) list.
02130904	Jones Falls (above Lake Roland)	Not listed. There is insufficient data to determine a violation of water quality standards.
02130905	Gwynns Falls	Not listed. There is insufficient data to determine a violation of water quality standards.
02130906	Mainstem/Lower North Branch Patapsco River	Not listed. There is insufficient data to determine a violation of water quality standards.
02130907	Liberty Reservoir Drainage Cascade Lake	Not listed. Latest data show no violations.
02130908	S. Branch Patapsco	Not listed. There is insufficient data to determine a violation of water quality standards.
02131005	West Chesapeake Bay	Added to 1998 303(d) list.
02131101	Lower Patuxent River	Added to 1998 303(d) list.
02131102	Patuxent	Not listed. There is insufficient data to determine a violation of water quality standards.
02131102	Patuxent River above Ferry Landing	Not listed. There is insufficient data to determine a violation of water quality standards.
02131103	Patuxent River Western Branch	Not listed. There is insufficient data to determine a violation of water quality standards.
02131104	Patuxent Mainstem-Rt. 214 to Rocky Gorge	Not listed. There is insufficient data to determine a violation of water quality standards.
02131105	Little Patuxent River	Not listed. There is insufficient data to determine a violation of water quality standards.
02131108	Triadelphia Reservoir Drainage	Not listed. There is insufficient data to determine a violation of water quality standards.

Watershed	Water Body Segment	Justification for listing or not listing
02139997	Middle Chesapeake Bay	Not listed. Restricted as precautionary measure and not due to poor water quality data (WWTP).
02139998	Lower Chesapeake Bay	Not listed. Restricted as precautionary measure and not due to poor water quality data (WWTP).
02140101	Potomac River - mouth to Smith Point	Not listed. Shellfish harvesting area approved.
02140102	Potomac-Marshall Hall to Smith Pt.	Not listed. There is insufficient data to determine a violation of water quality standards.
02140107	Gilbert Swamp	Not listed. There is insufficient data to determine a violation of water quality standards.
02140108	Zekiah Swamp	Not listed. There is insufficient data to determine a violation of water quality standards.
02140109	Port Tobacco River	Not listed. Shellfish harvesting area approved.
02140110	Nanjemoy Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140111	Mattawoman Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140201	Potomac - Marshall Hall to Chain Bridge	Not listed. There is insufficient data to determine a violation of water quality standards.
02140202	Potomac - Monacacy River to Chain Bridge	Not listed. There is insufficient data to determine a violation of water quality standards.
02140203	Piscataway Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140205	Potomac R., Anacostia	Not listed. There is insufficient data to determine a violation of water quality standards.
02140206	Rock Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140207	Cabin John Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140208	Seneca Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140301	Potomac River - Shenandoah to Monocacy	Not listed. There is insufficient data to determine a violation of water quality standards.
02140302	Lower Monocacy River	Not listed. There is insufficient data to determine a violation of water quality standards.
02140303	Upper Monocacy River	Not listed. There is insufficient data to determine a violation of water quality standards.
02140304	Double Pipe Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140305	Catoctin Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140501	Potomac River - hancock to Shenandoah River	Not listed. There is insufficient data to determine a violation of water quality standards.
02140502	Antietam Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140504	Conococheague Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02140508	Potomac River - N Branch Potomac to Hancock	Not listed. There is insufficient data to determine a violation of water quality standards.
02141001	Lower North Branch Potomac River	Not listed. There is insufficient data to determine a violation of water quality standards.

Watershed	Water Body Segment	Justification for listing or not listing
02141003	Wills Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
02141004	Georges Creek	Not listed. There is insufficient data to determine a violation of water quality standards.
05020202	Little Youghiogeny River	Not listed. There is insufficient data to determine a violation of water quality standards.
05020204	Casselman River	Not listed. There is insufficient data to determine a violation of water quality standards.

[This page was intentionally left blank.]

## **APPENDIX B**

### **DISTRIBUTION**

#### **Headquarters**

Office of Inspector General - Headquarters (2421)  
Assistant Administrator for Water (4101)  
EPA Library (3404)

#### **EPA Region III**

Regional Administrator (3RA00)  
Director, Water Protection Division (3WP00)  
Director, Environmental Services Division (3ES00)  
Chief, Office of Watersheds (3WP10)  
Chief, Office of Ecological Assessment and Management (3ES10)  
Regional Library (3PM50)

#### **Other**

Office of Inspector General - Divisional Offices  
General Accounting Office