Region III NPDES Permit Quality Review

Delaware

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I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Permit Quality Reviews (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 Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program and identifies opportunities for improvement in the development of NPDES permits.

EPA's review team, consisting of two Region 3 staff and one EPA Headquarters (HQs) staff member, conducted the core review of the Delaware NPDES permitting program which included an on-site visit to the Delaware Department of Natural Resources and Environmental Control (DNREC) in Dover from August 6 through 8, 2013. Four additional Region 3 staff were involved in the desktop reviews on specific topic areas, further discussed below.

The Delaware PQR consisted of two components: permit reviews and special focus area reviews. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and any correspondence, reports or documents in the administrative record that provide the basis for the development of the permit conditions.

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. The core review focused on the Central Tenets of the NPDES Permitting program to evaluate the Delaware NPDES program. In addition, discussions between EPA and state staff addressed a range of topics including program status, the permitting process, responsibilities, organization, and staffing. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states. The national topics reviewed in the Delaware NPDES program were: nutrients, pesticide general permit, pretreatment[1], and stormwater.

Regional topic area reviews target regionally-specific permit types or particular aspects of permits. The regional topic areas selected by EPA Region 3 included: Chesapeake Bay, Concentrated Animal Feeding Operations (CAFOs), and Total Maximum Daily Loads (TMDLs). These reviews provide important information to Delaware, EPA Region 3, EPA HQs and the public on specific program areas.

A total of fifteen permits were reviewed for the PQR. Ten permits were reviewed as part of the core review. Several of these permits and five additional permits were also used for the national and regional topic area reviews. Permits were selected based on issue date and the review categories that they fulfilled. In some cases there were no recently issued permits available for the regional topic area reviews. In these instances recently public noticed draft

[1] DNREC has not been delegated the authority to implement the Pretreatment program in Delaware. The pretreatment authority for Delaware is the US Environmental Protection Agency in Region 3.

permits were reviewed to obtain a view of current permitting practices. The permits reviewed during this PQR included:

Core Review:

DE0000621	Croda Uniqema
DE0021491	Milton Water Reclamation Facility (Milton WRF)
DE0021512	City of Lewes STP
DE0050580	NRG Indian River
DE0051021	Evraz Claymont Steel (Claymont Steel)
DE0051071	New Castle County MS4 (NCCO MS4)
DE0050547	Middletown-Odessa-Townsend Regional WWTP (MOT WWTP)
DE0000141	SAW, Inc.
DE0051039	Bilcare Research
DE0051063	Hanover Foods

National and Regional Topic Area Reviews:

Aquatic Pesticides General Permit (GP)
GP for Discharges of Stormwater Related to Industrial Activity
GP for Discharges of Stormwater Related to Construction Activities

DE00202479	Bridgeville STP
DE0051179	Delaware Racing Association (CAFO)

II. STATE PROGRAM BACKGROUND

A. Program Structure

The Delaware Department of Natural Resources and Environmental Control (DNREC) is the NPDES permitting authority for the state of Delaware. DNREC's Surface Water Discharges Section (SWDS) contains the Stormwater and Discharge Permits Branch, which prepares and issues the majority of Delaware's NPDES permits[2]. This Branch administers NPDES individual permits and general permits (GPs) for the following types of discharges: industrial, sewage, aquatic pesticides, Municipal Separate Storm Sewer (MS4), and industrial stormwater. The CAFO permit program is jointly administered by DNREC's Surface Water Discharges Section and the Delaware Department of Agriculture through a Memorandum of Agreement. DNREC's Sediment and Stormwater Program in the Division of Watershed Stewardship administers the NPDES General Permit for Stormwater Discharges Associated with Construction Activities.

DNREC is located at 89 Kings Highway, Dover, DE, 19901, and, although has no regional offices performing NPDES functions, does have satellite offices in New Castle, Lewes, and Georgetown for other programs. DNREC's SWDS has two full time permit writers that prepare individual NPDES permits. The NPDES permitting group is supported by other DNREC staff on an as-

[2] The permit writers report to the Permitting Program Manager I, who in turn reports to the Program Manager II (see page 8).

needed basis. For example, the SWDS has an engineer that largely works on wastewater facility construction permitting, but who may be available to assist with NPDES permits when workload allows. The SWDS also receives technical support from DNREC's Watershed Assessment staff, and DNREC's Fish and Wildlife. As indicated earlier, the Delaware Department of Agriculture also helps to support the CAFO program.

DNREC maintains an internal Sequel-based database called "DNREC Environmental Navigator" (DEN) that tracks facility discharge monitoring data and compliance with NPDES permit narrative conditions that have compliance deadlines. DNREC transmits NPDES Discharge Monitoring Report (DMR) data to EPA's Integrated Compliance Information System (ICIS) via DEN. The SWDS also maintains a Microsoft Access database that tracks all permits issued by the section (NPDES, MS4, Industrial Stormwater, CAFO, Biosolids, and Wastewater Facility Construction). This database maintains modules specific to each program noted above, and contains information specific to each permit issued including hyperlinks to the permit's electronic files. The links provide information on application dates, the permittee, compliance inspection information, permit writer notes, and site tracking, amongst other relevant topics.

In addition to the tracking databases, permit writers use various templates and spreadsheets in the development of NPDES permits. The State has developed template language (including boiler plate language for standard conditions applicable to all permits) for use in permits and Fact Sheets in order to promote consistency in permit documents. DNREC uses a spreadsheet titled "DeSWQS.xlsm", which enables permit writers to perform reasonable potential analyses (RPAs) that are based on the procedures described in EPA's "Technical Support Document for Water Quality-based Toxics Control" (TSD). The RPA spreadsheet duplicates the algorithms in EPA's TSD for log-normal distributions, and produces average and maximum limits calculated from the long term average values. The DeSWQS spreadsheet also uses four dilution factors for acute, chronic, systemic, and carcinogenic mixing zones, and "no dilution" for technology based standards. The dilution factors used in this spreadsheet can also come from more sophisticated models such as CORMIX.

Permit writers utilize other supporting spreadsheets for permit limit development, titled "DMR_Lookup.xlsm" and "DMR_Statistics.xlsm". "DMR_Lookup" obtains data from ICIS and summarizes each parameter as chronological graphs representing the average and maximum values for both DMR data and permit limits. These graphs assist the permit writer in selecting appropriate data sets for additional statistical calculations, including the coefficient of variation (CV) for the RPAs. The "DMR_Statistics" spreadsheet also produces graph fits of each parameter to log-normal and normal distributions, and calculates statistics for each distribution (coefficient of variation, performance based percentiles, correlation coefficient, etc.).

DNREC generally follows EPA's guidance on permit development as presented in EPA's NPDES Permit Writer's Training, but also has an internal standard operating procedure (SOP) regarding the documentation, drafting and review process for permit development. DNREC follows an internal QA/QC SOP for the review process of all draft permits. This process includes submission of an evaluation memo, a pre-notice draft permit and fact sheet that go through both peer and management review. DNREC has two senior permit writers, each of whom

performs peer reviews of the other's permits prior to the documents going through management review. At the management level, draft permits are reviewed by the Permitting Program Manager I, the Compliance Program Manager I, and the Program Manager II (see page 8). If there were no changes in the permit conditions since the last permit issuance, a full peer review may not occur, but the management level review will always occur. Once this internal review process is completed, the pre-notice draft permit is submitted to EPA and the permittee for review. After the pre-notice draft permit documents are reviewed and additional comments or changes are made, the draft permit is public noticed.

During NPDES permit development, documents and files are maintained in several locations. All working documents are kept in the permit writer's office during the permit drafting process. Permit applications and any associated documentation are maintained in DNREC's paper facility files. DNREC's paper filing system is well maintained and organized, and pertinent documents are easy to find and access. In addition to paper files, the permitting section has begun to scan all new permit applications and other submitted documents into an electronic facility file. DNREC also maintains notes on the permit submission and draft permit development progress in the SWDS database. Historic correspondence is maintained in DNREC's paper files, while more recent correspondence is kept in both the paper and electronic facility files. Monitoring and reporting data and compliance records are maintained in the paper and electronic facility files, and in the SWDS database. Information regarding permits, inspections, and permit writer notes are maintained in the SWDS database, which also provides hyperlinks to the electronic files for the permit.

B. Universe and Permit Issuance

Delaware has 51 NPDES permits, including 21 major permits and 30 minor permits. Of the 19 Publicly Owned Treatment Works (POTWs) in Delaware, there are 8 major and 11 minor POTWs, with 1 POTW containing CSO requirements. Delaware has 27 non-municipal facilities, including 11 major and 16 minor facilities. Delaware's CAFO program will be growing in terms of permit coverage. Currently, DNREC has issued one NPDES CAFO permit, but there are 439 Notices of Intent that are expected to be received. Delaware's stormwater permits include four MS4 permits, including one major Phase I MS4, and 3[3] minor Phase II MS4s. DNREC is in the process of generating a Phase II MS4 General Permit (GP). DNREC issues three GPs by regulation, which provide coverage for Stormwater Discharges Associated with Industrial Activities, Stormwater Discharges Associated with Construction Activities, and Aquatic Pesticides applications. As of the 2013 PQR, Delaware has GP coverage for 364 active Industrial Stormwater discharges, 2,977 Construction Stormwater discharges, and 30 Aquatic Pesticide discharges.

As of the end of Fiscal Year 2013 (through September 30, 2013), 12 of DNREC's major permits were expired representing a 57% backlog of the major permits universe, and 12 minor permits were expired representing a 40% backlog of the minor permit universe.

[3] Subsequent to the PQR site visit, one (1) additional municipality, Middletown, was issued a Phase II MS4 permit on October 30, 2013.

All NPDES permitted facilities that have individual permits are assigned to a specific permit writer. Permit development is generally handled by the same permit writer with each successive permit renewal. DNREC uses EPA's NPDES Application Forms and requires that renewal applications be received within 180 days of the permit expiration date, which is part of the standard conditions in all Delaware NPDES permits. Permit applications are received, date stamped and logged in by administrative staff, who then scan and email the application to the permit writer and permitting Program Manager I. A hard copy of the permit application is placed in the facility's file. The Program Manager I will update the state's database to document the date of receipt and provide a brief review of the application. Permit applications are then reviewed for completeness by the permit writer. Within 15 days of receipt of an application, the permit writer will generate either an Administratively Complete/Technically Complete combination letter, or an Administratively Complete letter within 15 days and a Technically Complete letter within 60 days of the Administratively Complete letter. If applications are found to be incomplete, the Technically Complete letters can also function as letters requesting additional information. The permit writer will also schedule a site visit with the facility's Compliance Specialist, which is entered into the database, before or during the draft permit development process.

Permit writers develop the draft permit based on an evaluation of the permit renewal application and any other related documents, a review of DMR data (with use of the supporting DMR_Lookup spreadsheet), and based on any necessary correspondence, meetings/site visits, or other contacts with the permittee. Permit writers create an "evaluation memo" that provides a description of the permit issues, effluent limits development, and other special conditions that are applicable to a facility. The evaluation memo is sent to the Program Manager I and Program Manager II for review. This memo is used to create the pre-notice fact sheet and draft permit, which will go through a Technical Peer Review (optional), a review by DNREC's Watershed Assessment, and Management Review (required, as described in Section II.A. of this report). The permit writer will finalize the draft permit documents based on all internal comments received, document the date of the approved draft permit documents and share the pre-noticed draft permit and fact sheet with the permittee, EPA, and the Delaware River Basin Commission (DRBC), if applicable. The draft permit is then revised based on all comments received during the pre-notice draft review period, and the permit writer prepares the draft documents for public notice.

Management review will provide the approval for publication. The permit writer prepares all public notice documents, while administrative staff will address publishing the public notice in newspapers and posting them on the State of Delaware website. All relevant dates for these actions are entered into DNREC's database. The public noticed draft permit is sent to the permittee, EPA, and DRBC (if applicable) for review. If a public hearing is requested, DNREC's management will determine the appropriate steps forward. Any such request for a public hearing will be noted in the database, as well as the date of any scheduled public hearing. The permit writer will address all comments received on the public noticed draft permit and fact sheet, and will make any necessary revisions. Once a final draft permit has been prepared, DNREC's Program Manager II will receive the final draft for signature and the permit's issuance,

effective, and expiration dates. The final permit dates are entered into DNREC's database, and administrative staff produce copies for the file and for mailing.

DNREC applies technology-based effluent limits (TBELs) for POTWs and non-POTWs based on Federal secondary treatment standards, technology based limits established in Section 7 of Delaware's 7201 Regulations Governing the Control of Water Pollution, applicable effluent limitation guidelines and/or Best Professional Judgment (BPJ) determinations, as applicable. Water quality based effluent limit (WQBEL) development is based on a review of the permit application and DMR data. As described in Section II.A, of this report, DNREC uses spreadsheets (DMR_Statistics and DeSWQS) to assist with the statistical evaluations and development of WQBELs based on the EPA's TSD approach, and to apply mixing zones as appropriate.

DNREC includes standard conditions in Part II of it permits. Narrative conditions are developed as appropriate and are included in Part III of the permits. In addition to numeric effluent limits, narrative limits are also included in Part I of DNREC permits, in which there is a requirement for discharges to be "free from floating solids, sludge deposits, debris, oil and scum." Internal evaluation memos and Fact Sheets include the draft permit development documentation, and statements regarding whether draft permits have met DNREC's policies regarding Antidegradation and Waters of Exceptional Recreational and Ecological Significance (ERES).

DNREC's Antidegradation and ERES Policies are described in Section 5 of Delaware's Surface Water Quality Standards regulations. Delaware currently has no waterbody segments that carry the Outstanding National Resource Waters (ONRW) designation, so there are no Tier 3 waters in the state. Delaware classifies its ERES waters as Tier 2.5, and these waters are listed in Section 3 of Delaware's Water Quality Standards regulations. There are roughly 19 basins that are designated ERES, either "all" or "in part". High Quality Waters are classified as Tier 2. All Delaware surface waters are subject to at least Tier 1 protection. Those which are only subject to Tier 1 protection are those waters that have not been assigned as an ONRW, ERES water, or high quality water. In general, Tier 1-only waters are those segments where fishable/swimmable goal uses are not attained, or where assimilative capacity does not exist for any of the parameters that would be affected by the proposed activity. DNREC's policy requires that no new or increased discharges to high quality or ERES waters may occur without an evaluation of alternatives (including an evaluation of the available waste minimization practices and technologies, and the lack of feasible alternative production process and disposal options) and a social and economic justification. Additionally, any such discharge is required to be consistent with any Pollution Control Strategy that has been developed by the State for the respective basin.

C. State-Specific Challenges

Like any state DNREC faces challenges, such as a limited staff for developing and issuing NPDES permits. Fortunately, DNREC has been able to maintain a core, dedicated permitting staff for a number of years who carry a wealth of history and knowledge about existing facilities and

previous permit development. Due to the persistent challenge with its permit backlog, DNREC wishes to continue one on one meetings with EPA Region 3 in order to increase communication, and to keep programs moving forward. DNREC has also indicated a need for an NPDES permit writers course or funding so that staff can attend any available training.

D. Current State Initiatives

DNREC's efforts to develop a Microsoft Access database and electronic filing system is a state initiative that has already and will continue to improve the permitting process. This database system tracks permits issued, provides information on each permit during permit development, and includes links to each permit's electronic files. DNREC is in the process of populating the database and electronic filing system, but the database will help to consolidate permit application and development documents, compliance inspection information, permit writer notes, and more. This database already seems to be a great resource for DNREC, and will continue to aid permit development in the future as it becomes more robust.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Basic facility information is necessary to properly establish permit conditions. For example, information regarding facility type, location, processes and other factors is required by NPDES permit application regulations (40 CFR 122.21). This information is essential for developing technically sound, complete, clear and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

Program Strengths:
Overall, DNREC fact sheets and permits provide a clear description of the facility names, addresses, type of facility and processes/operations, and receiving waters. DNREC's permits also contained all other basic permit information including issuance, effective and expiration dates, authorization-to-discharge information, a description of the activities/services carried out by the facilities and to which outfalls those wastewaters discharge.

Areas for Improvement:
A number, but not all of the permits that were reviewed were missing the outfall location information in the record. Details such as the latitude and longitude for outfalls and/or a map identifying the physical location of each outfall within the receiving water were missing from some fact sheets, permits, and the permit applications. Of the permits reviewed, MOT WWTP, Milton WRF, and Hanover Foods did not include the outfall location information noted above in the administrative record.

While the SAW, Inc. permit application included the latitude and longitude for the facility outfalls, the permit provided no information on the physical location of these outfalls. The permit only provided a map of the facility location.

2. Permit Application Requirements

Federal regulations at 40 CFR 122.21 and 122.22 specify application requirements for permittees seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the state and used in permit development.

Program Strengths:
DNREC uses EPA NPDES permit application forms. Permit applications were well organized in the paper filing system and were readily available for review during the PQR. Most permit applications appeared to be submitted in a timely fashion, some of which were complete while others did not appear to be complete. Where incomplete applications were received, DNREC appeared to engage with the permittee to obtain the missing application information. With the exception of the City of Lewes STP (which was submitted past the permit expiration date and no extension seems to have been given), applications that were submitted late appeared to be in line with a time extension provided by DNREC. Data submitted with the applications appeared to be adequate and in accordance with application and regulatory requirements (sufficiently sensitive methods appeared to be used).

Areas for Improvement:
There was one noted late submission for the City of Lewes STP permit application without an extension. Otherwise, DNREC's permit application requirements and procedures are in accordance with Federal regulatory requirements.

B. Technology-based Effluent Limitations

NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop technology-based requirements where applicable. Permits, fact sheets and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

1. TBELs for POTWs

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent pollutant removal), and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133. A total of three POTW permits were reviewed as part of the PQR.

Program Strengths:
The POTW permits reviewed contained numeric limits with appropriate units of measure, and met the minimum secondary treatment requirements or more stringent standards for BOD/CBOD, TSS, and pH. In accordance with Section 7 of DNREC's Regulations Governing the Control of Water Pollution, facilities that employ secondary treatment, filtration, and

disinfection, and also those that employ nutrient removal, are required to meet more stringent treatment requirements for these parameters. These facilities are required to meet technology based effluent limits of 15 mg/L BOD (average monthly) and 23 mg/L as a daily maximum (or 13 mg/L CBOD (average monthly) and 20 mg/L as a daily maximum). All three of the POTW permits that were reviewed (Lewes STP, MOT WWTP, and Milton WRF) either met DNREC's more stringent technology based requirements for BOD/CBOD and TSS, or met more stringent water quality based limits based on TMDL wasteload allocation requirements (MOT WWTP).

The Delaware River Basin Commission (DRBC) establishes water quality requirements for discharges within the Delaware River Basin, and where applicable, DNREC applied more stringent percent removal requirements for BOD/CBOD and TSS in the permit (for example, the MOT WWTP is required to meet 92.5% removal of CBOD and TSS).

40 CFR 133.102 requires that BOD5/CBOD5 and TSS effluent limits for POTWs be expressed in terms of a 30-day (monthly) average and a 7-day (weekly) average. DNREC permits include BOD5/CBOD5 and TSS limits that are expressed as a daily average and a daily maximum. DNREC's daily average value is equivalent to a 30-day average monthly expression and meets Federal requirements. DNREC's regulations require that POTWs meet a minimum of 45 mg/L BOD5 and TSS (40 mg/L CBOD5) as a daily maximum, rather than as a weekly average value. While application of a daily maximum value instead of a 7-day (weekly) average may not appear to be consistent with the Federal secondary treatment requirements, it is in fact more stringent than Federal requirements.

Areas for Improvement:
While DNREC's regulations require a minimum of 85% removal of BOD/CBOD and TSS, the POTW permits do not include the 85% removal requirement. Only permits that were required to meet a more stringent percent removal for BOD5/COBD5 and TSS included the requirement in the Part III permit conditions.

2. TBELs for Non-POTW Dischargers

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Available Technology Economically Achievable (BAT) or Best Conventional Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BAT/BCT developed on a case-by-case using best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

Program Strengths:
For non-POTW permits, effluent limits were appropriately expressed in terms of maximum daily and monthly average limits. The explanation of facility descriptions, process wastewaters being evaluated, and treatment processes were adequately discussed in the fact sheets.

Areas for Improvement:

Three of the permits reviewed were not subject to an ELG (Hanover Foods, Croda Uniqema, and SAW). The Hanover Foods permit included technology based limits based on DNREC's regulations at Section 7.3.1 (for BOD, TSS, and O&G). The SAW permit maintained effluent limitations from the previous permit with no identification in the fact sheet as to how the previous limits were derived. In the Croda Uniqema permit, the current fact sheet provided limited information on effluent limit derivation. While the previous permit's fact sheet was more detailed, changes at the facility made it difficult to identify how limits were determined for the current permit.

The Bilcare permit was subject to an ELG, and the permit applied the appropriate category for the type of processes employed, and the appropriate technology-based requirements were evaluated for the permit. The Claymont Steel and NRG Indian River fact sheets did not provide a discussion of the applicable ELGs and how they were evaluated or applied in the permit. In these cases, the fact sheet made reference to the fact that the technology-based limits were continued from the previous permit; however, the fact sheet did not provide documentation of how the previous limits were derived.

C. Water Quality-Based Effluent Limitations

The NPDES regulations at 40 CFR 122.44(d) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such "water quality-based effluent limits" (WQBEL), the permitting authority must evaluate the proposed discharge and determine whether technology-based requirements are sufficiently stringent, and whether any pollutants or pollutant parameters could cause or contribute to an excursion above any applicable water quality standard.

The PQR for DNREC assessed the processes employed by permit writers and water quality modelers to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers:

- determined the appropriate water quality standards applicable to receiving waters,
- evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- determined critical conditions,
- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limits were necessary for pollutants of concern and, where necessary,
- calculated such limits or other permit conditions.

For impaired waters, the PQR also assessed whether and how permit writers consulted and developed limits consistent with the assumptions of applicable EPA-approved total maximum daily loads (TMDLs).

Program Strengths:
DNREC's fact sheets clearly described the receiving waters, their designated uses and 303(d) impairment status. Additionally, fact sheets clearly indicated when a TMDL had been completed and provided an explanation of the TMDL requirements and how they were applied in the permit. DNREC consistently applies WQBELs in its permits that are in accordance with the wasteload allocation (WLA) requirements of the applicable TMDLs.

As discussed earlier in this report, DNREC's permit writers use a spreadsheet to analyze reasonable potential (RP), mixing zones, and to calculate WQBELs based on Delaware's water quality standards and based on the methods in EPA's TSD.

Areas for Improvement:
The WQBEL development and evaluation spreadsheet was not always available for review with the public record. DNREC is in the process of making these spreadsheets available in their electronic database for any future permit development. An explanation of how permit application data was evaluated and how the spreadsheet was used to develop WQBELs generally was not provided in the fact sheets, so it is unclear which pollutants were assessed for any given permit. Additionally, while the fact sheets may state which WQBELs or TBELs are being applied in the permit, there is no direct comparison provided of the technology and water quality based limits that were calculated. Outside of the WQBELs determined as part of the TMDL process, DNREC assumes a "zero" background for any pollutant that it assesses.

D. Monitoring and Reporting

NPDES regulations at 40 CFR 122.41(j) require permittees to periodically evaluate compliance with the effluent limitations established in their permits and provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48 requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge.

Program Strengths:
All but one of the permits that were reviewed (NRG Indian River) included at least annual monitoring for all limited parameters. For the permit that did not include at least annual

monitoring, the record indicated that the facility applied for and was granted a monitoring wavier. All permits included the monitoring locations and frequency of sampling appropriate for the discharge type, and Whole Effluent Toxicity (WET) testing was applied where appropriate (for all major POTWs and for Industrial dischargers where DNREC deemed it necessary). Some permits specifically required the use of a "sufficiently sensitive" 40 CFR 136 method for an identified pollutant, while other permits included the requirement that test methods at 40 CFR 136 must be utilized.

Areas for Improvement:
POTW permits do not directly require influent monitoring for BOD5/COBD5 and TSS to determine compliance with the secondary treatment standard for percent removal. While there is no Federal requirement to monitor influent BOD5/COBD5 and TSS, it is a necessary action to document compliance with the 85%, or more stringent percent removal requirements. DNREC could consider including influent monitoring in their permits.

E. Standard and Special Conditions

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain an enumerated list of "standard" permit conditions. Further, the regulations at 40 CFR 122.42 require that NPDES permits for certain categories of dischargers must contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition, unless such alteration or omission results in a requirement more stringent than required by the federal regulations.

In addition to standard permit conditions, permits may also contain additional requirements that are unique to a particular permittee or discharger. These case-specific requirements are generally referred to as "special conditions." Special conditions might include requirements such as: additional monitoring or special studies such as pollutant management plan or a mercury minimization plan; best management practices [see 40 CFR 122.44(k)], or permit compliance schedules [see 40 CFR 122.47]. Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

Program Strengths:
A review of DNREC's standard permit conditions indicated that most of the requirements were at least as stringent as the Federal regulations. Special conditions in permits reviewed during the PQR included appropriate compliance schedules for meeting WQBELs, conducting WET testing, and implementing stormwater BMP requirements, among other requirements.

Areas for Improvement:
DNREC permits (both POTWs and non-POTWs) seem to be missing a portion of the Monitoring and Records requirements at 40 CFR 122.41(j)(5). This regulation deals with the penalties for any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the permit. For POTWs, the additional requirements listed at 40 CFR 122.42(b) may not be adequately addressed in the standard condition language. It seems as though DNREC's requirements for "planned changes" may

overlap with the intent of some of these requirements. For non-POTW permits, the reference to penalties at 40 CFR 122.41(a)(3) has been noted missing in some, but not all permits, and the additional conditions at 40 CFR 122.42(a) regarding notification levels of the specifically listed toxic pollutants is absent.

F. Administrative Process

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.5 and 40 CFR 124.6); coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR 124.11 and 40 CFR 124.12); responding to public comments (40 CFR 124.17); and, modifying a permit (if necessary) after issuance (40 124.5). EPA discussed each element of the administrative process with DNREC, and reviewed materials from the administrative process as they related to the core permit review.

Program Strengths:
DNREC's administrative process includes the proper coordination of EPA and state review of draft permits, the required public notice period for draft permits, the name and address of the office processing the permit action, name and address of the permittee/facility, the name and contact information of the person more information can be obtained, and a brief description of the comment and hearing procedures.

Areas for Improvement:
During the review of the public record, it was noted that the public notices did not meet some of the minimum Federal requirements. The following information was missing from the public notice documents:
1) The description of the business (40 CFR 124.10(d)(i)(iii)) for industrial facilities was inadequate (the description of the business was adequate for sewage treatment facilities);
2) The outfall locations were missing (40 CFR 124.10(d)(1)(vii);
3) Sludge use/disposal practices were not included (40 CFR 124.10(d)(1)(vii).

It was not always evident whether permit comments were received and how or if they were addressed. No specific response to comment documents were observed during the core review; however, some cover letters for final, issued permits noted that changes were made based on comments received. DNREC indicated verbally that if no comments were received, no mention was made of this fact on the cover letter of the final permit.

G. Administrative Record

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or

statement of basis; all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

Current regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

For the 10 permits reviewed, the administrative record contained many of the necessary documents; however, the record was sometimes incomplete in describing the basis for permit development. While the record contained permit applications, public notice documents, draft permits, fact sheets, final permits, and related correspondence, specific information related to the derivation of both TBELs and WQBELs were often not adequately documented.

1. Documentation of Effluent Limitations

Permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for water quality-based effluent limitations as well as the procedures explaining the basis for establishing, or for not establishing, water quality-based effluent limitations should be clear and straight forward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file.

Program Strengths:
The fact sheets provide a discussion of the treatment processes and type of discharge for non-POTW permits, and effluent limits were in the appropriate units and forms. DNREC fully documents the receiving streams, impairments, applicable TMDLs, and consistently provided a brief discussion on antidegradation.

Areas for Improvement:
As noted earlier in this report, ELGs appear to have been applied in permits, but a discussion of the ELG and the calculation of related TBELs appeared to be missing from some of the fact sheets. This documentation may have been provided in previous fact sheets, but when permit limits were maintained in the reissued draft/final permit, the documentation and justification for the effluent limits was not provided.

The permit rating sheet that establishes the score by which non-POTW (i.e., industrial) facilities are classified as majors or minors, could not be located in the administrative record for any industrial facilities.

Fact sheets provided somewhat limited information regarding the development of WQBELs, and should be augmented to fully explain the evaluation of and provide supporting documentation for the derivation of water quality based effluent limits.

H. National Topic Areas

National topic areas are aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national scale**.** National topic areas are reviewed for all state PQRs. The national topics areas are: nutrients, pesticides, pretreatment and stormwater.

1. Nutrients

For more than a decade, both nitrogen and phosphorus pollution has consistently ranked as one of the top causes of degradation of surface waters in the U.S. Since 1998, EPA has worked at reducing the levels and impacts of nutrient pollution. A key part in this effort has been the support EPA has provided to States to encourage the development, adoption and implementation of numeric nutrient criteria as part of their water quality standards (see the EPA's *National Strategy for the Development of Regional Nutrient Criteria*). In a 2011 memo to the EPA regions titled *Working in Partnerships with States to Address Nitrogen and Phosphorus Pollution through use of a Framework for State Nutrient Reductions*, the Agency announced a framework for managing nitrogen and phosphorus pollution that, in part, relies on the use of NPDES permits to reduce nutrient loading in targeted or priority watersheds.

Background:
Although there are no water quality criteria for nutrients, DNREC has established nutrient endpoints (or targets), which are based on an interpretation of its narrative criteria. These endpoints have been established for all of Delaware's nutrient impaired waters; however, site-specific nutrient endpoints were established for the Inland Bays watershed. These endpoints are used to determine water quality based wasteload allocations in nutrient TMDLs, which are then implemented in Delaware's NPDES permits.

To assess how nutrients are addressed in the Delaware NPDES program, EPA Region III reviewed two permits: MOT WWTP (DE0050547), and the Lewes STP (DE0021512). Both waste water treatment plants (WWTPs) are located in eastern Delaware in ecologically sensitive watersheds.

The MOT facility is the only point source discharger to the Appoquinimink River which is 303(d) listed for excessive dissolved oxygen (DO) loadings due to excessive phosphorus. The Appoquinimink River Total Maximum Daily Load (TMDL) establishes a limit of 0.5 mg/L limit for total phosphorus which has and continues to be the limit in MOT's NPDES permit.

The Lewes STP discharges to Rehoboth Bay via the Lewes-Rehoboth Canal. Rehoboth Bay is a tidal salt water body, which together with its tributaries, are listed for DO due to excessive phosphorus and nitrogen. The TMDL for Rehoboth Bay requires 100% reduction of nutrients, which is implemented in the Lewes permit.

In accordance with the TMDLs, the NPDES permits for both facilities include numeric limits for total nitrogen and total phosphorus. In the instance of the MOT WWTP, the permit contains load based numeric limits (daily maximum) for total kjeldahl nitrogen. Monitoring is also required for nitrate-nitrogen and nitrite-nitrogen constituents. With regard to the Lewes permit, total nitrogen is limited and is expressed as concentration (daily average) and load (daily average). With regard to total phosphorus, limits for the MOT permit are expressed as loads for a daily average and daily max period. Total phosphorus in the Lewes permit is concentration and load based and expressed as a daily average. Monitoring frequency for MOT is once weekly (composite) and once monthly for Lewes. Both permits were written in accordance with reductions required by their respective TMDLs.

Program Strengths:
Overall, Delaware has implemented a strong program to protect surface waters from nutrients.

Areas for Improvement:
There were no areas for improvement noted. Delaware has met EPA's expectations with regard to establishing water quality-based TMDLs and is following through in implementing reductions in NPDES permits.

2. Pesticides

On October 31, 2011, the EPA issued a final NPDES *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*. This action was in response to a 2009 decision by the U.S. Sixth Circuit Court of Appeals (National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009)) in which the court vacated EPA's 2006 Final Rule on Aquatic Pesticides (71 Fed. Reg. 68483, November 27, 2006) and found that point source discharges of biological pesticides and chemical pesticides that leave a residue, into waters of the U.S. were pollutants under the CWA. The federal PGP applies where the EPA is the permitting authority. Approximately 40 authorized state NPDES authorities have issued state pesticide general permits as of November 2011.

Background:
On January 7, 2009, the Sixth Circuit vacated the EPA's 2006 NPDES Pesticides Rule under a plain language reading of the CWA. National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009). The Court held that the CWA unambiguously includes "biological pesticides" and "chemical pesticides" with residuals within its definition of "pollutant." In response to this decision, on April 9, 2009, EPA requested a two-year stay of the mandate to provide the Agency time to develop general permits, to assist NPDES-authorized states to develop their NPDES permits, and to provide outreach and education to the regulated community. On June 8, 2009, the Sixth Circuit granted EPA the two-year stay of the mandate. On March 28, 2011, the

U.S. Court of Appeals for the Sixth Circuit granted EPA's request for an extension to allow more time for pesticide operators to obtain permits for pesticide discharges into U.S. waters. The court's decision extended the deadline for when permits would be required from April 9, 2011 to October 31, 2011.

As a result of the Court's decision to vacate the 2006 NPDES Pesticides Rule, NPDES permits are required for discharges of biological pesticides and of chemical pesticides that leave a residue, to waters of the United States. EPA proposed a draft pesticide general permit on June 4, 2010 to cover certain discharges resulting from pesticide applications. EPA Regional offices and state NPDES authorities may issue additional general permits or individual permits if needed.

For this PQR, EPA Region III reviewed DNREC's final regulation for Aquatic Pesticides which added a new section, 9.8, to the regulation entitled, "Regulations Governing Discharges from the Application of Pesticides to Waters of the State". This final regulation (originally issued as an emergency amendment on February 7, 2012, and approved by the EPA Regional Administrator on April 24, 2012), became issued on August 15, 2012 and became effective on September 11, 2012. In accordance with this regulation, pesticide applications in the state of Delaware are covered by a permit-by-rule. According to Delaware's regulations, all operators below the Annual Treatment Thresholds are automatically covered and do not need to submit a Notice of Intent (NOI). Thirty NOIs were received by DNREC, which is the known universe of permittees within the State.

Notices for coverage under the amendment are submitted to DNREC by hard (paper) copy. Information is entered into an internal Surface Water Discharges Section (SWDS) database, which tracks the status of the application and permit coverage. This database is available for use by DNREC staff only.

Certain permittees are required to develop Pesticide Discharge Management Plans which are not sent to or approved by the State, however, individual plans and its supporting documents are available at the address identified by the permittee. Permittees are required to submit annual reports to DNREC, which are reviewed for completeness. Information from the annual report is loaded into the SWDS database and hard copies of the reports are filed and retained by DNREC. DNREC does not have funding for monitoring individual pesticide applications; however, some limited pesticide monitoring data is available through the Watershed Assessment and Management Section of DNREC. As of this report, no emergency situations for pesticide application have been reported, however, should one occur, the State maintains a well-trained Emergency Response Team. Due to budgetary constrictions, Delaware is only able to commit 0.10 full time employee to the pesticide program. It would like to expand the program if additional resources or funding were available.

Program Strengths:
Delaware is able to use resources and experienced personnel from different program areas to support its pesticide program.

Areas for Improvement:

This is a permit by regulation; therefore there is no expiration date. DNREC does consider the issuance date the date the regulation became effective. While the regulations claim that coverage under the permit is not valid for a period of longer than 5 years, there is no expiration date of the regulation.

3. Pretreatment

The general pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement pretreatment standards to control pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

Background:

The goal of this pretreatment program review was to assess the status of the pretreatment program in Delaware, as well as assess specific language in POTW NPDES permits. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR 122.42(b) (POTW requirements to notify Director of new pollutants or change in discharge);
- 40 CFR 122.44(j) (Pretreatment Programs for POTWs);
- 40 CFR 403.8 (Pretreatment Program Requirements: Development and Implementation by POTW);
- 40 CFR 403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval);
- 40 CFR 403.12(i) (Annual POTW Reports); and
- 40 CFR 403.18 (Modification of POTW Pretreatment Program).

The PQR also summarizes the following (when available): program oversight, which includes the number of audits and inspections conducted; number of significant industrial users (SIUs) in approved pretreatment programs; number of categorical industrial users (CIUs) discharging to municipalities that do not have approved pretreatment programs; and the status of implementation of changes to the general pretreatment regulations at 40 CFR part 403 adopted on October 14, 2005 (known as the streamlining rule).

While the State of Delaware issues NPDES permits directly to POTWs, it does not have approval to implement the pretreatment program and the pretreatment program is therefore implemented by EPA Region 3. According to the Integrated Compliance Information System (ICIS) there are six POTWs in Delaware that have approved pretreatment programs. For PQRs related to pretreatment, the information in the table below is typically pulled from ICIS. Region 3 inputs information about numbers of SIUs and CIUs and numbers of SIUs and CIUs with expired permits, from POTW annual reports. According to ICIS the numbers of SIUs per POTW are: Wilmington (46); Kent County (8); Bridgeville (2); Seaford (2); Selbyville (1); and, Middletown-Odessa-Townsend (MOT) (0).

State of Delaware Pretreatment Program at a Glance 2012	
Number of Approved POTW Pretreatment Programs	6
Number of SIUs in POTWs with Approved Pretreatment Programs	59
Percent of SIUs with expired Permits	8%
Number of CIUs in POTWs with Approved Pretreatment Programs	21
Percent of CIUs with expired Permits	*
Number of CIUs that are discharging to POTWs without Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	3**
Number of Pretreatment Compliance Inspections in 2012	0
Number of Pretreatment Compliance Audits in 2012	0
Percentage of POTWs for which CMS Goals were met	Not applicable
Date State Program updated for Streamlining Regulations	Not applicable***

* Not available in ICIS.

** Region 3 Coordinator provided data to expand on Governmental Performance Results Act (GPRA) 11/2013 data.

***Not applicable. EPA directly implements the Delaware pretreatment program, therefore, the streamlining rule provisions were not required to be adopted by the state.

As part of the PQR analysis for pretreatment implementation requirements, four permits were reviewed, two for POTWs with approved pretreatment programs, and two from POTWs without approved programs. Permits and fact sheets were provided for review by Region 3 staff. All permits had accompanying fact sheets. Three of the permits and fact sheets reviewed are current and in effect. The draft permit update and fact sheet were reviewed for Bridgeville.

The design flows for the four Delaware POTWs with permits reviewed range from 0.35 million gallons per day (MGD) to 2.5 MGD, as shown in the table below.

Permittee	Permit No.	Approved Pretreatment Program?	Design Flow (MGD)
Middletown-Odessa-Townsend (MOT) Regional Water Works Treatment Facilities	DE0050547	Y	2.5

Permittee	Permit No.	Approved Pretreatment Program?	Design Flow (MGD)
Town of Bridgeville	DE0020249	Y	0.8
Tidewater Environmental Services Incorporated aka Milton WRF	DE0021491	N	0.35
City of Lewes	DE0021512	N	1.5

Program Strengths

The Region 3 pretreatment team is part of the NPDES Permits Branch of the Office of NPDES Permits and Enforcement. The pretreatment team consists of two full-time staff and two part-time staff. Pretreatment staff conduct audits, local limits reviews, and annual report reviews of approved POTW pretreatment programs. One of the part-time staff members oversees the CIUs in non-approved cities with oversight by the Region 3 Pretreatment Coordinator. Oversight of these CIUs includes categorizing the users, determining the appropriate limits, and reviewing self-monitoring reports.

For NPDES permits, the standard pretreatment language is developed by the pretreatment staff with input from Region 3 attorneys and the State of Delaware staff. When a permit comes in for review, the permit reviewer sends it to the assigned pretreatment person who reviews the pretreatment language to determine if it needs to be adjusted. That adjustment could include a change in the monitoring frequencies for pretreatment or the local limits development language or other language as appropriate. At times, Region 3 pretreatment staff also make recommendations on the need for limits for toxic pollutants based on the pretreatment monitoring data that the Region collects.

The Region 3 pretreatment staff works with the enforcement branch to identify enforcement cases. Enforcement staff take the lead in developing and pursuing the case and pretreatment program staff are available to provide technical assistance on the pretreatment requirements and to provide background on the POTW's history. Pretreatment staff generally review any program documents that are submitted as part of an enforcement case.

For industrial users in non-pretreatment cities, the standard operating procedure is to try to identify categorical industrial users from the POTW permit applications for those POTWs that do not have approved pretreatment programs. However, the Regional Coordinator stated that he is unsure whether he receives all of these applications. As the semiannual compliance reports come in for categorical industries in non-pretreatment cities, a pretreatment staff member reviews them for completeness and compliance. Region 3 does not have the monitoring data computerized at this point, so the evaluation is done manually. Region 3 is continually in the process of identifying new categorical industrial users, so at any given time

there are users that are in various stages of being categorized, having limits established, etc. The Region has these users on a cycle to be inspected every 3 years. These inspections are done by the Region's field inspectors.

In terms of ICIS data input, the RIDE and inspection data for the POTWs with approved programs is entered by the person assigned to the case. The inspection data for the inspection completed by EPA OECEJ is entered by the Region 3 Pretreatment Coordinator.

Based on this PQR, the NPDES permits reviewed for POTWs with pretreatment programs incorporate all General Pretreatment Regulations by reference. The NPDES permits state that permittees must operate a POTW pretreatment program in accordance with the federal Clean Water Act, applicable State laws and the federal General Pretreatment Regulations at 40 CFR Part 403. Further, the permits all require that the program be implemented in accordance with the permittee's approved pretreatment program and any modifications. The fact sheets for the permits for POTWs with pretreatment programs clearly specify that a pretreatment program is required and describe whether industrial facilities discharge to the POTW.

Areas for Improvement

According to available ICIS data, Region 3 has not conducted a PCI or PCA at any of the six approved programs since at least 2008. Since 2008, the Region has conducted one field audit per POTW. Field audits are not considered PCAs or PCIs. Field audits were coded as PCIs when the previous database, PCS, was used. No field audits were conducted in 2012. According to ICIS, one POTW without an approved program (Millsboro) was inspected in 2011. The Pretreatment Coordinator said that perhaps this was an inspection conducted by the State, and the type of inspection conducted is unknown.

<u>Non-Pretreatment Program POTWs</u>

The two permits for the non-pretreatment POTWs are not consistent with respect to pretreatment program requirements. Although Lewes is not required to have a pretreatment program, the Lewes permit contains a section entitled Pretreatment Program Requirements ("Special Condition No. 2 outlines the pretreatment program requirements applicable to this facility").

The Milton permit does not contain notification requirements at 40 CFR 122.42(b)(1) & (b)(2) and 122.44(j)(1). [The Lewes permit is the only permit out of all four of the permits reviewed that contains the language required at 40 CFR 122.42(b)(1) & (b)(2) and 122.44(j)(1).] Both permits for non-approved POTWs do contain language in Part II.A.2 regarding notification requirements for planned changes that is similar to 40 CFR 122.42(b)(1) through (b)(3) , however, the reporting requirements in the permits include a list of caveats for when notification is required, the federal requirements do not. The caveats could limit the enforceability of the notification requirements.

Neither permit contains requirements at 122.42(b)(3) to provide information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

The Milton permit does not discuss the establishment of a pretreatment program, when required, nor does it require that the program will meet all reporting requirements of the Clean Water Act and 40 CFR Part 403 (as does the Lewes permit).

Both permits for POTWs without approved pretreatment programs have standard reopener clauses, but they do not specifically mention that they could be reopened, if deemed necessary, to require a pretreatment program or local limit development, based on results of an industrial waste survey, new categorical standards, or industry changes. Also, the standard reopener clause does not include requirements at 40 CFR Part 122.62(a)(2) and 403.5(c)(2).

The fact sheets for these permits do not specifically state that a pretreatment program is not required at this time, or state the reason why. Because the Lewes fact sheet says the permit contains "Special Condition No. 2 outlines the pretreatment program requirements applicable to this facility" and the Milton permit and fact sheet are silent on this issue, it is somewhat confusing as to whether the Lewes POTW is required to have a pretreatment program.

Approved Pretreatment Programs

Neither permit for POTWs with approved pretreatment programs contain the specific notification requirements at 40 CFR 122.42(b)(1) through (b)(3). The permits contain language in Part II.A.2 regarding notification requirements for planned changes that is similar to 40 CFR 122.42(b)(1) through (b)(3), however, the reporting requirements in the permits include a list of caveats for when notification is required, the federal requirements do not. The caveats could limit the enforceability of the notification requirements.

The MOT permit does not contain requirements for conducting local limits reevaluations as required at 40 CFR 122.44(j)(2)(ii) and 40 CFR 403.8(f)(4), and the fact sheet does not contain an explanation. According to a personal communication with the EPA Regional Pretreatment Coordinator, a reevaluation was not required because the POTW does not currently have any SIUs.

The MOT permit has an incorrect citation in Part III.A.2.b.iv for the significant noncompliance definition. The permit incorrectly references 40 CFR 403.8(f)(2)(vii) and should refer to 40 CFR 403.8(f)(2)(viii).

Both of the permits for POTWs with approved pretreatment programs have standard permit reopener clauses, however, the clauses do not reference 40 CFR Part 122.62(a)(2) and 403.5(c)(2).

Permit contents are not consistent. Pretreatment Program Requirements are found in Special Conditions (Part III.A.2). The permit for Bridgeville contains more detailed pretreatment program requirements. For example, the Bridgeville permit contains procedures for notification of pretreatment program changes, and includes an additional condition for requiring that the POTW request approval for modification of its pretreatment program (i.e., "submit for approval changes to its pretreatment program if the POTW proposes to introduce new pollutants or an increased loading of approved pollutants"). The Bridgeville permit also requires more detailed annual report requirements than the MOT permit. Region 3 explained that the Bridgeville permit contains updated language which will be used in all future permits.

The fact sheets for POTWs with approved programs do not denote dates pretreatment programs were approved or modified.

Finally, the fact sheet for the Lewes permit does not discuss whether the reasonable potential analysis conducted to develop water quality-based limits included analysis of pollutants common for the types of industries discharging to the POTW.

4. Stormwater

The NPDES program requires stormwater discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to be permitted. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities.

Background:

The following is a list of Delaware stormwater permits at the time of the Delaware PQR:

1. New Castle County Phase I MS4 (DE0051071)
2. DELDOT Phase II MS4 (DE0051144)
3. Newark Phase II MS4 (DE0051152)
4. Dover City Phase II MS4 (DE0051161)
5. GP for Discharges of Stormwater Related to Industrial Activity
6. GP for Discharges of Stormwater Related to Construction Activities

Region 3 selected three NPDES stormwater permits to review for the PQR. These permits include:

1. New Castle County Phase I MS4
2. GP for Discharges of Stormwater Related to Industrial Activity
3. GP for Discharges of Stormwater Related to Construction Activities

Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s)
Background:
Federal regulations in 40 CFR Section 122.26(d) outline a two-part NPDES application process for discharges of stormwater from large and medium municipal separate storm sewer systems

(MS4s). The permit application includes description of the adequacy of the jurisdiction's legal authority, a list of identified sources of pollutants, data for the characterization of the discharges, proposed management programs and a fiscal analysis to ensure the program is properly funded. Urban stormwater runoff is a source of various pollutants and the MS4 program was designed to control pollution from the continual development and urbanization of larger metropolitan areas. The focus of the MS4 Stormwater review is to verify that permits and fact sheets comply with federal regulations and are protective of water quality. In Delaware, there is one jurisdiction designated as a large MS4 - New Castle County. The County maintains Phase I MS4 permit coverage as a co-permittee with the Delaware Department of Transportation, the towns of Bellefonte, Elsmere and Newport and the cities of Delaware City, New Castle and Wilmington. This permit was evaluated as part of this PQR review process. The New Castle County/DelDOT Phase I MS4 permit was issued on May 7, 2013 and expires May 6, 2018.

While it would appear that there are some aspects of the permit that do not correspond exactly with the regulations in the check list, Delaware's recently revised Sediment and Stormwater regulations contain a number of conditions related to water quality and quantity control that are applicable statewide. Therefore, the permit area is considered to be consistent with all regulatory requirements.

Program Strengths:
Besides the two main co-permittees, there are six other jurisdictions that maintain co-permittee status for this permit. One of the strengths of a permit with this many co-permittees is that it requires development of an inter-jurisdictional agreement and regular meetings to ensure that all permittees are doing their part to maintain compliance with the permit.
The permit requires the development of a Stormwater Pollution Prevention and Management Plan (SWPP&MP). The SWPP&MP shall describe in detail all Best Management Practices (BMPs), control measures, and other actions to be implemented as part of the permit. The SWPP&MP addresses six main components: (1) Public Education/Public Involvement; (2) Illicit Discharge Detection and Elimination; (3) Stormwater Management during Construction; (4) Post Construction Stormwater Management; (5) Good Housekeeping; and (6) Industrial Stormwater. The SWPP&MP must be reviewed and approve by DNREC.

The permit further requires the development and implementation of a Water Quality Improvement Plan to be reviewed and approved by DNREC. The purpose of the plan is to identify potential projects, estimated costs, and potential funding sources for projects that aim toward meeting TMDL allocations and applicable water quality standards. In addition, the plans are to include a consideration of all available BMP options, and propose at least a 3% decrease in untreated Effective Impervious Area as defined within the permit. The 3% decrease shall be obtained through development and redevelopment in conjunction with revitalizing or retrofitting existing BMPs in need of repair and the introduction of new green technology BMPs.

Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity
Background:
The DNREC General Permit for Discharges of Stormwater Related to Industrial Activity is a permit by regulation. The Regulation was last updated in February 2006. EPA is the permitting authority for federal facilities in Delaware.

Program Strengths:
With the exception of the Airport Deicing ELG, the permit covers the rest of the stormwater specific ELGs. The permit also has a good grasp of TBELs applicable to permittees. The permit requires that if there is a TMDL with a wasteload allocation (WLA) applicable to a site, that the permittee must get an individual permit. Any changes in operation, personnel, activities, etc. that cause the Stormwater Pollution Prevention Plan (SWPPP) to change must be reflected in the SWPPP immediately, but no more than 45 days after the change(s) occurs. The permit also identifies that a measureable storm event is greater than or equal to 0.1 inch at least 72 hours after the previous measurable storm event, and includes the appropriate monitoring procedures that need to be followed.

Areas for Improvement:
This is a permit by regulation; therefore there is no issuance date and expiration date. While the regulations claim that the permit is not valid for a period of longer than 5 years, the regulations are older than 5 years and should be updated. Not all of the sectors from EPA's Multi Sector General Permit (MSGP) are listed in Delaware's regulations. Additionally, the regulations do not include the new ELG for airport deicing activities. There are no specifics with regard to new discharges to impaired waters, or for high quality or other special protection waters. While the permit specifies that discharges must comply with applicable water quality standards, the language does not specify how compliance with applicable water quality standards will be determined. There are no corrective actions required by the regulation. There are no requirements for noncompliance reporting, keeping records for at least 3 years (with the exception of keeping records required by the SWPPP), or availability of SWPPPs to the public.

There is no language in this regulation regarding public access to documents, nor is there language regarding how to go about terminating permit coverage.

General Permit for Stormwater Discharges from Construction Activity
Background:
The Delaware Permit for Discharges of Stormwater Related to Construction Activity is a permit by regulation. The Regulation was last updated in February 2006. Because it is a permit by regulation, and there is only a General Permits program for Construction Activities, individual permits are not issued under this program. EPA is the permitting authority for federal facilities in Delaware.

Program Strengths:

The Construction General Permit for Discharges Associated with Stormwater does not allow discharges to be permitted that go to a water with an approved TMDL unless the permittee has prepared an approved Sediment and Stormwater Plan, nor is a discharge permitted that would cause or contribute to water quality standard exceedances. The permit requires that before submitting a Notice of Termination (NOT), the permittee must verify that all the items in the erosion and sediment and stormwater plan have been satisfied, including as-built verification of BMPs. The permit requires that final stabilization is also realized before submission of a NOT form. Permittees must follow Delaware Sediment and Stormwater Regulations for BMP design, installation, and maintenance. The permit also prohibits the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance if such discharges will cause or contribute to a water quality standards excursion. The permit also requires that a SWPPP be prepared prior to submitting a Notice of Intent, and that all SWPPP documents and elements be maintained for at least 5 years after the NOI date (which is more stringent than federal requirements of a records retention of 3 years).

Areas for Improvement:
This is a permit by regulation; therefore there is no issuance date and expiration date. While the regulations claim that the permit is not valid for a period of longer than 5 years, the regulations are older than 5 years and should be updated. The regulations do not have any language regarding Erosion and Sediment Controls related to the language found in 40 CFR 450.21(a), with the exception of requirements for final stabilization to occur. The regulations do not have any language regarding Soil Stabilization, Dewatering, and Surface Outlets related to language in 40 CFR 450.21(b), (c), or (f), nor 450.21(d) and (e), with the exception of prohibiting fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance if they cause or contribute to a water quality standards exceedance. As long as water quality standards are not exceeded, there is no language requiring that they must be "met," nor is there language regarding discharges to impaired waters, except if there is an applicable TMDL. The only language regarding self-inspections is in reference to only after a rainfall, and only to monitor erosion and sediment controls and BMPs.

There is no public access to NOIs provided by the regulations, nor is there the option for small operators to submit a rainfall erosivity waiver. There is no antidegradation language, no requirements for corrective actions, and no requirements for training.

Follow up Actions:
Per DNREC's request, EPA followed up on areas for improvement regarding the Construction General Permit. (Refer to Section V.H.4.)

IV. REGIONAL TOPIC AREA FINDINGS

A. Chesapeake Bay

The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limits be developed consistent with the assumptions and requirements of any wasteload allocations (WLAs) established by approved TMDLs. The Chesapeake Bay TMDL was developed and allocations were established within the entire watershed to ensure protection of in-stream water quality standards established by the State of Maryland within the Bay itself. The focus of the Chesapeake Bay review is to verify that permits and fact sheets have been developed to incorporate proper effluent requirements to meet the intent of the TMDL established WLAs assigned to facilities in Delaware. At the time of review, no permits had been reissued in Delaware in the Chesapeake Bay Watershed to incorporate effluent limits consistent with the Chesapeake Bay TMDL WLAs; however, one draft permit was review by EPA Region III for this PQR and this permit has subsequently been reissued.

Background:
On December 29, 2010, EPA established the Chesapeake Bay TMDL, a historic and comprehensive "pollution diet" with rigorous accountability measures to initiate sweeping actions to restore clean water in the Chesapeake Bay and the region's streams, creeks and rivers. The TMDL established WLAs for NPDES point sources throughout the watershed, including sources in Delaware. Watershed Implementation Plans (WIPs) were developed by the Bay jurisdictions to detail how and when the jurisdictions will meet TMDL allocations. The TMDL identified four "significant" wastewater dischargers in Delaware and assigned individual WLAs to these dischargers for Total Phosphorus (TP), Total Nitrogen (TN), and Total Suspended Solids (TSS).

Program Strengths:
EPA Region 3 reviewed a March 2013 draft permit for the Bridgeville Sewage Treatment Plant developed by DNREC. The draft permit properly included effluent limitations to comply with the TP, TN and TSS WLAs assigned this facility in the TMDL. The permit was subsequently reissued on February 27, 2014, incorporating the proper limitations.

Areas for Improvement:
EPA Region 3's finding during the draft permit review revealed that the calculation of the "Moving 12-Month Cumulative Loads" for TN and TP were incorrect. The total monthly flow should have been expressed as MGD x the number of days per month in which there was a discharge in order to have the product of the equation equal pounds per month. DNREC subsequently corrected the error, identified as a typo, and provided a revised draft permit in June 2013 with the proper calculation.

However, this is the only permit for a significant discharger that has now been finalized and reissued by DNREC to incorporate the TMDL requirements. This is more a general issue of backlogged permits in Delaware which is discussed more in Section II.B., of this report.

B. Concentrated Animal Feeding Operations (CAFOs)

Background:

Federal regulations at 40 CFR 122.23 define an animal feeding operation as a lot or facility where animals are stabled or confined and fed for at least 45 days per year and where crops, vegetation, forage growth, or post-harvest residue are not sustained in the normal growing season over any portion of the lot or facility. Concentrated Animal Feeding Operations (CAFOs) are the largest of these facilities and are defined as point sources by the Clean Water Act. The regulations authorize the permitting authority to designate any animal feeding operation as a CAFO subject to permitting if the facility is a significant contributor of pollution to waters of the U.S.

The EPA first developed federal ELGs for CAFOs in 1974. In 2003, the EPA revised the CAFO requirements at 40 CFR 122.23 and the ELGs at 40 CFR Part 412. The 2003 CAFO Rule stated all CAFOs are subject to the development and implementation of a nutrient management plan (NMP) and annual reporting requirements. Following challenges in federal court to the 2003 CAFO regulations, the EPA published revisions to the CAFO regulations and ELGs (73 Fed. Reg. 70418, November 20, 2008). The revised 2008 CAFO rule required that CAFOs apply for a permit if they discharge or propose to discharge to a surface water. In addition, NMPs have to be reviewed by the permitting authority and the terms of the NMP must be incorporated into the permit, making it a requirement to public notice the NMP. On July 19, 2012, EPA issued a final rule to revise its CAFO permit regulation to remove the requirement that CAFOs that "propose to discharge" must seek NPDES permit coverage. This rule revision is in response to a 2011 U.S. Court of Appeals for the Fifth Circuit decision in *National Pork Producers Council v. EPA*, which vacated portions of the Agency's 2008 CAFO rule. In addition, this action removed from the CAFO permit regulation the option to voluntarily certify that a CAFO does not discharge or propose to discharge.

Regulations Governing the Control of Water Pollution, Title 7, Del. Admin. Code §7201, §9.5 Concentrated Animal Feeding Operation (CAFO) (DE CAFO Regulations) were developed pursuant to 3 Del. C. §2201-2290 and 7 Del. C. §6000 et.al, and under DNREC's delegated authority, effective November 11, 2011. These statutory and regulatory authorities establish the requirement that a NPDES permitting program for CAFOs be implemented. These regulations will function as the baseline CAFO standards for compliance of NPDES CAFO permits applicable to certain farms. These regulations were developed by the Delaware Nutrient Management Commission, the Delaware Department of Agriculture (DDA) and DNREC. They are adopted with the guidance, advice and consent of the Delaware Nutrient Management Commission and will be managed by DDA in conjunction with DNREC.

The DNREC and DDA have a Memorandum of Agreement (MOA), dated December 16, 2010, in which it is described their individual and collective roles regarding the Delaware NPDES Program (including the development and implementation of the DE CAFO Regulations). DNREC manages the permitting process and DDA manages review of the AWMP/NMP and State

Technical Standards. The DE State Technical Standards were reviewed by EPA in 2010, and a letter was sent from EPA to DNREC detailing the findings. DNREC sent a response letter dated July 28, 2010 which addressed some but not all of EPA's concerns. Remaining concerns include a need to clarify soil and manure testing procedures, as well as a clarification of how nutrient additions to high phosphorus (P) soils should be handled.

DNREC issued its first NPDES CAFO permit on March 21, 2013 for the Delaware Racing Association (DE0051179). Delaware decided to issue only Individual Permits (IP) for these types of discharges, and is in the process of creating templates for different types of CAFO operations. The permit issued to DE Racing Association utilized a template for large CAFOs with 500 or more horses that do not land apply. The permit requires the permittee to implement and fully comply with an Animal Waste Management Plan (AWMP). The AWMP must be developed by a Delaware certified nutrient consultant in accordance with State Technical Standards, and is applicable to facilities that do not land-apply manure. A Nutrient Management Plan (NMP) is required for those facilities that do land apply manure. Currently, IP templates for medium (37,500 to 124,999 chickens other than laying hens) and large (125,000 or more chickens other than laying hens) poultry facilities that do not use a liquid manure handling system and do not land-apply manure are in draft form, and EPA has provided initial comments. The 2007 USDA census found that there are 571 medium and large facilities in DE. Of those 571, DE has received 400 permit applications.

The review process consisted of a checklist that EPA Region III developed based on Standard Permit Conditions of 40 CFR 122.41, Special Permit Conditions of 40 CFR 122.42(e) and 412.47(b), and Permit Application Requirements of 40 CFR 122.21(i)(1). This checklist was used to review DE0051179, issued March 21, 2013. Further review of draft permits and permit development documentation was performed during the review process of 3 draft permits. We have included a brief review of the Draft Technical Standards as the information provided in this guidance will directly impact the quality of future permits. The draft permits that EPA has reviewed thus far are for facilities that do not land apply manure, therefore, the record-keeping requirements for the Land Application Area of 40 CFR 412.37(c) were not reviewed.

Program Strengths:

Following PQRs that were performed in 2007 and 2011, DE has strengthened the CAFO program by completing the following:

1. Language was added to DE CAFO Regulations that confirmed DDA's authority to implement relevant NPDES CAFO requirements, and identified the duties of the Delaware Nutrient Management Commission.

2. Maximum limits for stockpiling were clarified in DE CAFO Regulations as on farm limits to no more than 14 days uncovered, and in field to no more than 90 days.

3. DNREC provided the document "Setback Standards and Alternative Compliance Practices to Satisfy CAFO Requirements: An assessment for the DEF-AG group", October

9, 2009, which demonstrates that alternative setback requirements set out in Section 5.1.4.6.1.3 of DE CAFO Regulations provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-ft setback, therefore meeting the requirements set forth in 40 CFR 412.4(c)(5)(ii).

4. DE CAFO Regulations clarified that certain information, including but not limited to information pertaining to NPDES CAFO permit issuance, reissuance, modification, revocation or termination must be made publically available.

5. DE CAFO Regulations now define liquid manure and clarify that poultry operations using liquid manure systems with a certain animal number are included as CAFOs (30,000 or more laying hens or broilers = Large; 9,000 – 29,999 = Medium).

6. Delaware has made progress to address EPA's concern that NPDES permits should be developed for CAFOs that discharge into waters of the US. An IP for a Horse Racetrack was issued March 21, 2013, and IPs for Medium and Large Poultry facilities that do not land apply are currently in draft form. These IPs have undergone preliminary review by EPA.

Areas for Improvement:

1. Permit development documentation: the issued permit explains that stockpiling must be conducted and positioned in accordance with State Technical Standards. The State Technical Standards do not include guidance on stockpiling, and therefore does not ensure that stockpiles comply with zero discharge requirements of 40 CFR 412. This is part of an ongoing discussion between EPA and DNREC.

2. Permit: the Delaware Racing Association permit does not include a record keeping requirement of 40 CFR 122.42(e)(1)(ix) to document the implementation and management of 40 CFR 122.42(e)(1)(v) to ensure that chemicals and other contaminants are not disposed of in any manure, litter, or process wastewater storage unless designed to treat such chemicals. This issue is currently being discussed between EPA and DNREC.

3. The issued permit states that "manure testing shall be performed annually in accordance with the State Technical Standards". State Technical Standards reference a link that describes protocols for taking a sample, but does not identify target analytes for manure analysis, nor does it identify appropriate labs.

4. Soil testing guidance is offered in two separate locations in the State Technical Standards; the Nutrient Management tab and the Soil Testing Procedures tab. This may cause confusion for a permittee. Links provided in the Soil Testing Procedures tab do not link to a functional site, so it is unclear if the State Technical Standards currently provides adequate information on how to collect a soil sample. Although the Nutrient

Management tab identifies criteria for an approved lab, it would be helpful for the state to identify and approve specific laboratories for the permittee to use.

5. DE CAFO Regulations explain that manure must be applied in accordance with State Technical Standards. DE Technical Standards include conflicting guidelines for high phosphorus soils between guidance in the Phosphorus Site Index (PSI) tab and the Nutrient Management tab. It is therefore unclear when the PSI should be performed, whether or not phosphorus application to soils can exceed a 3-year crop removal rate, and if there is a maximum soil test phosphorus value to which additional phosphorus may not be applied.

C. Total Maximum Daily Loads (TMDLS)

The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limits be developed consistent with the assumptions and requirements of any WLAs established by approved TMDLs. Section 303(d) of the Clean Water Act requires states to develop TMDLs for impaired waterbodies. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs develop water quality based allocations for point and non-point source discharges. Allocations for point source discharges are implemented through the NPDES permitting process. These WLAs, once incorporated into permits, intend to reduce pollution from point sources as part of the practices to restore and maintain the quality of a state's water resources. The focus of the TMDL review is to verify that permits and fact sheets have been developed to incorporate proper effluent requirements to meet the intent of the TMDL WLAs assigned to facilities in Delaware. Two permits were reviewed to determine whether DNREC is developing permits consistent with the assumptions and requirements of approved TMDLs.

Background:
The two permits reviewed were: Milton Water Reclamation Facility (WRF) and Hanover Foods.

The Milton WRF is a sewage treatment facility that discharges to the Broadkill River. This permit was issued on May 1, 2011 and expires on April 30, 2016. DNREC adopted the TMDL for the Broadkill River Watershed in December 2006, which contains WLAs for this facility for total nitrogen (TN), total phosphorus (TP), and enterococcus. The permit appropriately applies the TMDL WLAs for these pollutants in the permit.

Hanover Foods is an industrial facility that discharges to Providence Creek, which discharges to the Smyrna River. This permit was issued on March 14, 2013, became effective on April 1, 2013, and expires on March 31, 2018. Hanover Food's process wastewater is land applied; therefore, the only facility discharge is an intermittent stormwater and non-process wastewater discharge from a wet pond, which only discharges due to high water levels or storm events. The Smyrna River TMDL provides WLAs for TN, TP, and enterococcus. The TMDL acknowledges that Hanover Foods is the only active NPDES point source discharging into the Smyrna River; however, due to

the intermittent nature of the facility's discharge, the facility was not included in the watershed modeling. It was concluded that the impact of the intermittent discharge is minimal and therefore was not assigned any WLAs because the discharge was incorporated as part the implicit Margin of Safety in the TMDL. The permit, therefore, contains no WLAs but applies monitoring requirements for the TMDL related parameters. This permit and fact sheet document that the permit is consistent with the assumptions of the TMDL.

Program Strengths:
The Milton WRF draft permit properly included effluent limitations to comply with the WLAs assigned to the facility in the Broadkill River TMDL. The Hanover Foods permit and fact sheet document that the permit is consistent with the assumptions of the Smyrna River TMDL.

V. ACTION ITEMS

This section provides a summary of the main findings of the review and provides proposed action items to improve DNREC's NPDES permit programs. This list of proposed action items will serve as the basis for ongoing discussions between Region 3 and DNREC as well as between Region 3 and EPA HQ. These 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.

- **Critical Findings** (Category One) **-** Most Significant: Proposed action items will address a current deficiency or noncompliance with respect to a federal regulation.
- **Recommended Actions** (Category Two) **-** Recommended: Proposed action items will address a current deficiency with respect to EPA guidance or policy.
- **Suggested Practices** (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 critical findings and recommended actions proposed 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 or may serve as a roadmap for modifications to the Region's program management.

A. Basic Facility Information and Permit Application

DNREC's fact sheets and permits provide the majority of the basic facility information required to be submitted in the permit application procedures at 40 CFR 122.21, including facility names, facility type, receiving waters, authorization to discharge information, issuance and effective permit dates, etc. Three of the permits reviewed were missing the outfall location information in the administrative record and one permit did not include information on the physical location of the outfalls. The missing information includes details such as the latitude and longitude and/or a map identifying the physical location of each outfall within the receiving

water. DNREC's permit applications were well organized and were readily available for review during the PQR. There was one noted late permit application submission (City of Lewes STP) that did not appear to have been given an extension. The majority of DNREC's permit application requirements and procedures appear to be in accordance with Federal regulatory requirements. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings:

1. 40 CFR 122.21 requires that industrial and POTW permit applications include the latitude and longitude of each outfall. For the MOT WWTP, Milton WRF, and Hanover Foods permits, the latitude and longitude information could not be found in the record, which included a review of the permits, fact sheets and permit applications. DNREC should ensure during its permit application review that all required information is submitted and that applications are complete. (Category 1)

2. 40 CFR 122.21(d) requires that any POTW with a currently effective permit shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. The City of Lewes STP permit application was submitted late without any apparent extension from DNREC. DNREC should consider options to address this issue, such as penalties/fees for late permit application submissions, or a notification system (if not already incorporated into its administrative processes) to remind permittees of upcoming application deadlines. (Category 1)

Suggested Practices:

1. The SAW, Inc. permit did not identify the physical location of the outfalls. While the permit did indicate the receiving water for each outfall, there was no other identifying information in the permit that provided the actual location of the outfalls. We would recommend that all DNREC permits clearly identify the physical location of each outfall in both its permits and fact sheets (including latitude and longitude and a map identifying the location of each outfall in the receiving water body), which would help to provide clarity about each facility's discharge location. We note that DNREC does include this information in some, but not all of its NPDES permits. We would recommend that DNREC provide consistency in its permits with regard to outfall location. (Category 3)

B. Technology-based Effluent Limitations

DNREC's permits meet or exceed the minimum secondary treatment requirements for POTWs. While the state's regulations require a minimum 85% removal from BOD/COBD and TSS, the POTW permits that were reviewed did not include this requirement. Percent removal was only required as a permit condition if a more stringent level was imposed. Some of the non-POTW permits that were reviewed provided adequate documentation of the TBELs that were applied in the permit; however, a number of permits lacked a description of how the effluent limits were derived. Fact sheets did not fully meet the requirements of 40 CFR 124.8. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings:

1. Unless a more stringent percent removal is necessary, DNREC should include a requirement for its POTW permits to require a minimum of 85% removal of BOD/COBD and TSS. (Category 1)
2. Fact sheets should provide adequate information to document how the current permit's effluent limits were derived. The fact sheet should also document all relevant ELGs and how they were used to calculate permit limits. (Category 1)

C. Water Quality-Based Effluent Limitations

DNREC uses a spreadsheet to analyze RP, mixing zones, and to calculate WQBELs based on Delaware's water quality standards and the methods in EPA's TSD. Although it is understood that DNREC uses this spreadsheet in its permit development, the spreadsheet was not always available for review with the public record. Fact sheets would benefit from a more thorough discussion of RP evaluations, permit limit derivation, and a comparison of calculated TBELs and WQBELs. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Recommended Actions:

1. It is recommended that DNREC include the spreadsheet used to develop WQBELs as an attachment to its fact sheet. A brief explanation in the fact sheet explaining how this spreadsheet is used, which permit application data and other information were evaluated as "pollutants of concern", and a summary of the results of this evaluation would provide a great deal of clarity regarding DNREC's draft permit development process. (Category 2)
2. It is recommended that a direct comparison of any applicable TBELs and WQBELs be provided in the fact sheets, demonstrating that the most stringent limits are applied in a permit. (Category 2)
3. It is recommended that DNREC consider background values, where available, for pollutants undergoing a reasonable potential evaluation. (Category 2)

D. Monitoring and Reporting

Monitoring and reporting requirements appear to be adequately addressed. Influent monitoring for BOD/CBOD and TSS is not currently required in DNREC's POTW permits. Influent monitoring is necessary in order for POTWs to document that they are in compliance with the 85% or more stringent percent removal requirements. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Suggested Actions:

1. DNREC should consider including influent BOD/CBOD and TSS monitoring in order for facilities to better document the percent removal being achieved for these parameters. (Category 3)

E. Standard and Special Conditions

The majority of standard permit conditions are included in DNREC permits. Permits are missing the portion of the Monitoring and Records requirements at 40 CFR 122.41(j)(5), the additional requirements for POTWs listed at 40 CFR 122.42(b), the reference to penalties at 40 CFR 122.41(a)(3) (which appeared to be missing for some non-POTW permits), and the additional requirements for non-POTWS at 40 CFR 122.42(a) regarding notification levels. Special Conditions were appropriate based on the type of discharge and related requirements. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings:

1. DNREC should review its standard permit language and ensure that the requirements of 40 CFR 122.41(j)(5), 40 CFR 122.42(b) (for POTWs), 40 CFR 122.41(a)(3), and 40 CFR 122.42(a) (for non-POTWs) are included in all permits, as appropriate. (Category 1)

F. Administrative Process (including public notice)

DNREC's records demonstrate that overall, the public notice procedures were properly implemented. Documentation of draft permits being submitted to EPA and going out for public notice were observed in the record; however, inadequate documentation existed regarding whether permit comments were received and how or if they were addressed. In addition, there were three areas of the public notice requirements that were missing from DNREC's public notice documents. These areas included the description of the business for industrial facilities (40 CFR 124.10(d)(1)(iii)), outfall locations (40 CFR 124.10(d)(1)(vii)), and a description of sludge use/disposal practices (40 CFR 124.10(d)(1)(vii)). Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings:

1. DNREC should revise its public notice documents to include the description of the business for industrial facilities (40 CFR 124.10(d)(1)(iii)), outfall location for each discharge point (40 CFR 124.10(d)(1)(vii), and a description of sludge use/disposal practices (40 CFR 124.10(d)(1)(vii)) for draft permits. (Category 1)
2. The administrative record should contain copies of any comments received on a proposed draft permit. Additionally, a response to comment document should be added to DNREC's permit development procedures that will document how comments were addressed and any revisions that were made to the draft permit as a result. (Category 1)

G. Documentation (including fact sheet)

DNREC's administrative record includes the majority of required documents, including fact sheets, draft and final permits, public notice documents, and correspondence. DNREC fully documents the receiving streams, impairments, applicable TMDLs, and consistently provided a brief discussion on antidegradation; however, the record was sometimes incomplete in describing the basis for permit development. Specific information related to the derivation of

both TBELs and WQBELs were often not adequately documented. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings:

1. Fact sheets should fully document the derivation of TBELs in all permits (including calculations), and should fully document the application of any relevant ELG(s). When permit limits are maintained in a reissued permit, the documentation and justification for the effluent limits needs to be provided in the fact sheet. (Category 1)
2. The permit rating sheet that establishes the score by which non-POTW (i.e., industrial) facilities are classified as majors or minors should be maintained in the administrative record. (Category 1)

Recommended Actions:

1. The evaluation of pollutants of concern and the derivation of WQBELs occurs through the use of DNREC's WQBEL spreadsheet, but this evaluation is not fully documented in the record. The fact sheet should better document how permit application and DMR data are evaluated, and should include the WQBEL spreadsheet as supplemental documentation to support and fully explain WQBEL limit derivation. (Category 2)

H. National Topic Areas

Proposed actions items for the national topic area reviews are provided below.

1. Nutrients

DNREC has addressed nutrient impairments in the state by establishing nutrient endpoints for total nitrogen and total phosphorus, which have been used to develop nutrient WLAs in Delaware's applicable TMDLs. DNREC has incorporated the WLAs in NPDES permits that are affected by TMDLs addressing nutrient impaired waterways. In accordance with 40 CFR 122.44(d)(1)(vii)(B), when developing water quality based effluent limits, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge. DNREC has successfully implemented water quality based nutrient limits in permits, which have been established by these TMDLs. There are no action items recommended to help DNREC strengthen its program regarding nutrients.

2. Pesticides

DNREC's pesticide permit is a General Permit that is implemented in a state regulation. DNREC uses multiple sections within its agency to support its Pesticide Program which covers thirty operators that submitted NOIs.

Critical Findings

1. The current regulation is not consistent with 40 CFR 122.46(a), as it has no expiration date, and does not ensure that the regulation is effective for a term not to exceed more than 5 years. While the regulations claim that coverage under the permit is not valid for a period of longer than 5 years, there is no expiration date of the regulation. (Category 1)

3. Pretreatment

While the State of Delaware issues NPDES permits directly to POTWs, it does not have approval to implement the pretreatment program and the pretreatment program is therefore implemented by EPA Region 3. Proposed action items to help the Pretreatment Program include the following:

Critical Findings

1. Region 3 needs to ensure that all of its POTW permits contain specific requirements at 40 CFR 122.42(b)(1) through (3) and 122.44(j)(1). (Category 1)

2. Region 3 needs to ensure that all of its permits for POTWs with pretreatment programs contain requirements for conducting local limits reevaluations as required at 40 CFR 122.44(j)(2)(ii) and 40 CFR 403.8(f)(4). If a POTW does not currently have SIUs the permit should state that the POTW will be required to reevaluate local limits should an SIU begin discharging to the system. (Category 1)

Recommended Actions:

1. Region 3 should revise the permit reopener clause for non-program permits to specifically mention that they could be reopened to require a pretreatment program if deemed necessary, and to reference requirements at 40 CFR Part 122.62(a)(2) and 403.5(c)(2). (Category 2)

2. Region 3 should revise the permit for MOT to include the correct citation for definition of significant noncompliance (i.e., 40 CFR 403.8(f)(2)(viii)). The permit does not expire until October 31, 2017, therefore, the permit should be corrected before the permit is renewed. (Category 2)

3. Region 3 should revise the permit reopener clause for permits for POTWs with pretreatment programs to reference requirements at 40 CFR Part 122.62(a)(2) and 403.5(c)(2). (Category 2)

Suggested Practices:

1. The Regional Coordinator stated that he is unsure whether he receives all permit applications for industrial users in non-pretreatment cities. It is highly recommended that Region 3 establish protocol to ensure that the Regional Coordinator sees all of these applications. (Category 3)

2. Region 3 should ensure that permits contain consistent pretreatment program requirements and language (permits for POTWs with pretreatment programs should be consistent with each other and permits without pretreatment programs should be consistent with each other). (Category 3)

3. Region 3 should revise the fact sheets for POTWs with approved programs to denote dates pretreatment programs were approved or modified. (Category 3)

4. Region 3 should discuss in the fact sheets for POTWs with approved pretreatment programs whether the reasonable potential analysis conducted to develop water quality-based limits included analysis of pollutants common for the types of industries discharging to the POTW. (Category 3)

4. Stormwater

MS4

The New Castle County Phase I MS4 permit is DNREC's only Phase I MS4. This permit involves numerous co-permittees, which requires a great deal of coordination, including inter-jurisdictional agreements and meetings to ensure that all permittees are doing their part to maintain compliance with the permit. The permit requires development of a Stormwater Pollution Prevention and Management Plan, and a Water Quality Improvement Plan that will aim towards meeting TMDL allocations and water quality standards. This permit is considered to be consistent with all regulatory requirements; therefore, there are no action items proposed to help DNREC strengthen its program regarding MS4s.

GP for Stormwater Discharges Related to Industrial Activity

The Industrial Stormwater GP is a permit by regulation, which regulations are older than 5 years and need to be updated. The regulations also need to be revised to address several requirements that are not addressed by the existing regulations.

Critical Findings

1. DNREC needs to reissue the General Permit/renew its regulation. The current regulation is not consistent with 40 CFR 122.46(a), as it has no issuance, effective, or expiration dates, and does not ensure that the regulation is effective for a term not to exceed more than 5 years. (Category 1)
2. The regulation is not consistent with 40 CFR 122.44(d), since it is not consistent with state water quality standards (it does not specify how regulation requirements are applicable with water quality standards). (Category 1)
3. The regulation is not consistent with 40 CFR 122.26(b)(14)(i)-(ix) & (xi), as all sectors are not included. Delaware must verify the reason why all sectors are not in the regulation. (Category 1)
4. The regulation is not consistent with 40 CFR 449, as it does not require compliance with this effluent limitation guideline (Airport Deicing). (Category 1)

Recommended Actions:

1. The regulation currently does not allow for public access to documents. It is recommended that DNREC add such a provision to the revised regulation. (Category 2)

2. There is no language on how to terminate permit coverage when appropriate. It is recommended that this language be added to the regulation when it is re-promulgated. (Category 2)
3. The regulation currently requires that all record items required by the SWPPP are to be kept for a period of five (5) years. DNREC needs to demonstrate that there are no records produced outside of the SWPPP, otherwise the regulation is not consistent with 40 C.F.R. 122.41(j) requiring records retention of three (3) years. (Category 2)

GP for Stormwater Discharges Related to Construction Activities

The Construction Stormwater GP is a permit by regulation, which regulations are older than 5 years and need to be updated. The regulations also need to be revised to address several requirements that are not addressed by the existing regulations.

Critical Findings:

1. DNREC needs to reissue the General Permit/renew its regulation. The current regulation is not consistent with 40 CFR 122.46(a), as it has no issuance, effective, or expiration dates, and does not ensure that it is effective for a term not to exceed more than 5 years. (Category 1)
2. The regulation is not consistent with 40 CFR 450.21(a), as it does not have any language regarding Erosion and Sediment Controls with the exception of the requirement for final stabilization. Additionally, it is not consistent with the specific provisions of 40 CFR 450.21(a)(1-7). (Category 1)
3. The regulation does not have any language regarding Soil Stabilization, Dewatering, and Surface Outlets related to language in 40 CFR 450.21(b), (c), or (f), with the exception of final stabilization; nor is it consistent with 40 CFR 450.21(d) and (e), with the exception of 40 CFR 450.21 (e)(3) and prohibiting fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance if they cause or contribute to a water quality standard exceedance. (Category 1)
4. The regulation is not consistent with 40 CFR 122.44(d), since the it is not consistent with state water quality standards (it does not specify how regulation conditions are applicable with water quality standards), nor does it have any language regarding compliance with TMDLs, or how to address discharges to impaired waters in advance of a TMDL. (Category 1)

Recommended Actions

1. The regulation currently does not allow for public access to documents. It is recommend the DNREC add such a provision to the revised regulation. (Category 2)
2. There is no antidegradation language, the option for small operators to submit a rainfall erosivity waiver does not exist, and there are no requirements for corrective actions or training. It is recommended that DNREC include this language when the regulation is re-promulgated. (Category 2)

Follow up Actions:
At DNREC's request, EPA followed up on areas for improvement regarding the Construction General Permit. DNREC explained to EPA how its program as a whole worked, and that some of the issues identified Section III.H.4. are actually part of DNREC's Erosion and Sediment Control Program, including its regulations. EPA explained to DNREC that just a review of the permit by regulation (permit) was done, and not an overview of the entire program. EPA also explained that in looking at a permit, these key points are required to be in the actual permit.

DNREC explained to EPA that each NOI goes on its website, that construction projects must have an approved Erosion and Sediment Control Plan and SWPPP consistent with DE regulations, and stressed that the key missing elements identified in Section III.H.4. of this report are actually part of the plan. They also explained that they have done calculations related to the rainfall erosivity waiver, and that no projects would qualify for such waiver, which is why it is not an option in the permit, nor are there any impaired waters without an approved TMDL.

DNREC informed EPA that it was updating its permit by regulations, and that they were developing a general permit instead of having a permit by regulation. EPA is supportive of this decision. EPA explained that in its creation of a fact sheet, DNREC can discuss why some requirements are not applicable to the permit. EPA also suggested that DNREC include more specific references to its regulations, in addition to citing the entirety of the regulation. DNREC explained that it was updating its website, and that everything relating to the permit and regulations would be up on the website.

To help DNREC in its creation of a general permit for stormwater discharges associated with construction activities, EPA sent a copy of its NPDES permit checklists to DNREC so that they would know what EPA expects to be in a permit and a fact sheet. DNREC agreed to include more specific references to regulations at the appropriate permit section, which EPA will be looking for in its review of the draft general permit when DNREC sends it to EPA. DNREC also agreed to be more specific in other sections of the permit to some extent, but as not to be so specific that it inadvertently excludes permittees from complying with all state and federal requirements. EPA looks forward to receiving DNRECs draft construction general permit when it is ready for review.

I. Regional Topic Areas

Proposed action items for special focus areas are provided below.

1. Chesapeake Bay

There are four significant wastewater discharges to the Chesapeake Bay in Delaware that have been assigned WLAs in the Chesapeake Bay TMDL. Only one of the four point source discharges has been drafted and available for EPA review, the Bridgeville Sewage Treatment Plant. While the draft permit properly included effluent limits to comply with the TP, TN, and

TSS WLAs assigned to this facility in the TMDL, the calculation provided for determining the cumulative TN and TP loads was incorrect. Additionally, while this is more an issue of backlogged permits in Delaware, at the time of this review none of the four significant Chesapeake Bay discharges had been issued an NPDES permit including the Bay TMDL WLAs. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Suggested Practices:

1. In its draft permit review, EPA noted that the calculation of the "Moving 12-Month Cumulative Loads" for TN and TP were incorrect. DNREC subsequently corrected the error, identified as a typo, and provided a revised draft permit with the proper calculation. DNREC should ensure that this correction is continued forward in future draft permits discharging to the Chesapeake Bay basin. (Category 3)

2. CAFOs

Delaware has made significant improvements to its CAFO NPDES program in the time since EPA's 2007 and 2011 PQRs were performed. These improvements include clarification of alternative setback requirements, modifications to the DE CAFO Regulations that define a liquid manure handling system and what information should be made publicly available. Further improvements can be made by amending record keeping requirements in the permit, by including guidance on stockpiling, and by clarifying methods of soil and manure sampling. Proposed action items to help DNREC strengthen its NPDES permit program include the following:

Critical Findings

1. Include in the State Technical Standards guidance on how to conduct and position stockpiles to comply with the zero discharge requirements of 40 CFR 412. (Category 1)
2. Include record keeping requirements in the permit that comply with 40 CFR 122.42(e)(1)(ix) to ensure that chemicals and other contaminants are not disposed of in any manure, litter, or process wastewater storage unless designed to treat such chemicals. (Category 1)

Recommended Actions

1. Ensure that guidance referenced in the State Technical Standards identifies target analytes and identifies appropriate labs for manure analysis. (Category 2)
2. Streamline guidance found in the State Technical Standards so that all information regarding soil testing is found in a single location. Additionally, ensure that links referenced in the State Technical Standards are functional, and identify specific laboratories that can be used for soil analysis. (Category 2)
3. Alter the Phosphorus Site Index (PSI) tab and the Nutrient Management tab in the State Technical Standards to offer consistent guidance that describes when the PSI should be performed, whether or not phosphorus application to soils can exceed a 3-year crop removal rate, and if there is a maximum soil test phosphorus value to which additional phosphorus may not be applied. (Category 2)

3. TMDLs

The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limits be developed consistent with the assumptions and requirements of any WLAs established by approved TMDLs. Two permits were reviewed to assess how TMDLs are implemented in DNREC's NPDES program. The draft permits properly included effluent limitations that were in accordance with the assumptions of the TMDLs. There are no proposed action items to help strengthen DNREC's NPDES permit program related to TMDLs.