



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

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MEMORANDUM

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FEB 16 2011

SUBJECT: 2007 Regional National Pollutant Discharge Elimination System (NPDES)
Program Review for Region 3

EPA's Office of Wastewater Management, Water Permits Division is pleased to provide you with the findings of the 2007 Regional National Pollutant Discharge Elimination System (NPDES) Program Review conducted for EPA Region 3.

The enclosed report summarizes the discussions held during the EPA Office of Water NPDES Program Review, as well as the Permit Quality Review (PQR), conducted in preparation for the Program Review. These reviews cover topics across the NPDES program as they apply specifically to Region 3. We have included proposed action items for the Region and the States, based on discussions conducted during the Office of Water NPDES Program Review of Region 3, and the findings of the Permit Quality Reviews. These reviews also help EPA Headquarters (HQ) promote national consistency and identify areas where guidance and support is necessary.

The report includes a list of proposed Action Items to serve as the basis for ongoing discussions between Region 3 and your authorized States, as well as between Region 3 and EPA HQ. In order to facilitate these discussions, EPA HQ divided the proposed Action Items into three categories to identify the priority that should be placed on each Item:

- Category One - Most Significant: Proposed Action Items will address a current deficiency or noncompliance with a federal regulation.
- Category Two - Recommended: Proposed Action Items will address a current deficiency with respect to EPA guidance or policy.
- Category Three - Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the State's or Region's NPDES permit program.

The Category One and Category Two proposed Action Items should be used to augment the existing list of “follow up actions” currently established as an indicator performance measure and tracked under EPA’s Strategic Plan Water Quality Goals and/or may serve as a roadmap for modifications to Region 3 program management strategies. A complete description of the proposed Action Items is included in Section 4 of the report.

We believe the NPDES Program Review helped us to better understand the Region 3 NPDES program and identify strengths and opportunities for improvement for EPA HQ, Region 3 and its States.

Thank you for your cooperation and for the help of your staff in conducting the reviews, and in the development of the report and its findings. If you have any questions regarding this effort, please call me at (202) 564-9545 or Sharmin Syed of my staff at (202) 564-3052.

2007 REGIONAL NPDES PROGRAM REVIEW
EPA REGION 3

February 15, 2011

Water Permits Division
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CONTENTS

1.0 INTRODUCTION.....	1
2.0 REGION 3 REGIONAL REVIEW OVERVIEW	2
2.1 Select Accomplishments	2
2.2 Permit Issuance Status	2
2.3 Priority Permits	3
2.4 Antidegradation.....	3
2.5 Stormwater Program	3
2.6 Concentrated Animal Feeding Operations	4
2.7 Whole Effluent Toxicity (WET).....	4
2.8 Watershed-Based Permits	5
2.9 Water Quality Trading	5
2.10 Pretreatment	6
2.11 Significant Noncompliance (SNC)	6
3.0 PERMIT QUALITY REVIEW	7
3.1 Core Permit Reviews	7
3.1.1 Delaware	8
3.1.2 Pennsylvania	9
3.1.3 West Virginia	12
3.2 Topic-Specific Reviews	14
3.2.1 Mercury Methods	14
3.2.2 Impaired Waters	15
3.2.3 Total Maximum Daily Loads (TMDLs).....	17
3.2.4 Use of <i>E. coli</i> and Enterococcus Bacteria Standard	18
3.2.5 Antidegradation and Mixing Zones.....	20
3.2.6 Thermal Variances & Cooling Water Intake Structures [CWA §316(a) & 316(b)]	21
3.2.7 Combined Sewer Overflows (CSOs)	24
3.2.8 Sanitary Sewer Overflows (SSOs)	26
3.2.9 Stormwater	27
3.2.10 Concentrated Animal Feeding Operations (CAFOs)	28
3.2.11 Whole Effluent Toxicity.....	37
4.0 SUMMARY OF FINDINGS AND PROPOSED ACTION ITEMS	43
4.1 NPDES Regional Program Review.....	43
4.1.1 Permit Issuance	43
4.1.2 Antidegradation.....	44
4.1.3 Watershed-Based Permitting Review.....	44
4.1.4 Water Quality Trading	44
4.1.5 Pretreatment Program Review	45
4.2 Permit Quality Review.....	46
4.2.1 Core Permit Review	46
4.2.2 Mercury Methods	48
4.2.3 Impaired Waters and TMDLs	48
4.2.4 <i>E.coli</i> and Enterococcus Bacteria Standards	49
4.2.5 Thermal Variances and Cooling Water Intake Structures [CWA §316(a) and 316(b)] ..	49
4.2.6 Stormwater	50
4.2.7 Combined Sewer Overflows (CSOs)	50
4.2.8 Sanitary Sewer Overflows (SSOs)	51
4.2.9 Concentrated Animal Feeding Operations (CAFOs)	51
4.2.10 Whole Effluent Toxicity.....	54

Appendix A. Central Tenets of the NPDES Permitting Program
Appendix B. Core Review Checklists

1.0 INTRODUCTION

This report presents findings of an U.S. Environmental Protection Agency (EPA) Office of Water (OW) Regional National Pollutant Discharge Elimination System (NPDES) Program review and Permit Quality Review (PQR) conducted for EPA Region 3 in November 2007.

On a rotating basis, the OW schedules reviews of Regional Water Programs. The Water Permits Division (WPD) in the Office of Wastewater Management uses the OW reviews of Regional NPDES programs to focus its oversight responsibilities.

Topics discussed during the review vary by Region, on the basis of the needs and interest of the Region. EPA Headquarters reviews topics such as permit backlog, Priority Permits, Action Items, and watershed-based permits before the review. A large component of each review is the PQR, which assesses whether a State and/or Region adequately implements the requirements of the NPDES program as reflected in the permit and other supporting documents (e.g., fact sheet, calculations). In this report, an entire section is devoted to the results of that PQR.

Through this review mechanism, EPA promotes national consistency, identifies successes in implementing the NPDES program, and opportunities for improvement in the developing NPDES permits. EPA could use the findings of the review to identify areas for training or guidance, and by Region 3 to help identify or assist States in determining any needed action items to improve their NPDES programs.

EPA Region 3 oversees the NPDES program for Delaware, Maryland, Pennsylvania, Virginia, and West Virginia, and it issues permits for the District of Columbia. All the States are authorized to administer the NPDES program; the District of Columbia is not authorized. EPA Region 3 also implements the Pretreatment Program in Delaware and Pennsylvania, as well as the Federal Facilities Program in Delaware.

The PQRs were performed during the first quarter of FY2008. WPD staff collected NPDES program information and permits from Regional and State staff, and a detailed PQR was performed for Delaware, Pennsylvania, and West Virginia in October 2007. WPD staff and managers traveled to Region 3 for the formal OW Regional Program Review on November 28 and 29, 2007.

This report is organized as follows:

- Section 2 – Region 3 Regional Review Overview
- Section 3 – Permit Quality Review Summaries
- Section 4 – Summary of Findings and Proposed Action Items

2.0 REGION 3 REGIONAL REVIEW OVERVIEW

Regional reviews assist in assessing the consistency and effectiveness of the Regional and State programs. The reviews can also include an analysis of the entire permitting workflow, progress on action items, progress on memorandum of understanding (MOU) commitments or other legal arrangements, and progress on Government Performance and Results Act (GPRA)/Program Assessment Rating Tool measures.

The Region 3 NPDES Regional Program Review explored several NPDES program accomplishments and issues, which are discussed briefly below.

2.1 Select Accomplishments

On the basis of the work conducted in preparing for the Regional Program Review, EPA Region 3 deserves specific recognition for accomplishing the following:

- Region 3 is very active with regard to trading, encompassing point source, nonpoint source, nutrient, and sediment trading at both the public and private levels. In the past two years all the States in the Region have begun and/or finished development of State trading programs. Region 3 is also the only Region actively pursuing interstate trading.
- Region 3 uses enforcement authority to fully achieve combined sewer overflow (CSO) measures, which is a good example of best practices. Twenty-four CSO actions taken at the end of FY2007 were the result of Region 3 finalizing a consent decree with Alleghany County Sanitary Authority.
- EPA Region 3 and Perdue Farms, Incorporated's Memorandum of Agreement to work together to develop and implement the Perdue Clean Bays Environmental Management Initiative is an innovative way to provide training, assistance, and environmental assessments to poultry operations to help protect the waters of the Delmarva peninsula, including the Chesapeake Bay and Coastal Bays, and to improve compliance with federal, State, and local environmental regulations on the part of poultry operations.
- Region 3 resolved two withdrawal petitions, both in Virginia, in 2007.

2.2 Permit Issuance Status

At the end of FY2007, there were 757 major permits in Region 3; 5 in the District of Columbia; 21 in Delaware; 387 in Pennsylvania; 150 in Virginia; 97 in Maryland, and 97 in West Virginia. In addition, there were 6,414 minor permits in Region 3, as well as, 34 non-stormwater general permits, and 10,796 facilities covered by general permits.

Eighty-nine percent of all NPDES permits in Region 3 were current as of September 2007, an increase from 77 percent in 2005 (individual permits and general permit-covered facilities). As of September 2007, Virginia and West Virginia had met the existing backlog goal of 90 percent of permits current, with rates of 99.2 percent and 92.8 percent, respectively. Pennsylvania is above 80 percent (85.8 percent), Maryland and Delaware are above 70 percent (77.2 percent and 73 percent, respectively), and the District of Columbia is at 66.7 percent. Maryland and the District of Columbia's current permit rates have decreased somewhat since September 2005,

with the District of Columbia slipping from 93.3 percent to 66.7 percent. In the District of Columbia, the lack of final rules regarding 316(b) issues and gross allocations assigned to stormwater in the total maximum daily loads (TMDLs) are some of the major factors contributing to the inability to issue some permits in a timely manner. Region 3 has indicated that it has successfully reduced the backlog of some of the oldest expired permits. Only two major NPDES permits in Region 3 have been expired for 10 years or more (Indian River Power Plant, Delaware, and Allegheny Energy Supply Co., LLC, Pennsylvania). Those permits have 316(b) issues to resolve.

2.3 Priority Permits

Region 3 had 452 permits that qualified as candidate Priority Permits in FY2007. Of those, 12 percent (56 permits) were designated as Priority Permits for FY2007, FY2008, and FY2009. Of particular note, Pennsylvania designated only 33 of its 375 candidate permits (9 percent) as Priority Permits for issuance through FY2009; that is below the national average of 40 percent of candidate permits being designated as Priority Permits.

The low percentage of designated Priority Permits and the high percentage of completion could be perceived to mean that the Priority Permits selected are not adequately challenging. Region 3's consideration of the new criteria, and what should be included, will assist in the targets being challenging yet attainable.

2.4 Antidegradation

Region 3 States have both implementation and documentation issues in meeting antidegradation requirements. Implementing antidegradation requirements has posed a challenge for the Pennsylvania Department of Environmental Protection (PADEP) because legal challenges remain, despite the existence of antidegradation procedures in the State regulations. Pennsylvania relies on a designation approach to antidegradation, i.e., waters receive Special Protection through the State's program once they have been designated as High Quality or Exceptional Value through the water quality standards (WQS) process. Pennsylvania has a *Special Protection Waters Handbook*, which describes the requirements that apply to those waters. Evaluation of whether new or expanded discharges will affect water quality falls on individual permit writers. The result is that the responsibility for addressing antidegradation has fallen on individual permit writers. With regard to documentation, the consideration of antidegradation requirements should be better documented in fact sheets. For additional discussion, see Section 3.2.5.

2.5 Stormwater Program

Select issues were identified from EPA's review of stormwater permits, including the inclusion of water-quality based effluent limits, documenting why existing Best Available Technology (BAT) limits are adequate, addressing more than just erosion and sediment controls in Maryland and Pennsylvania, and including narrative effluent limits in Maryland. In addition, the permits should improve consistency with certain federal requirements (Pennsylvania—signature and certification, standard conditions; West Virginia—standard conditions), and the West Virginia

permit should be organized more logically, consistent with the order presented in EPA's *Permit Writers Guidance Manual*, and contain more detailed inspection requirements.

The Municipal Separate Storm Sewer Systems (MS4s) stormwater permits in Region 3 do not provide adequate information on evaluating and tracking the effectiveness of the Stormwater Management Plan (SWMP). They also do not directly require a link between the SWMP and the protection or improvement of water quality, nor do they state sufficient measurable goals. That has been the subject of significant discussion in Region 3, particularly in regards to the District of Columbia's MS4 permit and appeals. Further, those permits need to provide specific requirements for discharges to impaired waters (with and without TMDLs).

In 2008 a large number of stormwater permits will expire, and Region 3 has indicated it is waiting for the national Multi-Sector General Permit before reissuing those permits. In addition, discussions with the Region highlight that although the Phase 2 program is developing rapidly, several significant issues still need to be addressed. One issue is the need to clarify the relationship (and associated requirements) between achieving WQS and controlling discharges to the Maximum Extent Practicable.

2.6 Concentrated Animal Feeding Operations

EPA Region 3 has a total of approximately 628 CAFOs, as exhibited below.

	DE	MD	PA	VA ^c	WV
Estimated CAFO operations	50	50 ^b	348	140	30
CAFOs covered by permits	15 ^a	7	238	140	0

a. CAFOs covered by the State's General Permit that have not yet been approved as an NPDES permit.

b. Includes only estimate of operations with discharge. The number of Maryland-defined AFOs is about 200.

c. Shows VPDES permits as of November 2007. The Virginia VPDES CAFO program was approved June 14, 2010.

Forty percent of the nutrients being discharged into the Chesapeake Bay are from agriculture. The bulk of nutrients discharged are from CAFOs, especially in sensitive areas such as the Eastern Shore, which is why permitting rates are of concern. In addition, some State regulations still do not fully comply with the 2003 CAFO rules. See Section 3.2.10 for more details.

2.7 Whole Effluent Toxicity (WET)

EPA reviewed how Region 3 States implement WET programs pursuant to the Clean Water Act (CWA) and EPA NPDES regulations with regards to WET, including reasonable potential (RP) determinations, monitoring frequencies, WET test species selection, and the inclusion of a WET limit. A review of selected permits identified the lack of adequate documentation on the rationale supporting WET permit decisions, and the citation of outdated WET test methods in the permits and/or in the State's WQS. With additional training and assistance from EPA Headquarters, more Region 3 guidance and oversight to its States could help resolve those issues. More information on the issues were identified during the review is provided in Section 3.2.11.

2.8 Watershed-Based Permits

In Region 3, Virginia has issued a watershed-based permit for the Chesapeake Bay watershed. The key water quality concern addressed by this permit is excessive nutrients leading to algal blooms and low dissolved oxygen levels. Virginia's experience in developing and implementing the watershed-based permit could provide valuable lessons learned by other States both in and outside Region 3.

Pennsylvania has also considered developing a watershed-based permit to address the Chesapeake Bay and has contemplated addressing stormwater permitting on a watershed basis. West Virginia conducts its monitoring, TMDL, and permitting programs on a watershed basis.

2.9 Water Quality Trading

Region 3 is the most active EPA Region in water quality trading. Much of the trading is driven by the Chesapeake Bay tributary strategies. Each State's program is very different; however, the States are working toward coordinating interstate trading along the Potomac River

Virginia issued a general permit for large point source dischargers in its portion of the Chesapeake Bay watershed at the beginning of 2007. With EPA's aid, Virginia is also working on a nonpoint source trading manual and plans to expand the nonpoint source aspects of its trading program in the future.

Pennsylvania issued its nutrient trading policy at the end of 2006. The Pennsylvania program focuses on point source–nonpoint source trading and it is planning to issue more than 70 permits with trading language in the next year. Pennsylvania also has an independent broker, Red Barn Trading Company that is buying and selling credits. Pennsylvania is developing a handbook for the different industry sectors to help them participate in the trading program.

Maryland is developing a point source trading policy. Maryland has said that EPA's August 2007 Trading Toolkit was helpful to Maryland in preparing its draft policy.

Delaware issued its *Pollution Control Strategy Regulation for the Inland Bays* in mid-2007. The strategy allows for trading in the Inland Bays watershed to support their zero discharge requirements for nutrients. Delaware has two individual trading programs, one of which has executed trades.

West Virginia, through a grant from Natural Resources Conservation Service (NRCS), is working with the Water Research Institute to develop a framework for a nutrient trading program. It is moving down a path to develop a program for point and nonpoint source trading. Recently, West Virginia also received a Chesapeake Bay Targeted Watershed Grant to develop a nutrient and sediment trading framework for Rockymarsh Run.

Given the level of activity, it is important for Region 3 to continue to provide oversight of the trading programs in the Region, including any interstate trading. Trading programs should include the *Keys to Success* from the Water Quality Toolkit (August 2007) (e.g., transparent, real reductions, accountability, technical defensibility, and enforceable). In addition, interstate trading

presents unique concerns that highlight the importance of outreach, a consensus-based strategy, and communication.

2.10 Pretreatment

Maryland, Virginia, and West Virginia implement State-authorized pretreatment programs while EPA Region 3 implements the pretreatment program for Pennsylvania, Delaware, and the District of Columbia. FY2007 GPRA data indicate that of a total of 1,810 Significant Industrial Users (SIUs) in the Region, 95 percent (1,723) were covered by control mechanisms. That is greater than the national average (61 percent). Similarly, FY2007 data indicate that a total of 75 Categorical Industrial Users (CIUs) in non-approved publicly owned treatment works (POTWs) pretreatment programs (i.e., a State or EPA is the control authority) in the Region, of which 88 percent (66) were covered by control mechanisms. That is also greater than the national average (72 percent). Region 3 has developed and is implementing a 19-element performance standard program, which has resulted in a better understanding of program compliance and a reduction in the rate of significant noncompliance.

Updates on PCS/ICIS data entry and data reconciliation progress, particularly for Maryland, Virginia and West Virginia are needed. For specific reporting information, EPA expects data entry consistent with *April 2007 draft ICIS-NPDES Policy Statement*. In addition, an update on oversight progress is needed. Finally, progress reports on the status of streamlining are needed.

2.11 Significant Noncompliance (SNC)

In FY2006, Region 3's overall SNC rate was at 16 percent for majors. The national SNC rate for major sources for the same period was 22 percent. Virginia's SNC rate was 8 percent (12 facilities), which was the lowest of the Region 3 States; the SNC rate for Pennsylvania was 16 percent (61 facilities); Maryland and Delaware were both at 19 percent (18 and 4 facilities, respectively); the SNC rate for West Virginia was 24 percent (24 facilities); and the District of Columbia had the highest SNC rate for Region 3 States at 60 percent (3 facilities).

3.0 PERMIT QUALITY REVIEW

PQRs are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the CWA and NPDES regulations.

The Region 3 PQR consisted of two components, a core review and a topic-specific review. The core review focused on core permit quality and included a review of the permit application, limits, monitoring requirement development, special conditions, standard conditions, correspondence, documentation, administrative process, and other factors.

Topic-specific reviews target components or types of permits. The scope of a topic-specific review is determined in consultation with States on a case-by-case basis. Region 3 topic-specific reviews focused on the following areas: mercury methods/limits; discharges to impaired waters; TMDL implementation; use of *Escherichia coli* and Enterococcus requirements; antidegradation and use of mixing zones; implementation of CWA §316(a) and (b); implementation of long-term control plans (LTCs) for CSOs; Sanitary Sewer Overflows (SSOs); stormwater permitting; implementation of CAFO requirements; and implementation of WET.

EPA has conducted NPDES PQRs since the mid-1980s and has revisited the review process periodically to promote permit quality and ensure a reasonable degree of national consistency with regard to core program requirements. Such reviews also serve to ensure that NPDES permits keep pace with developments in the NPDES program. Information developed during PQRs informs broader Regional Water Program Reviews being conducted by EPA Headquarters. Recommended action items are identified in Section 4 of this report.

Objectives and Scope for the Region 3 PQR

The Region 3 PQR consisted of the following: a comprehensive core permit review of a sample of NPDES permits in Delaware, Pennsylvania, and West Virginia to provide an overall review, and a topic-specific review of a sample of permits from all five Region 3 States and the District of Columbia to assess specific areas of concern. The results of the PQR also will serve as a mechanism to provide information on the integrity of the NPDES Permit Program and to promote national consistency, in accordance with EPA's Permitting for Environmental Results initiative. Proposed action items are identified in Section 4 of this report.

Details of the Region 3 PQR process and review results are provided below.

3.1 Core Permit Reviews

EPA conducted comprehensive core reviews with on-site visits in Delaware, Pennsylvania, and West Virginia. The review team consisted of EPA Headquarters, EPA Region 3, and contractor personnel.

The core permit review process involves evaluating select permits and support materials against basic NPDES program criteria. Reviewers complete the core review by examining selected permits and supporting documentation, assessing those materials using the PQR tools, and

talking with permit writers about technical issues related to the permit development process. The following tools were primarily used for this review, and are attached in Appendices A and B, respectively: (1) *Central Tenets of Permitting* (developed during the 2000/2001 PQR); and (2) *Checklist for Municipal and Industrial Permits* (developed during the 2000/2001 PQR). Material reviewed as part of the Region 3 core review include NPDES permits, State WQS (including mixing zone provisions, bacteria standards, mercury standards and methods, and RP procedures), and various State permitting policy and guidance. In addition, discussions with Region 3 and State staff addressed a range of topics, including program status, the permitting process, relative responsibilities, organization, and staffing.

Most of the permits were chosen randomly from a list of permits issued after December 31, 2005, to ensure a review of recently issued permits. The remaining permits were selected on the basis of discussions with State and Region 3 staff, with an effort to primarily include major facilities, with an equal distribution of industrial and municipal permits. Six permits were selected for the core review from Delaware, nine permits from Pennsylvania (five from the Pittsburgh regional office and four from the Wilkes-Barre regional office), and six permits from West Virginia

3.1.1 Delaware

The Delaware Department of Natural Resources and Environmental Control (DNREC) has one central location in Dover that is responsible for drafting and issuing NPDES permits. The Division of Water Resources has responsibility for overall management of the water program in the State. The Surface Water Discharges Section is tasked with writing the NPDES permits, while the Watershed Assessment Section supports TMDLs. DNREC manages 52 individual permits. Of those, 48 are traditional NPDES permits, 1 is a Phase I MS4 permit, and 3 are Phase II MS4 facilities. Of the traditional permits, 18 are major facilities, while 30 are minor facilities.

In the past, DNREC has tried a watershed permitting approach (i.e., basin-focused sequencing of permits). However, DNREC was reluctant to delay issuing NPDES permits within a basin as a result of issues or problems associated with one or two permits. Often the issues or problems presented in the delayed permits are beyond the immediate control of the Surface Water Discharge Section. As a result, the watershed approach has since been discontinued.

Permitting Process: Once the NPDES permit application is received, the permit writer reviews it for completeness. The State works closely with permittees and generally has numerous meetings with dischargers. Site visits are made before drafting a permit. An initial step in the process is to develop an evaluation memorandum to identify changes that have taken place at the facility, determine any regulatory changes, and review the facility's compliance history. The evaluation memorandum is provided to management and, once approved, permit development begins. A pre-notice draft is shared with the discharger and other regulatory personnel, with the intent of eliminating surprises when the draft permit is issued for public comment.

The permit writer develops effluent limitations. He or she uses spreadsheets for determining RP on the basis of approaches described in EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD) (EPA/505/2-90-001) and for calculating water quality-based effluent limitations (WQBELs). DNREC has a permit template and uses existing permits in

developing NPDES permits (changing appropriate provisions). Technology-based effluent limitations (TBELs) are based on federal effluent limitations guidelines and standards (ELGs) and State technology regulations.

Notices of draft tentative permits are published in two newspapers and on DNREC's website; interested parties are notified via e-mail. Copies of the tentative permit are not posted electronically but the public can request a copy. There is a 30-day public notice comment period, during which the public can request a public hearing on the tentative permit. EPA Region 3 receives a pre-notice draft and a formal copy of the tentative permit. If the NPDES permit is appealed, it goes before the Delaware Environmental Appeals Board, which is separate from DNREC.

WQS: Delaware's WQS were amended July 11, 2004. The standards include designated uses, water quality criteria, antidegradation and ERES (exceptional recreational or ecological significance) policies, mixing zone requirements, and other topics. WQS include both freshwater and marine criteria.

Delaware Core Review Findings

Six core NPDES permits were reviewed: two municipal and four non-municipal facilities. The State's fact sheets, RP analyses, and water quality-based limits analyses were very good, including thorough mixing zone analyses. However, the analyses are not typically placed in the permit files, which made it difficult to confirm whether the analyses were completed. In some instances, additional explanation or documentation would be useful. Examples of issues include the following:

- There are apparent increases in pollutant loadings in some permits; it was not clear whether antidegradation analyses were performed.
- In one municipal permit, the 85 percent removal requirement for biochemical oxygen demand (BOD) and total suspended solids (TSS) is absent. That is a requirement of the secondary treatment standard found in 40 CFR 433. In DNREC, staff indicated that BOD and TSS limitations were derived from State technology-based regulations and are more stringent than the secondary treatment standards.
- Data provided in some POTW applications appear inconsistent. Two municipal permits do not include complete pollutant sampling data.
- DNREC has taken a long time to finalize a few permits because of various contentious issues. The State should consider when it will request new data to ensure that permits are based on data representative of current conditions (e.g., after 5 years).

3.1.2 Pennsylvania

PADEP is divided into a central office in Harrisburg and six regional offices. PADEP is responsible for issuing 389 major and 4,090 minor individual NPDES Permits. The central office develops policies and procedures but is not involved in drafting or issuing NPDES permits. PADEP also formed a watershed program that is responsible for TMDL development, a function that was previously conducted by the water management program, which develops the NPDES permits.

Permitting Process: Permit applications are received, date stamped, and administratively reviewed to check for correct fees paid, Act 537 (sewage disposal) planning approval documentation on new or upgrading facilities, and other general information. The permit is then logged into e-facts, Pennsylvania's statewide permit tracking system that tracks specific activities for drafting the permit, dates required, and responsible parties. A letter indicating that administrative requirements of the application process have been satisfied is sent to the permittee to notify them that the application was received. The permit application process is subject to a *money back guarantee* provided by PADEP. If the NPDES permit is not issued within a specific time frame, the application fee is refunded.

The permit is then provided to the Permits Section Chief and assigned to a staff engineer, who performs a technical review of the application. Assignments are determined by current workload and the engineer's experience level.

The permit writer develops the draft permit, which together with the fact sheet and other relevant documents make up the permit file. The permit writer develops both TBELs and WQBELs with the exception of TMDL requirements and wasteload allocations. WQBELs are developed using models, including the DO model, PENTOX model, TRC model, and temperature models. The central office develops the water quality models, but regional engineers input required data and run the models.

Word processors develop the draft permit using one of three templates: POTWs, Industrial Waste, or Non-municipal Sewage. The Permits Section Chief reviews the draft permit and file for new facilities and major facilities. EPA Region 3 receives the draft permit at the same time it is published for public notice in the *Pennsylvania Bulletin*. The Region then has 30 days to provide objections.

The public has 30 days to comment from the date of publication; comments are received by the Environmental Program Manager's office and then passed to the Permits Section Chief. Public hearings are rare. For comments received from third parties, a more formal response with a letter of acknowledgement is provided. The permit writer addresses comments and makes changes as needed. Significant changes can result in re-drafting and re-noticing the permit. If no significant comments are received, a final permit is issued. The final permit is listed in the *Pennsylvania Bulletin* under Actions.

The transmittal letter to the permittee for the final permit includes an appeal paragraph. If the permittee decides to appeal, the Legal Office receives the appeal.

WQS and Use Attainability: Chapter 93 of the Pennsylvania Code contains the State's WQS. In 2006, PADEP used an integrated format for CWA §303(d) and 305(b). The report is titled *Pennsylvania Integrated Water Quality Monitoring and Assessment Report* and is available on PADEP's website. The water quality status of Pennsylvania's waters is based on the water's use attainment status within one of five categories (e.g., Category 1 is for waters meeting all designated water uses; Category 5 is where a TMDL is required to correct specific impairments). State waters are further broken into segments. Therefore, the same waterbody can have different categories assigned to it if the attainment status changes as the water flows downstream.

The WQS developed by the State consist of both use designations and the criteria necessary to protect those uses. Evaluations of the designated uses of waters occur on an ongoing basis for segments not listed in Chapter 93 of the Pennsylvania Code and for those segments PADEP believes to be improperly classified. Redesignation evaluations can also be requested by other State agencies or by the general public through a rulemaking petition to the Environmental Quality Board.

Pennsylvania Core Review Findings

The core review focused on two of PADEP's six regions: the Southwest regional office, in Pittsburgh, and the Northeast regional office, in Wilkes-Barre. Nine NPDES permits were reviewed, five permits for municipal facilities, and four permits for non-municipal facilities. For both PADEP regions reviewed, most issues focused on a lack of clear documentation and discussion in the fact sheets. Examples of issues include the following:

- Fact sheets for permits reviewed are brief and do not meet regulatory requirements in 40 CFR 124.8 and 124.56. However, when pollution reports (an addendum to fact sheets that includes facility, receiving water, limits and other information) are also considered, the fact sheets are more robust.
- The permit application form (developed by the State) does not require 40 CFR 136 analytical methods for monitoring results. At least one of the permits reviewed used solid waste methods for its analyses.
- Permits reviewed do not have substantial discussion of TMDLs, which should be added to fact sheets. PADEP personnel noted that permit writers typically do not have access to TMDL work done by another group in the central office.
- A non-municipal facility contains effluent limitations for its on-site sanitary treatment system. The permit needs to state that the limitations are based on best professional judgment (BPJ) and not on the secondary treatment standards as noted in the permit. The permit refers to regulations that are only applicable to POTWs.
- In general, fact sheets should include a more detailed discussion of antidegradation and antibacksliding.
- Generally, the fact sheet or pollution report should have a discussion of PENTOX, including any inputs, criteria used, and what the outputs signify. Additionally, that would lead to a discussion of whether TBELs or WQBELS are appropriate, and provide a detailed discussion of any RP analysis (RPA) that was conducted.
- No industrial permits require WET testing. While testing is not required, representative monitoring is needed to demonstrate that WET RP was conducted.
- Fact sheets and records do not include clear descriptions of the decision-making process used in developing permit limitations.
- On the basis of fact sheets, receiving water characteristics, including its general health, background concentrations, and impairment, are often not addressed. It was also unclear how TMDLs were considered in developing permit limitations.
- On the basis of information provided in fact sheets, it was difficult to understand how pollutants of concern were selected.

- For limits carried forward from previous permits, there is no clear discussion of how data were validated from one permit term to another. It would be helpful to include a reference to the initial information and basis for limit development.
- During the permit review, there were multiple transcription errors, presumably because word processing staff produced the final permit. For example, in multiple permits there are references to supplemental flow information cited on the incorrect page, and in one permit the fecal coliform limitations are in the wrong column, producing erroneous effluent limitations in the final permit.
- The influent monitoring requirement needed to determine compliance with BOD₅ and TSS percent removal requirements is missing from POTW permits.

3.1.3 West Virginia

The West Virginia Department of Environmental Protection (WVDEP) has one central location in Charleston, which drafts and issues NPDES permits. The water permitting is led by an assistant director who manages four teams: NPDES permits, groundwater, stormwater, and general permits. WVDEP manages 550 individual permits, including approximately 100 majors.

WVDEP recently switched to a watershed/regional approach, under which all permits for facilities in the same area of the State are addressed in the same permit renewal cycle. That approach was initially taken to reduce permit backlog and was retained. The TMDL workgroup also uses a regional watershed approach and works on watersheds one year ahead of the watershed being addressed by the permits group. Permit writers consult the TMDL workgroup to determine if any TMDL limits are necessary for a given permit. Generally, the TMDL workgroup would develop the WLA, but in some cases a facility might not have been included or the WLA is higher than the permit group would like—the workgroup then develops a more restrictive limit. The permits reflect limits that are protective of water quality and use end-of-pipe limits.

Permitting Process: Each spring, in anticipation of the upcoming fiscal year, notices are sent to all permittees with permits expiring the following year. Permit writers are responsible for requesting the submittal of materials, developing the permit, public notice, and publishing a final permit. EPA's review period coincides with the public review period.

Typically, permittees are not provided with advanced notice of the draft permit. Providing advance notice was done in the past with larger dischargers, but it led to many difficulties with permit revisions and delayed the permitting process. Furthermore, the permittee has ample time to comment on the draft, and the opportunity to appeal the final permit.

The RPA is conducted following procedures in EPA's TSD. WVDEP uses spreadsheets that calculate a log-normal distribution of environmental data. Two separate steps are used in the RPA. The first uses maximum RP values and compares these with the most stringent water quality criteria; the second step compares results on the basis of a consideration of site-specific factors such as mixing zones. The first step is a screening analysis to determine if a pollutant is of concern, while the second offers a more detailed review.

WVDEP uses two mixing zone approaches: default and site-specific. The default approach is used when mixing occurs in large waterbodies. Under that approach, dischargers are granted dilution credits without a mixing zone study. The site-specific approach is applied to large industrial dischargers, where they are required to develop a mixing zone study, conduct water quality modeling, and undertake other tasks. The dischargers must submit mixing zone studies as part of the permit limit development process.

WVDEP has an internal checklist that documents how mixing zones are addressed, but it is not clear if those checklists are used consistently because the approach used is not always explained in the fact sheet.

Antidegradation: Title 47, Series 2 of West Virginia Administrative Law contains the State's WQS. The regulations contain water quality criteria, designated use of receiving waters, the State's antidegradation policy, and mixing zone requirements.

The WQS developed by the State consist of both use designations and criteria necessary to protect those uses. Evaluations of designated uses of waters occur on an ongoing basis.

West Virginia Core Review Findings

Six core NPDES permits were reviewed, for two municipal and four non-municipal facilities. Most issues focused on a lack of clear documentation and discussion in fact sheets. Examples of issues include the following:

- In one permit, no RPA discussion is in the fact sheet. Some pollutants are identified in samples submitted with the permit application, but it is not clear if that information was considered in developing the permit.
- In some fact sheets, there is no substantive discussion of designated uses of the receiving water or whether the waterbody is impaired.
- Fact sheets do not discuss the basis for developing each effluent limitation. There is no comparison of TBELs versus WQBELs or discussion of which is more stringent.
- The rationale for developing interim limits in one permit is not discussed, which is important because the interim limits are similar to the final limits.
- It was not clear if permit applications (specifically State Form S) fulfill all the federal requirements. Form S does not specify that a facility must use analytical methods contained in 40 CFR 136. That requirement might be in the instructions to the permit application or in regulations, but it should be clearer.
- In the table of effluent limits, some permits have no weekly average for BOD, but limits are discussed later in the permit.
- For some permits, it was noted that composite samples are required to be taken over an 8-hour period, which is unusually short (most composite samples are 24-hour samples.) No explanation is provided as to whether that period is consistent with the time of discharge.
- Several municipal permits also contain discharge limits for indirect dischargers, although it was not clear how limits for indirect dischargers were derived or whether the limits are enforceable.

- For one municipal permit, the facility's receiving waterbody is listed as impaired, but the fact sheet does not discuss any existing or pending TMDLs.
- For one municipal facility, limits for TRC in the permit and fact sheet are not consistent. After discussions with WVDEP, it appears that the fact sheet contains more appropriate limits.
- The fact sheet for one permit does not describe the process of industry categorization (and whether the facility is classified as new or existing). It should be clear in identifying which waste streams and limits in the ELG are applicable at the facility.
- Spreadsheets containing permit limit calculations are not included in the fact sheet or permit file for one facility. The fact sheet does contain a sample calculation, but derivation of each permit limit should be included (at a minimum as an attachment to the fact sheet).

3.2 Topic-Specific Reviews

3.2.1 Mercury Methods

NPDES regulations require the use of analytical test methods approved under 40 CFR 136. Four EPA-approved methods for mercury are commonly used in the NPDES program under 40 CFR 136: Method 245.1, Method 245.2, Method 245.7, and Method 1631E. In 1974, EPA approved Methods 245.1 and 245.2, which can achieve measurement of mercury at 200 nanograms per liter (ng/L). EPA approved Method 245.7 and modified versions of other methods, on March 12, 2007. Method 245.7 has a quantitation level of 5.0 ng/L, which is 40 times more sensitive than Methods 245.1 and 245.2. EPA approved Method 1631 Revision E in 2002. Method 1631E has a quantitation level of 0.5 ng/L, which is 400 times more sensitive than Methods 245.1 and 245.2.

Sensitivity of Methods 245.1 and 245.2 are well above most State water quality criterion adopted for protection of aquatic life and human health. In contrast, Methods 245.7 and 1631E, with quantitation levels of 5.0 ng/L and 0.5 ng/L, do support measurement of mercury at lower levels.

Use of a specific method in NPDES permits is not required; however, low level permit limits set in accordance with many State mercury WQS indicate the need to determine the most appropriate analytical method to provide representative information for developing permit requirements.

This portion of the review looked at analytical or detection limits, or both, specified for monitoring requirements in permits following promulgation of the more sensitive Method 1631E and 245.7, and whether the permits provide consideration of quantitation levels (minimum levels) for 40 CFR 136 methods. In an EPA guidance memo dated August 2007, proper test method requirements were clarified, stating NPDES permits require the most sensitive methods, such as Methods 1631E and 245.7. Those methods are appropriate for establishing mercury limits within the permit.

EPA selected permits issued within the past two years (i.e., after December 31, 2004) from each State in the Region to evaluate mercury methods and limits. Two permits from Maryland, one from Pennsylvania, one from Virginia, and two from West Virginia were reviewed to determine

whether justification for limits, monitoring conditions, and appropriate analytical methods are provided in the permit or fact sheet. No permits from Delaware or the District of Columbia were identified that met the selection criteria.

Mercury Methods Findings

Maryland: Two permits identified in Permit Compliance System (PCS) as containing mercury limits were reviewed for Maryland. Both permits were issued after promulgation of Method 1631, but neither permit lists a limit in the permit or fact sheet. One of the permits, Back River WWTP (MD0021555) lists 40 CFR 136 as the method, but does not specify an analytical detection method. The other permit, Patapsco WWTP (MD0021601), lists Maryland Department of the Environment (MDE) Water Management Administrative Toxic Substance Analytical Protocol as documentation for limit requirements. Standards for that method were not available to EPA at the time of the review.

Pennsylvania: One permit for Pennsylvania was identified in PCS that contains mercury limits for review. The Borough of Ambler permit (PA0026603), requires mercury monitoring using Method 245.1 However, the fact sheet has toxics analysis that identifies the average monthly load as 0.077 micrograms per liter ($\mu\text{g/L}$). which is achievable with Method 245.1.

Virginia: One permit identified in PCS as containing mercury limits was reviewed for Virginia. The U.S. Navy-Norfolk Naval Shipyard (VA0005215) permit listed 40 CFR 136, specifically citing methods 200.7, 245.1, 200.8, and 1631. This permit was issued before the 1631E promulgation, with limits of 2.0 $\mu\text{g/L}$, and a quantitation level of 1.0 $\mu\text{g/L}$. The Virginia permit manual says that quantitation levels for metals must equal the lesser of 0.4 WLAA OR 0.6 WLAC, but not less than the lowest Virginia Department of Environmental Quality (VDEQ)-certified metal specific method QL (1.0 Hg.).

West Virginia: Two permits identified in PCS as containing mercury limits were reviewed for West Virginia. Both permits provided a rationale for the limits. The PPG Industries permit (WV0004359) has a table and rationale for each outfall, but no specific analytical methods are included. However, this permit has numeric limits for mercury concentration 30 day average for Outfalls 004, 009 (0.012 $\mu\text{g/L}$), daily max for Outfall 004 (0.018 $\mu\text{g/L}$) and Outfall 009 (0.023 $\mu\text{g/L}$), mercury mass 30-day average for Outfall 309 (0.0396 lbs/day), and mercury mass daily max for Outfall 309 (0.0911 lbs/day). Although no specific analytical method is listed, many permit limits listed are lower than the 0.2 $\mu\text{g/L}$ quantitation limit of Method 245.1.

The other permit, Logan County PSD (WV0105171), lists 40 CFR 136, Method 1631E, as the appropriate analytical method, although it was issued before the 1631E promulgation. BPJ was justification for the method listed; however, no specific limits are cited in the permit or fact sheet.

3.2.2 Impaired Waters

CWA §303(d) requires States to identify and establish priority ranking for waters not attaining WQS, despite implementation of technology based requirements (impaired waters). For those priority waters, States must establish TMDLs for pollutants causing impairments. The focus of the impaired waters review was to verify that permits acknowledge §303(d) status of receiving

waters and verify that impairing pollutants are being addressed in NPDES permits before TMDLs are completed.

EPA examined five permits for impaired waters, one chosen randomly from each Region 3 State. The focus of this inquiry was to assess whether each State considers impairments of a receiving waterbody and, if so, how such impairments are addressed. Mechanisms to address impaired waterbodies include performing RPA; requiring applicants to monitor if they discharge to an impaired water and are likely to discharge the impairing pollutant; and setting appropriate limits for facilities discharging to impaired waterbodies.

Impaired Waters Findings

Delaware: The Allen Family Foods, Inc. (DE0000299) facility discharges to Beaverdam Creek, impaired for nutrients and pathogens. TMDLs for nitrogen and bacteria were being developed when the permit was issued on May 1, 2006. The fact sheet acknowledges that TMDLs were being developed. In addition, the permit includes a special condition reopener that can be used to address the discharge of any pollutant causing or contributing to diminished attainment of any designated use. Discussions with DNREC staff members indicated that because of their permitting workload, TMDLs are generally incorporated into a permit when the relevant permit is reissued.

Maryland: The St. Lawrence Cement Company, LLC (MD0002151) facility discharges to Antietam Creek, §303(d)-listed for nutrients and suspended solids at the time of permit issuance. The permit includes TSS limits and indicates that the limits are continued from the previous permit. The prior permit was not available for review and, therefore, it is not known whether the TSS limits were originally developed in a manner that considered existing impairments. A TMDL addressing TSS in Antietam Creek was issued in August 2002, although there is reference to the TMDL in the permit fact sheet. The facility is an industrial facility that is not likely to discharge nutrients, so no permit limitations were developed for nutrients.

Pennsylvania: The Pennsylvania permit reviewed for impaired waters was Columbia Municipal Authority (PA0026123). The fact sheet indicates that the facility discharges to Susquehanna River and that the discharge point is not on a §303(d)-listed stream segment, although EPA data (TMDL website) indicate that the lower Susquehanna River is impaired for sediment, with no known TMDLs in development. The permit includes TSS limits, and the fact sheet indicates under a heading, *Antidegradation*, that all effluents limits in the permit will protect in-stream existing water uses.

Virginia: The Virginia permit reviewed for impaired waters was R.J. Reynolds Tobacco Company (VA0002780). The facility discharges to James River, within the Lower James River Basin. Lower James River was listed on the State's §303(d) list for nonattainment of nutrients, eutrophication, biological indicators, chloride, estuarine benthics, *E. coli*, and fecal coliform at the time of permit issuance. That segment is also restricted for fish consumption because of PCBs. The fact sheet acknowledges that the facility discharges to a §303(d)-listed segment and indicates that limits were developed in accordance with §303(d)(4), with limits for ammonia and 5-day carbonaceous BOD (CBOD₅), and a requirement that minimizes levels of DO, on the basis of a section 208 plan (the Richmond-Crater 208 Plan). Nutrient limits are based on State Chesapeake Bay nutrient law and guidance (including loadings). The fact sheet also indicates

that because the permit requires compliance with limits before discharge, the facility is expected to neither cause nor contribute to observed violations of WQS. The permit also includes a TMDL reopener permit condition and a Chesapeake Bay nutrient reopener permit condition to address a final TMDL or Chesapeake Bay nutrient standards, respectively.

West Virginia: The West Virginia permit reviewed for impaired waters was Creo Manufacturing America, LLC (WV0005533), which manufactures lithographic plates and mixes/repackages chemicals for the printing industry. The facility discharges treated industrial waste to Opequon Creek of the Potomac River, and stormwater to Turkey Run of Opequon Creek. Opequon Creek is impaired for aluminum, biological integrity, and fecal coliform. The State performed a Tier I antidegradation review for the facility's Outfall No. 003. At the time of permit issuance, the State determined that the facility's proposed activity will not cause significant degradation to the receiving stream.

3.2.3 Total Maximum Daily Loads (TMDLs)

A TMDL is a calculation of the maximum quantity of a given pollutant that may be added to a waterbody from all sources without exceeding the applicable water quality standard for that pollutant. States must establish TMDLs for all impairing pollutants—those pollutants that prevent waters from attaining WQS after implementing applicable technology-based requirements. Where a TMDL has been established for a waterbody, effluent limits should be consistent with assumptions and requirements of any wasteload allocation for the discharge and approved by EPA.

The focus of the TMDL review was to verify that final TMDL requirements applicable to point sources are being implemented in NPDES permits. EPA examined three permits, one each randomly selected from Delaware, Maryland, and West Virginia. For Pennsylvania, Virginia, and the District of Columbia, no relevant final TMDLs were identified.

TMDLs Findings

Delaware: The Delaware permit reviewed for TMDLs was Kent County Levy Court Wastewater Treatment Plant (WWTP)(DE0020338), issued November 16, 2006. According to EPA's *Surf Your Watershed*, Muderkill River (USGS HUC 02040207) is impaired for nutrients and oxygen consuming compounds. A TMDL was approved in December 2001 and later amended in December 2005. The TMDL establishes limits for Kent County Levy Court WWTP for total nitrogen, total phosphorus, and CBOD₅. The permit includes discharge limits on the basis of the TMDL; however, those are subject to a 54-month compliance schedule.

Maryland: The Maryland permit reviewed for TMDLs was Back River WWTP (MD0021555), issued September 1, 2005. The fact sheet indicates that the receiving water, Back River, is a §303(d)-listed waterbody for nutrients, suspended sediment, chlordane, zinc, and PCBs, and that a TMDL for chlordane was completed in December 1999. The permit requires monitoring and reporting for chlordane, but according to the TMDL, Back River WWTP is not likely to discharge chlordane.

Additional TMDLs for total nitrogen and total phosphorus were not final when the permit was being developed. The permit includes seasonal (summer) limits for phosphorus that appear

consistent with the TMDL, and an annual load limit for phosphorus that appears consistent with the TMDL. The permit includes limits for ammonia nitrogen but does not include limits for total nitrogen. The permit acknowledges that TMDLs are being developed and provides that the permit can be reopened when TMDLs are completed, or when revised nutrient limits are developed (such nutrient limits are based on Chesapeake Bay agreements).

It is noteworthy that since 1997, Back River WWTP has implemented a Biological Nutrient Reduction program and that the facility is participating in the Enhanced Nutrient Removal Strategy. The facility has entered a contract for Enhanced Nutrient Removal-related upgrades to be completed by 2013 and the permit provides that when upgrades are complete, the permittee must make best efforts to achieve specified total nitrogen and total phosphorus concentration and loading goals. A TMDL was finalized for bacteria in June 2007 and, according to the permit, limits for bacteria will be amended when reopened.

West Virginia: The West Virginia permit reviewed for TMDLs was for Luke Paper Company, part of the Westvaco Corporation (WV0046329), issued March 31, 2003. According to EPA's *Surf Your Watershed*, Piney Swamp Run (USGS HUC 02070002) is listed as impaired for iron, aluminum, and pH. A TMDL for aluminum provides a wasteload allocation for the facility (396 lbs/year). The fact sheet and permit do not indicate that the receiving water is impaired or explain the basis for effluent limitations. The permit includes limits for aluminum (3.00 milligrams per liter (mg/L) monthly average, 6.00 mg/L maximum daily average); however, because flow information was not provided, it was not possible to verify that aluminum limits implement the wasteload allocation.

3.2.4 Use of *E. coli* and Enterococcus Bacteria Standard

In its 1986 *Ambient Water Quality Criteria for Bacteria* document, EPA found that *E. coli* and Enterococcus are the most reliable indicators of bacteria in surface waters and recommends that those two indicators serve as the basis for bacterial WQS. *E. coli* is recommended as an indicator criterion for fresh waters, and enterococci is recommended as an indicator criterion for fresh waters and marine waters.

The EPA-recommended recreational water quality standard (WQS) for *E. coli* is based on two criteria: (1) a geometric mean of 126 organisms/100 milliliters (mL) based on several samples collected during dry-weather conditions, or (2) a single sample maximum based on designated use (e.g., 235 organisms/100 mL for designated beach).¹ The EPA-recommended recreational WQS for enterococci also is based on two criteria: (1) a geometric mean of 33 organisms/100 mL (fresh water) or 35 organisms/100 mL (marine waters); and (2) a single sample maximum based on designated use. EPA published approved test methods for *E. coli* and enterococci in wastewater on March 26, 2007 (72 FR 14220). Those methods were added to 40 CFR 136.

All Region 3 States except for West Virginia and the District of Columbia are subject to the BEACH Act.² Under the BEACH Act, States with *coastal recreation waters* must incorporate

¹ *Ambient Water Quality Criteria for Bacteria* – 1986, USEPA, EPA 440/5-84-002, January 1986.

² *Beaches Environmental Assessment and Coastal Health Act of 2000*.

EPA's published criteria for bacteria or bacterial indicators, or criteria EPA considers equally protective of human health, into their State WQS by April 4, 2004.³

Delaware: Delaware has water quality criteria for enterococci for primary and secondary contact recreation waters, for both freshwater and marine waters. For primary contact recreation in fresh waters, the criterion is 100 colonies/100 mL. For primary contact recreation in marine water this criterion is 35 colonies/100 mL (DNREC Surface Water Quality Standards, §4.6).

District of Columbia: The District of Columbia⁴ has criteria for fecal coliform and *E. coli* that appear consistent with federal criteria (Title 21, Ch. 11, DCMR, Water Quality Standards). Based on documents reviewed, use of the fecal coliform standard ceased after December 31, 2007.

Maryland: Maryland regulations at COMAR 26.08.02.03-3 (Water Quality Criteria for Specific Designated Uses) establish water quality criteria for *E. coli* and enterococci that appear consistent with EPA's 1986 federal criteria.

Pennsylvania: Pennsylvania has water quality criteria based on fecal coliform (PA Code § 93.7). However, Pennsylvania is subject to 40 CFR 131.41 [Bacteriological criteria for those states not complying with CWA §303(i)(1)(A)].

Virginia: Virginia's WQS (9VAC25-260-170) include standards for fecal coliform in shellfish waters and *E. coli* in freshwater and enterococci in saltwater. All standards (fecal, *E. coli* and enterococci) appear consistent with EPA criteria.

West Virginia: West Virginia has water quality criteria for fecal coliform (47 CSR 2).

Use of *E. coli* and Enterococcus Bacteria Standards Findings

One permit from Maryland and one from Virginia were reviewed to determine whether the permits reflect the most current bacteria water quality indicator. In addition, core permits that identified bacteria limits were also reviewed.

Maryland: The Maryland permit reviewed was Northeast Maryland Waste Disposal (MD0065447). The fact sheet indicates that the previous permit contained a fecal coliform limitation based on WQS, and that the State promulgated new regulations that replaced fecal coliform with a limitation for *E. coli*. The proposed permit limit is based on the new *E. coli* standards (COMAR 26.08.02.03-3). The *E. coli* limit is a monthly average of 126 MPN⁵/100 mL with monthly sampling (limit is a monthly geometric mean), consistent with steady state geometric mean indicator density standard specified in COMAR 26.08.02.03-3. No single

³ EPA published a final rule on November 16, 2004, promulgating its 1986 water quality standards for *E. coli* and enterococci for the 21 states and territories with coastal recreational waters that had not adopted water quality criteria that were as protective of human health as EPA's approved criteria.

⁴ The District of Columbia is not authorized to implement the NPDES program. Region 3 implements the program in D.C.

⁵ Most probable number.

sample maximum limit is included in the permit.⁶ Thus, the permit appears to be implementing the State *E. coli* criteria.

Virginia: The Virginia permit reviewed for bacteria standards was for the Opequon Water Reclamation facility (VA0065552). The permit includes an *E. coli* (N/100 mL) limit of 126 (geometric mean), which is consistent with the State WQS. No single sample maximum limit is specified in the permit.

Core Review Bacteria Findings

The core permit review also found the following:

- Three Delaware POTW permits include limits for enterococci.
- One West Virginia POTW permit includes limits for fecal coliform.
- Permits in the Pennsylvania Northeast Regional Office include limits for fecal coliform based on State regulations.
- Analytical methods:
 - The Virginia permit specified methods in 40 CFR 141.21 (Drinking Water Coliform Sampling) and holding times per 40 CFR 136.
 - Other permits generally referenced analytical methods in 40 CFR 136.

3.2.5 Antidegradation and Mixing Zones

During the review of NPDES permits, provisions for antidegradation were reviewed for consistency with the State and federal program requirements. The application of mixing zones was also examined, to gain an understanding of how mixing zones are being used in permit development. Permits in Pennsylvania, West Virginia, and Delaware were reviewed.

Antidegradation Findings

Implementing antidegradation requirements has posed a challenge for PADEP. The State has antidegradation procedures in State regulations; however, according to PADEP personnel, legal challenges remain. Therefore, responsibility for addressing antidegradation has fallen on individual permit writers. In Delaware and West Virginia, it appears antidegradation is considered in permit development, but a more substantive discussion should be included in the States' fact sheets.

Delaware has antidegradation requirements in its State's WQS, and also has a State antidegradation policy. This policy indicates that MOUs can be used to coordinate implementation of antidegradation requirements. Under State requirements, waters of ERES are provided tier 2.5 level of protection. In general, consideration of antidegradation requirements should be better documented in fact sheets.

Mixing Zones Findings

West Virginia uses two mixing zone approaches: default and site-specific. Default mixing is generally used for larger receiving waterbodies and dischargers are granted dilution credits

⁶ State water quality standards also specify single sample allowable maximum based on frequency of use.

without a mixing zone study. A site-specific mixing assessment is often required for larger industrial dischargers, who are required to develop a mixing zone study, conduct water quality modeling, and undertake other tasks. The default approach is used when mixing occurs in large waterbodies, and the site-specific approach is applied for large industrial dischargers. The larger dischargers must submit mixing zone studies as part of the permit limit development process. WVDEP also has an internal checklist to document how the mixing zone assessment was handled, but it does not seem to be applied consistently because the approach applied is not always explained in the fact sheet.

Pennsylvania uses the PENTOX model in determining whether WQBELs are required. A component of PENTOX is a mixing zone module. Data and other inputs are entered by the permit writer. Fact sheets do not provide a detailed explanation of the inputs, criteria used, and what the outputs signify. PADEP stated that the percent of flow allotted to dilution is determined on a site-specific basis. The percentage varies, and PADEP has no other model for these types of discharges, which makes modeling on lakes and river pools difficult. PENTOX is able to consider a partial mix factor as a user-defined criterion.

Delaware incorporates its mixing zone analysis into a spreadsheet used to assess RP and calculate water quality based limits. It appears that the State's spreadsheet efficiently incorporated mixing zones into the development of permit limits.

3.2.6 Thermal Variances & Cooling Water Intake Structures [CWA §316(a) & 316(b)]

CWA §316(a) addresses thermal discharges and §316(b) controls impacts from cooling water intake structures. The goal of the review was to identify if and how the permitting authority incorporated §316 provisions into permit requirements.

The universe of potential NPDES permits for review was determined using EPA's PCS database. A query of PCS produced a list of 200 NPDES permits in Region 3 under Standard Industrial Classification codes 4911, 4931, 4932, and 4939. Those sectors include the steam electric generator category, which typically use large volumes of cooling water and are often subject to both §316(a) and (b). EPA selected 16 permits from Region 3 (2 in Washington, D.C., 2 in Delaware, 2 in Maryland, 4 facilities in Pennsylvania, 4 in Virginia, and 2 in West Virginia). Region 3 provided copies of the permit, fact sheet, and associated record materials (correspondence, memos to the record, and previous permits), as available.

Findings from §316(a) and 316(b) Review

Eleven of the sixteen facilities selected are §316(b) Phase II facilities.⁷ Four permits (one in Virginia, one in the District of Columbia, and two in Delaware) appeared to be draft permits. Among the final permits, all but two permits were issued within the past five years.⁸ For some of the permits, only the permit and fact sheet were provided for review; others provided previous permits or other supporting materials for review. A summary of §316(a) and §316(b) findings is provided below.

⁷ The 316(b) Phase II Final Regulation is suspended.

⁸ The permit for Benning (DC) expired in 2005. The permit for Smith (Maryland) expired in January 2007.

Delaware

§316(a): For the Edge Moor facility (DE0000558), a renewal of the §316(a) variance was requested by the permittee and granted in the permit. The second Delaware facility (Indian River, DE0050580) grants an interim variance on the basis of an expanded mixing zone study, called a *designated heat dissipation area* that covers 300 acres or most of Island Creek, the receiving stream. The study requests follow-up studies to ensure that the variance is not causing appreciable harm to the waterbody.

§316(b): Both Delaware facility permits (Indian River and Edge Moor) require a variety of §316(b) information collection requirements. However, neither permit contains a determination of best technology available (BTA) or §316(b) permit conditions. DNREC is in the process of making a §316(b) BTA determination for the Indian River draft permit. The draft permit went to a public hearing, and DNREC is waiting for the hearing officer's recommendation, through a Secretary's Order, that will provide the Surface Water Discharges Section directions as to requiring cooling towers or screening structure with reduced flow, as a result of closing of two of the units at the Indian River facility.

District of Columbia

§316(a): One District of Columbia facility (Benning, DC0000094) employs closed-cycle cooling and operates infrequently. The permit does not include limits for temperature. The other facility (Potomac, DC0022004) does not seem to have a variance, and temperature limits are WQBEL-based.

§316(b): The Benning facility permit does not discuss §316(b) permit conditions. The Potomac facility permit requires §316(b) studies, but it does not contain a determination of BTA.

Maryland

§316(a): The permits for both Maryland facilities (Smith, MD0000582 and Calvert Cliffs, MD0002399) renew thermal limits from the prior permit. Neither discusses how the limits were derived or if a variance was requested, but both permits require the facility to conduct a thermal discharge study during this permit term.

§316(b): The Calvert Cliffs facility is required to adhere to the schedule for submitting materials under the Phase II rule. However, no mention is made of permit conditions based on BPJ for the current permit cycle. The permit for the Smith facility recently expired and contains no reference to the Phase II rule; it requires only the reporting of unusual impingement events.

Pennsylvania

§316(a): Two Pennsylvania facilities (Mid Merit, PA0088781 and Robinson, PA0252808) are new facilities and will employ closed-cycle cooling. Because of the expected low volume of thermal discharge flows, WQBELs apply in the permits. Another facility (Brunner Island, PA0008281) is being required to install helper cooling towers to reduce the thermal impacts. One facility (New Castle, PA0005061) retains the thermal limits from the prior permit, but it does not discuss how the limits were derived or if a variance was requested.

§316(b): Two Pennsylvania facilities are new facilities. The Mid Merit facility is required to adhere to the Phase I rule, and the Robinson facility will not withdraw from surface waters, making it exempt from the Phase I rule. The other two permits, Brunner Island and New Castle, contain language requiring the facilities to meet the schedule for submitting documents under the Phase II rule. However, neither Phase II permit contains interim BPJ-based measures to minimize adverse environmental impacts.

Virginia

316(a): Two Virginia facilities (North Anna, VA0052451 and BreMO, VA0004138) retained thermal limits from prior permits. Both permits require annual monitoring data that is reviewed at each permit renewal. An attachment to North Anna's permit presents the derivation of the heat load, but BreMO's permit does not explain how limits were derived. The other two facilities (Bear Garden, VA0090891 and Fluvanna, VA0090905) employ closed-cycle cooling. Both facilities have temperature limits, but it is not clear if the facilities are required to obtain a 316(a) variance.

Since the review, the BreMO permit was issued July 2010. Appendix C of the fact sheet states, "Note: BreMO Power Station does not have a §316(a) variance. Rather, BreMO Power Station has a Thermal Mixing Zone." The thermal mixing zone is described in Appendix D of the fact sheet. According to the State, the rationale for the heat rejection unit limit is not clear; the State will add guidance in the permit manual stating that §316(a) considerations for all thermal effluents should be discussed in the fact sheet.

§316(b): The North Anna permit requires the facility submit data similar to the materials required in the now-withdrawn Phase II rule. There was no discussion of interim BPJ-based measures to minimize adverse environmental impacts. The BreMO facility is required to submit materials as described in the Phase II rule, and it does not contain any discussion of interim BPJ-based measures to minimize adverse environmental impacts. Bear Garden and Fluvanna appear to be new facilities whose permits do not discuss conditions for a cooling water intake; it is not clear if either facility withdraws from surface waters.

According to the State, the 2012 reissuance of North Anna will readdress §316(b), and the July 2010 reissuance, the §316(b) special condition was updated to read,

As required by §316(b) of the Clean Water Act, the location, design, construction and capacity of the cooling water intake structures for the permitted facility shall reflect the best technology available (BTA) for minimizing adverse environmental impact. This permit may be reopened to address compliance with Clean Water Act § 316(b) through requirements including but not limited to those specified in EPA regulations in 40 CFR Part 125 Subpart J when finalized. An assessment shall be conducted to determine the BTA to reduce impingement mortality from the operation of the cooling water intake structures. The assessment shall evaluate all feasible technologies to minimize the impingement impacts from the cooling water withdrawal. The report shall be submitted to DEQ-Valley Regional Office within 1 year from the effective date of the permit.

West Virginia

§316(a): One West Virginia permit (Kanawha, WV0001066) renewed the thermal limits from the previous permit, but it does not discuss how the limits were derived or if a variance was requested. The other permit (Albright, WV0004723) renews the previous variance, but it also requires the facility to install a closed-cycle recirculating cooling system within the permit term.

§316(b): The Kanawha facility is required to submit materials as described in the Phase II rule. The Albright facility is granted a renewal of a §316(b) variance until a closed-cycle cooling system is installed.

3.2.7 Combined Sewer Overflows (CSOs)

In 2007 EPA adopted a new definition for the Water Safe for Swimming (SS) Measure,⁹ which sets goals to address the water quality and human health impacts of CSOs. The new definition sets a goal of incorporating an implementation schedule of approved projects into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones. The cumulative national goal was 65 percent of the nation's CSO communities.

In FY2007, Region 3 had 222 CSO communities. Its commitment under the SS measure for FY2007 was to have 140 permits, or other enforceable mechanisms in place, to implement approved LTCPs with specific dates and milestones. In FY2007, Region 3 States had 156 CSO permits or enforceable orders with approved LTCPs (70 percent), enabling them to exceed both their FY2007 commitment of 63 percent and the national commitment of 65 percent.

In FY2006 and FY2007, EPA Headquarters reviewed three LTCPs in Region 3, all from Pennsylvania, assessing whether the CSO control plans included appropriate financial and technical analyses and determining if there was a need for additional guidance.

Borough of Kane, Pennsylvania: (Small Community). The LTCP review for this small community was done using a new format for the LTCP Checklist review. Each LTCP Checklist evaluation workbook contains the completed LTCP Checklist, the completed LTCP Evaluation, and the reviewer's overall opinion of LTCP's compliance with the CSO Control Policy and permit requirements.

Borough of Monaca, Pennsylvania: (Small Community). The borough was required to develop a Post Construction Monitoring Plan based on an Administrative Order (AO) received from EPA Region 3. The AO requires Monaca Borough to monitor flow; characterize pollutant loads to receiving waters from remaining CSO discharges; characterize impacts of remaining CSO discharges on receiving waters; monitor ecological health of receiving waters; monitor recreational use of receiving waters affected by CSO discharges; and identify trends in use of receiving waters, effects of CSO discharges on the health of the human population, and of organisms in the waterbody. The AO does not prescribe how Monaca must comply with those requirements; Region 3 and Monaca can negotiate how those requirements are met. Monaca addresses several of requirements in its Post Construction Monitoring Plan, and uses the

⁹ As part of EPA's Office of Water Strategic Plan (within Goal 2: Protecting America's Waters). See generally <http://water.epa.gov/aboutow/org/programs/goals.cfm>.

Presumption Approach, whereby capture of greater than 85 percent of flow during wet weather indicates compliance with the CSO Control Policy. In 2000 Monaca developed a predictive model to correlate rainfall with CSO events and overflow volumes. Monaca conducted a six-month study during which it collected CSO overflow volumes and rainfall data, and developed the model to predict frequency, duration, and flow of CSOs based on recorded rainfall (intensity and depth). Beginning in 2003, flow meters were installed to monitor CSO volumes at CSOs 002 and 006 (the only active CSOs).

Upper Allegheny Joint Sanitary Authority, Pennsylvania: (Small Community). Upper Allegheny Joint Sanitary Authority prepared its LTCP in 2003, as required by a Compliance Order from PADEP. At the time of LTCP development, it felt that the permit schedule did not allow it time to properly characterize the Combined Sewer Systems (CSS). It is not clear if further work has been done to update the plan since 2003.

Implementation of characterization studies or CSO controls is made more difficult because the Authority must obtain cooperation (or ownership in the case of many controls) of the municipalities that own the multiple tributary collection systems.

Combined Sewer Overflow Findings

Borough of Kane, Pennsylvania: The Borough of Kane no longer has active CSOs, and has a *temporary* bypass at the POTW. Some potential issues with the bypass that were evaluated as part of this review.

Borough of Monaca, Pennsylvania: The CSO discharge monitoring report form/requirement was not available for EPA Headquarters review. Monaca's Post Construction Monitoring Plan focuses on evaluating the impacts of any remaining CSOs on water quality and designated uses in the receiving water.

- The Ohio River has designated uses of aquatic life support, fish consumption, and recreation. The water quality of this segment of the river supports only aquatic life and recreation, but it does not support fish consumption. Fish advisories have been made for bottom-feeding fish, which indicates that the source of contamination is sediment contaminated with PCBs and chlordane. However, Monaca is not required by its permit to monitor for PCBs or chlordane in CSO discharges.
- Monaca has proposed conducting bacterial monitoring for fecal coliform to evaluate compliance with recreational designated uses of the Ohio River. That fulfills Monaca's requirements of monitoring receiving waters to characterize impacts of remaining CSO discharges and recreational use of the receiving waters affected by CSO discharges.
- Monaca proposes to collect fecal coliform data upstream and downstream of each of the two remaining CSOs, likely nearshore samples. As such, sampling results would probably be representative of nearshore conditions and localized CSO impacts, if impacts occur. Sampling would not be representative of mainstem conditions in the Ohio River.
- Monaca proposes to conduct biweekly sampling on non-CSO days with additional sampling of CSO events whenever possible. Fecal coliform data will be evaluated quarterly.

The Post Construction Monitoring Plan focuses on addressing monitoring requirements of receiving waters to characterize impacts of remaining CSO discharges. In addition, the plan monitors recreational use of the receiving waters when affected by CSO discharges from the Monaca system. The plan does not summarize relevant WQS for bacteria, nor does it provide for collection of an adequate number of samples to calculate the geometric mean for comparison to the bacterial water quality standard. Therefore, on the basis of its current sampling plan, Monica cannot adequately demonstrate compliance with WQS.

Upper Allegheny Joint Sanitary Authority: The LTCP is very weak, with no characterization of CSS, CSOs, receiving waters or rainfall-overflow relationships. It does not map CSS, map or list CSOs, list receiving waters (or any information about them), or summarize CSS capacity, population or acreage served. The authority reportedly had a consultant monitor rainfall, CSO overflow, water quality (BOD, DO, TSS, fecal coliform), and prepare a rainfall-CSO relationship model; the LTCP has no discussion of the sampling plan, results, or analysis.

The LTCP also has a weak evaluation of CSO controls. The LTCP looks at 31 potential controls; 9 (2 source controls, 4 collection system controls, 3 treatment technologies) were selected for further consideration. Of the 31 potential controls, street sweeping, installation of elastometric tidegates, in-line storage, and coarse screening have already been implemented as part of the Nine Minimum Controls. The plan does not provide an analysis of alternatives (other than general narrative statements of infeasibility because of space or capital limitations), discuss screening criteria, rationale for their choices, cost analysis, or analysis indicating that the chosen controls will meet WQS. The LTCP identifies CSOs in sensitive waters (public water supply intake), but it does not consider them when choosing controls. The primary control chosen is to identify illegal connections through a dye study, but there is no supporting evidence that illegal connections in CSS are a problem or that eliminating them will meet WQS.

3.2.8 Sanitary Sewer Overflows (SSOs)

Ensuring reporting of overflows to the NPDES authority is essential in controlling wet weather discharges from municipal wastewater sources. EPA believes that, most CSOs and bypasses at treatment plants are being adequately reported. However, information obtained in developing the *2004 Report to Congress on the Impacts and Control of CSOs and SSOs*,¹⁰ indicates that some NPDES authorities need to improve permittee reporting of SSOs.

Sewage overflows and bypasses at sewage treatment plants may endanger human health. Appropriate third party notification can reduce health risks associated with such releases. Permits can establish a process for requiring the permittee or the NPDES authority to notify specified third parties of overflows that can endanger health because of a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that could endanger health because of a likelihood of human exposure.

In April 2005, EPA's WPD distributed draft guidance for NPDES permit requirements for SSOs. The draft guidance addresses how NPDES permits should be clarified to ensure that SSOs and unanticipated bypasses and upsets are reported.

¹⁰ U.S. EPA, Office of Water, EPA 833-R-04-001, August 2004.

EPA's review of SSOs included an evaluation of the reporting of SSOs and notification to drinking water officials, focusing on whether SSO occurrences are being reported, and how drinking water facilities are notified of impacts on source water.

Findings

EPA Region 3 believes that all States in the Region are requiring reporting of SSOs. It is not clear what authorities (e.g., State reporting requirements or NPDES requirements) are being used to require reporting of SSOs. In addition, it is not clear whether States are requiring reporting of SSOs that do not discharge to waters of the United States. Those discharges and SSOs from municipal satellite collection systems must be reported. Some States might need to clarify NPDES reporting requirements for SSOs to be consistent with the EPA draft guidance on permit SSO reporting requirements, dated August 2007.¹¹ That draft guidance addresses how existing permit conditions apply to SSOs and sanitary sewer collection systems and is available on the EPA website. The Region has not yet had comprehensive discussions with its States about how to ensure that drinking water facilities should be notified of impacts on source water from SSOs or unanticipated bypasses or upsets.

3.2.9 Stormwater

A review of selected stormwater permits was completed as part of the PQR. Stormwater construction general permits were reviewed for Maryland, West Virginia, and Pennsylvania, and a stormwater industrial general permit was reviewed for Maryland. EPA selected stormwater general permits that will soon be reissued in the Region, for which comments could still be considered for incorporation. EPA did not review State general permits that were more than a year away from being reissued, acknowledging that comments submitted to the State now could be considered for all future permits.

Stormwater Construction General Permits Findings

Maryland: EPA reviewed the Maryland Construction General Permit, which expired February 28, 2008. The permit should require controls on other construction activities in addition to erosion and sediment control, and be reorganized to include non-numeric limits (i.e., BMPs) rather than imply that Storm Water Pollution Prevention Plan (SWPPP) documentation identifies appropriate permit requirements. The permit should also include WQBELs (or document in the fact sheet why existing BAT limits are adequate). Finally, the permit should include language that addresses the need to document updates to plans and any corrective actions taken to comply with permit requirements.

West Virginia: EPA reviewed West Virginia's Construction General Permit, for which public notice was given in August 2007. The permit is not well organized and should be restructured topically in a manner consistent with EPA's permit writers' guidance, and include all applicable NPDES standard conditions. In addition, the permit must distinguish between permit eligibility and permit authorization, particularly as it applies to compliance with WQS. Inspection requirements in the permit should also be more detailed (e.g., inspector qualifications, areas to inspect, documentation).

¹¹ http://www.epa.gov/npdes/pubs/sso_fact_sheet_model_permit_cond.pdf.

Pennsylvania: EPA reviewed Pennsylvania's Construction General Permit, which expired December 2007. The permit does not include all applicable NPDES standard conditions, and should be revised to require that all reports are signed and certified in accordance with the requirements in 40 CFR 122.22. Required BMPs and inspection requirements must include more than just erosion and sediment controls (e.g., waste and material management) and those additional conditions should be reasonably specific in the permit. The permit also needs to include WQBELs (or document in the fact sheet why existing BAT limits are adequate).

Industrial Stormwater General Permit Findings

EPA reviewed Maryland's Industrial General Permit, which expired November 30, 2007. The permit should include all applicable NPDES standard conditions, including certification for all reports. The control standard should be more stringent than the *reduce* standard included in Part IV.B. It is suggested that the permit use *eliminate or minimize* or similar language. The permit should be reorganized to include narrative effluent limits rather than imply that SWPPP documentation identifies appropriate permit requirements. The permit also needs to include WQBELs (or document in the fact sheet why existing BAT limits are adequate).

3.2.10 Concentrated Animal Feeding Operations (CAFOs)

At the time of the review, Region 3 had 770 CAFOs, of which an estimated 23 percent were covered under NPDES CAFO permits issued under EPA's 2003 CAFO regulations. That low number of permitted CAFOs is of concern, because 40 percent of the nutrients discharged into the Chesapeake Bay can be attributed to agricultural sources. CAFOs are considered to be the most significant source of nutrients in the Chesapeake Bay, including certain sensitive areas like the Eastern Shore. All States in the Region are required to update their regulations to be consistent with EPA's 2003 and 2008 CAFO rulemakings,¹² which increased the number of permitted operations. Since the PQR was conducted in 2007, results provided herein indicate State progress at the time of the review. Virginia provided an updated summary of its CAFO program, which is included in the Virginia summary below.

EPA reviewed general permits issued by Region 3 States for CAFOs. Those general permits cover all animal sectors in the Region and were chosen because of their widespread applicability. The following section includes a brief discussion of each States' procedures and a discussion of findings from the permit review.

Delaware: The Water Resource Division of the Delaware DNREC administers regulatory programs related to CAFOs, develops individual NPDES permits for CAFOs, and framework/regulations for the General Permit. The Delaware Nutrient Management Commission, under the Delaware Department of Agriculture develops regulations pertaining to nutrient management, waste management for animal feeding operations (AFOs), and processes notices of intent (NOIs) for the NPDES general permit for CAFOs. The responsibilities of all agencies are outlined in a detailed Memorandum of Agreement dated June 13, 2000, which had not received EPA approval as of December 2008.

¹² 73 FR 70418-70486, November 20, 2008.

On the basis of information provided by Region 3 to EPA Headquarters, 50 CAFOs are in Delaware, 15 of which (30 percent) are covered under the State's General Permit. Delaware revised its regulations and published a CAFO general permit in September 2005 to reflect the 2003 federal CAFO regulations.

A nutrient management plan (NMP) must be developed for all AFOs with more than eight *animal units* (AUs) or where persons control property in excess of 10 acres on which nutrients are applied (Note: the AU threshold under the Nutrient Management Act may differ from NPDES thresholds under State regulations). These NMPs were required to be developed and implemented as of January 1, 2003. In compliance with the Delaware NPDES regulations, CAFOs are required to develop an NMP. The State NMP requires an NMP to be developed by a certified nutrient handler. Full implementation of the program was required by January 1, 2007. Delaware also has a certification program for those persons that develop Comprehensive NMPs and certification of persons directly involved with the generation or application of nutrients in the State.

Maryland: MDE, Water Management Administration, Water and Wastewater Permits Program, administers the NPDES permitting program. Maryland Department of Agriculture (MDA) also has authority to implement the Water Quality Improvement Act (WQIA), which authorizes regulations and mandates NMPs for all Maryland farms with eight or more AUs. An MOU exists between MDE and MDA.

On the basis of information provided by Region 3 to EPA Headquarters, 78 CAFOs are in Maryland (primarily in the broiler sector), 7 (9 percent) of which have NPDES permits. Maryland revised its regulations to reflect the 2003 federal CAFO regulations and published a draft CAFO general permit in April 2005. Another draft general permit that regulates the broiler industry has been developed and has undergone several public meetings. It is expected that formal public hearings will be scheduled in September 2008. Poultry processors are required to help growers dispose of excess chicken manure in a manner that will not increase nutrient loading to the Chesapeake Bay.

In Maryland, the NPDES program requires CAFOs to prepare a waste storage and handling plan. All those facilities are also covered by the WQIA, which requires all agricultural operations with gross annual incomes in excess of \$2,500 or livestock operations with more than eight AUs to prepare an NMP.

Waste Management System Plans for facilities that include animal wastewater distribution systems must also meet all requirements of NRCS Waste Utilization Standard 633, COMAR 15.20.04.09 and 15.20.04.10 for NMP content and recommendations. For facilities using liquid animal wastewater, the plan must also comply with NRCS Irrigation Water Management Standard 449.

MDA Nutrient Management Regulations (Title 15, Subtitle 20) require CAFOs to have an NMP prepared by a certified nutrient management consultant. State NPDES regulations and general permits for CAFOs do not require certification of preparers of the waste management plan. MDA developed a Comprehensive Nutrient Management Plan (CNMP) certification program in 1992.

Pennsylvania: State Conservation Commission (SCC) and PADEP have authority to regulate CAFOs under Title 25 of Pennsylvania Code. PADEP administers NPDES permits, and SCC has developed regulations outlining requirements for developing and approving NMPs (county conservation districts can also approve NMPs). Pennsylvania Department of Agriculture supports the PADEP CAFO program.

On the basis of information provided by Region 3 to EPA Headquarters, 462 CAFOs in Pennsylvania, an estimated 165 (36 percent) of which have NPDES permits. Pennsylvania revised regulations in November 2005 to reflect the 2003 federal CAFO regulations and published a CAFO general permit in June 2006.

Pennsylvania uses the term *animal equivalent unit* (AEU), which is based on animal weight (one AEU is equal to one pound of animal weight) in place of the federal AU. AUs are based on the number of animals. Pennsylvania considers the AEU to be as protective of water quality as the AU.

All CAFOs in Pennsylvania must obtain coverage under an NPDES CAFO Permit. The following, where applicable, are required for all CAFOs:

- An approved NMP under the Pennsylvania Nutrient Management regulations.
- Implementation and availability of the Chapter 102 Erosion and Sedimentation Control Plan for earthmoving activities, including plowing and tilling where manure is applied.
- An NPDES Permit for stormwater discharges for earth disturbances of five acres or more.

An NMP developed by a certified nutrient management specialist is required for all CAFOs. The NMP must be submitted for approval to the county conservation district (CCD) or SCC. The CCD or SCC must approve the NMP before the NPDES CAFO permit coverage becomes effective. Only the CCD may be delegated the responsibility for overseeing plan implementation, maintenance, record-keeping, and compliance.

CAFO owners and operators should follow the requirements in PADEP's *Field Application of Manure*.¹³ The manual describes approved practices for application of livestock and poultry manure in Pennsylvania and serves as a supplement to *Manure Management for Environmental Protection*.¹⁴ It works in conjunction with requirements under the Nutrient Management Act and the Pennsylvania Strategy for CAFOs. A registered professional engineer must certify the design and construction of any new manure storage facility is consistent with the *Pennsylvania Technical Guide*.¹⁵ That certification must be submitted to PADEP.

PADEP proposes additional requirements for large farming operations (with more than 1,000 AEUs). Additional requirements include:

- Preparedness, Preventive, and Contingency plan;
- Water Quality Management Part II CAFO permit for a new or expanded manure storage facilities, and professional engineer's certification for existing manure storage facility design, construction, and operation; and,

¹³ <http://www.elibrary.dep.state.pa.us/dsweb/Get/Version-48423/361-0300-002.pdf>.

¹⁴ http://panutrientmgmt.cas.psu.edu/pdf/rp_manure_mgmt.pdf.

¹⁵ <http://www.nrcs.usda.gov/technical/efotg/>

- Importer or broker agreement for addressing the storage and/or land application of exported manure.

Pennsylvania requires individual permits for operations that meet specific criteria.

Virginia: At the time of the PQR, VDEQ, Water Programs, regulated the NPDES program and pollution discharges from land application, from treated waste and surface water. There were approximately 150 Large CAFOs in Virginia, regulated under the Virginia Pollution Abatement (VPA) permitting program for all livestock and poultry, which includes individual and general permits. Virginia revised its regulations to reflect the 2003 federal CAFO regulations and published a NPDES CAFO general permit in November 2004. The State also issues VPA general permits for poultry and AFOs.

CAFO operators/producers were required to file a complete VPA General Permit Registration Statement with the regional office of VDEQ with the owner's name and address, location of the CAFO, and number of animals to be fed. The VPA General Permit for Poultry also requires a registration statement, an NMP, and information regarding dead bird disposal and new construction. This permit applies to all confined poultry feeding operations.

A permit was required for any CAFO having 300 or more AUs using a liquid manure collection and storage system, excluding broiler, turkey, and laying hen operations using a dry manure handling system. The permit allows a CAFO to operate and maintain waste storage facilities and to apply the waste to land. VDEQ may have required smaller producers to obtain a permit if public complaints and subsequent VDEQ inspections indicated the producer was not following acceptable waste management practices.

A letter from the Department of Conservation and Recreation (DCR) certifying approval of an NMP was required to be attached to the VDEQ permit registration form. The NMP is designed to ensure that no waste, or potentially water-affecting nutrients from the waste, reach either groundwater or surface water supplies. The plan accounts for the production and use of all surplus (or waste) nutrients associated with the AFO. If the producer follows the NMP, the water supply in the local community and the State will be protected. Because the NMP is critical to the protection of the environment, the law allows VDEQ to enforce it, once a permit is granted. The NMP is the site-specific tool in the permit used to protect the environment, so the majority of the management and reporting requirements in the permit are related to monitoring and enforcing the NMP.

2010 Update: In response to changes to the EPA CAFO Rule, which became effective in December 2008, Virginia amended the VPDES Regulation, effective March 3, 2010. In a letter dated June 14, 2010, EPA approved the VPDES CAFO Regulatory provisions of the Permit Program. The VDEQ Animal Waste Program is now regulated by both the VPA Permit Regulation Program and the Virginia Pollutant Discharge Elimination Permit Regulation (VPDES) Program. Specifically, the Animal Waste Program uses the VPA Permit Regulation (9VAC25-32), the VPA General Permit Regulation for AFOs (9VAC25-192), the VPA General Permit Regulation For Poultry Waste Management (9VAC25-630) and the VPDES Permit Regulation (9VAC25-31) to implement the permit and inspections program.

AFOs that confine more than 300 AUs of livestock and handle liquid manure are required to obtain coverage under a VPA general permit. Poultry operations that confine more than 200 AUs of poultry (20,000 chickens or 11,000 turkeys) must register for coverage under the VPA General Permit for Poultry Waste Management.

In addition, §62.1-44.15.(5) of the State Water Control Law provides VDEQ, under the direction of the State Water Control Board, the authority to permit AFOs that do not otherwise meet criteria at §62.1-44.17.1 or §62.1-44.17.1.1, which mandate AFOs to obtain coverage under a VPA permit. VDEQ exercises the authority to permit operations that fall below the mandated criteria, or operations that VDEQ determines are unable to comply with the requirements of the general permit regulations.

AFO and CAFO operators/producers must file a complete VPA or VPDES Permit Application with the regional office of VDEQ, with the owner's name and address, location of the AFO or CAFO, and number of animals to be fed. All permitted AFOs covered under either VDEQ VPA or VPDES Permit Programs must obtain and implement a site specific NMP which is then enforceable through the VDEQ permit. The NMP must be developed by a nutrient management planner certified by the DCR in accordance with §10.1-104.2 of the Code of Virginia and approved by the DCR. The DCR letter certifying approval of an NMP is still required with permit application forms.

West Virginia: WVDEP, Office of Water Resources, Permitting Section, manages the NPDES permitting program. The NPDES Permit Team is responsible for individual permitting of industrial facilities and municipal and domestic waste facilities. The General Permit Team also is responsible for permitting facilities with similar discharges, such as stormwater, small sewage treatment, and water treatment facilities.

On the basis of information provided by Region3 to EPA Headquarters, 30 CAFOs are in West Virginia, primarily in the broiler sector. None of those CAFOs have NPDES permits. West Virginia has revised its regulations and published a CAFO general permit in April 2005 to reflect the 2003 federal CAFO regulations.

Under the State's Department of Agriculture groundwater protection rules, any person maintaining more than 1,000 AUs in a feedlot must submit an NMP to the commissioner and implement the plan within three years of the plan's development. Any person maintaining more than 300 AUs in a feedlot in an area where potential for impairment of existing groundwater quality is high must submit an NMP to the commissioner and implement it within five years of the plan's development. The NMP is specified in the Nutrient Management Standard Practice 590 of the NRCS *Field Technical Guide*.¹⁶

West Virginia does not have a CNMP preparer certification program. West Virginia is an NPDES authorized State; however, it has not issued any NPDES permits for CAFOs.

¹⁶ See generally, <http://www.nrcs.usda.gov/technical/efotg/>.

CAFO Findings

Delaware: The following issues were identified with the Delaware CAFO general permit:

- The general permit appears to allow temporary storage of uncovered dry poultry litter stockpiles in the production area and land application areas. That could lead to unauthorized pollutant runoff and might be inconsistent with federal requirements for application to production areas (defined in part as including storage).
- Provisions for temporary stockpiling of in-field and on-farm litter do not appear to be time limited.
- The general permit provides alternative setback criteria that must be based on documentation required by 40 CFR 412.4(c)(5)(ii) demonstrating the alternative setback requirements provide, “pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback.”
- EPA proposes that all affected Delaware agencies (including a representative of the State Attorney General Office) further discuss the DNREC proposed regulations of Section 9.4.E.1.f. The language excludes from public availability and the definition of public record, “all waste management plans, nutrient management plans and records of implementation.” That is inconsistent with EPA requirements [see 40 CFR Part 122.42 (e)(2) (ii)] to the extent that they are part of the NPDES program.
- It is unclear whether the DNREC definition of *liquid manure handling systems* would result in poultry operations that use liquid systems being defined as CAFOs.
- Both DNREC and EPA should be explicitly included as authorized parties for purposes of inspection and other activities included under 9.4.J.1 of the proposed regulations.

Maryland: EPA reviewed drafts of Maryland’s CAFO general permit dated November 9, 2007, and December 31, 2007, (note that EPA also reviewed an earlier version, May 4, 2007, of the permit). In general, the permit prohibits animal waste discharges from the production area unless they result from a storm event greater than the 25-year, 24-hour storm, the production area is operated in accordance with specified measures, including the use of a CNMP (developed per specified NRCS provisions and MDA NMP/COMAR regulations), and the State’s application of the nine minimum measures. The permit authorizes land application provided it is performed in accordance with a CNMP. Primary findings are summarized below.

- The draft general permit does not appear to require submittal of a CNMP with the NOI. Rather, following submittal of the NOI, the State will notify the permittee of a CNMP due date (at least 90 days after notification and not later than February 27, 2009). The revisions to the federal CAFO regulations require submittal of an NMP with the NOI.
- Under Part V.A (Annual Report), required information does not include whether the NMP was developed by a certified planner. However, under Maryland’s nutrient management regulations [COMAR 15.20.07.05.A(1)], NMPs must be developed by a certified nutrient management consultant. Therefore, the certification question in the annual report would be unnecessary. The permit also provides that all waste storage and distributions systems must be operated pursuant to a CNMP developed by a certified planner (IV.A.1).
- The permit does not appear to include the Best Practicable Control Technology (BPT) 10-year, 24-hour storm design requirement for horse and sheep CAFOs or numeric

effluent limitations BPT requirements for duck CAFOs. Rather, it appears to apply the same design standard to all CAFOs addressed under the permit. That appears to be more stringent than federal requirements.

- The permit does not explicitly require design documentation for all manure, litter, and wastewater storage. It does, however, require records documenting CNMP and effluent limitation development and implementation (IV.B.9). The permit also requires adequate storage capacity as a minimum measure (and records supporting such capacity to the extent storage requirements are considered an effluent limitation) (IV.B.1).
- The permit references provisions in Maryland State regulations; however, some aspects of State regulations appear to contain recommendations. It is not clear how such recommendations would be viewed in a permitting context.

Pennsylvania: Primary findings of a review of the Pennsylvania NPDES general permit for CAFO operations (PAG 12) are summarized below:

- *Definitions:* The permit defines *CAFO* to include (1) operations that meet the definition of a *Large CAFO* under the federal regulations, (2) agricultural operations that exceed *animal equivalent unit* (AEU) thresholds (live weight based, with 1,000 pounds equal to one AEU), and (3) operations with more than 300 AEUs and two AEUs per acre. It is unclear whether the permit covers all operations that would meet the federal definition of a *Medium CAFO* and appropriately apply CAFO ELGs and NPDES requirements to those operations.
 - The permit's definition of *agricultural process wastewater* appears narrower than the federal definition of *process wastewater* because it does not include the following language from the federal definition, "[p]rocess wastewater also includes any water [that] comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding."
- *Effluent Limitations and NMP Requirements:* The permit includes a 100-year, 24-hour storm design standard for manure storage structures for new swine poultry and veal calf operations. The State should confirm that this requirement is appropriate based on the 2nd Circuit *Waterkeeper* decision.
- The permit does not fully address the 2nd Circuit decision. In particular, the permit does not appear to include a mechanism for incorporating site-specific information on how the NMP addresses each of the nine minimum standards. The permit does require that an approved NMP be submitted with the NOI/application; however, it is unclear who is responsible for approving the NMP. The State regulation addressing NMP requirements (see below) indicates that plans must be submitted for initial review and approval to delegated conservation districts or to the Commission for CAFOs in non-delegated counties. It is EPA's interpretation that to be in compliance with the 2nd Circuit decision, the plan must be approved by the authorized State permitting authority, which is the Department of Environmental Protection.
- The permit specifies that an NMP must be submitted for land application areas on CAFOs. That would appear to omit federal NMP requirements that do not specifically or exclusively apply to land application areas (e.g., chemical handling).
- The State identifies another State regulation (25 PA Code, Chapter 83, Subchapter D) as the basis for meeting NMP requirements of CAFO ELGs. A cursory review was made to

determine whether the chapter meets all the NMP requirements in the NPDES CAFO regulations.

- *NMP Element—Prevent Direct Contact of Animals with Waters of the United States:* Neither Permit nor NMP regulations appears to include a provision prohibiting the direct contact of animals with waters of the United States within the production area.
- *NMP Element—Chemical Handling:* The permit includes a requirement to prevent discharges to surface water from raw materials and feed storage areas; however, neither permit nor NMP regulations appears to include a provision addressing disposal of chemicals and other contaminants in manure, wastewater or stormwater storage, or treatment systems.
- *NMP Element—Site-Specific Conservation Practices:* The Permit requires CAFOs to develop an Erosion and Sediment Control Plan in accordance with 25 PA Code, Chapter 102; however, the plans are required only for plowing and tilling operations and therefore would not include conservation practices to prevent nutrient runoff from production areas. It is important to note that land application is subject to buffer requirements and BMPs. In addition, BMPs must address handling and storage, and minimum standards address storage facilities.
- *NMP Element—Manure, Litter, Process Wastewater, and Soil Sampling:* Section 83.291—Determination of available nutrients—of the NMP regulations recommends, but does not require, that nutrient content of manure be determined through sampling and analysis. The regulations allow use of book values, “when sampling and analysis is not done.” The regulations do not include a minimum required frequency for manure sampling and do not specifically require that manure be tested for nitrogen and phosphorus, which is inconsistent with federal CAFO regulations.
- *NMP Element—Protocols for Land Application Rates:* Sections 83.291—83.293 address the determination of available nutrients, nutrients needed for crop production, nutrient application rates, and nutrient application procedures. The regulations appear to allow for nitrogen-based or phosphorus-based land application rates; however, phosphorus application appears to be limited only where conditions would result in, “an immediate risk of impacts to surface water,” not necessarily based on high soil test levels or crop needs (although soil phosphorus levels must be considered, and crop needs can be the basis of phosphorus application). That is inconsistent with federal CAFO regulations.
- *NMP Element—Record Keeping:* Section 83.342 addresses record-keeping requirements for land application. This section does not require records of the following items required by the CAFO ELG: weather conditions; litter and process wastewater test methods; explanation of the basis for determining application rates; total amount of nitrogen and phosphorus actually applied; land application method used, and dates of equipment inspection. In addition, NMP regulations do not appear to address record keeping for any of the other minimum NMP elements, as set forth in federal CAFO regulations.

Virginia: Virginia published a general permit for CAFOs that became effective January 1, 2006 (VAG01). Primary findings from the review of this permit are summarized below:

- *9 VAC 25-191-10, Definitions:* The permit does not provide definitions for *land application areas* and *manure*.
- *9 VAC 25-191-30. Authorization to Discharge: A.3.* needs to include the following language from federal regulations, “Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided: The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff from a 25-year, 24-hour rainfall event.”
- The permit includes a 100-year, 24-hour storm design standard for manure storage structures for new swine poultry and veal calf operations. The State should confirm that the requirement is appropriate, in light of the 2nd Circuit decision to remand the provision.
- *General Permit VAG01, Part II.A:* Just as above, this part needs to include the following language from the federal regulations, “Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided: The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff from a 25-year, 24-hour rainfall event.”
- The permit includes in numerous places, reference to a 100-year, 24-hour storm design standard for manure storage structures for new swine poultry and veal calf operations. The State should confirm that this requirement is appropriate, in light of the 2nd Circuit decision to remand this provision.
- *General Permit VAG01, Part II.D. Special Conditions:* The permit needs to include the following requirement, regardless of animal sector or amount of manure, “Prior to transferring manure, litter or process wastewater to other persons, Large CAFOs must provide the recipient of the manure, litter or process wastewater with the most recent analysis. The analysis provided must be consistent with the requirements of 40 CFR 412. Large CAFOs must retain for five years records, date, recipient name and address, and approximate amount of manure, litter, or process wastewater transferred to another person.”
- It is unclear whether the NMP will be made available for public review because of the lack of a provision in the general permit. It is recognized, however, that the State could address this without mention in the permit. The permit requires the NMP to be submitted with the NOI and coverage is not granted until the department accepts the NOI. The public review and comment requirements of the *Waterkeeper* decision with respect to the NMP could be addressed during this period.

2010 Update: In response to changes to EPA’s CAFO Rule, which became effective in December 2008, Virginia amended the VPDES Regulation which became effective March 3, 2010. In a letter dated June 14, 2010, EPA approved the VPDES CAFO Regulatory provisions of the Permit Program. Virginia has used a public participatory approach and established a Regulatory Advisory Panel (RAP) to include EPA Region 3 representation. The RAP is assisting VDEQ staff develop a permit template. Implementation guidance will be developed concurrently with the permit template. Permit requirements mirror those found in the EPA 2008 CAFO Rule.

West Virginia: West Virginia published a general permit for CAFOs in April 2005. Primary findings are summarized below:

- *Section A.2:* The State needs to add a caveat after the bulleted item *200 mature dairy cows*. The caveat should read, “(whether milked or dry).”
- *Permit Application/Notice of Intent (NOI) Requirements:* The State’s general permit does not contain requirements specified in the revised federal NPDES CAFO regulations. For clarity, EPA recommends that the information requirement for the NOI be specified in the permit and address the requirements of 40 CFR 122.28.
- *Section E:* Includes each of the minimum practices specified in the federal NPDES CAFO regulation as standalone permit conditions; however, the permit does not link them to the NMP (or CAFO Management Plan for West Virginia). EPA recommends that the permit require minimum practices to be specifically addressed in the CAFO Management Plan. It would be useful for the permit to specify that a CAFO Management Plan is the equivalent of an NMP as specified in the federal regulation. The use of multiple terms for the same requirement could lead to confusion in the regulated community.
- *Section E.1:* The permit addresses adequate storage capacity. EPA recommends that the State include a required design minimum storage period such as 120 or 180 days rather than the unspecified period as defined by E.1.(c).
- *Facility Closure:* The permit does not address duty to maintain permit coverage with respect to facility closure. Permit coverage must be maintained until the permittee has demonstrated to the satisfaction of the director that there is no remaining potential for a discharge of manure, litter, or associated process wastewater that was generated while the operation was a CAFO, other than agricultural stormwater from land application areas.

3.2.11 Whole Effluent Toxicity

EPA reviewed WET provisions in NPDES permits issued by Region 3 States for 12 permits, 2 from each State and 2 from the District of Columbia. Of those 12 permits, 5 industrial permits and 7 municipal permits were reviewed. WET WQS and criteria for each State were reviewed carefully before reviewing permits or fact sheets or both to see if WQS were adequately and correctly represented in the permit. A determination was made as to whether provisions in permits and fact sheets adequately ensured the aquatic life protection criteria for each State would not be exceeded because of the permitted discharge(s).

EPA specifically checked for obsolete permit provisions or citations, such as outdated WET test method references; if WQS for each State are met through permit requirements; if WET RP determinations are made; and overall if an adequate basis or rationale or both are provided in the permit and fact sheet.

WET Test Methods: 40 CFR 122.44(i)(1)(iv) requires permits to include monitoring using appropriate analytical methods. EPA reviewed permits and fact sheets for inclusion of a current promulgated (2002) WET test methods¹⁷ or 40 CFR 136 (or both) methods reference in standard

¹⁷ 67 FR 69951-69972, November 19, 2002; also see 40 CFR 136.

or special conditions of the permit. The permits were reviewed for inconsistencies to assess whether the permit includes outdated citations to WET test methods.

WET Monitoring Frequencies: While regulations require only annual monitoring when there is a WET limit, regulations at 40 CFR 122.44(d) also require that several factors be considered, including monitoring data representative of the effluent to ensure that effluent variability is accounted. 40 CFR 122.48(b) requires permits establish monitoring requirements to yield data representative of monitored activity, and 40 CFR 122.44(i)(1) requires monitoring requirements to ensure compliance with permit limitations. Monitoring frequencies are based on the nature of the facility, similar facilities and, if applicable, existing or previous permit's monitoring results or compliance history. In addition, EPA's 1991 TSD states that conducting toxicity tests using three species quarterly for one year is recommended to adequately assess variability of toxicity observed in effluents. Below that suggested minimum, chances of missing toxic events increases. According to the TSD, the toxicity test result for the most sensitive of tested species is considered to be the measured toxicity for an effluent sample.

WET Findings

General findings applying to States and the District of Columbia in Region 3 are the following:

Documentation: Some of the Region 3 States' permits and fact sheets reviewed lack adequate documentation of the rationale and basis for decisions made on permit WET requirements. These include RP determinations and/or complete expectations of the permittee with regard to their Toxicity Reduction Evaluation/Toxicity Identification Evaluation (TRE/TIE) and monitoring permit activities. Of all the Region 3 States, the West Virginia POTW permits, in particular, lack documentation on several basic permit decisions in the fact sheet and permit, such as rationale behind decisions for RP determinations and monitoring frequency, and some regulatory requirements (i.e., 2002 WET test methods and WET limits when RP is confirmed). In addition, permit fact sheets from Delaware and the District of Columbia do not include discussion of whether an RP determination was done, nor do the fact sheets document how WET requirements would meet WQS.

Obsolete WET Test Method Citations: Delaware's industrial permits do not include a citation to EPA's 2002 WET test methods, and list outdated 1993 WET test methods. West Virginia WQS contain outdated WET test methods and West Virginia permits do not include a WET test method citation for the permittee to use when conducting required annual WET monitoring.

Monitoring: Region 3 States do not substantiate the basis for annual monitoring in fact sheets. If WET data in the administrative record are not referenced in fact sheets, the chosen monitoring frequency is not substantiated as being representative of the effluent. Annual monitoring is not generally considered representative of the effluent discharge without some documentation of the rationale and data behind monitoring decisions. Quarterly monitoring is usually more appropriate for providing the necessary amount of WET data to properly assess RP. The basis for only requiring annual monitoring and how that frequency is representative and protective of respective State WET WQS, should be explicitly documented in the fact sheet, including a rationale for when samples are taken (i.e., explain how seasonal or production considerations are addressed by monitoring frequencies to support RP determinations). POTWs often have little control over pollutants discharged into collection systems; therefore, annual WET monitoring is

unlikely to provide meaningful information to assess potential toxic impacts of the effluent on the receiving stream and whether WQS are protected.

Delaware

Permit Documentation: The fact sheet does not include information as to whether an RP determination was done or the rationale to support permit requirements. For example, permits reviewed contain provisions for monitoring, possibly a TRE, but no WET limits and the rationale as to why these provisions protected State WET WQS are not provided. In addition, there was insufficient instruction on what is required from the permittee regarding TRE plans (i.e., detailed reporting instructions).

EPA WET Test Methods (cited): The industrial permit cite outdated 1990 methods. However, the municipal permit correctly cites 2002 EPA WET test methods.

Monitoring: Fact sheets do not contain adequate documentation for monitoring frequency sets for WET (permit lists annual monitoring only). The industrial permit's discharges contain many solvents, therefore the permittee and/or permitting authority should review appropriate Material and Safety Data Sheets (MSDS) to check whether solvents are considered toxic to aquatic life when determining monitoring frequencies. This recommendation is offered, because when permitting chemical compounds that do not have State aquatic life criteria, permit writers should be aware of the toxicity of a compound. In many cases, the LC₅₀ information is available on MSDS and should provide information regarding potential toxicity, especially when there is not much dilution available for the discharged effluent.

District of Columbia

Permit Documentation: There was no rationale of an RP determination to substantiate the permitting decision to not include WET permit provisions in either permit. The Blue Plains plant permit (DC0021199) has no WET requirements. WASH Aqueduct permit (DC0000019) requires the permittee to implement WET monitoring requirements on EPA's and NMFS's review and approval of the monitoring plan (Section 7 Part A, pg.6 and Section 14, pg. 17). The fact sheet includes a reference to previous WET test results, but it does not provide data or a summary of the data in the fact sheet.

WASH Aqueduct permit (DC0000019) requires that within one year of initiation of testing, a TIE plan must be developed if the discharge demonstrates an unacceptable toxicity in 25 percent or more of tests conducted at that outfall. On EPA's and NMFS's approval of the TIE plan, TIE testing would be performed for each of the discharges from that outfall the following year. No toxicity was found, therefore no TIE was performed. WET test results are reported on Discharge Monitoring Reports to ensure that EPA can track any toxicity from the discharge.

If WET RP was not done on District of Columbia effluent discharges and an assessment is done that demonstrates an exceedance of WQS, a TIE plan would not be sufficient to comply with 40 CFR 122.44(d). A WET limit must be included in the permit because TIEs/TREs do not guarantee a reduction or elimination of toxicity (or sufficient reduction/elimination) to ensure compliance with State WQS because they are a toxicity study, not a control. A WET limit is a control that prohibits exceedance of WET WQS and is enforceable. The fact sheet does not

provide a rationale for how this approach satisfied 40 CFR 122.44(d) for assessing RP, and setting limits if RP exists.

EPA WET Test Methods (cited): The Blue Plains POTW permit (DC002119) does not contain WET monitoring or limit permit requirements in either general permit conditions or by specific reference. The WASH Aqueduct permit (DC0000019) contains a reference to EPA test methods at 40 CFR 136 in its standard permit conditions (Part II, Section C) if a WET monitoring plan is approved by EPA and NMFS in the fact sheet (Section 7, Part A, pg.6 and Section 14, pg. 17).

Monitoring: The Blue Plains POTW permit (DC0021199) has no WET monitoring requirements; it states that previous WET monitoring requirements had been removed from the permit because WET testing had indicated no toxicity. However, the fact sheet does not include a WET data summary or a reference to the administrative record (containing the WET data) to support the decision to remove the WET monitoring requirement from the current draft permit.

Under the WASH Aqueduct permit (DC0000019), the permittee is required to submit a monitoring plan *within 3 months of permit issuance* and required to monitor for WET on EPA and NMFS review of the plan. However, because of that allowance, no definitive date for beginning WET monitoring is established. Because the permittee can submit its plan right up to permit issuance, followed by EPA's and NMFS's review period, WET monitoring could start at some undefined time after permit issuance.

Maryland

Permit Documentation: The industrial (Vienna Power, MD0000094) fact sheet does not provide documentation on whether an RP determination was completed, and does not provide rationale for WET RP conclusions. The industrial permit has a TRE requirement as a standard WET requirement.

The municipal (Patapsco WWTP, MD0021601) fact sheet provides some rationale of the RP determination. The permit does not contain WET limits—only a TRE requirement if WET toxicity is measured. Maryland WET WQS contain provisions for both acute and chronic toxicity including provisions for chronic sublethal endpoints. In discussions with Region 3, it was confirmed that Maryland uses TIE/TREs instead of WET limits where RP is demonstrated. It should be noted that on demonstrating RP, a WET limit must be included in the permit (40 CFR 122.44(d)(1)).

EPA WET Test Methods (cited): Maryland permits contain both the general permit condition language citing 40 CFR 136 and a 2002 citation to current WET methods in the biomonitoring section of the permit.

Monitoring: The industrial (Vienna Power, MD0000094) fact sheet does not provide the rationale for why only acute monitoring was selected as a monitoring requirement to ensure WET WQS were protected for the most sensitive species or why it is representative of the effluent discharge, as required under 40 CFR 122.44 (d). The fact sheet indicates that WET monitoring was required at one outfall, but it does not explain why it was not necessary at all outfalls.

The municipal permit (Patapsco WWTP, MD0021601) and fact sheet indicate that quarterly WET monitoring is required unless there is a WET test failure, which then triggers accelerated testing or a TRE or both. However, it is not clear why acute monitoring is sufficient to ensure that WET WQS were protected for the most sensitive species and is representative of the effluent discharge, as required under 40 CFR Part 122.44 (d).

Pennsylvania

Permit Documentation: The municipal (Albion Boro Mun Auth, PA0023124) fact sheet provides inadequate rationale of permit requirements listed in the permit, including the interim chronic limit followed by a final chronic limit. The fact sheet should provide more explanation regarding how RP was determined and how interim and final WET limits ensure protection of WET WQS.

The industrial (PH Glatfelter, PA0008869) fact sheet has very little documentation of the rationale not to include WET permit requirements such as monitoring or a WET limit when RP was demonstrated. The WET RP determination and rationale are not clear in the fact sheet; therefore it is not clear whether RP has been adequately demonstrated to support not including WET limits in the permit.

EPA WET Test Methods (cited): The municipal permit (Albion Boro Mun Auth, PA0023124) includes both citations to 2002 EPA WET test methods and general language with a reference to 40 CFR 136 methods. The industrial permit (PH Glatfelter, PA0008869) does not contain a 40 CFR 136 citation or any specific citation to the 2002 methods, but it does include references to WET species (*Ceriodaphnia dubia* and fathead minnow for chronic testing, and *Selenastrum* for acute testing). The permit should include the requirement to use 40 CFR 136 methods.

Monitoring: The industrial permit (PH Glatfelter, PA0008869) does not require WET monitoring. The fact sheet provides insufficient documentation on whether RP for WET was demonstrated, which, if present, would require a WET limit and monitoring under NPDES regulations.

Virginia

Permit Documentation: The industrial (Old Dominion Power, VA0083097) fact sheet does not discuss whether an RP determination was performed. It is unclear whether an RP assessment was conducted; if this is the case, no documentation of RP procedures or results was provided. The POTW permit (Alexandria, VA0025160) does reference an RP rationale in an attachment. Attachments were not available for review and EPA could not confirm that an adequate rationale is provided in the attachments.

EPA WET Test Methods (cited): Permits contain language referencing 40 CFR 136.

Monitoring: The fact sheet does not include adequate documentation on how monitoring frequency was determined (permit lists annual monitoring only), as recommended by EPA's TSD and required under NPDES regulations.

West Virginia

Permit Documentation: West Virginia permits generally lack adequate documentation in the fact sheets for several permit conditions. In particular, fact sheets do not provide adequate rationales supporting WET permit decisions, including clear documentation of WET RP determination and WET test results.

The industrial permit (Wheeling Pittsburgh Steel, WV0004511) documentation of whether an RP assessment of the effluent discharge was done is not mentioned in the fact sheet and if conducted, that the State WET WQS were not exceeded. The permit contains an acute limit, but it was removed and replaced with annual chronic monitoring with no rationale. Also, the municipal permit (Follansbee, WV0020273) does not state what action must be taken if the annual WET test failed. If there is a WET test failure, the permit should indicate what follow-up actions the permittee must take, such as temporarily increasing WET test monitoring frequency for affected species or additional WET testing if the tests are not valid because of quality control or similar reasons.

EPA WET Test Methods (cited): Both permits have a reference to 40 CFR 136 in the permit conditions; the municipal permit also have a 2002 EPA WET test method reference. West Virginia WQS reference outdated WET test methods (WV WQS 9.4, 1993 acute and 1989 freshwater chronic instead of 2002 EPA methods); EPA recommends that the State update those to reflect 2002 EPA WET test methods to support permits or at least be consistent with the permit language regarding required WET methods.

West Virginia WET Aquatic Life Criteria Protection: On the basis of permit language in both permits, it is unclear how protection of WET criteria is ensured. The designated use cited in the industrial permit is “warm water aquatic life, public water supply, water contact recreation and wildlife use,” yet the acute WET limit was removed and replaced with only annual chronic WET monitoring with no justification provided in the fact sheet. The permit and the fact sheet lack adequate WET data on which to properly assess WET RP, especially because the effluent’s discharge contains many metals discharging to a low dilution receiving stream.

Monitoring: Both permits require annual WET test monitoring; however, fact sheets do not provide adequate documentation for decisions on monitoring frequency.

4.0 SUMMARY OF FINDINGS AND PROPOSED ACTION ITEMS

The NPDES Regional Program and PQR identified areas where the Region and its States were doing well and recommended areas where improvement is needed. This section provides a summary of the main findings of the review and provides proposed Action Items to improve Region 3 NPDES permit programs. This list of proposed Action Items will serve as the basis for ongoing discussions between Region 3 and their authorized States, and between Region 3 and EPA Headquarters. The discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion.

The proposed Action Items are divided into three Categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and States.

- Category 1—Most Significant: Proposed Action Items will address a current deficiency or noncompliance with a federal regulation.
- Category 2—Recommended: Proposed Action Items will address a current deficiency with EPA guidance or policy.
- Category 3—Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the State's or Region's NPDES permit program.

The Category 1 and Category 2 proposed Action Items should be used to augment the existing list of *follow-up actions* established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals and/or could serve as a roadmap for modifications to Region 3 program management.

Note that the NPDES program review for Region 3 took place in late 2007 and the States and Region might have already taken significant steps for improvement in deficient areas. For example, the Commonwealth of Virginia has provided additions, changes, comments and responses as reflected throughout this document

4.1 NPDES Regional Program Review

4.1.1 Permit Issuance

Eighty-nine percent of NPDES permits in Region 3 were current as of September 2007, an increase from 77.1 percent in 2005 (individual permits and general permit-covered facilities). Region 3 has indicated that it has successfully reduced the backlog of some of the oldest expired permits. Two major NPDES permits are in Region 3 that have been expired for 10 years or more: Indian River Power Plant in Delaware and Allegheny Energy Supply Co. LLC, Pennsylvania, both with unresolved §316(b) issues. Proposed Action Items to improve permit issuance are the following:

Region 3

- Develop and provide EPA Headquarters with a District of Columbia permit issuance action strategy (Category 2):

- As of August 2008, the District of Columbia permit backlog had been reduced to 27 percent; Region 3's current permits were above the 70 percent threshold requiring an action strategy at the end of FY2008. The backlog was below 20 percent as of January 2011.
- For priority permits, send talking points to EPA Headquarters on the FY2008 Pennsylvania list ensuring enough permits are selected. (Category 3)
 - On the basis of implementing the new priority permit selection process, the percentage of Pennsylvania candidate permits selected as priority permits increased to 35 percent, well above the guideline of 20–30 percent.
- Region 3 should determine the appropriate number of priority permits to be issued for FY2008 through FY2010 as defined by the new priority permits criteria. (Category 3)
 - Region 3 completed development of the 2008 Priority Permits lists with all states in March/April 2008 and included the new criteria of priority watersheds and TMDL implementation. Approximately 35 percent permits were selected as priority permits for FY2011.

4.1.2 Antidegradation

EPA's review found that permit documentation with respect to implementing antidegradation requirements should be more robust across all Region 3 States. In addition to enhancing permit documentation, the following proposed Action Item was identified:

- A more substantive discussion of antidegradation provisions should be included in the State's fact sheets. (Category 2)

4.1.3 Watershed-Based Permitting Review

Virginia issued a watershed-based permit for the Chesapeake Bay watershed in the State. Pennsylvania also has considered developing a watershed permit to address the Chesapeake Bay, and has contemplated addressing stormwater permitting on a watershed basis. West Virginia conducts its monitoring, TMDL, and permitting programs on a watershed basis. Maryland is working on a watershed permit in Anne Arundel County to address nutrient issues. Delaware used a basin-oriented approach to permitting but has discontinued the approach. EPA Headquarters recommends working with States to reach agreement at the start of any watershed permit development. A Proposed Action Item to improve implementation of watershed-based permitting is as follows:

- Region 3 should work with States to identify opportunities for implementing watershed based permitting. EPA Headquarters is prepared to help with the effort. (Category 3)

4.1.4 Water Quality Trading

Region 3 is the most active EPA Region with regard to trading. In the past two years all the States in the Region have begun or finished developing State trading programs. Region 3 also is the only Region actively pursuing interstate trading. Proposed Action Items to facilitate implementation of the Water Quality Trading Program are the following:

- Region 3 and Headquarters needs to ensure that programs meet *Keys to Success* identified in the 2007 Water Quality Toolkit (e.g., transparency, achieve real reductions, accountability, technical defensibility, enforceability). That is particularly important for Phase 1 Chesapeake Bay permits (large dischargers) in Pennsylvania, because permits include authorization to trade. (Category 2)
 - As of August 2008, 61 out of 63 (97 percent) Phase I Pennsylvania permits had been issued. As of January 2011, Pennsylvania was in the process of issuing Phase II and III permits, which include trading language agreed to by the State and EPA.

4.1.5 Pretreatment Program Review

Maryland, Virginia, and West Virginia implement State-authorized pretreatment programs. Region 3 implements pretreatment programs for Pennsylvania, Delaware, and the District of Columbia. FY2007 GPRA data indicate that 95 percent of SIUs were covered by control mechanisms, exceeding the national average of 61 percent. Similarly, GPRA data indicate that 88 percent of CIUs in non-approved POTW pretreatment programs were covered by control mechanisms, greater than the national average of 72 percent. Proposed Action Items to improve implementation of the Pretreatment Program are the following:

- Maryland, Virginia, West Virginia should provide updates on PCS/ICIS data entry and data reconciliation progress. (Category 2)
 - For specific reporting information, EPA Headquarters expects data entry consistent with *April 2007 draft ICIS-NPDES Policy Statement*.
 - Inform EPA Headquarters if it can provide assistance for gaps in data entry.
 - Identify any pretreatment data report formats that the Region would like to have developed for ICIS-NPDES.
 - As of January 2011, no issues exist with Virginia and West Virginia in regard to data entry and reconciliation. Region 3 continues to monitor Maryland for inspections and RIDE data in ICIS.
- Progress reports on streamlining status are needed. (Category 2)
 - Progress on State regulation revisions to address streamlining is requested for District of Columbia, Delaware, and Pennsylvania. Headquarters requests information on whether assistance is needed for Maryland.
 - Provide a report on how each State plans to address ongoing progress to require POTW programs updated for (required portions of) Streamlining regulations. For example, POTWs might be placed on a schedule to update local legal authorities for streamlining with their respective NPDES permits reissuance, or with program audits, and such.
 - As of January 2011, progress reports were completed for Virginia and West Virginia.
- Region 3 should give an update on oversight progress. (Category 3)
 - The Region keeps track of State implementation and can provide that information from its database system.

- As of January 2011, state audits have been conducted by Region 3 approximately every 5 years.

4.2 Permit Quality Review

4.2.1 Core Permit Review

In general, the core review showed that Pennsylvania and West Virginia would benefit from better documentation of the rationale supporting permit conditions to develop strong, effective permits. Both States should work toward clearly documenting all RP, antibacksliding/antidegradation, and water quality impairment analyses, as well as the basis for all permit limitations and monitoring requirements. Such documentation can include standard language on how the various NPDES requirements are fulfilled in each State, as well as some discussion of how each requirement was addressed for the relevant permit. Delaware could also bolster its documentation of topics such as antidegradation and clearly link reference of specific RPA/limits spreadsheets to the relevant fact sheet and permit. Additional specific considerations for each State are summarized below, with actions already taken by the States and Region 3 noted, where appropriate.

Delaware

- Fact sheets were generally adequate; however, calculations and documentation are often in supporting documents that are not readily accessible. DNREC should strengthen fact sheets in the following areas to ensure that they meet the requirements of 40 CFR 124.8 and 124.56:
 - DNREC should link or reference by name and date the specific RPA/limits spreadsheets to the relevant fact sheet and permit. That would better document work done and identify relevant permit information. (Category 2)
 - DNREC should include in municipal permits in the fact sheet a more thorough discussion concerning the absence of the percent removal requirement. (Category 2)
 - DNREC should include a standard section header in its fact sheets to clarify when antidegradation/antibacksliding are applicable and to explain how they are addressed and how the permit meets applicable requirements. (Category 3)
- Permit application forms for several facilities were determined to be incomplete or significantly outdated. DNREC should ensure that complete applications are provided that comply with all applicable requirements of 40 CFR 122. Specifically, DNREC should address should ensure that
 - Complete application data are submitted for all municipal facilities. (Category 1)
 - For permits that are delayed for a significant period (e.g., greater than five years), that application data are sufficiently current to support permit development. (Category 2)

Pennsylvania

- Several fact sheets developed by the State and reviewed during the PQR do not meet the requirements of 40 CFR 124.8 and 124.56. The State should revise its fact sheet structure and template to fully document permit development and specifically address the following concerns:

- Fact sheets should incorporate relevant aspects of the pollution reports to ensure consistency with fact sheet requirements. (Category 1)
- When relevant, fact sheets should include a more detailed discussion of TMDLs. (Category 2)
- When relevant, fact sheets should include a more robust discussion of antidegradation and anti-backsliding. (Category 2)
- Fact sheets should include a more complete discussion of PENTOX, including any inputs, criteria used, and what the outputs signify. Additionally, that should lead to a discussion of whether TBELs or WQBELS are appropriate and provide a detailed discussion of any RPA that was conducted (i.e., a clearer description of the decision-making process used to develop permit limitations). (Category 2)
- Fact sheets should include a more detailed characterization of the receiving water, including its general health, background concentrations, impairments, and application of TMDLs, if appropriate. (Category 2)
- Fact sheets should include a more detailed discussion on the determination of pollutants of concern for analysis. (Category 2)
- Permit application forms used in Pennsylvania should conform with EPA regulations and require 40 CFR 136 analytical methods for the monitoring results. (Category 1)

West Virginia

- Several fact sheets developed by the State and reviewed during the PQR do not meet requirements of 40 CFR 124.8 and 124.56. The State should revise its fact sheet structure and template to fully document permit development and specifically address the following concerns:
 - Fact sheets should include a more substantive discussion of designated uses of the receiving water and whether the waterbody is impaired. (Category 2)
 - Fact sheets should include a more detailed discussion of the basis for developing each of the effluent limits along with a comparison of TBELs versus WQBELS and which is more stringent. (Category 2)
 - Since the time of the review, West Virginia has added permit conditions to POTWs to analyze its effluent (priority pollutant scan) consistent with federal regulations.
 - For one permit, the fact sheet does not describe the process of industry categorization (and whether the facility is classified as new or existing) and should be clearer in identifying which waste streams and limits in the ELG are applicable at the facility. (Category 1)
 - For one facility, the spreadsheets containing the calculation of the permit limits are not included in the fact sheet or permit file. The fact sheet contains a sample calculation, but the derivation of each permit limit should be included (at a minimum as an attachment to the fact sheet). (Category 1)
- West Virginia should review State permit applications (specifically State Form S) to ensure consistency with all federal requirements. (Category 1)
- For some permits, composite samples are required to be taken over an 8-hour period, which is unusually short. (Most composite samples are 24-hour samples.) EPA

recommends that the permit clearly state that sampling must encompass normal operating conditions. (Category 2)

- Several municipal permits also contain discharge limits for indirect dischargers. It was not clear how the limits for indirect dischargers were derived. EPA recommends that the derivation be better documented in the fact sheet. (Category 1)

4.2.2 Mercury Methods

As described in Section 3.2.1, mercury methods specified in permits reviewed for Region 3 States present mixed results, including several permits that do not include mercury limits. Action items for Region 3 and States are the following:

- Region 3 should ensure that the States are aware of the most current mercury methods and should verify that each State is incorporating such methods into relevant permits. (Category 1)
- States in Region 3 should implement policies and procedures to evaluate which methods are appropriate for application data and for monitoring during the permit term. (Category 1)
- Fact sheets should better document decisions and rationales behind limits used in the permit. (Category 2)

4.2.3 Impaired Waters and TMDLs

West Virginia and Pennsylvania fact sheets indicate some level of antidegradation review was conducted and that relevant permit limits are protective of designated uses. However, documentation does not contain rationales. The Virginia permit requires compliance with limits before discharge which, according to the fact sheet, ensures that such discharges will neither cause nor contribute to observed violations. The Virginia fact sheet also explains that certain limits are based on plans to address various impairments (i.e., DO, nutrients). The Delaware permit includes a specific reopener clause that can address revised limits necessary to address impairments. The Delaware permit is implementing applicable TMDLs using a compliance schedule. The Maryland permit was issued before the TMDL being finalized. Reopening permits to include TMDLs could be very resource intensive. Because of limited resources, the issue should be addressed when the permit comes up for reissuance or is being reopened for other reasons.

Proposed Action Items to improve implementation of impaired waters and TMDLs are the following:

- Document in the fact sheet whether the receiving waterbody is impaired and whether the facility discharges a pollutant of concern. This might require that States make impairment data available to permit writers on a location-specific basis. (Category 1)
- Clarify State policy regarding consideration of background water quality data in developing water quality-based limits. (Category 1)
- Document in the fact sheet that a facility does not cause or contribute to a relevant impairment. (Category 1)

- Document in the fact sheet whether a relevant TMDL is final or is under development and how that TMDL has been or will be addressed in the permit. (Category 1)

4.2.4 *E.coli* and Enterococcus Bacteria Standards

Delaware, District of Columbia, Maryland and Virginia have WQS that appear consistent with EPA's 1986 criteria. Pennsylvania is subject to 40 CFR 131.41 [Bacteriological criteria for those states not complying with CWA §303(i)(1)(A)].

The permits reviewed in Maryland, Virginia, and Delaware appear to be implementing the respective State bacteria standards. Some permits from the Pennsylvania Northeast Regional Office include limits for fecal coliform.

Proposed Action Items to improve implementation of *E. coli* limits in permits are the following:

- Region 3 should continue to work with States to improve implementation and documentation in permits and fact sheets of *E. coli* limits. (Category 1)
- The Region should ensure Pennsylvania permits fulfill requirements under 40 CFR 131.41. (Category 1)
- Pennsylvania should expedite the use of *E. coli* limitations in permits. (Category 1)
- The Region could encourage West Virginia to adopt and implement updated bacteria WQS. (Category 2)
 - As of January 2011, West Virginia was still using the fecal coliform standard in permits.

4.2.5 Thermal Variances and Cooling Water Intake Structures [CWA §316(a) and 316(b)]

Section 316(a) and (b) permit conditions should be considered and addressed as appropriate in all permits. Additional recommendations based on a review of 16 permits are the following:

- For all States, §316(a) variances and §316(b) BTA determinations need to be fully documented, and where prior determinations are being renewed, the permits should contain documentation regarding why such prior determinations remain justified. (Category 1)
- States should endeavor to implement §316(b) Phase II requirements (BPJ) in a manner consistent with EPA guidance. (Category 2)

4.2.6 Stormwater

Generally, permits reviewed in Region 3 do not contain all required standard conditions, including signature and certification, and are not structured in the way typical NPDES permits are expected to be formatted. That makes understanding applicable requirements difficult. Generally, permits fail to provide adequate demonstration that water quality protections are being implemented (i.e., permit requirements are based solely on BAT). Recommendations to improve stormwater requirements in permits for Region 3 are the following:

- EPA strongly recommends that the stormwater permits be consistent with NPDES regulation. One suggestion is that stormwater permits go through NPDES permitting staff in addition to stormwater program staff to ensure consistency. (Category 1)
- For construction, permits need to address other construction activities beyond simply erosion and sediment control. For example, addressing spills, waste and material management, and concrete washout should be included as a component of each construction permit. (Category 1)
- Permits should be structured so actual SWPPP requirements are clearly provided as narrative effluent limits in the permit, rather than implying that permittee-developed SWPPP includes specific permit conditions that must be met. Such narrative effluent limits should clearly establish expected performance of BMPs using terms such as *eliminate* and *minimize* rather than a term such as *reduce*, which establishes a negligible performance expectation. (Category 1)

4.2.7 Combined Sewer Overflows (CSOs)

In FY2007, Region 3 exceeded its SS commitment and the national commitment.

Recommendations based on a review of select CSO requirements are the following:

- For the Borough of Kane, Pennsylvania, Region 3 should clarify how the borough is using a *temporary* bypass at the POTW to limit CSOs and should ensure that such actions are consistent with applicable requirements and policy. (Category 1)
- For Upper Allegheny Joint Sanitary Authority, Pennsylvania, Region 3 should work with PADEP to improve weaknesses in the LTCP (e.g., weak to no characterization of the CSS, CSOs, receiving waters or rainfall-overflow relationships, and had a weak evaluation of CSO controls). The Region or State also should assist to the extent possible in obtaining cooperation of the municipalities that own the multiple tributary collection systems. (Category 3)

Recommendations to update Monaca Borough's Post Construction Monitoring Plan are the following:

- Fecal coliforms/100 mL—During the swimming season, the maximum fecal coliform level should be a geometric mean of 200 organisms/100 mL, according to a minimum of five consecutive samples collected on different days during a 30-day period. No more than 10 percent of total samples taken during a 30-day period may exceed 400/100 mL. For the remainder of the year, the maximum fecal coliform level must be a geometric mean of 2,000/100 mL on the basis of a minimum of five consecutive samples collected on different days during a 30-day period. (Category 2)

- The period of sampling should span the five-month period consistent with the swimming season: May 1 through September 30. (Category 2)
- The frequency of sampling should be such that the number of samples is sufficient to (1) meet the minimum number of samples (five) to be collected within a 30-day period for the purpose of calculating a 30-day geometric mean, and (2) provide a representative mix of wet- and dry-weather conditions. To accomplish that, the sampling program should be structured so that sampling occurs twice per week (or more frequently) at a fixed time (i.e., Monday and Thursday at 10:00 a.m.) over the entire five-month period. That frequency of sampling provides a sufficient number of samples for assessment of the 30-day geometric mean criteria, and the fixed schedule ensures that a representative mix of wet- and dry-weather sampling conditions will be sampled. (Category 2)
- The Sample Data Summary Sheet can be used with sample results, rainfall and CSO flow data recorded on the appropriate days. (Category 3)
- The sample locations should be positioned so that conditions above and below CSO discharges will be assessed independently. (Category 3)
- Data should be evaluated on a calendar month basis looking at (1) the geometric mean for each month and (2) the number of samples greater than 400/100 mL. The recommended evaluations (a, b and c) are adequate but the specific test for statistical significance should be stated, and raw data and geometric mean for each month should be tabulated and summarized for visual analysis and interpretation. (Category 3)

4.2.8 Sanitary Sewer Overflows (SSOs)

EPA Region 3 believes that all States in the Region are requiring that SSOs be reported through standard language contained in the permits. However, it is not clear whether States are requiring reporting of SSOs that do not discharge to waters of the United States. Those discharges, and SSOs from municipal satellite collection systems must be reported. The Proposed Action Item to improve SSO implementation in Region 3 follows:

- Region 3 should meet with its States and District of Columbia to clarify that NPDES reporting requirements for SSOs are consistent with the draft SSO Fact Sheet. (Category 2)

4.2.9 Concentrated Animal Feeding Operations (CAFOs)

Region 3 has approximately 770 CAFOs, of which only 23 percent have NPDES permits. Each of the Region 3 States has a general permit issued that implements the requirements of EPA's 2003 CAFO regulations. EPA proposes the following Action Item:

- Region 3 should establish a strategy to work with its States to improve the issuance rate of permits for CAFOs that discharge. Once the strategy is developed, the Region should work to implement the strategy. (Category 1)

In addition, States should ensure their regulation and statutory authorities are revised as appropriate to implement both the 2003 and 2008 CAFO rules. It is important that the Region 3 States address CAFOs in a manner consistent with the federal NPDES requirements. Proposed

Action Items to help the Region 3 States improve implementation of CAFO permits in Region 3 are the following:

Delaware

The Delaware Nutrient Management Commission, Department of Agriculture, and DNREC have approved regulations to create the Delaware CAFO program. Those regulations were published in the September *Delaware Register of Regulations* and became effective September 11, 2005. That regulation was considered a State CAFO Program at the time of the review, and had yet to be approved by EPA. Authority for CAFO permits falls under the DNREC but will be administered by the State Nutrient Management Program within the Department of Agriculture. The responsibilities of all agencies are outlined in a detailed Memorandum of Agreement dated June 13, 2000.

EPA has concerns regarding the draft regulations delegating authority from DNREC to the Department of Agriculture and the Delaware Nutrient Management Commission to administer parts of the NPDES program. EPA Region 3 also expressed concerns in 2005 regarding the general permit, which had yet to be addressed. Considering those issues, Action Items for Delaware are the following:

- EPA requests that the Delaware Attorney General's Office prepare and issue a statement to confirm the authority of the Department of Agriculture to implement the relevant NPDES CAFO requirements, and to identify the provisions/duties that the DNMC will administer in this comprehensive program approach. EPA remains willing to work with both DNREC and the Department of Agriculture to formally re-delegate the administration of the NPDES permit program from EPA to both DNREC and the Department of Agriculture. (Category 1)
 - EPA is working with Delaware on regulatory revisions to incorporate both the 2003 and 2008 CAFO rules.
- DNREC should address the following issues pertaining to its general permit:
 - EPA is concerned that temporary storage of uncovered dry poultry litter stockpiles in the production area (including land application areas) could lead to unauthorized pollutant runoff. EPA is requesting DNREC to amend its definition of *production area* to include stockpiles as part of the production area. That definition would be consistent with EPA regulations, which define production area to include that part of an AFO that includes (among other things) the *manure storage areas*, which include *stockpiles* 40 CFR §§ 122.23(b)(8) and 412.2(h). (Category 1)
 - Provisions for temporary stockpiling of in-field and on-farm litter should have equally protective maximum limits of 15 days. (Category 1)
 - DNREC should provide documentation (required by 40 C.F.R. § 412.4(c)(5)(ii)) demonstrating that their alternative setback requirements set out in section 9.4.F.2.e provide, "pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback." (Category 1)
 - EPA proposes that all affected Delaware agencies (including a representative of the State Attorney General Office) further discuss the DNREC-proposed Section 9.4.E.1.f that would exclude from public availability and the definition of public record, "all waste management plans, nutrient management plans and records of

implementation,” because it is inconsistent with EPA requirements [40 CFR122.42(e)(2)(ii)] to the extent that they are part of the NPDES program. (Category 1)

- EPA requests that DNREC include a broader and/or more explicit definition of Liquid Manure Handling Systems to clarify that poultry operations using liquid manure systems are included as CAFOs. (Category 1)
 - There are no facilities in Delaware that use Liquid Manure Handling Systems.

Maryland

EPA reviewed drafts of Maryland’s CAFO general permit (MDG01) dated November 9, 2007, and December 31, 2007 (note that EPA also reviewed an earlier version of this permit, dated May 4, 2007). Recommendations are the following:

- The State and EPA must assess the general permit requirements that, following submittal of the NOI, the State will notify the permittee of a CNMP due date (at least 90 days after notification and no later than February 27, 2009, in light of the proposed federal CAFO regulations, which require the submittal of an NMP with the NOI. (Category 1)
- The State and EPA must assess whether the general permit adequately requires design documentation for all manure, litter, and wastewater storage. (Category 1)
- The State should clarify for EPA that no required elements of the CAFO permit are recommendations under referenced State regulations. (Category 3)

Pennsylvania

Recommendations based on a review of the general permit are the following:

- The State should clarify whether the general permit covers all of those operations that would meet the federal definition of a *Medium CAFO* and appropriately apply the CAFO ELG and NPDES requirements to those operations. (Category 1)
- The following language from the federal definition of *process wastewater* should be included in the general permit, “Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.” (Category 1)
- The State should address the NMP issues that were identified as weaknesses during the cursory review of the State regulation (25 PA Code, Chapter 83, Subchapter D) that serves as the basis for meeting the NMP requirements of the CAFO ELG (see Section 3.2.9). (Category 1)
- The State should ensure that the permit is consistent with and addresses the 2nd Circuit *Waterkeeper* decision. (Category 2)

Virginia

Recommendations based on a review of the State’s general permit are the following:

- The Virginia general permit should have definitions for *land application areas* and *manure* in 9 VAC 25-191-10. *Definitions*. (Category 1)
 - Virginia amended the VPDES Regulation, effective March 3, 2010, and addresses this Action Item.

- The following language from the federal regulations should be added to 9 VAC 25-191-30. *Authorization to Discharge* and to *General Permit VAG01, Part II.A*: “Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided: The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff from a 25-year, 24-hour rainfall event.” (Category 1)
 - Virginia amended the VPDES Regulation, effective March 3, 2010, and addressed this Action Item.
- The permit needs to include the following requirement in *General Permit VAG01, Part II.D. Special Conditions*, regardless of animal sector, “Prior to transferring manure, litter or process wastewater to other persons, Large CAFOs must provide the recipient of the manure, litter or process wastewater with the most recent analysis. The analysis provided must be consistent with the requirements of 40 CFR 412. Large CAFOs must retain for five years records, date, recipient name and address, approximate amount of manure, litter or process wastewater transferred to another person.” (Category 1)
 - As of January 2011, the RAP was assisting VDEQ staff to develop a permit template. This recommendation will be addressed for all poultry operations covered by a VPDES Individual Permit.
- Ensure that the permit is consistent with and addresses the 2nd Circuit decision. (Category 2)
 - Virginia amended the VPDES Regulation, effective March 3, 2010, and addressed this Action Item.

West Virginia

Recommendations based on a review of the State’s general permit are the following:

- In *Section A.2.* of the West Virginia draft general permit, the State needs to add a caveat after the bulleted item *200 mature dairy cows*. The caveat should read “(whether milked or dry).” (Category 1)
- The permit must address duty to maintain coverage with respect to facility closure. Permit coverage must be maintained until the permittee has demonstrated to the satisfaction of the Director that there is no remaining potential for a discharge of manure, litter or associated process wastewater that was generated while the operation was a CAFO, other than agricultural stormwater from land application areas. (Category 1)

4.2.10 Whole Effluent Toxicity

Region 3 should conduct an in depth review of its States’ NPDES WET programs and review State permits (especially for Delaware, Maryland, and West Virginia) with respect to NPDES WET implementation. In addition, Region 3 should work with States to ensure that permits reflect implementation of respective State aquatic life protection WQS. Other Region 3 recommended action items are the following:

- Region 3 should ensure that State permits either include a reference to 40 CFR 136 for EPA methods in their general permit conditions or ensure that the permit is consistent

with regard to methods. (e.g., Delaware industrial permit contradicts itself (lists 1990 WET methods and 40 CFR 136 boilerplate language)). (Category 1)

- Region 3 should ensure that State permits thoroughly discuss and document rationale behind permit requirements or reasons for omitting WET requirements. For example, some permits had monitoring frequencies approaches that allowed a potential reduction in monitoring frequency and/or no WET limit, but do not state the rationale behind decisions allowing monitoring reductions or not requiring WET limits. (Category 1)
- State permits, at a minimum, should provide the following: a clear explanation of decisions on WET permit requirements that provide a summary or reference to WET data on which the decisions were based, the basis behind RP assessment, and citations to methods at 40 CFR 136 (or correct references to the 2002 EPA WET test methods). (Category 1)
- State WQS should be consistent with permit methods language as well (i.e., WV WQS WET test methods are outdated, 1993, 1989 references). (Category 3)

State-specific and District of Columbia action items are the following:

Delaware

- The fact sheet and permit WET conditions and rationale behind permitting decisions should be documented better. The industrial permit (DE0000035) should consistently cite correct EPA WET methods. (Category 1)
- The permits contain annual monitoring only. See the discussion under *Background and Scope* (Section 3.2.11). (Category 2)

District of Columbia

- Fact sheets and permits need to more accurately and completely document the rationale behind monitoring requirements, RP assessments, and lack of permit WET requirements. (Category 1)
- If an RP determination was conducted, the procedure used, results obtained and rationale should be clearly provided in the fact sheet. For example, the POTW fact sheet needs to better document the decision not to include WET monitoring requirements. (Category 1)
- Monitoring—See the discussion under *Background and Scope* (Section 3.2.11). (Category 2)

Maryland

- The fact sheet and permit need to more accurately document the RP determination and WET data used in the assessment. Maryland permits with RP demonstrated must include WET limits, not just TRES/TIEs. (Category 1)
- Maryland permits stated that WET RP was demonstrated, thus requiring a WET limit (40 CFR 122.44(d)). However, permits do not contain WET limits, are not in compliance with federal regulations, and are violating State WET WQS. In addition, Maryland NPDES permits (both industrial and municipal) do not contain WET limits, using TRES/TIEs instead of WET limits when RP is demonstrated. Under 40 CFR 122.44(d), when RP is demonstrated, a WET limit must be included in the permit. The only exception is when narrative WET WQS exist, cause of toxicity identified, and

determination made that a chemical limit would result in reducing or eliminating toxicity so WQS would no longer be exceeded. (Category 1)

- Monitoring—See the discussion under *Background and Scope* (Section 3.2.11). (Category 2)

Pennsylvania

- The municipal permit needs more documentation of RP determination and for WET limits. For example, the permit and/or fact sheet should provide a clear explanation of why an interim WET limit followed by a final WET limit is necessary, instead of just a final WET limit. (Category 1)
- The industrial permit needs considerably more documentation regarding WET RP determination, and the decision not to include WET permit requirements at all. (Category 1)
- Monitoring—See the discussion under *Background and Scope* (Section 3.2.11). (Category 2)

West Virginia

- Region 3 should work closely with West Virginia on improving WET sections of permit requirements such as monitoring or WET limits. (Category 1)
- Permits need more documentation, especially when the fact sheet and permit state that WET requirements were replaced with less stringent requirements. (Category 1)
- Monitoring—See the discussion under *Background and Scope* (Section 3.2.11). (Category 2)

Virginia

- The permits and fact sheets should be more thoroughly documented to show compliance with Virginia's Toxics Management Program/WET procedures as outlined in Section 3.2.11. (Category 1)
 - Since the PQR, WET training was conducted for permit staff at VDEQ in February 2010. Permit staff were reminded that annual testing can be used in permits only after WET screening at more frequent intervals has been done, that a cumulative data table should be included, with a data review memo explaining results of previous WET analysis and including rationale for WET language in the new permit. If any testing is dropped, an explanation should be in the fact sheet.

LIST OF APPENDICES

**APPENDIX A. CENTRAL TENETS OF THE NPDES PERMITTING
PROGRAM**

APPENDIX B. CORE REVIEW CHECKLISTS

**APPENDIX A. CENTRAL TENETS
OF THE NPDES PERMITTING PROGRAM**

APPENDIX A. CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

I. Permit Administration	
CWA/NPDES requirements	Conditions subject to disapproval
<p>The Clean Water Act (CWA) and NPDES regulations require that no point source may discharge pollutants to Waters of United States without explicit authorization provided by an NPDES permit. Complete applications must be submitted at least 180 days before discharge or expiration. Additionally, NPDES permit terms may not exceed 5 years. NPDES permits must clearly state the permit term and may not be modified to extend the permit term beyond 5 years. The NPDES regulations also require <i>fact sheets</i> for all major facilities, general permits, and other permits that could be subject to widespread public interest or raise major issues. Fact sheets MUST contain all the elements prescribed at 40 CFR 124.8 AND 40 CFR 124.56.</p>	<ul style="list-style-type: none"> - Any facility that fails to submit a complete permit application at least 180 days before discharge or expiration - Any permit that does not clearly identify the permitted facility and describe the authorized discharge location(s) - Any permit with term > 5 years - Any permit modification that extends the permit term beyond 5 years - Any permit (for a major facility, general permit, et al.) that is not accompanied by a fact sheet developed in accordance with the requirements of 40 CFR 124.8 and 40 CFR 124.56.

II. Technology-Based Effluent Limits	
Municipal Dischargers—Publicly Owned Treatment Works (POTWs)	
CWA/NPDES requirements	Conditions subject to disapproval
<p>CWA requires POTWs to meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent removal). Permits issued to POTWs, therefore, MUST contain limits for ALL those parameters (or authorized alternatives) in accordance with the Secondary Treatment Regulations at 40 CFR Part 133.</p>	<ul style="list-style-type: none"> - Any permit that does not contain <u>specific numerical limits</u> for BOD (or authorized alternative; e.g., CBOD), TSS, pH, and percent removal. - Any permit that contains limits less stringent than those prescribed by the Secondary Treatment Regulation at 40 CFR Part 133, unless authorized by the exceptions noted in this regulation. Any permit that applies those exceptions must clearly document the basis. - Any permit that contains a compliance schedule that extends a statutory deadline for meeting secondary treatment requirements.

Nonmunicipal Dischargers	
CWA/NPDES requirements	Conditions subject to disapproval
<p>The CWA requires permits issued to nonmunicipal dischargers to require compliance with a level of treatment performance equivalent to <i>Best Available Technology Economically Achievable</i> (BAT) or <i>Best Conventional Pollutant Control Technology</i> (BCT) by July 1, 1989, for existing sources, and consistent with <i>New Source Performance Standards</i> (NSPS) for new sources. Where effluent limitations guidelines (ELG) have been developed for a category of dischargers, the technology-based effluent limits MUST be based on the application of these guidelines. In addition, if pollutants are discharged at treatable levels, and ELGs are not available, or for pollutants that were not considered during the development of an applicable ELG, the permit must include requirements at least as stringent as BAT/BCT. The performance level equivalent to BAT/BCT MUST be developed on a case-by-case basis using the permit writer's best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).</p>	<ul style="list-style-type: none"> - Any permit that does not include a specific numerical limit (or other requirement) for any pollutant parameter that is part of an ELG applicable to a discharger. - Any permit that misapplies or miscalculates an applicable limit required by an ELG (e.g., improper categorization, improper new source/existing source determination, inappropriate production or flow data used to calculate limits, failure to adjust limits to account for unregulated wastestreams such as non-contact cooling water or stormwater). - Any permit that does not contain a limit at least as stringent as required by 40CFR125.3(c)(2) where effluent limitations guidelines are inapplicable (e.g., where a pollutant is discharged at treatable levels, but there is no applicable ELG, or the applicable ELG did not consider the pollutant of concern). - Any permit that contains a compliance schedule that extends a statutory deadline for meeting a technology-based effluent limit.

III. Water Quality-Based Effluent Limits

CWA/NPDES requirements	Conditions subject to disapproval
<p>The CWA requires every State to develop water quality standards to protect receiving water, including designated uses, water quality criteria, and an antidegradation policy. The NPDES regulations at 40 CFR 122.44(d) require that limits MUST be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. States will likely have unique implementation policies for determining the need for and calculating water quality-based effluent limits; however, certain tenets may not be waived by the State procedures. Those consist of the following:</p> <ul style="list-style-type: none"> - Where valid, reliable, and representative effluent data or in-stream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored. - Where calculations indicate reasonable potential, a specific numeric limit MUST be included in the permit. Additional <i>studies</i> or data collection efforts may not be substituted for enforceable permit limits where <i>reasonable potential</i> has been determined. - Where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though data might be sparse or absent), a limit MUST be included in the permit (e.g., a new POTW plans to chlorinate its effluent and in-stream chlorine toxicity is anticipated). - Where a technology-based limit is required (because of an ELG or BPJ) AND the limit is not protective of water quality standards, a water quality-based effluent limitation (WQBEL) MUST be developed and included in the permit regardless of whether data indicate reasonable potential (i.e., a technology-based limit cannot authorize a discharge that would result in a violation of water quality standards). - Where the permit authorizes the discharge of a pollutant that results in a new or increased load to the receiving water, the State must ensure that the new or increased load complies with the antidegradation provisions of the State's water quality standards. - The final calculated limit placed in the permit MUST be protective of water quality standards, and MAY NOT be adjusted to account for <i>treatability</i> or analytical method detection levels. 	<ul style="list-style-type: none"> - Any permit in which the State fails to use all valid, reliable, and representative effluent or in-stream background data in reasonable potential and limits calculations. - Any permit in which the State fails to include a final enforceable limit in a permit where the discharge of a pollutant will cause, have reasonable potential to cause, or contribute to an exceedance of a State water quality standard. - Any permit that fails to incorporate wasteload allocations (WLAs) from an approved TMDL, or that contains a limit that is not consistent with the WLA prescribed in an approved TMDL - Any permit that contains technology-based limits that are not protective of water quality standards - Any permit that modifies a properly developed WQBEL to account for the ability of treatment to achieve the WQBEL or the availability of an analytical procedure to measure the presence of the pollutant - Any permit that authorizes new or increased loading of a pollutant that is not in compliance with the State's antidegradation policy - Any permit that contains a limit less stringent than a limit in the previous permit, unless specifically authorized under the antibacksliding provisions of the CWA - Any permit that allows a variance of a State water quality standard, unless the variance has been approved by the EPA Region. - Any permit that allows a new or increased loading of a pollutant to a receiving water that has not been evaluated for and shown to be in compliance with the antidegradation provisions of the State's water quality standards regulations. - Any permit that includes a compliance schedule for meeting a WQBEL, unless the State standards specifically allow for compliance schedules, and the standard was established or modified after July 1, 1977.

IV. Monitoring and Reporting Conditions	
CWA/NPDES requirements	Conditions subject to disapproval
<p>The CWA and NPDES regulations require permitted facilities to monitor the quality of their discharge and report data to the permitting authority. Each State will have unique policies and procedures to establish appropriate frequencies, procedures, and locations for monitoring; however, certain tenets may not be waived by those procedures.</p>	<ul style="list-style-type: none"> - Any permit that does not require at least annual monitoring for all pollutants limited in the NPDES permit, unless the permittee has applied for and been granted a specific monitoring waiver by the permitting authority, and this specific waiver is included as a condition of the permit. - Any permit that does not require monitoring to be performed at the location where limits are calculated and applied (i.e., the monitoring location cannot be at a location that includes flows that were not accounted for in limits development; e.g., cooling water, stormwater). - Any permit that does not require that the results of all monitoring of permitted discharges conducted using approved methods, be submitted to the permitting authority.

V. Special Conditions	
Municipal Dischargers—Publicly Owned Treatment Works (POTWs)	
CWA/NPDES requirements	Conditions subject to disapproval
<p>In general, special conditions will be established on the basis of the unique characteristics of the permitted facility. The appropriateness of the conditions, therefore, must be assessed on a case-by-case basis. However, certain elements of special conditions may be the basis of an objection.</p>	<ul style="list-style-type: none"> - <u>Pretreatment</u>: Any permit for a POTW that is required to implement a pretreatment program that does not contain specific pretreatment conditions. [State/Regional-specific language] - <u>Municipal Sewage Sludge/Biosolids</u>: Any permit that does not contain conditions addressing the facility's use/disposal of biosolids consistent with federal requirements. [State/Regional-specific language] - <u>Combined Sewer Overflows (CSO)</u>: Any permit for a facility authorized to discharge from CSOs, that does not comply with the State's CSO control policy and, at a minimum contain requirements for <ul style="list-style-type: none"> • Requiring compliance with all of the <i>Nine Minimum Controls</i> • Requiring development and implementation of a <i>Long Term Control Plan</i> - <u>Sanitary Sewer Overflows (SSO)</u>: Any permit that authorizes the discharge of untreated effluent from SSOs under any circumstances.
Municipal and Nonmunicipal Dischargers	
CWA/NPDES requirements	Conditions subject to disapproval
<p>In general, special conditions will be established on the basis of the unique characteristics of the permitted facility. The appropriateness of the conditions, therefore, must be assessed on a case-by-case basis. However, certain elements of special conditions may be the basis of an objection.</p>	<ul style="list-style-type: none"> - Any permit that contains a compliance schedule that extends a CWA deadline or otherwise modifies or postpones CWA or NPDES requirements unless specifically provided for in the statute or regulations. - Any permit that uses special studies or management plans to replace or modify limits or conditions that are required by the CWA or NPDES regulations, unless specifically provided for in the CWA or NPDES regulations (e.g., permit requires a monitoring program in lieu of establishing a permit limit where available data indicate reasonable potential).

VI. Standard Conditions	
CWA/NPDES requirements	Conditions subject to disapproval
<p>The NPDES regulations at 40 CFR 122.41 and 122.42 require that certain <i>standard conditions</i> be placed in all NPDES permits. The regulations allow States to omit or modify those standard conditions ONLY where the omission or modification results in more stringent requirements. For example, the standard condition that allows <i>bypass</i> under certain circumstances or the standard condition that allows <i>upset</i> to be used as an affirmative defense, may be omitted because the result of the omission is a more stringent permit requirement.</p>	<ul style="list-style-type: none"> - Any permit that does not contain ALL the standard conditions of 40 CFR 122.41 (unless the omission results in a more stringent condition). - Any permit that modifies the language of the standard conditions (unless the modification results in language that is more stringent than the 122.41 requirement). - Any permit for an existing nonmunicipal discharger that does not include the notification requirement of 40 CFR 122.42(a) - Any permit for a POTW that does not include the notification requirement of 40 CFR 122.42(b) - Any permit for a Municipal Separate Storm Sewer System (MS4) that does not include the annual reporting requirement of 40 CFR 122.42(c)

APPENDIX B. CORE REVIEW CHECKLISTS

APPENDIX B. CORE REVIEW CHECKLISTS

NPDES Permit Quality Review Checklist for Nonmunicipals

Pre-Review Information

		Response	Comment
1.	NPDES Permit number of facility		
2.	Name of facility:		
3.	Permit Reviewer (Last Name)		
4.	Date of review (MM/DD/YYYY)		
5.	Is the draft permit complete? (Y/N)		
6.	Is the fact sheet complete? (Y/N)		
7.	Did the State provide all appropriate supporting information (e.g., permit application, supporting documentation)? (Y/N)		
8.	Reviewer obtained PCS/DMR data for last 3 years (Y/N)		
9.	Reviewer examined previous permit, application, and fact sheet (Y/N/NA)		
10.	Reviewer examined all pertinent file information (Y/N)		
11.	Reviewer notified other Regional offices of reissuance (Y/N)		

Facility Information

		Response	Comment
12.	Are all outfalls (including non-process and stormwater) at the facility properly identified and authorized in the permit? (Y/N)		
13.	Does the record contain a description of the wastewater treatment process and discharge point? (Y/N)		
14.	Does the record describe the physical location of the facility? (Y/N)		
15.	Does the record provide a description of the receiving waterbody(s) to which the facility discharges? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
16.	Does the permit term exceed 5 years? (Y/N)		
17.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
18.	Does the permit contain appropriate issuance and expiration dates and authorized signatures? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
19.	Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? (Y/N)		
20.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21.	If yes, does the record discuss whether <i>antibacksliding</i> provisions were met? (Y/N)		

Technology-Based Effluent Limits (Effluent Guidelines and BPJ)

		Response	Comment
22.	Is the facility subject to a national effluent limitations guideline (ELG)? (Y/N)		
22a.	If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source? (Y/N/NA)		
22b.	If no, does the record indicate that limits were developed based on best professional judgment (BPJ) for all pollutants discharged at treatable concentrations? (Y/N/NA)		
23.	For all limits developed using BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?		
24.	Does the record adequately document the calculations used to develop both ELG and/or BPJ technology-based effluent limits? (Y/N)		
25.	For all limits that are based on production or flow, does the record indicate that the calculations are based on a <i>reasonable measure of ACTUAL production</i> for the facility (not design)? (Y/N/NA)		
26.	Does the permit contain <i>tiered</i> limits that reflect projected increases in production or flow? (Y/N)		
26a.	If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained? (Y/N/NA)		
27.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
28.	Are all technology-based limits expressed in terms of both maximum daily and monthly average limits? (Y/N)		
29.	Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ? (Y/N)		

Water Quality-Based Effluent Limits

		Response	Comment
30.	Does the record indicate that the receiving water is impaired (i.e., that the receiving water is listed on the State's 303(d) list)? (Y/N)		
30a.	If yes, does the record indicate that a TMDL has been COMPLETED for the receiving water? (Y/N/NA)		
30b.	If yes, does the record indicate that any WQBELs were derived from a completed TMDL? (Y/N/NA)		
31.	Does the record describe (list) the designated uses of the waterbody to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
32.	Does the record provide effluent characteristics for each outfall? (Y/N)		
33.	Does the record document that a <i>reasonable potential</i> evaluation was performed? (Y/N)		
33a.	If yes, does the record indicate that the <i>reasonable potential</i> evaluation was performed in accordance with the State's approved procedures? (Y/N/NA)		
34.	Does the record describe the basis for allowing or disallowing in-stream dilution or a mixing zone? (Y/N)		
35.	Does the record present WLA calculation procedures for all pollutants that were found to have <i>reasonable potential</i> ? (Y/N/NA)		
36.	Does the record indicate that the <i>reasonable potential</i> and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)? (Y/N/NA)		
37.	Does the permit contain numeric effluent limits for all pollutants for which <i>reasonable potential</i> was determined? (Y/N/NA)		
38.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
39.	For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
40.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? (Y/N)		
41.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
41a.	If yes, does the record indicate that an <i>antidegradation</i> review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
42.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
42a.	If no, does the record indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate that waiver? (Y/N)		
43.	Does the permit identify the physical location where monitoring is to be performed for each outfall? (Y/N)		
44.	Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices? (Y/N)		

Special Conditions

		Response	Comment
45.	Does the permit require development and implementation of a best management practices (BMP) plan or site specific BMPs? (Y/N)		
46.	If yes, does the permit adequately incorporate and require compliance with the BMPs? (Y/N/NA)		
47.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements? (Y/N/NA)		
48.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		

Standard Conditions

		Response	Comment
49.	Does the permit contain all 40 CFR 122.41 standard conditions? (Y/N)		
	<p>List of Standard Conditions – 40 CFR 122.41</p> <ul style="list-style-type: none"> • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O&M • Permit actions • Property rights • Duty to provide information • Inspections and entry 	<ul style="list-style-type: none"> • Monitoring and records • Signatory requirement • Reporting requirements <ul style="list-style-type: none"> Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24-hour reporting Other noncompliance • Bypass • Upset 	
50.	Does the permit contain the additional standard condition for existing nonmunicipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]? (Y/N)		

NPDES Permit Quality Review Checklist for POTWs

Pre-Review Information

		Response	Comment
1.	NPDES Permit number of facility		
2.	Name of facility:		
3.	Permit Reviewer (Last Name)		
4.	Date of review (MM/DD/YYYY)		
5.	Is the draft permit complete? (Y/N)		
6.	Is the fact sheet complete? (Y/N)		
7.	Did the State provide all appropriate supporting information (e.g., permit application, supporting documentation)? (Y/N)		
8.	Reviewer obtained PCS/DMR data for last 3 years (Y/N)		
9.	Reviewer examined previous permit, application, and fact sheet (Y/N/NA)		
10.	Reviewer examined all pertinent file information (Y/N)		
11.	Reviewer notified other Regional offices of reissuance (Y/N)		

Facility Information

		Response	Comment
12.	Are all outfalls (including combined sewer overflow points) from the POTW treatment facility properly identified and authorized in the permit? (Y/N)		
13.	Does the record or permit contain a description of the wastewater treatment process and discharge point? (Y/N)		
14.	Does the record or permit describe the physical location of the facility? (Y/N)		
15.	Does the record or permit provide a description of the receiving waterbody(s) to which the facility discharges? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
16.	Does the permit term exceed 5 years? (Y/N)		
17.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
18.	Does the permit contain appropriate issuance, effective, and expiration dates and authorized signatures? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
19.	Does the record describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? (Y/N)		
20.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21.	If yes, does the record discuss whether <i>antibacksliding</i> provisions were met? (Y/N)		

Technology-Based Effluent Limits (POTWs)

		Response	Comment
22.	Does the permit contain numeric limits for <u>ALL</u> the following: BOD (or an alternative; e.g., CBOD, COD, TOC), TSS, pH, and percent removal? (Y/N)		
23.	Are percent removal requirements for BOD (or BOD alternative) and TSS included, and are they consistent with secondary treatment requirements (generally 85%; or modified in accordance with 40 CFR Part 133 allowances)? (Y/N)		
24.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
25.	Are permit limits for BOD and TSS expressed in terms of both 30-day (monthly) average and 7-day (weekly) average limits? (Y/N)		
26.	Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/L BOD5 and TSS for a 30-day (monthly) average and 45 mg/l BOD5 and TSS for a 7-day (weekly) average)? (Y/N)		
26a.	If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations? (Y/N/NA)		

Water Quality-Based Effluent Limits

		Response	Comment
27.	Does the record indicate that the receiving water is impaired (i.e., that the receiving water is listed on the State's 303(d) list)? (Y/N)		
27a.	If yes, does the record indicate that a TMDL has been COMPLETED for the receiving water? (Y/N/NA)		
27b.	If yes, does the record indicate that any WQBELs were derived from a completed TMDL? (Y/N/NA)		
27.	Does the record describe (list) the designated uses of the waterbody to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
28.	Does the record provide effluent characteristics for each outfall? (Y/N)		
29.	Does the record document that a <i>reasonable potential</i> evaluation was performed? (Y/N)		
29a.	If yes, does the record indicate that the <i>reasonable potential</i> evaluation was performed in accordance with the State's approved procedures? (Y/N/NA)		
30.	Does the record describe the basis for allowing or disallowing in-stream dilution or a mixing zone? (Y/N)		
31.	Does the record present WLA calculation procedures for all pollutants that were found to have <i>reasonable potential</i> ? (Y/N/NA)		
32.	Does the record indicate that the <i>reasonable potential</i> and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)? (Y/N/NA)		
33.	Does the permit contain numeric effluent limits for all pollutants for which <i>reasonable potential</i> was determined? (Y/N/NA)		
34.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
35.	For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
36.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? (Y/N)		
37.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
37a.	If yes, does the record indicate that an <i>antidegradation</i> review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
38.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
38a.	If no, does the record indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate that waiver? (Y/N)		
39.	Does the permit identify the physical location where monitoring is to be performed for each outfall? (Y/N)		
40.	Does the permit require <u>influent monitoring</u> for BOD (or alternative) and TSS? (Y/N)		
41.	Does the permit require testing for Whole Effluent Toxicity? (Y/N)		

Special Conditions

		Response	Comment
42.	Does the permit include appropriate pretreatment program requirements? (Y/N/NA)		
43.	Does the permit include appropriate biosolids use/disposal requirements? (Y/N/NA)		
44.	Does the permit include appropriate stormwater program requirements? (Y/N/NA)		
45.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements? (Y/N/NA)		
46.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		
47.	Does the permit allow discharges from Combined Sewer Overflows (CSOs)? (Y/N)		
47a.	If yes, does the permit require implementation of the <i>Nine Minimum Controls</i> ? (Y/N/NA)		
47b.	If yes, does the permit require development and implementation of a <i>long-term control plan</i> ? (Y/N/NA)		
47c.	If yes, does the permit require monitoring and reporting for CSO events? (Y/N)		
48.	Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs)]? (Y/N)		

Standard Conditions

		Response	Comment
49.	Does the permit contain all 40 CFR 122.41 standard conditions? (Y/N)		
	<p>List of Standard Conditions – 40 CFR 122.41</p> <ul style="list-style-type: none"> • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O&M • Permit actions • Property rights • Duty to provide information • Inspections and entry 	<ul style="list-style-type: none"> • Monitoring and records • Signatory requirement • Reporting requirements <ul style="list-style-type: none"> Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24-hour reporting Other noncompliance • Bypass • Upset 	
50.	Does the permit contain the additional standard condition for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]? (Y/N)		