

**Region 3 NPDES Program and Permit Quality
Review
Delaware**

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EPA Region 3 (Mid-Atlantic)
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Executive Summary

U.S. Environmental Protection Agency (EPA) Region 3's National Pollutant Discharge Elimination System (NPDES) Permit Quality Review (PQR) for Delaware found that permits issued in the state were generally appropriate and adhered to federal regulations.

The PQR examined 11 permits for discharges in Delaware. The PQR also focused on several national and regional priority areas including:

- Permit Controls for Nutrients in Non-Total Maximum Daily Load (TMDL) Waters,
- Effectiveness of POTW NPDES Permits with Food Processor Contributions,
- Small Municipal Separate Storm Sewer System (MS4) Permit Requirements, and
- Compliance Schedules

The Delaware Department of Natural Resources and Environmental Control (DNREC) issues core Individual NPDES permits to 47 facilities. As of February 2018, 30 of Delaware's core Individual NPDES permits are current and 36 percent were in backlog status, i.e., expired more than 180 days without reissuance.

The PQR recognizes that the State of Delaware faces many state and region-specific challenges, including limited staff for developing and issuing NPDES permits. This has contributed to DNREC's permit backlog. DNREC's Surface Water Discharges Section (SWDS) program managers are developing standard operating procedures (SOPs) and internal guidance documents to provide consistent direction and procedures for NPDES permit development.

Although the permits reviewed commonly conformed to national requirements, several areas for improvement were identified and generally involve documentation of effluent limitation development and compliance schedules. In addition, public notices did not contain certain information that is required by 40 CFR § 124.10. The observations seem to stem from inconsistent practices for documentation, it is possible that they can be best resolved by DNREC as they continue to develop internal SOPs and guidance for NPDES permit development. Based on this PQR, EPA is recommending modifications to practices regarding documentation of technology-based effluent limitations for both publicly owned treatment works and industrial dischargers; illustration of the reasonable potential analyses; and overall final effluent limitation selection. In addition, the report provides an overview of the Delaware NPDES permitting program and identifies specific areas where EPA and DNREC can work together to continue to strengthen permit language and documentation in state issued NPDES permits.

The State of Delaware reviewed and provided comments on the draft PQR report. The State agreed with many of the draft PQR's findings and recommendations and committed to take action to address many of the proposed action items. Several of these actions include working to ensure applications are complete when submitted, developing SOPs, and ensuring consistent inclusion of required standard permitting language are already underway.

I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Program and 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 as well as opportunities for improvement in the development of NPDES permits. EPA last conducted a PQR of the Delaware NPDES permitting program on August 6-8, 2013. The PQR summary report is available at: https://www.epa.gov/sites/production/files/2016-08/documents/2013_de_pqr_report_final.pdf. The evaluation team proposed various action items to improve the Delaware NPDES permitting program. As part of the current PQR, EPA requested updates from Delaware on the progress on those action items. Region 3 conveyed that it will review all recommendations and required actions from the 2013 PQR. Of the 21 action items identified during the last 2013 PQR as being Essential¹ tasks, 14 have been resolved and the remainder represent actions that are either longer-term activities or lower-level actions on which Delaware is still in the process of addressing. In addition, EPA identified 15 Recommended action items to improve Delaware's program; Delaware has chosen to implement or is in the process of implementing 13 of the 15 Recommended actions. Section VI of this report contains a detailed review of the progress on action items identified during the 2013 PQR.

During this review, the evaluation team proposed action items to improve Delaware's NPDES permit program. The proposed action items are identified within sections III, IV, and V of this report and are divided into two categories to identify the priority that should be placed on each item to facilitate discussions between regions and states.

- **Essential Actions** - Proposed essential action items address noncompliance with respect to a federal regulation, which EPA has cited for each essential action item. The permitting authority must address these action items in order to come into compliance with federal regulations.
- **Recommended Actions** - Proposed recommended action items are recommendations to increase the effectiveness of the state's or Region's NPDES permit program.

The Essential findings are used to augment the existing list of "follow up actions" currently tracked by EPA Headquarters on an annual basis and reviewed during subsequent PQRs.

EPA's review team, consisting of three EPA Region 3 staff and one Headquarters (HQs) contractor staff, conducted a review of the Delaware NPDES permitting program which included an on-site visit to the DNREC in Dover on May 29–31, 2018.

¹ During the 2012-2017 PQR cycle, these action items were known as "Category 1" and address deficiencies or noncompliance with respect to federal regulations. EPA is now referring to these action items going forward, as Essential. In addition, previous PQR reports identified recommendations as either "Category 2" or "Category 3" action items. EPA is now consolidating these categories of action items into a single category: Recommended.

The Delaware PQR included reviews of core permit components and national and regional topic areas, as well as discussions between the PQR review team and Delaware staff addressing their program status and permit issuance process. 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 that provide the basis for the development of the permit conditions and related administrative process. The PQR also included conversations between EPA and the State on program status, the permitting process, responsibilities, organization, staffing, and program challenges the state is experiencing.

A total of 11 permits were reviewed as part of the PQR. Of these, 10 permits were reviewed for the core review, one permit was reviewed for a national topic area, and three permits were reviewed for the regional topic area. Some permits were reviewed for both the core review and one or more topic areas reviews. Permits were selected based on issue date and the review categories that they fulfilled.²

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria.³ 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*⁴ to evaluate the Delaware NPDES program. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states.

Topic Area Reviews

The national topics reviewed in the Delaware NPDES program were: Permit Controls for Nutrients in Non-TMDL Waters, Small MS4 Permit Requirements, and Effectiveness of POTW NPDES Permits with Food Processor Contributions.

Regional topic area reviews target regionally-specific permit types or particular aspects of permits.⁵ EPA Region 3 selected compliance schedules as a regional topic area. This review

² Infra 3 at 7. "To capture current permitting practices, the permits reviewed should be draft or permits issued within two years of the state visit, when possible. If there is an insufficient number of permits meeting this criteria, permits issued up to four years prior to the review may be used. If draft permit reviews are being utilized for a PQR, the draft permits reviewed should be ones that are expected to be finalized by the time of the planned state visit so that the final version of the permit and full permit issuance process can be assessed."

³ For permit identification methods, see NPDES Permit Quality Review (PQR) Standard Operating Procedures, July 2013. P. 6. This document is online at https://www.epa.gov/sites/production/files/2015-09/documents/pqr_draft_sop.pdf/.

⁴ <https://www.epa.gov/npdes/central-tenets-mpdes-permitting-program>

⁵ Supra 3 at P. 10.

"Regional topic areas are program areas of particular relevance in a given EPA region or state. These regional topic areas may be unique to each state PQR, and there is no standard list from which to select focus areas. In choosing

provides important information to Delaware, EPA Region 3, EPA HQs and the public on this specific program area.

II. STATE PROGRAM BACKGROUND

A. Program Structure

DNREC is the NPDES permitting authority for the state of Delaware. DNREC's SWDS contains the Stormwater and Discharge Permits Branch, which prepares and issues NPDES individual permits and industrial, sewage, aquatic pesticides, MS4, and industrial stormwater general permits (GPs). The Concentrated Animal Feeding Operation (CAFO) permit program is jointly administered by DNREC's SWDS 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 GP for Stormwater Discharges Associated with Construction Activities.

DNREC's central office, from which all NPDES permits are developed and issued, is located in Dover. Although DNREC has no regional offices performing NPDES functions, there are satellite offices in New Castle, Lewes, and Georgetown that support other programs. DNREC's SWDS indicated there are 2.5 permit writers, measured as full-time equivalents, that prepare individual NPDES permits. The NPDES permitting group is supported by other DNREC staff specialists who routinely assist with permit writing, TMDL analyses, and modeling on an as needed basis. Each permit writer develops, on average, four permits per year.

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)—NPDES via the DEN. The SWDS also maintains a Microsoft Access database that tracks all permits issued by the Section (i.e., 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,

the regional topic areas, regions should consider challenges the state programs are facing, and also consider other factors, such as:

- If there are significant levels of activity in the state or region;
- Whether new regulatory requirements exist;
- Weak state requirements or weak program implementation; or, PQR Standard Operating Procedures
- If activities within the state or region pose a potential for significant environmental impact.

Based on these factors, regions should choose two to four regional topics to conduct select permit reviews to assess state implementation of these programs against NPDES regulations. There are no standardized assessment criteria (i.e., checklists) for these reviews and thus applicable NPDES requirements and guidance should be used. Regions will be expected to summarize findings of the reviews in the final state PQR report."

compliance inspection information, permit writer notes, and site tracking, in addition to other relevant information.

In addition to the tracking databases, permit writers use other tools to support permit development, including various templates and spreadsheets. The State has developed template language (including boilerplate language for standard conditions and terms applicable to all permits) for use in permits and fact sheets 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)⁶. The RPA spreadsheet duplicates the algorithms in EPA’s TSD for lognormal distributions and produces average and maximum limits calculated from the long-term average values as well as the reasonable potential multiplication factor. 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 be generated by 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 lognormal and normal distributions and calculates statistics for each distribution, including the CV, performance-based percentiles, correlation coefficient, among other statistical factors.

DNREC generally follows EPA’s guidance on permit development as presented in EPA’s NPDES Permit Writers’ Training, but also implements internal SOPs regarding the documentation, drafting, and review process for permit development. Broader SOPs are currently being developed by SWDS permitting staff. In addition to permit writers utilizing the guidance and techniques in EPA’s NPDES Permit Writers’ Training, they also use example language found in EPA’s “MS4 Permit Improvement Guide”. Permit writing responsibilities are assigned to staff by the SWDS’s Permitting Program Manager I based on a combination of factors including: the Section’s priority permit commitments, backlog reduction plan and schedule, grant commitments, and individual permit writer caseload analysis.

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 receive both peer review as needed and management review. DNREC’s senior permit writers perform peer administrative and technical reviews of the draft 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 Section

⁶ U.S. EPA. (March 1991). *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001). <https://www3.epa.gov/npdes/pubs/owm0264.pdf>

Manager. If there were no changes in the permit conditions since the last permit issuance, a full peer review might not occur; however, the management level review will always occur. DNREC conducts a full peer review for all new discharge permits. Upon completion of the internal review process, 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 incorporated, 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 maintaining paper files, the permitting Section scans 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

At the time of the review, Delaware had 47 Individual NPDES permits, including 17 major permits and 30 non-major permits. Delaware administers 4 General NPDES permits. Of the 11 Publicly Owned Treatment Works (POTWs) in Delaware, there are 7 major and 4 non-major POTWs. Delaware has 31 non-municipal facilities, including 9 major and 22 non-major facilities. DNREC reports that there are 467 Notices of Intent (NOIs) received for coverage under the NPDES permit for large, medium, and designated CAFOs. CAFO permit coverage is not automatically in effect upon NOI submittal; DNREC reviews NOIs before providing CAFO permit coverage. Of the 467 CAFOs for which DNREC has received NOIs, DNREC has granted permit coverage to 171. DNREC previously issued general permits by regulation. However, during the PQR, DNREC reported they are in the process of transitioning away from permit-by-rule and developing four general permits to issue for five-year terms. These general permits are to provide authorization for discharges from Phase II MS4s, Stormwater Discharges Associated with Industrial Activities, Stormwater Discharges Associated with Construction Activities, and Aquatic Pesticides applications. DNREC tracks NOIs using a SWDS Microsoft Access database. As of October 2018, Delaware has 20 administratively continued individual permits, comprised of 5 major permits and 15 non-major permits. In addition, general permits in three categories (Stormwater Discharges Associated with Construction Activities, Aquatic Pesticides, and Stormwater Discharges Associated with Industrial Activities) require revision and reissuance. DNREC is also following up issuance of its first CAFO permit (CAFO GP-1), which provides coverage for poultry operations with no land application, with CAFO permits for large, medium, and designated poultry operations with land application of manure (CAFO GP-2) and CAFO

permits for large, medium, and designated non-poultry & diversified operations (CAFO GP-3). DNREC provided public notice of the CAFO GP-2 permit on October 7, 2018.

DNREC indicated that the state's significant industries include petroleum refineries, biochemical/chemical/pharmaceutical manufacturing, packaging and labeling operations, and agriculture—especially significant poultry processing operations.

C. State-Specific Challenges

DNREC faces common challenges, such as a limited staff for developing and issuing NPDES permits, that can contribute to permit issuance backlogs. DNREC has also indicated a need for an NPDES permit writers' course or funding so that staff can attend any available training. In addition to NPDES permit writers' training, DNREC specifically noted the desire for development of an MS4 permit writers' manual and workshop. In addition, DNREC indicated they would seek support from EPA for assistance with reviewing the materials received from permittees that are specific to implementation of CWA Section 316(b) requirements.

D. Current State Initiatives

DNREC's efforts to establish SOPs and guidance for NPDES permit development and administration is a management initiative that has already begun and will continue to improve the permit development process within the SWDS.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Background

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

Permits and fact sheets appropriately identify the physical location, authorization to discharge information, and receiving water of the permitted facility, as well as the appropriate permit issuance, effective, and expiration dates. Further, permit records appropriately indicate the presence of outfall locations, including stormwater discharge points.

Areas for Improvement

Out of the ten permits reviewed during the core review, three permits did not include adequate identification of the physical location of discharge outfalls. In addition, certain permit records

contain an illegible process flow diagram. Five out of the ten permits reviewed during the core review lack sufficient details regarding the description of facility operations and treatment processes. Fact sheets that accompany permits would be strengthened with descriptions of facility operations and treatment processes that more completely reflect the operations being permitted.

Action Items

Essential	<ul style="list-style-type: none"> •The PQR review team did not identify any essential action items for this section.
Recommended	<ul style="list-style-type: none"> •DNREC should ensure that all new permits include latitude/longitude coordinates for all outfalls. •DNREC should incorporate more thorough descriptions of facility operations and treatment processes in fact sheets. •DNREC should require that Dischargers provide clear and legible facility location maps and process flow schematic diagrams.

2. Permit Application Requirements

Background and Process

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.

DNREC administrative staff send out renewal reminder letters approximately 60 to 90 days prior to the application due date (i.e., 180 days prior to permit expiration). DNREC uses federal EPA application forms. Upon receipt of permit applications, staff stamp the application as received and log it into the system. A Program Manager I staff person conducts a brief application review upon receipt and the application is assigned to a SWDS permit writer. The assigned permit writer conducts a review to determine whether the application is both administratively and technically complete. Upon this determination, the permit writer will send the appropriate letter to the permittee. Administratively complete letters are sent to permittees within 15 days of application receipt and technically complete letters are sent to permittees within 60 days of application receipt. Where the permit writer determines that additional information is required, they will contact the permittee and request additional information. Upon determination that the application is technically complete, the permit writer will commence development of the permit and fact sheet.

Program Strengths

DNREC’s practice of sending out application reminders in advance of the application due date is a best practice. DNREC receives most permit applications in a timely fashion and responds to most applications with a notification of completeness or request for additional information.

Areas for Improvement

Four of the ten permit records reviewed did not include a confirmation of a complete renewal application.

In addition, EPA Form 2C requirements are not always met. Some applications provide insufficient data and the application for one facility did not provide any of the requested Form 2C data. The application data did not identify the analytical methods used. Further, it is not possible to determine whether sufficiently sensitive analytical methods were used.

Action Items

Essential	<ul style="list-style-type: none"> •DNREC must review EPA Form 2C application forms submitted and ensure that the applicant submit the required information, including data analyses, analytical methods, and discharge outfall location information, in compliance with 40 CFR 122.21.
Recommended	<ul style="list-style-type: none"> •DNREC should ensure that a letter deeming the application is complete is sent to the permittee and included in the administrative record.

B. Developing Effluent Limitations

1. 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.

TBELs for POTWs

Background and Process

POTWs must meet secondary or equivalent-to-secondary standards (including limits for biological oxygen demand (BOD), total suspended solids (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.

Three POTW permits were reviewed as part of the core review. TBELs for POTWs are developed largely from the requirements established in Section 7 of DNREC’s Regulations Governing the Control of Water Pollution (Technology-based Requirements). DNREC’s daily average value is equivalent to a 30-day average monthly expression. Section 7 contains specific minimum discharge limitations for sewage treatment works that employ certain treatment processes (e.g., secondary treatment, filtration, disinfection, nutrient removal, or a combination of these processes). These discharge limitations are more stringent than federal secondary treatment standards.

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 (or carbonaceous biochemical oxygen demand, CBOD) and TSS in the permit.

Program Strengths

The review team observed that the historic challenge of incorporating certain standard TBELs is being met. While some municipal permits lack the minimum percent removal requirements; newer permits do include the 85% removal requirement. Average monthly effluent limitations established in certain POTW permits are more stringent than those required by federal secondary treatment standards. Effluent limitations for POTWs are established in the appropriate forms and units.

Areas for Improvement

The basis for effluent limitations for certain POTWs is not consistently discussed in detail in accompanying fact sheets. The fact sheets for the three POTW permits reviewed did not include a comparison of established effluent limitations to the applicable federal secondary treatment standards; therefore, it is difficult to immediately understand whether the effluent limits established are appropriate and are as stringent as the federal secondary treatment standards. Permits establish TBELs for POTWs as average monthly and maximum daily limitations; fact sheets did not include a discussion of the appropriateness of the lack of average weekly effluent limitations.

Action Items

- | | |
|-------------|---|
| Essential | •The PQR review team did not identify any essential action items for this section. |
| Recommended | •DNREC should consider including in the fact sheet a summary of applicable TBELs to clearly demonstrate that effluent limitations established in the permit are appropriate and are the most stringent of applicable TBELs. |

TBELs for Non-POTW Dischargers

Background and Process

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).

A total of seven non-POTW permits were reviewed as part of the PQR. DNREC permit writers utilize the DeSWQS spreadsheet to develop ELG-based effluent limitations. DNREC occasionally uses BPJ limits.

Program Strengths

Fact sheets for the non-POTW permits reviewed where ELGs were applicable clearly indicate the applicable ELGs, including subpart. The permits also include a load requirement based on a TMDL that was more stringent than the ELG load requirement (40 CFR § 133.102), (40 CFR § 122.45(d)(2)).

Areas for Improvement

While fact sheets for certain non-POTW permits indicate that ELGs are applicable, fact sheets do not consistently discuss whether the ELGs were applied and therefore the basis for the final effluent limitations. In addition, certain fact sheets lack discussion of the categorization process for applying ELG-based effluent limitations. Further, fact sheets did not consistently include a comparison between TMDL requirements and technology-based standards.

Action Items

Essential	<ul style="list-style-type: none"> •The PQR review team did not identify any essential action items for this section.
Recommended	<ul style="list-style-type: none"> •DNREC should consider including in the fact sheet a thorough discussion of ELGs that are applicable to the discharge, the categorization determination, and whether ELG-based effluent limitations are established in the permit.

2. Reasonable Potential and Water Quality-Based Effluent Limitations

Background

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 (WQBELs), the permitting authority must evaluate whether any pollutants or pollutant parameters cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard (WQS). The PQR for DNREC assessed the processes employed to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- determine the appropriate water quality standards applicable to receiving waters,
- evaluate and characterize the effluent and receiving water including identifying pollutants of concern,
- determine critical conditions,
- incorporate information on ambient pollutant concentrations,
- assess any dilution considerations,
- determine whether limits were necessary for pollutants of concern and, where necessary,
- calculate such limits or other permit conditions.

For impaired waters, the PQR also assessed whether and how permit writers consult and develop limits consistent with the assumptions of applicable EPA-approved TMDLs.

Process for Assessing Reasonable Potential

DNREC permit writers identify the receiving stream and consult with other DNREC staff to identify applicable TMDLs and wasteload allocations (WLAs). DNREC permit writers begin the RPA process by reviewing the submitted application data. The permit writer inputs the DMR/application data into the DeSWQS spreadsheet that determines if there is reasonable potential for the discharge to exceed WQS. DNREC's permit writers use this spreadsheet to evaluate this reasonable potential, evaluate mixing zones, and calculate WQBELs based on Delaware's WQS using methods based on the methods in the TSD. If available and applicable, the permit writer uses the previous permits' spreadsheet and applies necessary updates. The spreadsheet addresses all applicable pollutants and water quality criteria. For copper specifically, the criteria are based on the biotic ligand model (BLM) procedures. The RPA is conducted for pollutants of concern listed in the application. DNREC permit writers generally assume zero as instream background concentration values for parameters.

RPA results and procedures are sometimes included in the permit fact sheets. The inclusion of these aspects is left to the judgement of the individual permit writer. The actual calculations

are not included in the fact sheet but are part of the administrative record. Calculations used can be viewed as formulas in the DeSWQS spreadsheet cells, some of which contain compound calculations.

Process for Developing WQBELs

DNREC permit writers use the same DeSWQS spreadsheet to develop WQBELs; WQBELs are developed using TSD procedures. WQBEL calculations were not consistently included in DNREC fact sheets.

Program Strengths

Reasonable Potential

DNREC permit writers implement appropriate procedures and methods for evaluating reasonable potential. As discussed earlier in this report, DNREC's permit writers use a spreadsheet to analyze reasonable potential based on Delaware's WQS and based on the methods in EPA's TSD.

WQBEL Development

As with conducting the RPA, DNREC permit writers utilize proper procedures and methods for developing WQBELs. As discussed earlier in this report, DNREC's permit writers use a spreadsheet to analyze mixing zones and to calculate WQBELs based on Delaware's WQS and based on the methods in EPA's TSD. As referenced earlier, the DeSWQS spreadsheet calculates dilution factor.

Areas for Improvement

Reasonable Potential

Fact sheets for four permits reviewed did not include reasonable potential documentation. DNREC fact sheets did not include an explicit discussion of pollutants of concern and the timeframe of the data evaluated for RPAs. In addition, fact sheets did not include a consistent discussion of the impairment status of the receiving water, TMDL status, and applicability of approved TMDLs to the discharge. Further, DNREC permit writers generally assume zero for background stream concentrations. EPA recommends that, to the extent they are available, actual stream background data are used. For example, if a stream is impaired there may be existing stream water quality data available. DNREC should consider developing a procedure to locate and use available in-stream data instead of assuming background concentrations of zero. For example, one state addresses the lack of background data when conducting an RPA by not granting a mixing zone. This state conducts the RPA at the end-of-pipe instead of assuming a zero background when in-stream background data are not available.

WQBEL Development

While the dilution/mixing zone policies and regulations are in the surface WQS (SWQS), there is no specific implementation policy for the regulations. Where WQBELs were imposed in the permit, DNREC's SWQS spreadsheet used to develop WQBELs is not provided as part of the permit fact sheet. The spreadsheet contains cells that execute compound calculations based on multiple standard equations used in WQBEL development.

No written guide to the spreadsheet is currently available and ascertaining exactly what calculations are made requires opening the spreadsheet in Excel and navigating through it by cross referencing linked cells. DNREC should consider including in the fact sheet either example equations that demonstrate how the WQBELs were calculated or a table listing the inputs and outputs of WQBEL development. DNREC may wish to consider developing a key that shows what equations correspond to each cell in the spreadsheet or to deconstruct the compound equations to make the spreadsheet calculations easier to understand.

Action Items

Essential	<ul style="list-style-type: none"> • <u>Reasonable Potential</u> <ul style="list-style-type: none"> • The PQR review team did not identify any essential action items in this section. • <u>WQBEL Development</u> <ul style="list-style-type: none"> • The PQR review team did not identify any essential action items in this section.
Recommended	<ul style="list-style-type: none"> • <u>Reasonable Potential</u> <ul style="list-style-type: none"> • DNREC should develop consistent discussions of RPAs, including identification of pollutants of concern, the timeframe of data evaluated, and a clear discussion of results. • DNREC should use actual receiving stream background data in the evaluation of reasonable potential, where actual data are available. • <u>WQBEL Development</u> <ul style="list-style-type: none"> • DNREC should consider including a clear summary of WQBELs calculations in the fact sheets and ensure that the calculations are retained in the permit record, at a minimum.

3. Final Effluent Limitations

Background and Process

Permits must include all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations that ensure all applicable CWA requirements are met. The permitting authority must identify the most stringent effluent limitations and establish them as the final effluent limitations in the permit. In addition, for reissued permits, if any of the limitations are less stringent than limitations on the same pollutant in the previous NPDES permit, the permit writer must conduct an anti-backsliding analysis and, if necessary, revise the limitations accordingly. In addition, for new or increased discharges, the permitting authority should conduct an antidegradation review, to ensure the permit is written to maintain existing high quality of surface waters or, if appropriate, allow for

some degradation. The NPDES regulations at 40 CFR § 131.12 outline the common elements of the antidegradation review process.

While DNREC fact sheets adequately identify the basis for each effluent limitation, fact sheets do not consistently demonstrate that, after conducting a comparison of applicable TBELs and WQBELs, the permit writer established the most stringent effluent limitation in the permit.

DNREC fact sheets include a general antidegradation statement. DNREC’s Antidegradation Policy is described in Section 5 of Delaware’s Surface WQS regulations. DNREC permit writers complete the anti-backsliding section of the fact sheet after developing the effluent limits. If anti-backsliding is triggered, the fact sheet includes a discussion of the requirements and determinations.

Program Strengths

All of the reviewed permits, except one non-POTW permit, properly establish limits when DNREC has determined reasonable potential to exceed WQS. Fact sheets reviewed consistently describe the basis for effluent limitations. All permits include general statements regarding antidegradation applicability.

Areas for Improvement

DNREC fact sheets did not demonstrate that the permit writer conducted a comparison of applicable TBELs and WQBELs and established the most stringent effluent limitation in the permit. Further, DNREC fact sheets did not include a consistent discussion of the applicability and implementation of ELGs. In addition, except for the WQBELs determined as part of the TMDL process, DNREC assumes a “zero” background for any pollutant that it assesses.

Action Items

Essential	<ul style="list-style-type: none"> •The PQR review team did not identify any essential action items in this section.
Recommended	<ul style="list-style-type: none"> •DNREC should consistently demonstrate that the permit writers compared TBELs and WQBELs and established the most stringent effluent limitation in the permit.

4. Documentation of Effluent Limitations Development

Background and Process

Permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Supporting documentation for development of TBELs 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 WQBELs as well as the procedures explaining the basis for establishing, or for not establishing, WQBELs should be clear and straightforward. 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. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

DNREC fact sheets contain a general description of facility operations and treatment processes, and fact sheets for POTWs contain clear identification of applicable effluent limitation standards based on state regulations. However, fact sheets rarely include a comparison of applicable discharge standards for POTWs (e.g., federal secondary treatment standards as compared to state discharge standards). Fact sheets include clear identification of the receiving stream and designated uses; however, they are less clear regarding the receiving stream's impairment status and whether TMDLs and WLAs apply to the permitted discharge. Fact sheets generally did not include a discussion of expected pollutants of concern and the source and timeframe of data evaluated in RPAs.

DNREC permit writers document the RPA with a discussion in the fact sheet; typical discussions consist of a summary table presenting the maximum effluent concentration, the limiting criterion, and a statement of whether monitoring only or a limitation is needed. When WQBELs are established, fact sheets do not contain clear illustration of the calculations used to develop such WQBELs. DNREC's reasonable potential spreadsheets contain the WQBELs calculations; however, these equations and resulting calculations are not always included in the fact sheet or administrative record for review—they are maintained electronically rather than in hard copy format. DNREC fact sheets clearly identify the basis for final effluent limitations (i.e., TBEL or WQBEL); however, fact sheets did not include a clear demonstration that the permit writer compared applicable TBELs and WQBELs and established the most stringent as the final effluent limitation.

Program Strengths

SWDS program managers are developing SOPs and guidance documents for permit development; the program will be strengthened with standard implementation procedures and guidance documents, including consistent templates for fact sheets and permits. For all but one fact sheet, ELGs are properly discussed when DNREC determined that ELGs are applicable.

Areas for Improvement

For the most part, the fact sheets did not include sufficient details regarding critical factors considered in the RPA, including identification of the pollutants of concern, timeframe of data evaluated, and final RPA results. Fact Sheets did not include discussion of how ELGs are applicable to the discharge, how specific discharge standards (e.g., BPT, BCT, BAT) are evaluated, and how ELGs are finally implemented. Most fact sheets did not include sufficient discussion of the impairment status of the receiving stream as well as 303(d)-listed pollutants

and detailed description of the applicable TMDLs and associated WLAs. When developing SOPs and guidance documents, SDWS wants to prepare a list of standard equations with information for cross-referencing the equations corresponds to cells the DeSWQS spreadsheet.

Action Items

Essential	<ul style="list-style-type: none"> •The PQR review team did not identify any essential action items in this section.
Recommended	<ul style="list-style-type: none"> •DNREC should develop thorough discussions explaining how applicable ELGs are implemented in the permit. •DNREC permit writers should ensure the fact sheets completely describe the RPA, including discussion of pollutants of concern, timeframe of data evaluated, and full results.

C. Monitoring and Reporting Requirements

Background and Process

NPDES regulations at 40 CFR § 122.41(j) require permittees to monitor the discharge 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 reporting of 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. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify appropriate monitoring locations to ensure compliance with the permit limitations and provide the necessary data to determine the effects of an effluent on the receiving water. A complete fact sheet will include a description and justification for all monitoring locations required by the permit. States may have policy or guidance documents to support determining appropriate monitoring frequencies; documentation should include an explicit discussion in the fact sheet providing the basis for establishing monitoring frequencies, including identification of the specific state policy or internal guidance referenced. Permits must also specify the sample collection method for all parameters required to be monitored in

the permit. The fact sheet should present the rationale for requiring grab or composite samples and discuss the basis of a permit requirement mandating use of a sufficiently sensitive Part 136 analytical method(s).

The PQR review indicated that permits identify appropriate monitoring locations and frequencies. Further, most monitoring requirements are typically carried over from permit to permit depending on the results of the RPA. In some cases, permit writers may consider reducing monitoring frequencies based on historical compliance data. Currently, all permits require electronic reporting.

Program Strengths

The review team observed that permits clearly identify appropriate monitoring locations. In addition, newer permits include a special condition requiring use of sufficiently sensitive methods and encourages DNREC to ensure all permits contain this special condition.

Areas for Improvement

Some effluent monitoring frequencies might not be sufficient to determine compliance with effluent limits. For example, the City of Seaford permit requires monitoring once monthly to determine compliance with a Chesapeake Bay Waste Load Allocation based on a 12-month rolling cumulative load. EPA considers twice monthly the minimum monitoring frequency necessary to determine compliance with such 12-month cumulative load limits.

Action Items

Essential	<ul style="list-style-type: none"> •The PQR review team did not identify any essential action items in this section.
Recommended	<ul style="list-style-type: none"> •DNREC should ensure that monitoring frequencies are appropriate to determine compliance with 12-month cumulative load limitations.

D. Standard and Special Conditions

Background and Process

Federal regulations at 40 CFR § 122.41 require that all NPDES permits, including NPDES general permits, contain certain “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 those in the federal regulations.

Permits may also contain additional requirements that are unique to a particular 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 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.

DNREC uses boilerplate standard conditions. DNREC last updated the boilerplate standard conditions in 2017. DNREC includes requirements for special studies as special conditions of the permit.

Program Strengths

The PQR review team noted that some newer permits include updated Standard Conditions per action items identified during the last PQR; for example, the additional notification levels condition for existing non-municipal dischargers required by 40 CFR § 122.42(a).

Areas for Improvement

Certain municipal permits reviewed did not include the additional standard condition for POTWs, required by 40 CFR § 122.42(b), for notification of any new introduction of pollutants into the POTW from an indirect discharger. None of the reviewed permits state that notification of any planned changes would occur as soon as possible (40 CFR § 122.41(l)(1)). For all of the permits, upset language did not include the following, “No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.”

Action Items

Essential	<ul style="list-style-type: none"> •DNREC must ensure that all federal standard conditions contained in 40 CFR §§ 122.41 and 122.42 are included in all NPDES permits.
Recommended	<ul style="list-style-type: none"> •The PQR review team did not identify any recommended action items in this section.

E. Administrative Process

Background and 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 CFR § 124.5). EPA discussed each element of the administrative process with Delaware, and reviewed materials from the administrative process as they related to the core permit review.

DNREC permit writers draft public notices in accordance with state regulations. The permit writer publishes the notice in a newspaper and records the public notice information into the SWDS database. The public noticed draft permit is sent to EPA, the permittee, and DRBC, as appropriate. Permit writers or the DNREC Secretary receive comments, and permit writers prepare responses to comments. Permit writers sometimes include the comments and responses in the fact sheet; however, if a large number of comments are generated, the permit writer creates a separate document for compilation of comments and responses. Permit writers will incorporate any necessary revisions into the permit and the permit is returned to the Program Manager II for signature.

Permit writers may also receive requests for a public hearing. If the hearing request is meritorious, the permit writer requests a hearing through the Office of the Secretary, a hearing officer is assigned, a date is selected, and a public notice of the hearing is provided for 30 days. The permit writer prepares a presentation for the public hearing as well as a technical memorandum, and following the hearing, the Secretary makes a determination of whether the permit is approved, approved with modifications, or denied.

Program Strengths

The review team indicated that Public Notices are improved from those reviewed during the last PQR in that they now include contact information and outfall identification.

Areas for Improvement

The PQR review team noted that some newer public notices did not include certain information as required by 40 CFR §§ 124.10(d)(1)(iv), (v), and (vii).

Action Items

- Essential

- DNREC must ensure that all public notices contain the public notice contents required by 40 CFR § 124.10(d).
- Recommended

- DNREC should ensure consistency in how public notice documents are prepared.

F. Administrative Record and Fact Sheet

Background and Process

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;⁷ 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.

DNREC permit writers usually develop the permit, and then prepare the fact sheet. Fact sheets are included with all permits and are generated using templates. For public comments on permits, once the comments are compiled, the permit writer will prepare responses to the comments, which are added to the administrative record. A separate document is developed if there are a large number of comments. DNREC maintains both electronic and hard copy files, which are kept on site in the Dover office.

Program Strengths

The PQR review team determined that DNRECs files were very well organized and easy to review. Fact sheets contain the necessary information; however, the fact sheets would be strengthened by more thorough discussions of facility and treatment processes, receiving stream quality, RPAs, and a demonstration that the most stringent applicable effluent limitation is established in the permit.

⁷ Per 40 CFR 124.8(a), every EPA and state-issued permit must be accompanied by a fact sheet if the permit: incorporates a variance or requires an explanation under 124.56(b); is an NPDES general permit; is subject to widespread public interest; is a Class I sludge management facility; or includes a sewage sludge land application plan.

Areas for Improvement

In general, the administrative record lacks clarity in whether comments were received per 40 CFR § 124.17. The administrative record for one POTW permit does not include an adequate explanation as to why a compliance schedule is needed.

Action Items

Essential	<ul style="list-style-type: none"> •DNREC must ensure that all public notices contain the public notice contents required by 40 CFR § 124.10(d).
Recommended	<ul style="list-style-type: none"> •A best practice for DNREC would be to clearly state in the administrative record whether public comments were received and whether a public hearing was requested. •DNREC should ensure that the administrative record clearly demonstrates that the permit writer established the most stringent applicable effluent limitation. •DNREC should ensure that when compliance schedules are issued, the administrative record includes appropriate justification.

IV. NATIONAL TOPIC AREA FINDINGS

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: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements.

A. Permit Controls for Nutrients in Non-TMDL Waters

Nutrient pollution is an ongoing environmental challenge; however, nationally permits often did not include nutrient limits. It is vital that permitting authorities actively consider nutrient pollution in their permitting decisions. Of the permits that do have limits, many are derived from WLAs in TMDLs, since state criteria are often challenging to interpret. For this section, waters that are not protected by a TMDL are considered. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions.

Federal regulations at 40 CFR § 122.44(d)(vii)(A) require permit limits to be developed for any pollutant which causes, has the reasonable potential to cause, or contributes to an excursion of the state’s WQS, whether those standards are narrative or numeric.

According to Delaware’s 2016 Integrated Report, Silver Lake is the only waterbody in Delaware that is listed as impaired for nutrients and does not have an approved TMDL. There are no

NPDES permits in Delaware that discharge to Silver Lake. The streams located within the watersheds that drain to Silver lake either have TMDLs for nutrients (Category 4a) or are fully supported for this parameter (Category 1).

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

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

Background

Indirect discharges from food processors can be a significant contributor to noncompliance at recipient POTWs. Food processing discharges contribute to nutrient pollution (e.g., nitrogen, phosphorus, ammonia) in the nation's waterways. Focusing specifically on the Food Processing Industrial Sector will synchronize PQRs with the Office of Enforcement Compliance and Assurance's National Compliance Initiative, "[Reducing Significant Non-Compliance with National Pollutant Discharge Elimination System \(NPDES\) Permits](#)".

The goal of the PQR is to identify successful and unique practices with respect to the control of food processor discharges by evaluating whether appropriate controls are included in the receiving POTW's NPDES permit and documented in the associated fact sheet or statement of basis, and if the POTW implements any controls on conventional pollutants (particularly those from food processors) and how those controls are imposed. An additional goal is to compile information for the purpose of providing permit writers with tools to maintain or improve both POTW and IU compliance with respect to conventional pollutants and nutrients.

This PQR reviews the status of the pretreatment program in Delaware, as well as specific language in Delaware POTW NPDES permits. With respect to NPDES permits, the PQR focused 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), including the requirement to permit all significant industrial users (SIUs);
- 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 Delaware Department of Natural Resources and Environmental Control (DNREC) issues NPDES permits directly to POTWs in Delaware. DNREC does not have the authority to implement the pretreatment program; therefore, EPA Region 3 is the Approval Authority for Delaware POTWs. EPA Region 3 implements the program which includes identifying appropriate conditions to be incorporated into POTW NPDES permits concerning pretreatment requirements, approving pretreatment programs established by local Control Authorities and reviewing and approving modifications of existing approved program elements, such as sewer use ordinances (SUOs), local effluent limitations, and enforcement response plans (ERPs). POTWs with approved pretreatment programs have the authority to issue IU discharge permits to IUs discharging to the POTW. In addition, or alternatively, many POTWs surcharge the pollutant loading from food processors and other high-strength conventional pollutant dischargers. For IUs discharging to POTWs without approved POTW pretreatment programs, EPA Region 3 is the Control Authority. The table below provides information on the pretreatment universe in Delaware.

Table 1. Delaware's Pretreatment Universe

POTWs in Delaware ¹		IUs controlled in Approved POTW Pretreatment Programs ¹		SIUs discharging to POTWs without Approved Pretreatment Programs ²	
Total	With Approved Programs	SIUs	CIUs	SIUs	CIUs
13	6	55	18	0	3

¹ Data source: EPA OWM provided this data through an ICIS database search conducted in 2016.

² Data source: EPA Region 3 communication to OECA.

Because EPA is the Approval Authority for the pretreatment program, Region 3 reviews POTW pretreatment program development submittals and revisions to previously approved pretreatment programs, including SUOs, ERPs and/or local limits re-evaluations, POTW annual pretreatment program reports, and takes enforcement actions when necessary.

Four POTW NPDES permits and five control mechanisms for food processors discharging into two of those POTWs, were reviewed as part of the PQR. SUOs were found online for each of the POTWs. EPA Region 3 selected the permits, listed in the table below, for POTWs that receive process wastewater from food processing facilities. These POTWs were selected based on a review of: data retrieved from EPA’s Enforcement and Compliance History Online (ECHO) and ICIS-NPDES databases; annual reports submitted to EPA Region 3 by POTWs with federally approved pretreatment programs; and discussions with DNREC. Two of the POTWs whose permits were reviewed have approved pretreatment programs and the other two POTWs do not have pretreatment programs (“nonapproved”). The design average flow among these four POTWs range from 1.5 million gallons per day (MGD) to 20 MGD.

The two approved POTW Pretreatment Programs have different pollutants controlled via local limits. The Kent County SUO did not have local limits for conventional pollutants. However, Kent County does surcharge for total oxygen demand (TOD), which is calculated based on chemical oxygen demand (COD) and total Kjeldahl nitrogen (TKN) concentrations received from its industrial users. The SUO for the Town of Selbyville contained local limits for BOD, TKN, and oil and grease (O&G). The SUOs for the two POTWs without approved pretreatment programs, the City of Lewes and the City of Rehoboth, do not contain local limits or surcharge information.

Table 2. Permits Selected for the Pretreatment Topic Area

Permittee (SUO is linked)	Permit No.	Approved Pretreatment Program?	Design Flow Average (MGD)	No. of SIUs ¹	No. of Food Processors ¹	Local Limits or Surcharges on Conventional Pollutants or Nutrients on IUs (Source = SUO)
Kent County	DE0020338	Yes	20	7	5 ²	Total oxygen demand (TOD) surcharge
Selbyville	DE0020010	Yes	1.50	1	1	BOD, TKN, and O&G local limits
Lewes	DE0021512	No	1.5	0	0	None
Rehoboth	DE0020028	No	3.4	0	0	None

¹Based on the information provided in the permit application, unless otherwise noted.

²Based on information provided in the POTW's 2017 pretreatment annual report.

Five food processing IU permits were also reviewed as part of the PQR; they are identified in the table below.

Table 3. Summary of Discharge Permit Conditions

Facility Name	Permit Number	Receiving POTW	Type of Food Processor	Classification by POTW	Average Process Wastewater Discharge (gallons per day [gpd]) ¹	Monitored Pollutants ³
Coastal Brewing Company	16	Kent County	Beer Brewery	SIU	25,000	Arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, COD, TKN, total nitrogen, total phosphorus, total residual chlorine (TRC), pH, flow, and TOD
Kraft Foods	1	Kent County	Package food products	SIU	610,000	Arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, pH, and TOD
Sea Watch International	10	Kent County	Clams and clam juice	SIU	1,000,000	Arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, pH, and TOD
Perdue Farms	9	Kent County	Chicken products	SIU	1,600,000	Arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, pH, and TOD
Mountaire Farms	SIU-0001	Selbyville	Chicken products	SIU	750,000	Flow, BOD, TSS, TKN, O&G, pH, and total chlorine

¹ Based on information included in the POTW's NPDES permit application.

²Includes parameters identified in the permit with numerical discharge limits, applicable surcharge values, and those identified as 'monitor only'.

The permit for one additional food processor, Dogfish Head Brewing, was not provided for review as part of the PQR. As noted on the Kent County 2017 pretreatment program annual report, this SIU is located in Milton, DE and hauls its process wastewater to the Kent County WWTP. When the annual report was submitted in early 2018, Kent County was in the process of issuing the permit to the industry as a SIU.

Table 4. Discharge Permit Conditions

IU and Receiving POTW	Pollutant Monitoring Frequency and Limit									
	Total P (frequency, limit)		Total N (frequency, limit)		BOD (frequency, limit)		TSS (frequency, limit)		O&G (frequency, limit)	
Coastal Brewing (max. loading limits)	Monthly	N/A	Monthly	N/A	N/A ¹	N/A ¹	N/A	N/A	N/A	N/A
Kraft Foods (max. loading limits)	Monthly	N/A	Monthly	N/A	N/A ¹	N/A ¹	N/A	N/A	N/A	N/A
Sea Watch International (max. loading limits)	Monthly	N/A	Monthly	N/A	N/A ¹	N/A ¹	N/A	N/A	N/A	N/A
Perdue Farms (max. loading limits)	Monthly	N/A	Monthly	N/A	N/A ¹	N/A ¹	N/A	N/A	N/A	N/A
Kent County	1/week	Varies ²	1/week	Moving ³	daily (CBOD ₅)	Varies ⁴	Daily	3,839 lbs/day DM; 2,504 lbs/day MA	N/A	N/A
Mountaire Farms	N/A	N/A	2/week	500 lbs/day MA; 625 lbs/day DM (TKN)	2/week	2,189 lbs/day MA; 2,735 lbs/day DM	1/week	2,555 lbs/day MA; 3,194 lbs/day DM	1/mont h	100 mg/L inst. Max.
Selbyville	N/A	N/A	N/A	N/A	Twice weekly	188 lbs/day DA; 288 lbs/day DM; 15 mg/l DA; 23 mg/l DM	Twice weekly	188 lbs/day DA; 288 lbs/day DM; 15 mg/l DA; 23 mg/l DM	N/A	N/A

¹SIUs are required to monitor for COD monthly and this sample result is used in calculating the TOD surcharge. TOD discharges above 1,100,000 lbs/month are subject to enforcement action as outlined in the ERP.

²Kent County's NPDES permit contained a total phosphorus limit of 51 lbs/day for May – September. No limit was listed for October – April. However, Kent County is also subject to a moving 12-month cumulative load of 18,615 pounds.

³Kent County's NPDES permit contained a Total N moving 12-month cumulative load limit of 327,405 pounds.

⁴Kent County's NPDES permit contained a CBOD₅ limit of 544 lbs/day for May – September. No limit was listed for October – April. However, Kent County is also subject to a moving 12-month cumulative load of 198,560 pounds.

Program Strengths

All POTW permits reviewed as part of this PQR contain requirements to implement the general and specific prohibitions established at 40 CFR §§ 403.5(a)(1) and (b). The permits for POTWs with approved pretreatment programs state, within the special conditions section, that permittees must operate a POTW pretreatment program in accordance with the federal General Pretreatment Regulations at 40 CFR Part 403, state, and local laws and regulations, and the approved pretreatment program and any approved modifications.

The five industrial user permits reviewed issued by the approved POTW pretreatment programs to food processing IUs include monitoring requirements and limits for conventional pollutants (BOD, TSS, and O&G) that are less frequent than required in the corresponding POTW permit. However, the sampling times could potentially correspond so that any loading effect on the POTW may be correlated.

Areas for Improvement

Based on the findings of a previous PQR, Delaware NPDES permits issued after 2015 were to have been revised to incorporate the notification requirements of 40 CFR § 122.42(b), which are applicable to all POTW NPDES Permits. None of the four POTW NPDES Permits contain conditions which address all of the notification provisions of 40 CFR § 122.42(b). The NPDES Permit issued to Rehoboth (effective July 1, 2017) contains provisions in Part III.A.2 which address 40 CFR § 122.42(b)(1) and (2) but lacks provisions for 40 CFR § 122.42(b)(3). (The other three permits were issued with effective dates of January 1, 2012, October 1, 2017 and November 1, 2017.), it is recommended that the permits for all POTWs, including those without an approved pretreatment program, be revised to define the timeframe for “adequate” notice under 40 CFR § 122.42(b).

None of the POTW NPDES permit fact sheets reviewed identify the POTW organic (conventional) and nutrient pollutant capacity, whether the POTWs accept hauled waste (which might affect capacities), nor do they identify and characterize the contributing industrial dischargers, even though the POTWs with approved pretreatment programs have local limits and/or surcharge values for conventional pollutants and nutrients in their SUOs. In addition, the fact sheets neither identify the number of SIUs discharging to each POTW nor characterize the pollutants from the SIUs (e.g., whether any of these SIUs are food processors). Inclusion of this information in the POTW NPDES permit fact sheets is important for documenting the rationale for WWTP monitoring and sampling requirements. Additionally, inclusion of language regarding the control of industrial discharges enables the permit writer and inspector to assess whether industrial loading exceeds what the POTW can safely accept and treat. It is recommended that

each POTW be required to determine its organic capacity and the NPDES permit writer note in the fact sheet whether the POTW accepts hauled waste. Additionally, it is recommended that the fact sheet identify and characterize contributing industrial dischargers and state if a pretreatment program is needed. This information will document the types of discharges that were known at the time of permit issuance.

Although the basis for modified secondary treatment effluent limits for Selbyville is identified as in accordance with 40 CFR § 133.103(d), it is unclear whether the POTW demonstrated the requirement of 40 CFR § 133.103(d)(3), that “wastewater plus inflow plus infiltration) is less than 275 gallons per capita per day.” Instead, the dilution is attributed to the SIU which contributes 70-80 percent of the POTW influent, with literature references to define low strength BOD and TSS.

Approved Pretreatment Programs

The POTW permits include the general and specific prohibitions by reference to the federal regulations. It is recommended that the POTW permits be revised to specify the prohibitions at 40 CFR § 403.5(a)(1) and (b), rather than incorporating by reference, to clarify requirements and strengthen the permit effectiveness.

The NPDES permits and permit fact sheets for both Kent County and Selbyville do not include the program approval or modification dates. It is recommended that the permit writer specify the program approval or modification dates as a means of determining whether the program includes up-to-date federal regulations.

POTWs without an Approved Program

The permit application for the City of Rehoboth Beach did not include information on industrial user dischargers. Section F of Form 2A was blank for this POTW.

Action Items (Effectiveness of POTW NPDES Permits with Food Processor Contributions)

Essential

- Permit writers shall ensure that the NPDES permit application identify and characterize industrial users. [40 CFR § 122.21(j)(6)].
- Revise POTW permits [POTW NPDES Permit boilerplate] to explicitly include all of the requirements of 40 CFR § 122.42(b) in all POTW NPDES Permits.

Recommended

- Revise POTW permits specify the timeframe for adequate notice, regarding the change in quality or quantity in effluent discharge to the POTW, for the notification requirements of 40 CFR § 122.42(b).
- Revise POTW permits to specify the general and specific prohibitions at 40 CFR §§ 403.5(a)(1) and (b), rather than incorporating by reference, to strengthen the permit effectiveness.
- Permit writers should specify the program approval or modification dates in fact sheets to ensure that the up-to-date program has been incorporated.
- Permit writers should ensure that IUs are properly characterized on NPDES applications, including any hauled industrial waste, and reviewed with respect to POTW organic capacity to ensure that POTWs do not accept excess loading.
- The POTW permit and fact sheet should clearly state whether the POTW is required to develop or implement a pretreatment program.

C. Small Municipal Separate Storm Sewer System (MS4) Permit Requirements

The NPDES program requires stormwater discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to obtain permit coverage. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for small MS4s, industrial activities, and construction activities. This PQR review will focus on the small MS4 permit.

Region 3 selected the following small MS4 permit to review for the PQR:

1. Individual Phase II MS4 permit for the Town of Middletown

Background

As part of this PQR, EPA reviewed the Town of Middletown Phase II MS4 permit for consistency with the Phase II stormwater permit regulations. EPA recently updated the small MS4 permitting regulations to clarify: (1) the procedures to be used when using general permits (see 40 CFR § 122.28(d)); (2) the requirement that the permit establish the terms and conditions necessary to meet the MS4 permit standard (i.e., “to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act”), including conditions to address the minimum control measures, reporting, and, as appropriate, water quality requirements (see 40 CFR § 122.34(a) and (b)); and (3) the requirement that permit terms must

be established in a “clear, specific, and measurable” manner (see 40 CFR § 122.34(a)). Federal regulations in 40 CFR § 122.34 outline the NPDES permit requirements for discharges of stormwater from small MS4s. The permit requirements include a description of the minimum control measures (MCMs) that operators of small MS4s must develop and implement as well as EPA guidance. 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 metropolitan areas. The focus of the MS4 Stormwater review is to verify that the permit and fact sheet comply with federal regulations and is protective of water quality.

In 2016, EPA promulgated the MS4 General Permit Remand Rule, which became effective January 9, 2017. Although the Middletown permit was issued prior to the Remand effective date, this PQR will evaluate the permit for consistency with the requirements of the Remand Rule, to evaluate the permit so that DNREC will be able to use the PQR recommendations to inform future MS4 permits and ensure that they are consistent with the most recent rules and regulations.

Because of the low number of Phase II MS4 permittees in Delaware (four), the DNREC issues individual Phase II MS4 permits to each of their small MS4 permittees. At one time, the Town of Middletown was a co-permittee under the New Castle County Phase I MS4 permit; however, when that permit was reissued in 2013, Middletown elected to obtain their own NPDES permit. DNREC issued an individual Phase II MS4 permit to Middletown on October 30, 2013, with an expiration date of October 29, 2014. The reason for the one-year permit term was that DNREC was in the process of switching from individual permits to a general permit for small MS4s, and the intention was for Middletown to obtain coverage under the newly issued general permit. Due to staff turnover, significant public comment, and other delays, the Phase II MS4 general permit has yet to be issued. All current individual Phase II MS4 permittees have administratively extended permits pending issuance of the general permit, including Middletown.

The permit requires that the permittee develop and implement a Stormwater Management Plan (SWMP). The Middletown permit contains requirements for the contents of the SWMP. The SWMP lists all the required MCMs as outlined in the federal regulations and describes the written plans and best management practices (BMPs) to be implemented as part of the permit. The SWMP addresses six main components: (1) Public Education and Outreach; (2) Public Involvement/Participation; (3) Illicit Discharge Detection and Elimination; (4) Construction Site Stormwater Runoff Control; (5) Post Construction Stormwater Management in New and Redevelopment; and (6) Pollution Prevention/Good Housekeeping for Municipal Operations.

Program Strengths

Delaware has Sediment and Stormwater Regulations (which include active construction site and post-construction stormwater management) that contain conditions related to water quality that are applicable statewide and incorporated by reference into this permit. The permit also contains a requirement to evaluate the SWMP and assess the effectiveness of the program in meeting the goals and requirements of the permit.

Areas for Improvement

There were a few recommendations based upon the permit review that that state should consider when it issues its Phase II MS4 general permit; recommendations are based on the following observations:

1. The permit did not include specificity when it comes to the MCMs. Any future permits must ensure that conditions are clear, specific, and measurable in accordance with the Remand Rule. (40 CFR § 122.34(a)). For example, the permit shall contain specific actions to be completed, as well as specific timeframes and frequencies for completion of activities.
2. The permit does not include any permit requirements in addition to the MCMs based upon allocations in an approved TMDL. (40 CFR § 122.34(c)(1))
3. The permit does not require proper reporting in the event of non-compliance with the permit. (40 CFR § 122.41(l)(6))
4. The permit does not require compliance with appropriate public notice requirements. Additionally, the public participation process must attempt to reach all economic and ethnic groups. (40 CFR § 122.34(b)(2)(i) and (ii))
5. The permit does not require the permittee to develop and enact an ordinance or other regulatory mechanism that requires erosion and sediment control. (40 CFR § 122.34(b)(4)(i)(A))
6. The permit does not recommend the use of environmentally sensitive design (green infrastructure, low-impact design, etc.) in new development and redevelopment projects.
7. The permit does not require or recommend retrofit in existing developed areas to reduce runoff volumes and pollutant loads.
8. The language found in the first sentence on page 5 that requires the permittee to develop and implement a SWMP to the “maximum extent practicable” should not be included in future permits. This language is inconsistent with regulations and defers this responsibility from the permitting authority to the regulated MS4 entity. The permitting authority shall draft a permit that clearly articulates the requirements that are necessary to be completed by the permittee to satisfy the MS4 standard. (See Remand Rule Preamble discussion 81 FR 89323, Section III.A.)
9. The last sentence at the bottom of page 5 should not be include in future permits. This language was removed from the original MS4 regulations when the Remand Rule was promulgated. The permit itself, not the SWMP, defines what is necessary to meet the MS4 permit standard and must do so in clear, specific, and measurable terms.
10. Conditional language found in the permit (such as “if feasible/practicable”, “to the MEP”, and “as necessary”) should not be used in future permits. Use of this language indicates that the permit is not sufficiently clear, specific, and measurable. If these

phrases must be used in the permit, then the permit shall define what is meant by these terms.

Action Items

Essential

- The permit needs to be revised so that it is consistent with the Remand Rule.
- The permit should include TMDL-based requirements in addition to MCMs per 40 CFR § 122.34(c)(1).
- The permit should require proper reporting of non-compliance and public notification per 40 CFR § 122.41(l)(6).
- The permit should require a regulatory mechanism for erosion and sediment control per 40 CFR § 122.34(b)(4)(i)(A).

Recommended

- DNREC should consider revising the permit such that it recommends the use of environmentally sensitive design where appropriate.
- DNREC should consider revising the permit such that it encourages retrofit where appropriate to reduce runoff and pollutant loads.
- DNREC should consider removing conditional language (e.g., "if feasible/practicable", etc.) from the permit.

V. REGIONAL TOPIC AREA FINDINGS

A. Compliance Schedules

40 C.F.R. § 122.47 provides that a NPDES permit may, when appropriate, specify a schedule for compliance with the CWA and implementing regulations. Associated requirements for time for compliance, compliance schedule limitations for new or recommencing discharges, interim dates, and reporting are provided under 40 C.F.R. §§ 122.47(a)(1), (2), (3), and (4), respectively. These requirements are key to preventing prolonged noncompliance that may involve discharges of excessive pollutant loads to receiving waters.

The focus of the Compliance Schedules review is to verify that, where permits contain compliance schedules, these compliance schedules are appropriate and meet the applicable regulatory requirements. Principles for assessing whether a compliance schedule for achieving a WQBEL is consistent with the CWA and its implementing regulations are set forth in a May 10, 2007 EPA memorandum titled "Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits" ("Hanlon memo"). For example, this memorandum states that factors relevant to whether a compliance schedule is appropriate include: how much time the discharger has already had to meet the WQBEL(s) under prior permits; the extent to which the discharger has made good faith efforts to comply with the WQBELs and other requirements in its prior permit; whether there is any need for modifications to treatment facilities, operations

or measures to meet the WQBELs and, if so, how long it would take to implement the modifications to treatment, operations or other measure; or whether the discharger would be expected to use the same treatment facilities, operations or other measures to meet the WQBEL as it would have used to meet the WQBEL in its prior permit.

In addition, this review is to verify that fact sheets provide adequate explanation of the bases for compliance schedules. Compliance schedules in three permits, and fact sheets for those permits, were reviewed. Findings for each permit are discussed in detail below.

Allen Harim

The 2016 NPDES permit issued to Allen Harim (DE0000299) was a reissuance of a 2006 permit that expired April 20, 2011. The permit contains a new WQBEL for total nitrogen (TN) based on a 2006 TMDL and a new WQBEL for aluminum. Because these are the first TN and aluminum WQBELs to be incorporated into this permit, specifying compliance schedules for TN and aluminum in the permit is appropriate so long as such schedules are necessary to allow reasonable opportunity to attain compliance (40 C.F.R. 122.47(a)(2)).

During review of the pre-notice draft of this permit, EPA provided comments in the form of recommended compliance milestones for both the TN and aluminum compliance schedules. EPA proposed shorter time frames for compliance than those ultimately incorporated into the permit by DNREC. A comparison of timeframes posed by EPA and timeframes incorporated into the permit by DNREC is provided in Table 5, below.

Table 5. Comparison of Recommended and Adopted Timeframes for Compliance

Compliance Milestone for Outfall 001	Timeframe proposed by EPA	Timeframe Incorporated
Complete design of proposed plant upgrades necessary for compliance with final TN effluent limitations	90 days after effective date of permit	Six months after effective date of permit
Initiate construction of proposed plant upgrades necessary for compliance with final TN effluent limitations	One year after effective date of permit	12 months after effective date of permit
Submit a Progress Report identifying actions taken to date to achieve compliance with the final effluent limitations for TN	N/A	24 months after effective date of permit
Complete construction of proposed plant upgrades necessary for compliance with the final effluent limitations for TN	N/A	36 months after effective date of permit
Achieve compliance with final TN effluent limitations and monitoring requirements	Two years after effective date of permit	42 months after effective date of permit
Prepare a plan to achieve compliance with aluminum limits	Six months after effective date of permit	Six months after effective date of permit

Implement the plan to achieve compliance with the Final Aluminum Limits	One year after effective date of permit	18 months after effective date of permit
Submit a progress report identifying actions taken to achieve compliance with the Final Aluminum Limits	Two years after effective date of permit	30 months after effective date of permit
Achieve compliance with the final effluent limitations and monitoring requirements for Aluminum at Outfall 001	Three years after effective date of permit	42 months after effective date of permit

The compliance schedules in the final permit meet the requirement under 40 CFR § 122.47(a)(3) that interim requirements be set forth, and the requirement under 40 CFR § 122.47(a)(3)(i) that time between interim dates not exceed one year. In addition, the compliance schedule includes the requirement to report compliance with each interim requirement within 14 days of the requirement deadline, as required under 40 CFR § 122.47(a)(4).

Estimating time necessary for compliance with new effluent limits typically requires considering the capabilities of existing controls, the technical complexity of designing and installing new controls, cost, and other factors that rely heavily on information that may be incomplete and assumptions that may change with time. Some uncertainty is associated with such estimates, and the six-month difference between most of the aluminum effluent limitation deadlines proposed by EPA and those incorporated into the permit may be within the range of this uncertainty. Regardless, the permit writer should ensure, as required under 40 CFR § 122.47(a)(1), that compliance schedules require compliance as soon as possible.

In addition, 40 CFR § 124.8(b)(4) requires that the permit fact sheet include a brief summary of the basis for the draft permit conditions.

The fact sheet for this permit does not include an explanation of why achieving compliance in 42 months constitutes achieving compliance as soon as possible or, for that matter, why the permittee cannot comply immediately with the new effluent limits upon permit issuance. Such an explanation could address obstacles that must be overcome to achieve compliance, such as gaps in information about technical feasibility, available capital, required approvals for construction, etc. This type of documentation, however brief, is necessary to establish that incorporating a compliance schedule into the permit is “appropriate” as provided by 40 CFR § 122.47(a) and requires compliance as soon as possible per 40 CFR § 122.47(a)(1).

The compliance schedules in this permit include enforceable sequences of actions or operations leading to compliance with a WQBEL, meeting the definition of “schedule of compliance under § 502(17) of the CWA, and enforceable sequence of interim requirements leading to compliance as required by the definition of “schedule of compliance” under 40 CFR § 122.2.

By referencing the permit effluent limit table, each compliance schedule includes an enforceable final effluent limitation, and the final compliance dates provided are within the

timeframe allows by applicable State or federal law provisions authorizing compliance schedules as required by CWA Sections 301(b)(1)(C);502(17); the Administrator's decision in *Star-Kist Caribe, Inc.* 3E.A.D. 172, 175, 177-178 (1990); and EPA regulations at 40 CFR §§ 122.2, 122.44(d) and 122.44(d)(1)(vii)(A).

The Hanlon memo states that, in order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the compliance schedule "will lead[] to compliance with an effluent limitation..." "to meet water quality standards" by the end of the compliance schedule as required by sections 301(b)(1)(C) and 502(17) of the CWA. *See also* 40 CFR §§ 122.2, 122.44(d)(1)(vii)(A). DNREC may have made such a finding, but the finding is not documented in the permit fact sheet. Neither EPA nor DNREC documented whether the same compliance time frame was necessary for two different pollutant parameters.

Laurel

The 2016 permit issued to the Mayor and Council of the Town of Laurel, DE (DE0020125) was a reissuance of a 2009 permit that expired in May 2014. The 2016 permit contains a compliance schedule for meeting a copper WQBEL, with a final compliance deadline of three years after the permit effective date.

Hardness-based WQC for copper were in effect prior to the adoption of new copper WQC based on EPA's BLM in 2014 and, because EPA did not approve the new copper WQC until 2017, the copper WQBELs in this permit were derived using the hardness-based copper WQC. Although the hardness-based WQC were longstanding, copper limits were not incorporated into earlier permits. In accordance with 40 CFR § 122.47(a)(2), specifying a compliance schedule in the permit is appropriate so long as the schedule is necessary to allow reasonable opportunity to attain compliance with the new copper WQBEL. The fact sheet notes that all of Laurel's water supply is from wells and that the transport of low-pH water through copper pipes is a possible source of copper discharges from Laurel's facility.

DNREC notes in the compliance schedule that the permittee may conduct monitoring for the development of site-specific criteria. This provision allows Laurel to collect input data that could be used to calculate new WQC using the BLM without waiving or altering the requirement for Laurel to comply with the effective copper limit. However, this provision, which serves to emphasize a course of action already open to Laurel, is not within a sequence of actions Laurel could take to achieve compliance with the copper WQBEL. Similarly, dilution modeling, which is offered in the compliance schedule as a potential compliance plan element, is not within a sequence of actions Laurel could take to achieve compliance with the copper WQBEL. Rather, both of these activities are means for Laurel to seek a revision to the WQBEL. This information would be more appropriately incorporated into separate special conditions of the permit or, better yet, communicated to Laurel via correspondence since they pertain to potential future modification of the permit, not the current permit requirements in effect.

The compliance schedule requires Laurel to submit a plan for achieving compliance with the final limits for dissolved copper and specifies what the plan may include but does not specify

what the plan must include. DNREC should require appropriate minimum elements for compliance plans to increase the likelihood that the permittee will ultimately submit an acceptable plan. Such minimum elements could include, where appropriate, schedules for activities to be undertaken, descriptions of methods to be employed, financial assurance of completion, and other elements that help set the permittee up for success in designing, selecting and undertaking actions towards compliance.

The fact sheet for this permit does not include an explanation of why achieving compliance in three years constitutes achieving compliance as soon as possible. Such documentation is necessary to establish that the permit meets the requirements of 40 CFR § 122.47(a)(1) and to meet the fact sheet requirement under 40 CFR § 122.8(a)(4).

The compliance schedules in this permit include enforceable sequences of actions or operations leading to compliance with a WQBEL, meeting the definition of “schedule of compliance under § 502(17) of the CWA, and enforceable sequence of interim requirements leading to compliance as required by the definition of “schedule of compliance” under 40 CFR § 122.2.

By referencing the permit effluent limit table, the compliance schedule includes an enforceable final effluent limitation, and the final compliance dates provided are within the timeframe allows by applicable State or federal law provisions authorizing compliance schedules as required by CWA Sections 301(b)(1)(C);502(17); the Administrator’s decision in Star-Kist Caribe, Inc. 3E.A.D. 172, 175, 177-178 (1990); and EPA regulations at 40 CFR §§ 122.2, 122.44(d) and 122.44(d)(1)(vii)(A).

The Hanlon memo states that, in order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the compliance schedule “will lead[] to compliance with an effluent limitation...” “to meet water quality standards” by the end of the compliance schedule as required by sections 301(b)(1)(C) and 502(17) of the CWA. *See also* 40 CFR §§ 122.2, 122.44(d)(1)(vii)(A). DNREC may have made such a finding, but the finding is not documented in the permit Fact Sheet. The compliance schedule offers multiple possible methods for compliance and does not limit means for compliance to those methods, raising the question as to whether DNREC has enough information to make this finding.

The compliance schedule in the final permit meets the requirement under 40 CFR § 122.47(a)(3) that interim requirements be set forth, and the requirement under 40 CFR § 122.47(a)(3)(i) that time between interim dates not exceed one year. In addition, the compliance schedule includes the requirement to report compliance with each interim requirement within 14 days of the requirement deadline, as required under 40 CFR § 122.47(a)(4).

Seaford

The 2015 permit issued to the City of Seaford (DE0020265) was a reissuance of a 2008 permit that expired in May 2013. The permit contains schedules for compliance with nutrient limits based on the 2010 Chesapeake Bay TMDL, and WQBELs for dissolved copper for Outfall 001.

Total Nitrogen and Total Phosphorus Limits

The permit fact sheet explains that the applicable TMDL-based nutrient limits are contingent upon a pollutant load trading agreement between the City of Seaford and INVISTA (DE0000035), and that the permit provides two sets of limits to account for both agreement implementation and agreement termination scenarios. Seaford and INVISTA entered the trade agreement in 2014.

The permit fact sheet also explains that, prior to development of the Chesapeake Bay Watershed Implementation Plan to meet the requirements of the Chesapeake Bay TMDL, DNREC had advised Seaford that biological nitrogen reduction and biological and/or chemical phosphorus removal were necessary for continued discharge to the Nanticoke River given expected requirements of the future Pollution Control Strategy for the Nanticoke River. Seaford constructed a Biological Nutrient Facility in 1998, the same year that WLAs for TN and TP were established for Seaford informed the Nanticoke River and Broad Creek Delaware TMDL analysis.

The WLA for TN and TP pursuant to this analysis are 134.48 lbs/day and 33.51 lbs/day, respectively. Seaford’s prior NPDES permit contained a TN limit of 135 lbs/day, presumably intended to represent the 134.48 lbs/day WLA. This limit also appears in the current permit as a final limit unless the trade agreement is not in effect.

The permit fact sheet illustrates, in a table, that the subsequent Chesapeake Bay TMDL establishes TN and TP WLAs for Seaford of 24,364 lbs/year and 6,091 lbs/year, respectively, but that with the trade agreement in effect, effluent limits based on these WLAs are replaced by TN and TP limits of 51,795 lbs/year and 4,631 lbs/year, respectively.

It should be noted that pollution credits traded in this instance are based on potential to discharge, not actual discharges. For example, a review of INVISTA’s DMRs indicates its highest reported daily TN discharge since 2010 was 492 lbs/day, which corresponds to about 180,000 lbs/year, but INVISTA’s TN WLA is 275,371 lbs/year.

A comparison of the interim and final TN and TP limits to maximum reported values before and after issuance of the permit (see Table 6, below) indicates that Seaford was, at the time of permit issuance, able to meet both daily and annual final limits for TN and TP under the scenario in which a trading agreement is in effect, so those limit values could have been used for establishing interim limits.

Table 6. Maximum Daily Average and Cumulative Loads Reported

	Maximum Daily Average Load (lbs)		Maximum 12-month Cumulative Load (lbs)	
	January 2010-September 2015	October 2015-May 2018	January 2011-September 2015	October 2015-May 2018
TN	106	113.8	25,909	32,073
TP	15.9	20.3	4,345	6,179

Since issuance of the permit, Seaford has reported discharges exceeding the TP annual limit for the trading agreement scenario but not exceeding the other three TN and TP limits for this scenario. The fact sheet notes that growth and “avoiding construction moratoriums between now and 2015” are concerns for Seaford, and although exceedance of the TP WLA had not occurred previously perhaps DNREC projected it was likely to occur if more Equivalent Dwelling Units were established in the service area.

Projected growth within Seaford’s service area and/or annexation of new areas are important considerations in predicting ability to comply with discharge limits in the future. However, the burden of managing these developments while maintaining compliance falls upon the permittee, so a compliance schedule addressing anticipated noncompliance due to a foreseeable circumstance controlled in significant part by the permittee was not justified.

Concerns about potential future noncompliance would be more appropriately addressed by advising Seaford to sequence wastewater treatment expansion such that adequate treatment is in place prior to acceptance of increased or new flows, and to enact new tap restrictions (and/or construction moratorium) as needed to ensure this proper sequence.

With respect to the alternate scenario (i.e., no trading agreement in place), a comparison of final limits to January 2011 through September 2015 12-month cumulative TN loads indicates that Seaford’s discharges began to exceed the final 12-month cumulative TN load limit for this scenario in July 2015 but did not exceed the other final limits for this scenario during that period. Thus, for this scenario a compliance schedule would be appropriate but only for the 12-month cumulative TN load limit.

Under both scenarios (existing or anticipated future noncompliance), limiting Seaford’s acceptance of new for increased flows until treatment is upgraded would be not only appropriate but also likely to provide the permittee with incentive to achieve compliance as soon as possible.

The permit fact sheet explains that the duration of the compliance schedule and the interim limits to be in effect during the term of the compliance schedule were inspired by the following excerpt from the Chesapeake Bay TMDL Executive Summary:

“The TMDL is designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal rivers are in place by 2025, with at least 60 percent of the actions completed by 2017.”

With this statement in mind, a compliance deadline of 2025 was incorporated into the permit and the interim limits were calculated 60 percent of the reduction needed for compliance to reflect DNREC’s interpretation of completion of 60 percent of action needed.

The Hanlon memo states that “Factors relevant to a conclusion that a particular compliance schedule requires compliance with the WQBEL “as soon as possible” as required by 40 CFR §

122.47(a)(1) include: consideration of the steps needed to modify or install treatment facilities, operations or other measures and the time those steps would take.”

The compliance deadline of 2025 in the permit is not substantiated by the broader endpoint goal for the Chesapeake Bay, and the fact sheet should contain more information about facility-specific challenges to explain why this time frame represents compliance “as soon as possible” and document the economic and technical analyses that support the length of the compliance schedule. For example, the fact sheet notes that Seaford’s debt service payments for its BNR facility were to continue until 2017. Such information could be used to explain why a compliance schedule might contain provisions that require Seaford to be incurring expense or debt for plant upgrades only after its final 2017 debt service payment, but the fact sheet needs to also contain relevant information supporting DNREC’s decision to allow the permittee until January 31, 2019 to prepare a funding referendum for public review and consideration, or until January 31, 2021 to commence construction.

In addition, the 60 percent goal articulated in the excerpt above is not an appropriate basis for an interim limit. An interim limit in a compliance schedule should represent levels the facility can already achieve during the large majority of operating hours. As discussed above, interim limits were not needed for daily average TN or TP loads, or for the annual TP load. For TN, DNREC established an interim annual limit of 61,684 lbs. A more appropriate interim limit would be one based on a high percentile for loads already reported, such as the 95th percentile value for 12-month cumulative TN loads to January 2011 through September 2015 (25,449 lbs) or based on the maximum of loads reported during this period (25,908 lbs).

Based on these observations, the compliance schedule did not adequately provide for compliance as soon as possible as required by 40 CFR § 122.47(a)(3).

Copper Limits

The copper WQBELs in this permit are hardness-based and were established while DNREC was in the process of adopting new BLM-based copper WQC.

DNREC notes in the compliance schedule that the required plan for compliance may include monitoring and other efforts to gather information that might support development of a less stringent copper limit. While a provision notifying the permittee that it may conduct monitoring to inform site-specific criteria is not in itself problematic, inclusion of such a provision in a compliance schedule is not appropriate because efforts to inform potential revision of a permit provision do not constitute efforts to achieve compliance with that permit provision. DNREC could address opportunities for seeking less stringent effluent limits in a standalone special condition or, because such opportunities aren't created by the permit, through correspondence with the permittee. Given that DNREC was concurrently adopting new copper criteria based on the BLM, if DNREC anticipated that future application of the BLM would provide less stringent criteria, it may have been most appropriate and useful to incorporate a special condition requiring prescribed ambient water quality monitoring for the express purpose of revisiting copper criteria during the permit term.

Section 1.b of the compliance schedule requires Seaford to submit a plan for achieving compliance with the final limits for dissolved copper and specifies that the plan may include but does not specify what the plan must include. Rather than merely offer what the permittee may wish to consider in a compliance plan, this condition should in addition establish minimum compliance plan elements to increase the likelihood that the permittee will submit an acceptable plan. For example, the permit fact sheet posits that the source of copper in Seaford's wastewater is conveyance of acidic groundwater by drinking water system infrastructure used by communities served by Seaford's POTW. This theory, which is reasonable in light of peer-reviewed research⁸, supports including as mandatory compliance plan elements a trackdown study and outreach to drinking water utilities and/or private well owners to promote pH adjustment at the source.

The fact sheet for this permit does not include an explanation of how the time frame allotted for complying with copper limits constitutes achieving compliance as soon as possible. Such documentation is necessary to establish that the permit meets the requirements of 40 CFR § 122.47(a)(1) and to meet the fact sheet requirement under 40 CFR § 122.8(a)(4).

Both the nutrient and copper compliance schedules in the final permit meet the requirement under 40 CFR § 122.47(a)(3) that interim requirements be set forth, and the requirement under 40 CFR § 122.47(a)(3)(i) that time between interim dates not exceed one year. In addition, the permit includes the requirement to report compliance with each interim requirement within 14 days of the requirement deadline, as required under 40 CFR § 122.47(a)(4).

⁸ "Corrosion in Drinking Water Distribution Systems: A Major Contributor of Copper and Lead to Wastewaters and Effluents", R.A. Isaac, *Environmental Science and Technology*, 1997, 31, 3198-3203, DOI:es970185i

Program Strengths

The compliance schedules in the final permits meet the requirement under 40 CFR § 122.47(a)(3) that interim requirements be set forth, and the requirement under 40 CFR § 122.47(a)(3)(i) that time between interim dates not exceed one year.

These permits include the requirement to report compliance with each interim requirement within 14 days of the requirement deadline, as required under 40 CFR § 122.47(a)(4).

The compliance schedules in the final permit reference an enforceable final effluent limitation and date for its achievement within the timeframe allowed by applicable State or federal law provisions authorizing compliance schedules as required by CWA sections 301(b)(1)(C); 502(17), the Administrator's decision in *Star-Kist Caribe, Inc.* 3 E.A.D. 172, 175, 177-178 (1990), and EPA regulations at 40 CFR §§ 122.2, 122.44(d) and 122.44(d)(1)(vii)(A).

Areas for Improvement

DNREC needs to make determinations regarding what constitutes compliance "as soon as possible" based on credible evaluations of technical and economic feasibility. The burden of providing information and in-depth analyses to support such evaluations should lie with the permittee seeking approval to discharge pollution to receiving waters in violation of NPDES effluent limits. Although DNREC's permit writer will need to review and consider information submitted by the permittee to make a final determination, DNREC's contribution to this effort should be largely transactional, i.e. in maintaining ongoing communication with the permittee to ensure that information is relayed in a timely manner and follow-up actions are completed.

DNREC needs to document how the compliance schedule provided in the permit is consistent with the requirements under 40 CFR § 122.47(a)(1) that any schedules of compliance require compliance as soon as possible. Such documentation could include technical analysis, economic analyses, and/or a brief explanation, as appropriate.

DNREC should avoid granting a compliance schedule to a permittee already meeting the permit WQBEL, because this scenario does not support a finding pursuant to 40 CFR § 122.47(a)(1) that the discharger cannot immediately comply with the WQBEL upon the effective date of the permit. In such cases a compliance schedule is not appropriate, and the permittee maintains responsibility for preventing future noncompliance.

DNREC could better document its findings that each compliance schedule "will lead[] to compliance with an effluent limitation..." "to meet water quality standards" by the end of the compliance schedule as required by sections 301(b)(1)(C) and 502(17) of the CWA. (See also 40 CFR §§ 122.2 and 122.44(d)(1)(vii)(A). As noted in the Hanlon memo, the permitting authority must not only make such a reasonable finding to grant a compliance schedule in a NPDES permit but should also adequately support this finding in the administrative record.

Action Items

Essential

- Consider relevant technical and/or economic information when making determinations regarding compliance schedule length to meet requirements of 40 CFR § 122.47(a)(1).
- Determine compliance schedule length for each discharge parameter independently to ensure compliance with each discharge limit is achieved as soon as possible.
- Avoid granting compliance schedules to permittees already in compliance with final effluent limits so as not to risk non-conformance with the appropriateness requirement of 40 CFR § 122.47(a).

Recommended

- Document basis for compliance schedule length in permit fact sheet.
- Document basis for determination that compliance schedule will lead to compliance with WQS by the end of the compliance schedule.
- Ensure compliance schedules do not include mechanisms by which the permittee may seek revisions to effluent limits; rather address such mechanisms through special permit conditions and/or correspondence.

VI. REVIEW OF PROGRESS ON ESSENTIAL ACTION ITEMS FROM LAST PQR

This section provides a summary of the main findings from the last PQR and provides a review of the status of the State’s efforts in addressing the action items identified during the last PQR, conducted in 2013. During the 2012-2017 PQR cycle, EPA referred to action items that address deficiencies or noncompliance with respect to federal regulations as “Category 1”. EPA is now referring to these action items going forward, as Essential.

Table 7. Essential Action Items Identified During 2013 PQR

Program Area	Action Item Description	Status Update
Applications	<p>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. (DE-15-01)</p>	<p>(Resolved) DNREC established a formal process for application review and notification of permittee if application is incomplete. DNREC updated SOP for technical reviews to include all items in 40 CFR 122.21. Last, DNREC began including outfall latitude and longitude information in permit under outfall descriptions.</p>
	<p>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. (DE-15-02)</p>	<p>(Resolved) DNREC’s permit tracking database was modified to incorporate tracking of “to expire” permits. An SOP was established to run “to expire” report monthly. DNREC issued a template letter for any permit that will expire within 9 months reminding permittee that an application is due at least 180 days prior to permit expiration. Since the last PQR, one permittee submitted a late application. Hanover’s application was due October 2, 2017 but was not received until November 14, 2017. DNREC cited this as a violation and</p>

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Program Area	Action Item Description	Status Update
		included it with other violations from the facility in Secretary's Order No. 2018-W-0018.
Technology-Based Effluent Limitations	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. (DE-15-03)	(Resolved) DNREC has made TSS and BOD removal a standard special condition in al POTW permits.
	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. (DE-15-04)	(Resolved) DNREC has added a table to all fact sheets identifying the source from which limits were derived. This change has been added to DNREC's Fact Sheet Template. Additional information, such as example calculations, is added as necessary. EPA and DNREC will discuss including in the fact sheet the determinative parameters for relevant ELGs.
Standards	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. (DE-15-05)	(Resolved) DNREC updated the standard conditions in the permit template.
Program Administration	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. (DE-15-06)	(Resolved) DNREC created a Public Notice Checklist which identifies all information that is required to be included in a public notice.

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Program Area	Action Item Description	Status Update
	<p>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. (DE-15-07)</p>	<p>(Resolved) DNREC added a response to comment section to the fact sheet template. If a standalone response to comments is generated, such as in the case of a hearing, that document is attached as an appendix to the fact sheet.</p>
<p>Program Administration</p>	<p>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. (DE-15-08)</p>	<p>(Resolved) DNREC has added a table to all fact sheets identifying the source from which limits were derived. This change has been added to our Fact Sheet Template. Additional information such as example calculations is added as necessary. EPA and DNREC will discuss including in the fact sheet the determinative parameters for relevant ELGs.</p>
	<p>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. (DE-15-09)</p>	<p>(Resolved) DNREC has made drafting or reviewing permit rating sheets part of its permitting process. All non-POTW permits issued in FFY17 and FFY18 have accompanying permit rating sheets. As DNREC continues this process through on permitting cycle all non-POTWs will eventually have rating sheets easily accessible in their administrative record.</p>
<p>National Topic Area – Nutrients</p>	<p><i>No Essential action items</i></p>	<p>N/A</p>

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Program Area	Action Item Description	Status Update
National Topic Area – Pesticides	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.	(In progress) DNREC is in the process of drafting a new pesticide permit which will not be permit by rule and will have an explicit expiration date.
National Topic Area – Industrial Stormwater	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.	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit which will not be permit by rule and will have an explicit expiration date.
National Topic Area – Pretreatment	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).	(Not started)
	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.	(Not started)
National Topic Area – Stormwater: MS4	<i>No Essential action items</i>	N/A

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Program Area	Action Item Description	Status Update
National Topic Area – Industrial Stormwater c	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.	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit which will not be permit by rule and will have an explicit expiration date.
	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).	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit. The permit will seek to resolve this issue, and the regulations will be modified to include this change at a later date.
	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.	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit. The permit will seek to resolve this issue, and the regulations will be modified to include this change at a later date.
	The regulation is not consistent with 40 CFR Part 449, as it does not require compliance with this effluent limitation guideline (Airport Deicing).	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit. The permit will seek to resolve this issue, and the regulations will be modified to include this change at a later date.
National Topic Area – Construction Stormwater	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.	(In progress) DNREC is in the process of drafting a new Construction General Permit (CGP) which will not be permit by rule and will have an explicit expiration date.

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Program Area	Action Item Description	Status Update
	<p>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).</p>	<p>(In progress) DNREC is in compliance with this section as the current CGP under Section 9.2.1.4 because the Sediment and Stormwater Plan DNREC requires must identify erosion and sediment controls. Authorization states “To be authorized to discharge storm water under this Part, a person planning a construction activity must submit, in accordance with the requirements of Section 9.1.2.3, an NOI form prior to commencement of any construction activities. Unless notified by the Secretary to the contrary, persons who submit such notification and have either obtained approved Sediment and Stormwater Plans or have been deemed exempt in accordance with the <i>Delaware Sediment and Stormwater Law and Regulations</i>, are authorized to discharge storm water associated with construction activity under the terms and conditions of this Part”. A Sediment and Stormwater Plan approval accounts for the items listed in the CFR citation. Also, our ESC Handbook would address these items as well.</p>

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Program Area	Action Item Description	Status Update
	<p>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.</p>	<p>(In progress) The Sediment and Stormwater Plan DNREC requires must identify erosion and sediment controls.</p>
	<p>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 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.</p>	<p>(In progress) <i>The Delaware Sediment & Stormwater Regulations</i> require construction sites to provide best available technology (BAT) to control sediment discharges under an approved plan, which is in turn a requirement of the Delaware CGP.</p>
<p>Regional Topic Area – Chesapeake Bay</p>	<p><i>No Essential action items</i></p>	<p>N/A</p>
<p>Regional Topic Area – CAFOs</p>	<p>Include in the State Technical Standards guidance on how to conduct and position stockpiles to comply with the zero discharge requirements of 40 CFR Part 412.</p>	<p>(Resolved) State Technical Standards have been reviewed, updated, and some newly generated. Approved by Nutrient Management Commission at their July 6, 2017 meeting.</p>
	<p>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</p>	<p>(Resolved) Record Keeping requirements consistent with this citation were included in General Permit 1 and are included in the draft General Permit 2.</p>

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Program Area	Action Item Description	Status Update
Regional Topic Area – TMDLs	<i>No Essential action items</i>	N/A

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the recommendations from the last PQR, conducted in 2013, and notes any State efforts to act on those recommendations. During the 2012-2017 PQR cycle, EPA referred to action items that are recommendations to strengthen the state’s program as either “Category 2” or “Category 3” action items. EPA is consolidating these two categories of action items into a single category: Recommended. The items below were categorized as “Critical Findings” in the 2013 PQR. The items below are either “Suggested Actions” (SP) or “Recommended Practices” (RP) from the 2013 PQR.

Table 8. Recommended Action Items Identified During 2013 PQR

Program Area	Action Item Description	Status
Basic Facility Information and Permit Application	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.	(Resolved) DNREC began including outfall latitude and longitude information in permit under outfall descriptions. All permits from FFY17 and FFY18 include longitude and latitude information for outfalls.
Technology-Based Effluent Limitations	<i>No Recommended action items</i>	N/A
Water Quality-Based Effluent Limitations	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.	(In progress) DNREC provides a spreadsheet to EPA during their review, includes it in their files, and provides it to the public upon request. These spreadsheets are not easily utilized by the lay person. DNREC does not believe that their inclusion in the fact sheet would benefit the public’s

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Program Area	Action Item Description	Status
		understanding. DNREC does continue to pursue other improvements to our fact sheets, such as additional narrative description and example calculations, which will clarify how limits are reached in the draft permit development process.
	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.	(Not pursuing) DNREC uses the strictest applicable limit and identifies in fact sheets what the limit is based on.
	It is recommended that DNREC consider background values, where available, for pollutants undergoing a reasonable potential evaluation.	(In progress) DNREC considers background values if representative data are readily available. However, DNREC assumes a background value of zero when available data are available for a single observation only. The change in Delaware’s state water quality standard for copper to BLM will require that background values be established for many discharging facilities. This will provide a consistent source of information from which DNREC could consider background in the future.
Monitoring and Reporting	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.	(Resolved) DNREC has made TSS and BOD removal a standard special condition in all POTW permits. The condition requires that facilities demonstrate compliance on a monthly basis, based on influent and effluent sampling data. All POTW permits in FFY17 and FFY18 have a condition requiring TSS and BOD removal of 85% or greater.

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Program Area	Action Item Description	Status
Standard and Special Conditions	<i>No Recommended action items</i>	N/A
Administrative Process (including public notice)	<i>No Recommended action items</i>	N/A
Documentation	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.	(In progress) DNREC provides a spreadsheet to EPA for EPA’s permit review, includes it in DNREC files, and provides it to the public upon request. These spreadsheets are not easily utilized by the lay person. DNREC does not believe that their inclusion in the fact sheet would benefit the public’s understanding. DNREC does continue to pursue other improvements to fact sheets, such as additional narrative description, to explain how data is evaluated in determining limits.
National Topic Area – Nutrients	<i>No Recommended action items</i>	N/A
National Topic Area – Pesticides	<i>No Recommended action items</i>	N/A
National Topic Area – Pretreatment	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 §§ 122.62(a)(2) and 403.5(c)(2).	(Not pursuing)
	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.	(Resolved)

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Program Area	Action Item Description	Status
	Region 3 should revise the permit reopener clause for permits for POTWs with pretreatment programs to reference requirements at 40 CFR §§ 122.62(a)(2) and 403.5(c)(2).	(Not pursuing)
	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.	(In progress)
	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).	(Resolved)
	Region 3 should revise the fact sheets for POTWs with approved programs to denote dates pretreatment programs were approved or modified.	(Not pursuing)
	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.	(Not pursuing)
National Topic Area – MS4 Stormwater	<i>No Recommended action items</i>	N/A
National Topic Area – Industrial Stormwater	The regulation currently does not allow for public access to documents. It is recommended that DNREC add such a provision to the revised regulation.	(Not pursuing) 29 Del. Code, Chapter 100 allows for public access to state documents including those related to Industrial Stormwater.
	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.	(Not pursuing) DNREC is in the process of drafting a new Industrial Stormwater permit. The permit will seek to resolve this issue, and the regulations will be modified to include this change at a later date.

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Program Area	Action Item Description	Status
	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.	(In progress) DNREC is in the process of drafting a new Industrial Stormwater permit. The permit will seek to resolve this issue, and the regulations will be modified to include this change at a later date.
National Topic Area – Construction Stormwater	The regulation currently does not allow for public access to documents. It is recommended the DNREC add such a provision to the revised regulation.	(In progress) DNREC is in the process of drafting a new CGP and will include language to address this item. Currently, our NOI’s and CGP can be viewed on our webpage.
	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.	(In progress) DNREC is in the process of drafting a new CGP. The permit will seek to resolve this issue, and the CGP will be modified to include this change at a later date.
Regional Topic Area – Chesapeake Bay	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.	(Resolved) DNREC has standardized permit language regarding 12-Month Cumulative Loads which takes into account EPA’s previous comment.
Regional Topic Area – CAFOs	Ensure that guidance referenced in the State Technical Standards identifies target analytes and identifies appropriate labs for manure analysis.	(Resolved) The State Technical Standard for Manure Sampling and Analysis states: Basic Dry Analysis includes results for total nitrogen (N), total phosphate (P2O5), soluble potash (K2O), Total Moisture & Dry Matter. Basic Liquid Analysis includes results for total nitrogen (N), total phosphate (P2O5), soluble potash (K2O), and total solids. Additional nutrients can be included in your analysis if desired.

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Program Area	Action Item Description	Status
		Being a static document, is does not identify appropriate labs by name but does reference the Manure Analysis Proficiency (MAP) Program as a tool to find an appropriate lab.
	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.	(Resolved) The Soil Sampling and Analysis Standard was updated October 2016 and includes all information regarding soil testing. All links in the document are functional. It does not identify specific labs, but references two lab certification programs through which an appropriate lab can be found.
	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.	(Resolved) The Phosphorous Site Index tab has been removed, and that information included in the Nutrient Management Standard. The standard: identified when PSI should be performed; states “P applications cannot exceed the amount of P removed in the harvested portion of the crops grown for the next three years’; and states that no phosphorus should be applied to sites with a PSI>100, with the exception of starter P in select cases.
Regional Topic Area – TMDLs	<i>No Essential action items</i>	N/A

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

This section provides a summary of the main findings of the PQR and provides proposed action items to improve Delaware’s NPDES permit programs, as discussed throughout sections III, IV, and V of this report.

The proposed action items are divided into two categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and states.

- **Essential Actions** - Proposed “Essential” action items address noncompliance with respect to a federal regulation. The permitting authority is expected to address these action items in order to come into compliance with federal regulations. As discussed earlier in the report, prior PQR reports identified these action items as Category 1. Essential Actions are listed in Table 3 below.
- **Recommended Actions** - Proposed “Recommended” action items are recommendations to increase the effectiveness of the state’s or Region’s NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended Actions are listed in Table 4 below.

The following tables summarize only those action items that were identified in Sections III, IV, and V of the report.

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Table 9. Essential Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Facility Information	None identified
Permit Application Requirements	<ul style="list-style-type: none"> • DNREC must review EPA Form 2C application forms submitted and ensure that applicant submit the required information, including data analyses, analytical methods, and discharge outfall location information, in compliance with 40 CFR § 122.21.
TBELs for POTWs	None identified
TBELs for Non-POTW Dischargers	None identified
Reasonable Potential	None identified
WQBELs Development	None identified
Final Effluent Limitations	None identified
Documentation of Effluent Limitations Development	None identified
Establishing Monitoring and Reporting Requirements	None identified
Standard and Special Conditions	<ul style="list-style-type: none"> • Ensure that all federal standard conditions contained in 40 CFR §§ 122.41 and 122.42 are included in all NPDES permits.
Administrative Process	<ul style="list-style-type: none"> • Ensure that all public notices contain the public notice contents required by 40 CFR § 124.10(d).
Administrative Record and Fact Sheet	<ul style="list-style-type: none"> • Adhere to public notice requirements established in 40 CFR § 124.10.
Nutrients-National Topic Area	N/A
Pretreatment: Food Processing Sector- National Topic Area	<ul style="list-style-type: none"> • Ensure that the NPDES application identifies and characterizes IUs. • Revise POTW permits to include 40 CFR § 122.42(b)(requirements).
Municipal Separate Storm Sewer Systems (MS4s) - National Topic Area	<ul style="list-style-type: none"> • The permit needs to be revised so that it is consistent with the Remand Rule. • The permit should include TMDL-based requirements in addition to MCMs per 40 CFR § 122.34(c)(1). • The permit should require proper reporting of non-compliance and public notification per 40 CFR § 122.41(l)(6). • The permit should require a regulatory mechanism for erosion and sediment control per 40 CFR § 122.34(b)(4)(i)(A).

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Compliance Schedule – Regional Topic Area	<ul style="list-style-type: none">• Consider relevant technical and/or economic information when making determinations regarding compliance schedule length to meet requirements of 40 C.F.R. § 122.47(a)(1).• Determine compliance schedule length for each discharge parameter independently to ensure compliance with each discharge limit is achieved as soon as possible.• Avoid granting compliance schedules to permittees already in compliance with final effluent limits so as not to risk non-conformance with the appropriateness requirement of 40 C.F.R. § 122.47(a).
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Table 10. Recommended Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Facility Information	<ul style="list-style-type: none"> • New permits include Latitude/Longitude coordinates for all outfalls. • Fact sheets should include thorough descriptions of facility operations and treatment processes. • Administrative records should contain clear and legible facility maps and other relevant diagrams.
Permit Application Requirements	<ul style="list-style-type: none"> • Ensure that a letter deeming the application is complete is sent to the permittee and included in the administrative record.
TBELs for POTWs	<ul style="list-style-type: none"> • Consider including in the fact sheet a summary of applicable TBELs to clearly demonstrate that effluent limitations established in the permit are appropriate and are the most stringent of applicable TBELs.
TBELs for Non-POTW Dischargers	<ul style="list-style-type: none"> • Include in the fact sheet a thorough discussion of ELGs that are applicable to the discharge, the categorization determination, and whether ELG-based effluent limitations are established in the permit.
Reasonable Potential	<ul style="list-style-type: none"> • Use actual receiving stream background data in the evaluation of reasonable potential. • Develop consistent discussions of RPAs, including identification of pollutants of concern, the timeframe of data evaluated, and a clear discussion of results.
WQBELs Development	<ul style="list-style-type: none"> • Include a clear summary of WQBELs calculations in the fact sheets, but ensure that the calculations are retained in the permit record, at a minimum.
Final Effluent Limitations	<ul style="list-style-type: none"> • Consistently demonstrate that the permit writers compared TBELs and WQBELs and established the most stringent effluent limitation in the permit.
Documentation of Effluent Limitations Development	<ul style="list-style-type: none"> • Develop thorough discussions explaining how applicable ELGs are implemented in the permit. • Ensure the fact sheets completely describe the RPA, including discussion of pollutants of concern, timeframe of data evaluated, and full results.
Establishing Monitoring and Reporting Requirements	<ul style="list-style-type: none"> • Ensure that monitoring frequencies are appropriate to determine compliance with 12-month cumulative load limitations.
Standard and Special Conditions	None identified
Administrative Process	<ul style="list-style-type: none"> • Ensure consistency in how public notice documents are prepared.
Administrative Record and Fact Sheet	<ul style="list-style-type: none"> • A best practice for DNREC would be to clearly state in the administrative record whether public comments were received or a public hearing was requested.

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	<ul style="list-style-type: none"> • Ensure that the administrative record clearly demonstrate that the permit writer established the most stringent applicable effluent limitation. • Confirm that when compliance schedules are issued, the administrative record includes appropriate justification.
Nutrients-National Topic Area	N/A
Pretreatment: Food Processing Sector- National Topic Area	<ul style="list-style-type: none"> • Revise POTW permits to specify timeframe for adequate notice of change in quality or quantity in effluent discharge to satisfy 40 CFR § 122.42(b). • Revise POTW permits to specify the general and specific prohibitions found at 40 CFR §§ 403.5(a)(1) and (b). • Specify the program approval or modification dates in fact sheets. • Ensure IUs are properly characterized in NPDES applications, including any hauled industrial waste, and reviewed with respect to POTW organic capacity. • Ensure the POTW permit and fact sheet clearly state whether the POTW is required to develop or implement a pretreatment program.
Municipal Separate Storm Sewer Systems (MS4s) - National Topic Area	<ul style="list-style-type: none"> • DNREC should consider revising the permit such that it recommends the use of environmentally sensitive design where appropriate. • DNREC should consider revising the permit such that it encourages retrofit where appropriate to reduce runoff and pollutant loads. • DNREC should consider removing conditional language ("if feasible/practicable", etc.) from the permit.
Compliance Schedule – Regional Topic Area	<ul style="list-style-type: none"> • Document basis for compliance schedule length in permit fact sheet. • Document basis for determination that compliance schedule will lead to compliance with water quality standards by the end of the compliance schedule. • Ensure compliance schedules do not include mechanisms by which the permittee may seek revisions to effluent limits; rather address such mechanisms through special permit conditions and/or correspondence.