

Region 7 NPDES
Program and Permit Quality Review
Iowa Department of Natural Resources

Review Date: March 4, 2019
Report Date: November 26, 2019

U.S. Environmental Protection Agency
Region 7
11201 Renner Blvd
Lenexa, KS 66219

Contents

Executive Summary..... 3

I. PQR BACKGROUND..... 5

II. STATE PROGRAM BACKGROUND 6

 A. Program Structure 6

 B. Universe and Permit Issuance 7

 C. State-Specific Challenges 8

 D. Current State Initiatives 8

III. CORE REVIEW FINDINGS..... 9

 A. Basic Facility Information and Permit Application 9

 1. Facility Information 9

 2. Permit Application Requirements 10

 B. Developing Effluent Limitations 11

 1. Technology-based Effluent Limitations 11

 2. Reasonable Potential and Water Quality-Based Effluent Limitations 13

 3. Final Effluent Limitations and Documentation 19

 C. Monitoring and Reporting Requirements 21

 D. Standard and Special Conditions..... 22

 E. Administrative Process 24

 F. Administrative Record and Fact Sheet 25

IV. NATIONAL TOPIC AREA FINDINGS 27

 A. Permit Controls for Nutrients in Non-TMDL Waters..... 27

 B. Effectiveness of POTW NPDES Permits with Food Processor Contributions 29

 C. Small Municipal Separate Storm Sewer System (MS4) Permit Requirements 39

V. REGIONAL TOPIC AREA FINDINGS 41

 A. Thermal Dischargers and Cooling Water Intake Structures (CWA sections 316(a) and 316(b)) 41

 B. Stormwater..... 42

VI. REVIEW OF PROGRESS ON ESSENTIAL ACTION ITEMS FROM LAST PQR 46

 Table 1. Essential Action Items Identified During Last PQR 2014..... 46

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR..... 47

 Table 2. Recommended Action Items Identified During 2014 PQR..... 47

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE 48

 Table 3. Essential Action Items from FY 2018-2022 PQR Cycle 48

 Table 4. Recommended Action Items from FY 2018-2022 PQR Cycle..... 49

Executive Summary

EPA Region 7's National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) for Iowa Department of Natural Resources (Iowa DNR) found that permits issued in the state were generally concise and adhere to federal regulations. However, we found that Iowa DNR does not always establish water quality-based limits in cases where data on the discharge is limited, does not include short-term Escherichia coli (E. coli) limits or chronic WET limits in permits, does not always establish limits based on EPA approved uses for receiving waterbodies in permits, and there is no mention of "Identification of the initial recipient for NPDES electronic reporting data" in the Standard Conditions. We also found Iowa DNR is not tracking Non-Categorical Significant Industrial Users in ICIS. Non-Categorical Significant Industrial Users tracking is scheduled to become a federal requirement in December 2020.

The PQR examined 28 permits for discharges in Iowa along with 3 General Permits issued by the Iowa DNR, several Iowa DNR permitting policies, and the statewide permit template. The PQR also focused on several national and regional priority areas including:

- *Permit Controls for Nutrients in Non-TMDL Waters,*
- *Effectiveness of POTW NPDES Permits with Food Processor Contributions,*
- *Small Municipal Separate Storm Sewer System (MS4) Permit Requirements,*
- *Industrial Stormwater, and*
- *Thermal Discharges and Cooling Water Intake Structures (CWA sections 316(a) and 316(b))*

Iowa DNR permits 1,578 site-specific facilities and permits 8,491 permit authorizations covered by general permits. As of December 3, 2018, 28% of Iowa DNR's site-specific permits are expired.

The PQR recognizes the many state and region-specific challenges faced by Iowa DNR, including a state legislative mandate to complete a Use Attainability Analyses (UAA) prior to issuing or renewing any NPDES permit, the need for additional staff to process permits associated with Thermal Discharges and Cooling Water Intake Structures, difficulty uploading DMR data to ICIS, trouble becoming CROMERR compliant and reduced budgets that impact implementing the NPDES program. The Iowa DNR also continues to implement the Iowa Nutrient Reduction Strategy which is designed to reduce point source nutrient reductions that target levels achievable through biological nutrient reduction, finalize the Antidegradation Implementation Procedures that should provide clarification of the modified "economic efficiency" definition, continue to investigate the data transfer issues, and work towards becoming CROMERR compliant.

Although the permits reviewed commonly conformed to national requirements, as noted above, we identified several concerns. Since many of the deficiencies seem to stem from revising the Iowa DNR regulations, policies and procedures, we believe they can be best resolved if the Iowa DNR revises these documents to include changes in federal requirements. Based on this PQR, EPA is recommending modifications and a continued dialogue for the following:

- *Continue to investigate and resolve issues associated with CROMERR compliance and data transfer issues to ICIS*
- *Update Iowa DNR Standard Terms and Conditions to be consistent with the e-Reporting requirements in 40 CFR 127.16*
- *Update Iowa DNR Water Quality Standard regulations to incorporate chronic WET protection in permits.*

In addition to the items listed above, the report provides an overview of the Iowa DNR NPDES permitting program and identifies specific areas where EPA and Iowa DNR can work together to continue to strengthen permit language and documentation in state NPDES permits.

Iowa DNR reviewed and provided comments on the draft PQR report on June 7, 2019. 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 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 conducted a PQR of the Iowa DNR NPDES permitting program on March 24, 2014¹. The evaluation team proposed various action items to improve the Iowa DNR NPDES permitting program. As part of the current PQR, EPA requested updates from Iowa DNR on the progress of those action items. Of the eleven action items identified during the last PQR as being Essential² tasks, eight have been resolved and the remainder represent actions that are either longer-term activities or lower-level actions. In addition, EPA identified Recommended action items to improve Iowa DNR's program; Iowa DNR has chosen to implement the majority of the Recommended actions. Section VI of this report contains a detailed review of the progress on action items identified during the last PQR.

During this review, the evaluation team proposed action items to improve Iowa DNR 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 and 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: John Dunn (316 and onsite review), Mark Matthews (Stormwater Coordinator and MS4 desk reviewer), Paul Marshall (Pretreatment Coordinator desk reviewer), Tanya Nix (State Coordinator and desk/onsite reviewer) and Michael Tate (Nutrient desk reviewer), conducted a review of the Iowa DNR NPDES permitting program which included an onsite visit to the Iowa DNR in Des Moines on March 4, 2019.

¹ <https://www.epa.gov/sites/production/files/2015-09/documents/srf-rd3-rev-ia.pdf>

² 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 Iowa DNR PQR included reviews of core permit components and national and regional topic areas, as well as discussions between the PQR review team and Iowa DNR 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 28 permits were reviewed as part of the PQR. Of these, fifteen permits were reviewed for the core review, 8 permits were reviewed for national topic areas, and 2 site-specific and 3 general permits were reviewed for regional topic areas. Some permits were reviewed for both the core review and one or more topic areas reviews. Permits were selected based on issuance date and the review categories that they fulfilled.

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. The core review focused on the *Central Tenets of the NPDES Permitting Program*³ to evaluate the Iowa DNR 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 Iowa DNR NPDES program were: Permit Controls for Nutrients in Non-TMDL Waters, Small Municipal Separate Storm Sewer System (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. The regional topic areas selected by EPA Region 7 included: Industrial Stormwater and Thermal Discharges and Cooling Water Intake Structures. These reviews provide important information to Iowa DNR, EPA Region 7, EPA HQs and the public on specific program areas.

II. STATE PROGRAM BACKGROUND

A. Program Structure

Iowa DNR operates a central office in Des Moines and six field offices in Manchester, Mason City, Spencer, Atlantic, Des Moines, and Washington. All NPDES permits are issued from the central office, including general permits.

³ <https://www.epa.gov/npdes/central-tenets-npdes-permitting-program>

The field offices conduct compliance and inspection activities, emergency response actions and addresses any complaints. Iowa DNR permits CAFOs and municipal separate storm sewer systems (MS4s) using individual permits.

Currently, the Iowa DNR NPDES Section employs sixteen central office staff and one supervisor. There are nine permit writers that develop and issue industrial and municipal permits, two permit writers for storm water, one permit writer for CAFOs and two permit writers for private septic systems (onsite) wastewater. Four of the ten permit writers are senior permit writers that provide oversight, regulatory, and technical assistance to the other permit writers. Two staff provide rulemaking, IT, and administrative support. The supervisor performs management and program oversight duties.

Iowa DNR uses a database (NPDS) to generate permit documents (e.g., cover page, outfall description page, effluent limits, and monitoring requirements). Templates are used for municipal permit rationales. Permit writers have a large amount of guidance and process manuals, developed by Iowa DNR staff, available to them.

The EPA reviewed the existing Memoranda of Agreement (MOAs) between the EPA and states governing the NPDES permit programs as part of the Agency’s activities under the October 15, 2009, Clean Water Act Action Plan (CWA Action Plan), and the Interim Guidance to Strengthen Performance in the NPDES Program (June 22, 2010). EPA Region 7 reviewed the Iowa DNR MOA, signed August 1, 1978, and a revised MOA was drafted and submitted to Iowa DNR for review on March 5, 2013. The revised MOA was signed by Iowa DNR on March 1, 2016, and by EPA Region 7 on March 10, 2016.

A brief summary of the significant revisions are as follows: the revisions ensured that the MOA, annual program grant, and any State/EPA agreement are consistent; and revisions also state how Iowa DNR will transfer draft/issued permits, compliance/inspection reports and other relevant or requested information to EPA.

B. Universe and Permit Issuance

As seen in the tables below (counts are current as of December 3, 2018) Iowa DNR is responsible for issuing 1,578 individual permits of which 136 are major facilities. There are also 8,469 authorizations under the 9 general NPDES permits.

| Individual Permit Type | Permit Count |
|---|--------------|
| Industrial | 288 |
| Municipal | 815 |
| Semi-Public | 195 |
| Water Treatment | 56 |
| Individual Storm water permits with MS4s | 47 |
| Individual Storm Water permits without MS4s | 10 |
| CAFO | 167 |

| General Permits | Authorizations |
|---|-----------------------------------|
| Storm Water Discharge Associated with Industrial Activity | 1,470 |
| Storm Water Discharge Associated with Construction Activity | 4,372 |
| Storm Water Discharge Associated with Industrial Activity for Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, and Sand and Gravel Facilities | 564 |
| <i>Discharge from Private Sewage Disposal Systems</i> | 1,752 |
| Discharge from Mining and Processing Facilities | 331 |
| <i>Discharge Associated with Well Construction Activities</i> | Unknown; coverage is automatic |
| <i>Pesticide General Permit (PGP) for Point Source Discharges to Waters of the United States from the Application of Pesticides</i> | Unknown; coverage is automatic |
| <i>NPDES and State Operation permit, Discharge from Hydrostatic Testing, Tank Ballasting and Water Lines</i> | 1 NOI, most coverage is automatic |
| <i>NPDES and State Operation permit, Dewatering and Residential Geothermal Systems</i> | 1 NOI, most coverage is automatic |

Currently, Iowa DNR has a backlog of 441 (28%) individually permitted facilities. The backlog is mainly due to a legislative mandate to complete a Use Attainability Analysis (UAA) prior to issuing or renewing any NPDES permit. This multi-year effort diverted permitting resources during which time the backlog grew inordinately. There is a strategy being implemented for reducing the backlog in a way that addresses priorities first. The strategy calls for issuance of 300 permits per year with a priority on the following: the nutrient reduction strategy, major permits, longest expiration dates, and those with completed UAAs.

C. State-Specific Challenges

As mentioned above the requirement to perform UAAs on all receiving water bodies before permits could be renewed was a challenge for the state and had a side-effect of bringing about a large backlog. Even after many UAAs were completed, delays in permitting remained.

Currently, Iowa DNR is fully staffed except for a vacancy in the CAFO program. This vacancy is due to retirement.

D. Current State Initiatives

The Iowa Nutrient Reduction Strategy is a science and technology-based framework to assess and reduce nutrients from both point and nonpoint sources to Iowa waters and the Gulf of Mexico. The Strategy was a collaborative effort of the Iowa Department of Agriculture and Land

Stewardship, the Iowa DNR, and the Iowa State University College of Agriculture and Life Sciences. The Iowa strategy outlines a pragmatic approach for reducing nutrient loads discharged from the state's largest wastewater treatment plants, in combination with targeted practices designed to reduce loads from nonpoint sources such as farm fields. This is the first time such an integrated approach involving both point and nonpoint sources have been attempted in the state. The point source nutrient reductions will target the levels achievable through biological nutrient reduction (BNR).

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.

Region 7 reviewed the following POTW and non-POTW facilities: Algona, City of STP; Cargill, Inc.; Clinton, City of STP; Denison Municipal Utilities Wastewater Treatment Facility; Hospers, City of STP; Le Mars, City of STP; Monsanto Company; New Hampton, City of STP; Osceola, City of STP; Ottumwa, City of STP; Roquette America, Inc; Teen Challenge of the Midlands Wastewater Treatment Facility; Toledo City, of STP; Wallingford, City of STP; and Waterloo, City of STP.

Program Strengths

All permits reviewed include descriptions of the facility in the fact sheet, descriptions of processes at the facility, identification of outfalls and waste streams, and location information relative to the receiving stream. The permits contain technology-based limits for 5-day carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), and pH. Permits also include water quality-based effluent limits (WQBELs) for ammonia and *Escherichia coli* (*E. coli*) along with either monitoring or effluent limitations for total nitrogen and total phosphorus. Three priority pollutant scans were found in all major permit records reviewed in this PQR. Permits contained complete descriptions of the location, the receiving stream, and the facility discharge.

Areas for Improvement

EPA did not identify any inadequacies in the Basic Facility Information and Permit Application section of the permits or fact sheets.

Action Items

The PQR team did not identify any action items for this section.

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.

Both federal and Iowa DNR's NPDES regulations require permittees to submit NPDES applications 180 days prior to the permits expiring. The clerk specialist is responsible for the entire application process. To assist permittees in submitting timely and complete permit renewal applications, Iowa DNR sends out a reminder letter 10 months (300 days) before permit expiration to minor facilities, and 13-months (390 days) before permit expiration for major facilities. The 10 and 13-month windows also allow the field offices to inspect the facility for compliance issues. Iowa DNR issues a notice of violation for applications over 30 days late.

Iowa DNR's application forms are based on EPA's forms. Upon receipt of the application, the clerk specialist conducts a preliminary review to determine whether the application is complete. They review the technical aspects of the application for completeness and work with the permittee to collect any additional pertinent and/or required information. Applications are then sent to the permit writer for processing.

Program Strengths

In general, the permit files EPA reviewed contain current, appropriate, and complete permit applications which are in compliance with 40 CFR 122.21. Applications reviewed appear to be current and complete. For permits that were expired (e.g., Denison, City of STP), the permit file included the most recent application. Further, each permit application form is available via Iowa DNR's website. The permit record contained additional documentation with the permit application where the clerk or permit writer noticed any deficiencies in application data.

POTWs: Federal regulations established at 40 CFR 122.21(j)(3)(i) require applicants to provide outfall locations, including latitude/longitude information. Iowa DNR's Form 30, Part A indicates that the permittee is required to submit latitude/longitude information. In addition, 40 CFR 122.21(g)(4)(ii) requires every applicant provide analytical results for certain parameters (BOD, fecal coliform (including *E. coli*), design flow rate, pH, temperature, and TSS). For facilities with a design capacity greater than or equal to 0.1 million gallons per day (MGD), 40 CFR 122.21(j)(4)(iii) requires results for specific parameters (ammonia, chlorine, dissolved oxygen, nitrate-nitrite, total kjeldahl nitrogen, oil and grease, phosphorus, and total dissolved solids). Further, 40 CFR 122.21(j)(5)(i) and (ii) require submittal of WET results and priority pollutants test results for facilities with a design capacity greater than or equal to 1 MGD, respectively. Form 30, Parts A, B, and C, require the submittal of analytical data for these parameters.

Non-POTW Dischargers: For industrial applicants, federal regulations established at 40 CFR 122.21(g)(1) require applicants to provide outfall locations, including latitude/longitude information. Form 1 requires submittal of latitude and longitude information. In addition, 40 CFR 122.21(g)(7)(iii) requires every applicant provide analytical results for certain parameters (BOD, COD, TOC, TSS, ammonia, temperature, and pH); 40 CFR 122.21(g)(7)(v) requires data for primary industry categories; and 40 CFR 122.21(g)(11) requires indication of WET tests conducted within the last three years. Form 3, Parts B instructs applicants to provide data for certain parameters—i.e., only for those parameters which the applicant knows or has reason to believe are present.

Areas for Improvement

EPA did not identify any inadequacies in the Permit Application Requirements portion of the PQR review.

Action Items

The PQR team did not identify any action items in this section.

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 BOD, TSS, pH, and percent pollutant removal), and must contain numeric limits for all these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133. A total of 12 POTW permits were reviewed as part of the PQR.

EPA routinely reviews POTWs permits as they are put on public notice. These reviews indicate that Iowa DNR is correctly establishing technology-based permit limits for POTWs.

Permits include mass limits for BOD and TSS. This is not required by the regulations, but the EPA urges use of both mass and concentration limits in permits when possible. Iowa DNR uses design flows for mechanical WWTF to calculate mass limits in permits.

Iowa DNR's fact sheets contain detailed descriptions of plant location, treatment processes within the plant, and the handling of all waste streams including sludge production.

Fact sheets state which limits apply to the discharge.

Program Strengths

Iowa DNR permit writers are including appropriate numeric TBELs for BOD or CBOD, TSS, and pH in POTW permits. All files reviewed contained limits expressed in appropriate units of measure and in monthly and weekly averages and contained the 85% removal requirement. POTWs also required influent monitoring for BOD or CBOD and TSS.

Areas for Improvement

EPA did not identify any inadequacies in the Developing Effluent Limitations section of the PQR review.

Action Items

The PQR team did not identify any action items in this section.

*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).

Program Strengths

EPA routinely reviews industrial permits as they are put on public notice. These reviews indicate that Iowa DNR routinely establishes properly applied ELG permit limits for non-POTW dischargers.

Iowa DNR's fact sheets for non-POTW dischargers contain detailed descriptions of plant location, treatment processes, and waste streams. The SIC code(s) for the facility are identified and permit limits are derived based on the applicable ELG. Where an ELG does not apply, the state derives permit limit using BPJ.

The files reviewed include documentation on the calculations used to develop the ELG-based effluent limits. The final limits are as stringent as the required ELG, are expressed in the appropriate units of measure, and include both maximum daily and monthly average limits. The review revealed that non-POTW discharge permits include TBELs that are based on production rather than facility design.

Areas for Improvement

EPA did not identify any inadequacies in the Developing Effluent Limitations section of the PQR review.

Action Items

The PQR team did not identify any action items in this section.

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 WQBELs, the permitting authority must evaluate whether any pollutants or pollutant parameters will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including for narrative criteria for water quality.

The PQR for Iowa DNR 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:

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

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

Process for Assessing Reasonable Potential

According to Iowa DNR's Determining Reasonable Potential Guidance dated July 13, 2009, Iowa DNR permit writers consider both numeric and narrative water quality criteria to determine whether the facility discharge has the reasonable potential to cause or contribute to a water quality standard violation. Iowa DNR utilizes best professional judgment to evaluate reasonable potential for narrative criteria. For example, if a facility discharges a pollutant for which the state does not have a numeric WQS, however toxicity data from the Material Safety Data Sheet (MSDS) and information from the permit application indicate the facility proposes to discharge levels that may be toxic to aquatic life, Iowa DNR may determine that the discharge demonstrates reasonable potential to violate the narrative criteria.

The following five paragraphs are based on Iowa DNR's Determining Reasonable Potential Guidance dated July 13, 2009.

When determining reasonable potential for numeric criteria with at least 10 sample results for a pollutant, the permit writer must use statistical analysis. The statistical analysis considers the variability of the sample data and projects a worst-case concentration that could be discharged from the facility. If this worst-case concentration exceeds the corresponding water quality-based effluent limit established in the WLA, then the pollutant in question has a reasonable potential to cause or contribute to a water quality standard violation and must be limited in the permit.

Values reported as a "less than value" or as "NO DETECTION" in the analytical data should be treated as ½ the reported level. If all the data provided is reported as less than detection and the WQBEL is greater than the detection level, no reasonable potential exists. If the WQBEL is less than the detection level used by the facility, reasonable potential may exist.

Iowa DNR's guidance further states that, when there is insufficient data (less than 10 sample results) to complete the statistical analysis, or no data at all, the permit writer must impose a water quality-based limit if he/she believes there is a reasonable potential for that pollutant to cause or contribute to a water quality standard violation. The types of information the permit writer can use to make this determination include: type of industry or POTW and the presence of contributing industries, existing data on pollutants (likely from the permit application), the source water used, and the type of receiving water and designated use.

In instances where little data exists (less than 10 sample results) for a particular pollutant, the permit writer must use his/her best professional judgment when determining if a reasonable potential exists for a pollutant to cause or contribute to a water quality standard violation. For a number of years Iowa DNR has used the following criteria; that if the sample data is less than one-half (< 50%) the WQBEL established by a WLA, then there is no reasonable potential for the pollutant to cause or contribute to a water quality standard violation. When the data show the effluent concentration or mass is greater than one-half (> 50%) the WQBEL then limits and monitoring have generally been included in the permit. This determination is left to the permit writers' discretion but should be justified and documented in the rationale.

If the permit writer is not able to decide if a reasonable potential exists for a discharge to cause or contribute to a water quality standard violation, he/she should require the facility to gather further data. In such cases, the data could be required prior to permit issuance or the monitoring may be required as a condition of the permit. In addition to the monitoring requirement, the permit writer shall include a clause in the permit that would allow the Iowa DNR to reopen the permit and impose an effluent limitation if the effluent monitoring establishes that there is a reasonable potential for the discharge to cause or contribute to a water quality standard violation.

A POTW that has been delegated the authority to implement an approved Pretreatment Program must conduct a detailed analysis to identify the maximum allowable headworks loadings that will not result in interference or pass-through. Furthermore, the POTW must determine the portion of the loadings that can be allocated to the significant industrial users. These values are used to set site-specific local limits. As long as the POTW is properly implementing the Pretreatment program, there is no reasonable potential for the discharge to cause or contribute to a WQS violation. However, if the local limits were calculated using outdated information (e.g., POTW design, WQS, etc), reasonable potential should be determined using the above procedures and the POTW shall be required to re-evaluate the local limits.

Process for Developing WQBELs

The permit writer is responsible for the development of the technology-based limits while the Water Quality Monitoring and Assessment Section develops the waste load allocations and water quality-based effluent limits, which includes evaluating whether a mixing zone can be used and the appropriate size of the mixing zone according to Iowa DNR rules. Iowa DNR NPDES permits contain the standard conditions required by federal regulation and they also reference the Iowa DNR narrative water quality standards. EPA has suggested that Iowa DNR include the narrative standards in permits verbatim instead of referencing them through a citation.

Iowa DNR uses the Iowa DNR Wasteload Allocation Procedure document (WLAP) dated February 21, 2018, to develop WQBELs for facilities that discharge wastewater to Waters of the State in order to meet WQS. The WLAP contains certain sections that address water quality standards. The WLAP provides the technical methodologies and procedures used to develop wasteload allocations and WQBELs for pollutants of concern that are necessary to protect the surface water quality standards as described in 567 IAC Chapter 61 – Water Quality Standards. The procedures developed in the WLAP are used as default procedures unless otherwise stated in the permits or fact sheets.

The calculation of a Waste Load Allocation (WLA) is based on assumptions to protect the water quality under worst-case scenario conditions. Facilities may choose to submit site-specific information on both the receiving waterbody and the discharge characteristics for consideration. Where site-specific data are unavailable, permit writers apply state default values.

The WLAs are calculated to protect all downstream uses. A WLA is performed for the protection of each downstream beneficial use and the most stringent WLA governs the final WQBELs.

The WLAP document is divided into sections to describe the input parameters that impact the WLA calculations such as discharge flows, critical stream low flows, and the stream flow velocities to name a few. This document presents the wasteload allocation procedures that are used to calculate parameters that include ammonia nitrogen, metals, total residual chlorine, chloride, sulfate, bacteria, temperature, and pH. The document also details the implementation of general water quality criteria, site-specific data collection requirements, and mixing zone

procedures. The WLAP document establishes procedures for 5-day biochemical oxygen demand (BOD₅) and dissolved oxygen (DO) modeling. This modeling is used to derive effluent limits for BOD₅ or 5-day carbonaceous biochemical oxygen demand (CBOD₅), ammonia-nitrogen (NH₃-N), and dissolved oxygen.

The WLAP document creates the permit derivation procedure that is used to translate a WLA into an NPDES WQBEL. The WLAP document also includes antidegradation implementation requirements and alternative site-specific methodologies for WQBELs.

Resolved Issue from the Previous PQR

An *E. coli* issue mentioned in the previous PQR discussed the assumed die-off or decay rates used in deriving permit limits. Iowa DNR used an outdated die-off rate based on studies of fecal coliform die-off. EPA encouraged Iowa DNR to use more protective die-off assumptions based on more recent *E. coli* die-off studies in the WLAP document update. Iowa DNR addressed this issue in the WLAP document dated February 21, 2018. Iowa DNR lowered their bacteria decay rate from 5.28/day to 1.0/day. EPA considers this issue resolved.

An additional issue of concern discussed in the previous PQR addresses WQBEL development and small data sets. For small data sets, Iowa DNR did not use EPA's recommended statistical procedure for determining reasonable potential but instead uses some rules of thumb which could cause problems in some instances. For example, during routine permit reviews examples have been noted where if a facility only has one or two data points of *E. coli* or another pollutant, then the permits routinely require only monitoring for that pollutant even if one of the samples is high enough to clearly show that a facility is capable of discharging a pollutant in high enough concentrations to violate water quality criteria. Iowa DNR has changed this procedure since the previous PQR. Any time there is more than one point of data from the same drawdown, Iowa DNR conducts a statistical reasonable potential determination. The only time Iowa DNR does not conduct a statistical reasonable potential determination is if there is one data point. If one point of data per drawdown is found, then the permit is reissued with a minimum of two samples per drawdown. None of the permits reviewed as part of this PQR were affected by this issue.

Ongoing Unresolved Issues

The UAA effort is an ongoing issue discussed in the March 24, 2014, PQR. Iowa DNR reclassified waterbodies which were disapproved by EPA. Iowa DNR continued to develop permit limits based on the disapproved use. The following gives a common example of this issue: Per the UAA, Iowa DNR changes the classification of a waterbody from primary contact recreation to secondary contact recreation. EPA disapproves of the classification change, but Iowa DNR develops an *E. coli* effluent limit based on the UAA. EPA has disagreed to this practice and is working with Iowa DNR to resolve this issue. Iowa DNR has submitted the fourth UAA package to EPA for EPA approval.

Another ongoing issue of concern mentioned in the previous March 24, 2014, PQR involves *E. coli* limits in Iowa: Clean Water Act regulations at 40 CFR 122.45(d) require that permits for

continuously discharging POTWs contain short-term limits in addition to monthly permit limits unless impracticable. Iowa DNR used to include short-term *E. coli* limits in appropriate permits until a regulatory change enacted November 11, 2009, disallowed using the Iowa DNR single sample maximum criteria for *E. coli*, as an end-of-pipe limit. This prohibition does not, however, preclude the Iowa DNR from using other appropriate short-term limits. This lack of short-term limits for *E. coli* was addressed in the WLAP dated February 21, 2018. The WLAP includes a short-term limit for *E. coli* but 567 IAC 62.8(2) states that “the daily sample maximum criteria for *E. coli* set forth in 567 – Chapter 61 shall not be used as an end-of-pipe permit limitation.” Therefore, only the geometric mean limit applies to NPDES permits. Implementing 40 CFR 122.45(d) concerning *E. coli* will require a state regulation change.

In a letter dated May 25, 2012, EPA expressed concerns over the Narrative Translator Procedure and its use of the one half of a 96-hour, or 48-hour, LC50 to represent a no-effect level. EPA and Iowa DNR have had many discussions over the years concerning this issue. Iowa DNR needs to address this issue during the next triennial review.

In 2012, EPA published updated Recreational Water Quality Criteria that Iowa DNR has not adopted. In a letter dated September 8, 2017, EPA asked Iowa DNR to provide the explanation required by 40 CFR 131.20(a). Clean Water Act regulations at 40 CFR 131.20(a) requires that the State shall provide an explanation if a State does not adopt new or revised criteria for parameters for which EPA has published new or updated 304(a) criteria during the triennial review process. In November 2017, Iowa DNR responded to EPA’s request by stating that Iowa DNR wants EPA to conclude the five-year review of the 2012 recreational water quality criteria before implementing the criteria. In May 2018, the EPA concluded its five-year review of the 2012 recreational criteria in a document titled *2017 Five-Year Review of the 2012 Recreational Water Quality Criteria*⁴. Iowa DNR needs to adopt the *2012 Recreational Water Quality Criteria* during the next triennial review or provide an explanation per 40 CFR 131.20(a) if the State does not adopt new or revised criteria for which EPA has published new or updated per the CWA 304(a) criteria.

The following paragraph includes a summary of additional water quality criteria updates that have not been adopted by Iowa DNR. Iowa DNR was notified of this information in a letter dated March 30, 2018. In 2013, EPA published national recommended criteria for ammonia under the CWA Section 304(a). In 2015, EPA updated and published national recommended ambient water quality criteria for the protection of human health where the 304(a) criteria has become more stringent. In 2016, EPA published national recommended chronic aquatic life criterion for selenium and cadmium in fresh water per the CWA section 304(a). Iowa DNR needs to adopt the 2013 ammonia criteria, 2015 human health criteria, 2016 selenium criteria and 2016 cadmium criteria during the next triennial review or provide an explanation per 40 CFR 131.20(a) if the State does not adopt the new or revised criteria for which EPA has published under the CWA section 304(a).

⁴ <https://www.epa.gov/wqc/five-year-review-2012-recreational-water-quality-criteria>

Program Strengths

Reasonable Potential

Iowa DNR assumes reasonable potential, when the pollutant meets the criteria stated above, for various pollutants of concern such as Chloride, Sulfate or TKN. For those pollutants, WLAs are calculated and permit limits are derived using the methods outlined in Iowa DNR's Determining Reasonable Potential Guidance dated July 13, 2009. This guidance refers permit writers to Chapter 6 of the U.S. EPA NPDES Permit Writers' Manual, Section 6.3⁵ for additional guidance and support.

All permits and associated fact sheets reviewed contain a detailed discussion of pollutants of concern. The fact sheets include brief statements identifying potential pollutants in the discharge according to the activity, discuss data available from the permit application forms, priority pollutant scans or other effluent characterization data and some fact sheets include reasonable potential analysis spreadsheets; however, certain fact sheets lack the reasonable potential analysis spreadsheets.

WQBEL Development

Iowa DNR has updated and implemented the Iowa DNR WLAP⁶ document dated February 21, 2018. This document is used to develop WQBELs for facilities that discharge wastewater to Waters of the State in order to meet WQS. The WLAP provides the technical methodologies and procedures used to develop WLAs and WQBELs for pollutants of concern that are necessary to protect the surface water quality standards as described in 567 IAC Chapter 61 – Water Quality Standards. Iowa DNR's permit records describe the designated uses of the receiving stream and fact sheets contain the 303(d) status of the stream segment. The review revealed that Iowa DNR's permits include appropriate WQBELs for ammonia and *Escherichia coli* (*E. coli*) along with either monitoring or effluent limitations for total nitrogen and total phosphorus.

Areas for Improvement

Reasonable Potential

The Iowa DNR should include consistent supporting data in all fact sheets. For example, if the permit writer used a reasonable potential analysis spreadsheet, the administrative record documents found on Iowa DNR's online system (Wastewater Public Information Exchange or WWPIE) should also contain the reasonable potential analysis spreadsheet.

WQBEL Development

Iowa DNR should address these ongoing issues mentioned in the Recommended Section of the Action Items. This section is listed below.

Action Items

⁵ https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_06.pdf

⁶ <https://www.iowadnr.gov/Environmental-Protection/Water-Quality/Wasteload-Allocations>

| | |
|--------------------|---|
| <p>Essential</p> | <ul style="list-style-type: none"> • <u>WQBEL Development</u> <ul style="list-style-type: none"> • As required by 40 CFR 122.45(d), Iowa DNR needs to start including short-term limits for <i>E. coli</i> in all continuously discharging POTW permits that contain <i>E. coli</i> limits. • As required by 40 CFR 121.31(d), NPDES permit limitations must be developed based on applicable water quality standards, which include designated uses. Iowa DNR must continue to establish limits that are protective of EPA approved uses for receiving waterbodies, not of disapproved uses. |
| <p>Recommended</p> | <ul style="list-style-type: none"> • <u>Reasonable Potential</u> <ul style="list-style-type: none"> • Include consistent supporting documentation in the WWPIE. • <u>WQBEL Development</u> <ul style="list-style-type: none"> • Adopt the 2012 Recreational Criteria, 2013 Ammonia Criteria, 2015 Human Health criteria, 2016 Selenium Criteria and 2016 Cadmium Criteria during the next triennial review or provide an explanation per 40 CFR 131.20(a) if the State does not adopt the new or revised criteria for which EPA has published new or updated criteria per the CWA 304(a). • Address the Narrative Translator Procedure during the next triennial review. |

3. Final Effluent Limitations and Documentation

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 that all applicable CWA standards 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.

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

Iowa DNR's fact sheets contain documentation of limit development, calculations, information on dilution and mixing zones, background data for the receiving water, the WLA, WLA calculations, and numeric WQBELs or BMPs. The fact sheets also contain WQBELs for all pollutants that demonstrated a reasonable potential to cause or contribute to an excursion of applicable water quality standards. The final WQBELs contain both long and short-term effluent limits (except short-term limits for *E. coli*) and are consistent with the justification and documentation provided in the record. WQBELs are expressed in appropriate units of measure and where a compliance schedule is required, the schedule is consistent with the requirements of 40 CFR 122.47.

If calculated limits are higher than the older limits, Iowa DNR places the older limits, or the most stringent limits, in the permit in accordance with the CWA. If the receiving stream is impaired or a TMDL is applicable to the discharge, the TMDL is implemented and the WLAs in the TMDL are included in the permits unless the calculated limits or the older limits, are the most stringent.

The State provides documentation in the fact sheet of the facility operations and treatment process of the facility. The fact sheet clearly identifies the waste streams and pollutants of concern. Permit writers also include the consideration of stream impairments and applicable TMDLs.

Iowa DNR's Antidegradation Policy at 567 I.A.C. 61.2(d) and the Antidegradation Implementation Procedures referenced at 567 I.A.C. 61.2(2)e were approved by EPA on September 30, 2010. On December 12, 2016, the EPA received Iowa DNR's water quality standards revision of the current policy. The 2016 revision modifies the "economic efficiency" definition. EPA disagreed with this modification in a letter dated January 19, 2017, and has had several discussions with Iowa DNR concerning this issue and looks forward to a future resolution.

Program Strengths

Iowa DNR's fact sheets contain documentation of limit development, calculations, information on dilution and mixing zones, background data for the receiving water, numeric WQBELs or BMP WQBEL for all pollutants that demonstrate a reasonable potential to cause or contribute to an excursion of applicable water quality standards. The final WQBELs contain both long and short-term effluent limits (except for *E. coli* as discussed above) and are consistent with the justification and documentation provided in the record. WQBELs are expressed in appropriate units of measure and where a compliance schedule is required, the schedule is consistent with the requirements of 40 CFR 122.47. Major permits reviewed for this PQR include acute WET limits. Permits reviewed cite sludge requirements when necessary.

Areas for Improvement

Iowa DNR should continue to work on and finalize the revised Antidegradation Implementation Procedures.

Action Items

Recommended

- Continue to finalize the Antidegradation Implementation Procedures

C. Monitoring and Reporting Requirements

Background and Process

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

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual 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.

Iowa DNR uses the TSD, the EPA Permit Writer's Manual, and state documents/regulations to develop monitoring requirements. Monitoring frequency may be case-specific, compliance-based, or consistent with previous permits. The monitoring location is identified by the treatment process while the pollutant of concern identifies the sample type.

Pollutants of concern are listed in the permit in tables, narratives or compliance schedules and are assigned reporting requirements.

Iowa DNR permits lack provisions for chronic WET monitoring (including those permits reviewed as part of this PQR). This issue was addressed in the previous PQR, and this continues to be an unmet action item. Proposals to include chronic toxicity are routinely included in the DNR's Regulatory Plan but have not yet been approved.

Program Strengths

In reviewing the fact sheets, Iowa DNR permit writers are providing justification and documentation for monitoring and reporting requirements. All fact sheets reference 40 CFR Part 136 for sampling consistency and recordkeeping.

Areas for Improvement

EPA's WET policy has consistently included the need for chronic protection. On June 2, 1989, EPA promulgated rules at 40 CFR Part 122.44 requiring permit limits if there is "reasonable potential to cause or contribute to a violation of water quality standards (this section includes WET). The preamble of that rule discusses the need for chronic WET protection. Iowa DNR needs to include chronic nonlethal WET protection in its permits.

Action Items

Essential

- Long-standing unmet action item. Iowa DNR needs to include chronic nonlethal WET protection in its permits per 40 CFR 122.44.

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.

The EPA reviewed each standard condition for implementation in each permit as required by 40 CFR 122.41. Iowa DNR has a standard set of narrative conditions used for special conditions, compliance schedules, BMPs, Nutrient Reduction Requirements, Operator Certification Requirements, toxicity, monitoring and reporting requirements, sludge handling and disposal, and stormwater. Iowa DNR uses boilerplate language for their standard conditions. The PQR review team identified that Iowa DNR's standard conditions do not include e-Reporting requirements. At the time of the review, Iowa DNR acknowledged that Iowa DNR does not fully comply with the federal e-Reporting requirement and that e-Reporting will not be included in the permitting standard conditions section until Iowa DNR has adopted rules to support e-Reporting. Iowa DNR's DMR submission is not CROMERR compliant due to receiving DMRs via email. Iowa DNR is working to resolve this issue.

There is also an issue with Iowa DNR data transfer to NPDES ICIS; there are problems uploading accurate Iowa DNR data to ICIS. At the time of the review, Iowa DNR is transferring about 75% of the NPDES data to ICIS. Iowa DNR is working to resolve this issue.

For POTWs, the state standard conditions refer to 40 CFR 122.42(b), not specifically, 40 CFR 122.42(b)(1)-(3) per the PQR Core Checklist. For non-POTWs, the state standard conditions refer to 40 CFR 122.42(a), not specifically, 40 CFR 122.42(a)(1)-(3) per the PQR Core Checklist. Most state standard conditions reference the proper CFR citation or their IAC regulations, which appear to be as stringent or more stringent than the federal standard conditions.

The state does not include compliance schedules as a standard condition for all permits. The state includes this condition only for permits that contain compliance schedules.

The state allows for waivers or variances from administrative rules. To obtain a variance, the applicant must follow the rules established in 561 IAC Chapter 10 - Waivers or Variances from Administrative rules. The applicant must submit an application to Iowa DNR that provides a comprehensive justification why the applicant needs a variance to the administrative rules. Iowa DNR will evaluate the application on a case-by-case basis to determine if a variance is granted. Variances are also classified as temporary and cannot be renewed without a new application/justification.

Program Strengths

Based on the permits reviewed, Iowa DNR permits explain the relevance and purpose of special conditions, identify measurable milestones in compliance schedules, explain the necessity of special studies, and explain the need for additional monitoring requirements.

Areas for Improvement

Review of the permit standard conditions revealed an omission of e-Reporting as required by 40 CFR 127.16.

Action Items

Essential

- Include e-Reporting as required by 40 CFR 127.16 in the standard conditions section for all permits.

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 Iowa DNR, and reviewed materials from the administrative process as they related to the core permit review.

Iowa DNR permitting procedures include all of these required components. Iowa DNR changed its regulations since the 2014 PQR and allows the public notices for minor permitted facilities to be published over the internet utilizing Iowa DNR's website, WWPIE. Major permittees are responsible for placing a public notice of the permitting action in a local newspaper and provide Iowa DNR with documentation that this has been done; Iowa DNR then files the proof of publication in the permit administrative record.

Draft permits and permit rationales are placed on the internet and anyone who wants to be notified of permit related actions is automatically sent an electronic notice. If comments are submitted on the draft permit they should be posted along with Iowa DNR's response to those comments. While reviewing the Le Mars, City of STP Wastewater Treatment Facility permit file, the review team noted that the Le Mars, City of STP draft CBOD and TSS mass limits were different in the final permit than what was in the fact sheet and the draft permit. The review revealed that the Iowa DNR official record keeping system and the WWPIE database/website lacks a comment record addressing why the final permit was modified from the draft permit. Iowa DNR acknowledged that not producing a Response to Comments document explaining the limit change was an isolated incident. On March 6, 2019, Iowa DNR submitted the Le Mars, City of STP "Response to Comment" document to EPA.

If permits are appealed, the Director sets a hearing date with an administrative law judge.

All final permits and permit modifications (including those reviewed during the PQR) can also be accessed by the public over the internet using the Iowa DNR's WWPIE website.

Program Strengths

Based on the permit reviews, the WWPIE database/website stores most of the documents related to the permitted facility. EPA comments are included in the database, as well as public comments and responses to those comments. The database contains permit revisions and modifications, and the supporting justifications.

Areas for Improvement

Permit applications are not located in the WWPIE system. Sometimes, WLA and other supporting documentation is not located in the WWPIE database/website. This was noticed in permits that are part of this PQR review (Teen Challenge of the Midlands and the City of Waterloo) and in permits that are not part of this PQR review. Iowa DNR should be consistent and include all the supporting permitting documentation in the WWPIE system, such as the WLA and documentation why draft permits are different from final permits for all permits.

*Action Items***Recommended**

- Iowa DNR should include all the supporting permitting documentation in the WWPIE system such as the application, WLA, and documentation addressing revisions between draft permits and final permits for all permits.

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.

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.

The permit writer drafts the permit rationale (which serves as the federally required fact sheet, or statement of basis) prior to drafting the permit. The draft permit, rationale, and attachments are posted online at Iowa DNR's Wastewater Permit Information Exchange (WWPIE) internet site. Consistent with the Memorandum of Agreement, EPA has 30 days to review and comment on the draft permit and rationale – this is generally done while the draft permit is on public notice. The State DNR Director has delegated signatory authority to the permit writers to issue and sign final permits. Iowa DNR provides administrative hearing and permit appeal opportunities in compliance with federal regulations.

The quality of Iowa DNR permit rationales (fact sheets and statement of basis) has continually improved since the previous PQR by including additional information about how permit limits were derived and better descriptions of the facility and concerns unique to the facility. In general, Iowa DNR permits and the associated permit rationales provide a clear description of the permitted facility, including a description of the wastes being treated and the treatment processes involved. Fact sheets and statement of basis identify receiving waterbodies and their status as impaired or meeting standards.

Permit records for POTWs and industrial facilities contain comprehensive documentation of the development of all effluent limitations. Documentation of the development of technology-based effluent limits includes 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 are clear and straight forward when WLA documentations are included in the fact sheets. In most cases, the permit writer routinely documents changes from the previous permit, ensures draft and final limitations are consistent (unless the basis for a change is documented), and includes all supporting documentation in the permit file. As previously discussed, the electronic file for one permit reviewed during the PQR (Le Mars, City of STP) lacked the WLA and documentation to address why the final permit differed from the draft permit. Iowa DNR acknowledged this error. The WLA was located during the site visit and on March 6, 2019, Iowa DNR submitted the Le Mars, City of STP "Response to Comment" document to EPA.

Iowa DNR permits are backed by the documentation required by regulation. Facility descriptions are usually complete and clearly written. The permit records contain facility location (Section, Township, Range), maps of facilities and receiving streams, and flow diagrams for industrial facilities. Receiving streams are described succinctly and applicable levels of protection are described in the permit rationale. The permit writer also summarizes monitoring data from the last permit cycle.

During the PQR, the following was found with regard to permit documentation: Documentation follows the permit development process. Permit writers make the assessment of applicable SIC Code and determine if an Effluent Limitation Guideline applies. The permit writer creates a list of pollutants of concern, and the Water Quality Monitoring and Assessment Section calculates the WLAs. The WLA procedures are highly regimented and the approaches are established in the WLAP document and the rule referenced procedures. The permit writer then develops the

TBELs and WQBELs. Fact sheets detail the limited parameters with a pollutant-by-pollutant discussion of the rationale for the limit (or monitoring requirement). Fact sheets contain a description of any changes in limits as permits are renewed including justification for the new limit.

Permit limits for POTWs and industrial facilities are calculated in units consistent with the applicable secondary treatment standards or effluent guidelines. Permit limits are stated in term of mass and concentration for all parameters, except pH and temperature.

Program Strengths

Utilization of the WWPIE has made electronic files easily accessible to EPA and the public. Iowa DNR permit rationales include explanation of permit limit derivation, descriptions of the facility, and concerns unique to the facility. Permit records for POTWs and industrial facilities contain comprehensive documentation of the development of all effluent limitations.

Technology-based effluent limits include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations.

Areas for Improvement

Iowa DNR needs to include WLAs in all electronic permit files.

Action Items

Recommended

• Include WLA in all electronic permit files.

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

Background

Nutrient pollution is an ongoing environmental challenge, however nationally permits often lack 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 wasteload allocations 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. For the purposes of this program area, ammonia is considered as a toxic pollutant, not a nutrient.

Federal regulations at 40 CFR 122.44(d)(vii)(A) require permit limits to be developed for any pollutant with the reasonable potential to cause or contribute to an impairment of water quality standards, whether those standards are narrative or numeric.

To assess how nutrients are addressed in the Iowa DNR NPDES program, EPA Region 7 reviewed thirteen permits as well as the *2017 Revised Iowa Nutrient Reduction Strategy*⁸ and the *2016-2017 Annual Progress Report of the Iowa Nutrient Reduction Strategy*⁹.

Based on the review of the selected permits, Iowa DNR is following provisions of its statewide Nutrient Reduction Strategy (NRS). Nutrients were also addressed in a manner consistent with the NRS in each of the thirteen permits reviewed, as described below.

- Archer Daniels Midland Corn Processing - Major Industrial (IA0003620) – The permittee had been directed through a previous permit to evaluate nutrient reduction. The permittee had optimized operations to address the NRS TN requirement and is in the process of design and installation of a physical/chemical TP reduction process. Performance-based mass limits are established in the permit for TN. Performance-based TP mass limits will be included in the next permit cycle once TP treatment is installed and optimized.
- Cargill – Major Industrial (IA0063762) - The permittee is under a schedule to develop and submit a report for the industrial treatment plant portion, only, that details the technology and costs for achieving biological nutrient reduction and a proposed schedule for initiating the identified technology. Nutrient monitoring is required within the permit.
- Cedar Rapids – Major POTW (IA0042641) - The permittee is under a schedule to develop and submit a report for achieving biological nutrient reduction using treatment optimization. Nutrient monitoring is required within the permit.
- Clinton – Major POTW (IA0035947), Le Mars – Major POTW (IA0036536), Monsanto – Major Industrial (IA0000205), New Hampton – Major POTW (IA0028525), Osceola – Major POTW (IA0041815), Ottumwa – Major POTW (IA0058611), and Roquette – Major Industrial (IA0000256): The permittees are under a schedule to develop and submit a report detailing the technology and costs for achieving biological nutrient reduction, and a proposed schedule for initiating the identified technology. Nutrient monitoring is required within the permits.
- Toledo – Minor POTW (IA0033103) - The permittee is under a schedule to develop and submit a report detailing the technology and costs for achieving biological nutrient

⁸ http://www.nutrientstrategy.iastate.edu/sites/default/files/documents/2017%20INRS%20Complete_Revised%202017_12_11.pdf

⁹ http://www.nutrientstrategy.iastate.edu/sites/default/files/documents/20171211_INRS_2017AnnualReport_PartOne_Final.pdf

reduction, and a proposed schedule for initiating the identified technology. Nutrient monitoring is required within the permit.

- Waterloo – Major POTW (IA0042650) - The permittee is under a schedule to develop and submit a report detailing the technology and costs for achieving biological nutrient reduction, and a proposed schedule for initiating the identified technology. This facility discharges to an impaired stream where a TMDL was written for Nitrate Nitrogen. This permit includes a monthly and daily TN effluent limitations that are required by the TMDL. Additional nutrient monitoring is required in the permit.
- West Liberty – Major POTW (IA0031691) - Iowa DNR evaluated previous influent and effluent data from West Liberty. It was determined the existing treatment plant could be operated in a manner to achieve the performance-based goals of the NRS. Pursuant to the NRS, performance-based permit limits for TN and TP were established in the permit.

Program Strengths

Iowa DNR has acknowledged the need for nutrient reduction in state waters as evidenced by the *Iowa Nutrient Reduction Strategy*. Iowa DNR is pursuing significant nutrients reduction from both nonpoint and point source discharges. The point source portion of the Strategy focuses on performance-based actions eventually leading to technology-based permit limits.

Iowa DNR utilizes enforceable permit schedules to require permittees to evaluate costs for and implementation of nutrient reduction technology in accordance with the NRS.

Iowa DNR utilizes enforceable permit schedules to require installation of technology to achieve NRS nutrient reduction goals.

Areas for Improvement

Iowa DNR has indicated most facilities have already conducted optimization studies. The Department needs to ensure implementation of the studies are completed as soon as practical. In addition, Iowa DNR should investigate any other mechanisms available that might accelerate nutrient reduction—e.g., exploring the possible use of translating narrative criteria and possibly using the antidegradation process to drive nutrient reduction upgrades.

Action Items

Recommended

- Continue to ensure optimization studies are completed as soon as practical.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

The general Pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement Pretreatment standards to control

pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

Background

Indirect discharges of food processors can be a significant contributor to noncompliance at recipient POTWs. Food processing discharges contribute to nutrient pollution (e.g., nitrogen, phosphorus, ammonia) to the nation’s waterways.

The goal of the PQR was 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 NPDES Permit and documented in the associated Fact Sheet or Statement of Basis; as well as by compiling information to develop or improve permit writers’ tools to be used to improve both POTW and industrial user compliance.

The PQR also assessed the status of the Pretreatment program in Iowa DNR as well as specific language in POTW NPDES permits. With respect to NPDES permits, EPA 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 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).

In addition to being authorized to administer the NPDES program, the Iowa DNR has been authorized to implement the Pretreatment program since June 3, 1981. The State further authorizes the Pretreatment program to municipalities. Individual POTW program approvals primarily occurred in the 1983 through 1985 timeframe when 19 cities applied for and were granted implementation authorization. Two additional programs were approved by 1995 bringing the total to 20. Below is a table of statistics characterizing the current status of the Iowa DNR Pretreatment Program.

| Iowa DNR Pretreatment Program at a Glance 2018 | |
|---|------|
| Number of Approved Pretreatment program cities | 20 |
| Number of SIUs in Program cities | 268 |
| Number of non-Categorical SIUs in Program Cities | 160 |
| Percent with unexpired permits, December 31, 2018 | 100% |
| Number of Categorical SIUs in Program Cities | 108 |
| Percent with unexpired permits, December 31, 2018 | 100% |

| | |
|---|----------|
| Number of SIUs in non-approved Cities | 234 |
| Number of CIUs in non-approved Cities | 81 |
| Date State Program updated for Streamlining Regulations | 11/15/06 |

No Program cities issue general permits and only one city has utilized the optional streamlining provision of regulating nonsignificant Categorical industries. The City of Marshalltown has identified one NSCIU.

Since 1995, Iowa DNR has not required a city to develop a Pretreatment program. At this time, no city is currently in the process of developing one. Rather, smaller cities participate in Pretreatment implementation through a mechanism known as a Treatment Agreement. All cities who do not have an approved Pretreatment program and have an industry, or industries, meeting the 40 CFR 403.3(v) definition of significant industrial user must enter into a treatment agreement with the SIU that reflects either the federal Categorical standard or local limit. The Treatment Agreement is a binding agreement between the SIU and the city and the requirement to enforce the treatment agreement is written into the city’s NPDES permit. Tables of the applicable SIU limits and sampling and reporting requirements are contained in the city’s NPDES permit. Sampling results for the SIUs are submitted with the city’s discharge monitoring report (DMR).

Most DMRs are Excel spreadsheets developed by the Iowa DNR for each individual NPDES permittee. The DMR consists of the following:

- Cover page: containing all salient facility identification information and reporting period;
- Influent sampling results: a table listing each day of the month and all parameters required to be sampled in the influent (e.g., BOD, TSS, TKN), reported in both milligrams per liter and pounds per day (calculated based on the reported flow, in mgd);
- Effluent sampling results: for each outfall with limits, a table listing each day of the month for all pollutants for which sampling is required (including flow if measured in the effluent); and
- Operational sampling results: represents daily internal plant sampling and performance information (e.g., aeration basin contents, temperature, etc.).

If the city does not have an approved Pretreatment program, the operational page is followed by pages, one for each industry having a Treatment Agreement, containing a table listing each day of the month and all of the pollutants regulated in the Treatment Agreement. All pages present summary statistics documenting the sum, maximum value, minimum value, average value, and in cases where appropriate, the highest 7-day average. Iowa DNR’s DMR forms are second to none in the Region and contain far more information than what is reported in ICIS. For cities that have an approved Pretreatment program, the DMR does not contain pages for each industry regulated under the approved Program. Rather, the annual reports submitted by the Program cities provides summary information for those industries.

The Iowa DNR implements its authorized Pretreatment program by distributing duties between the Pretreatment Coordinator in the Des Moines Central Office and wastewater inspectors in

the six field offices. In general, the Pretreatment Coordinator is responsible for implementation of NPDES pretreatment permit language, Treatment Agreement review and approval, and fulfilling reporting requirements to EPA Region 7. The Pretreatment Coordinator also receives all program modification requests and local limits analyses. While it is routine for the Pretreatment Coordinator to process these, assistance from Region 7 has been requested for complicated situations. The Pretreatment Coordinator also receives all annual reports submitted by the 20 Pretreatment Program Cities and reviews them for compliance.

The field offices inspect industries outside Pretreatment cities and conduct Pretreatment audits and Pretreatment Compliance Inspections (PCIs). In general, Iowa DNR does not make a distinction between an audit or a PCI. Region 7 assists Iowa DNR by conducting three Pretreatment audits per year.

Iowa DNR employs three mechanisms for identifying SIUs in non-Pretreatment cities. First, the field offices can identify them when in the field, either through discussion with the city during an inspection or direct visual observation of the industrial installation. Second, the permit application submitted by the prospective receiving POTW must include an inventory of Significant Industrial Users in Form 30, Part D. The third mechanism is the NPDES permit, within the section entitled *Major Contributing Industries Limitations, Monitoring, and Reporting Requirements*. This section of the permit requires the POTW to notify the Iowa DNR 180 days prior to the introduction of pollutants from a significant industrial user, which has the same definition as 40 CFR 403.3(v).

The Region selected six municipal permits to review for this round of the PQR. Four of the permits were issued to cities with wastewater contributions from at least one food processor but where the city does not have an approved Pretreatment program. The cities were selected because of the Region's familiarity with the food processor inventory in the state. One city, Denison, was chosen because its POTW treats more food processing wastewater than wastewater generated by the local population. The two cities reviewed having an approved Pretreatment program were chosen because EPA Region 7 had performed the most recent Pretreatment audit and background data was readily available for review.

Materials reviewed for the PQR included permit applications, fact sheets (permit rationale), final permits, Treatment Agreements, DMRs, and inspection reports. In addition, for the two Pretreatment program cities, annual reports and Pretreatment audits were reviewed.

The following is a table of cities chosen for review for this round of the PQR.

| Permittee | Permit No. | Approved Pretreatment Program? | Design Flow Average (MGD) | No. of SIUs ¹ | No. of Food Processors ¹ | Controls on Conventional Pollutants or Nutrients in SUO? |
|--------------|------------|--------------------------------|---------------------------|--------------------------|-------------------------------------|--|
| Denison | IA0023302 | No | 3.67 | 4 | 3 | unknown |
| Osceola | IA0041815 | No | 1.065 | 2 | 1 | unknown |
| New Hampton | IA0028525 | No | 1.32 | 5 | 2 | unknown |
| Hospers | IA0036897 | No | 0.18 | 1 | 1 | unknown |
| Marshalltown | IA0023302 | Yes | 6.4 | 6 | 1 | Surcharge: SS, BOD, TKN |

¹ Based on the information provided in the permit application. All of the industries in non-Pretreatment cities were covered by Treatment Agreement limits contained in the City’s NPDES permit. The two Pretreatment program cities have extra strength surcharges, the rates of which are contained in their SUOs. It is presumed that the non-Program cities also have surcharge programs but their SUOs were not available to confirm. Dubuque’s Code, Title 13, Chapter 2, Article E specifically applies permitting requirements under a FOG Program to “Food Establishments” (including food processors), but pollutant limits are not included in the code. Marshalltown’s code Section 28-50 identifies that “contributors who contribute wastewater, the strength of which is greater than normal domestic sewage” are surcharged for Suspended Solids, Biochemical Oxygen Demand, and Total Kjeldahl Nitrogen.

Iowa has a robust agricultural economy and leads the nation as the number one producer of eggs, corn, and pork. Consequently, it is expected that large food processors associated with these products will be found in both large and small municipalities across the state. Because food processors are expected to generate large amounts of compatible pollutants, discharges to municipal systems for treatment is common; Identification of food processors and their receiving POTWs was straightforward. Food processors located in Pretreatment program cities are permitted as SIUs in the city’s Pretreatment program. Since regulation of the SIU in a Program City occurs at the municipal level, documents addressing specific limits development and permit issuance are not available at the state level. A Pretreatment audit or Pretreatment Compliance Inspection is necessary to evaluate the efficacy of the Program city-issued permit.

Where Iowa DNR is the control authority, records are available to evaluate the food processor’s regulation and performance. Using these state records, the Region identified the following food processors discharging to non-Pretreatment program cities for the PQR:

| Facility Name | Permit Number ¹ | Receiving POTW | Type of Food Processor ² | Classification by POTW | Average Process Wastewater Discharge (gallons per day [gpd]) | Monitored Pollutants |
|-------------------------|----------------------------|----------------|-------------------------------------|------------------------|--|-------------------------------------|
| Premium Iowa Pork, LLC | IA0036897 | Hospers | Hog Processing | SIU | 120,000 | BOD, TSS, Ecoli, flow, TKN, O&G, pH |
| Sparboe Foods | IA002858 | New Hampton | Egg processing | SIU | 215,000 | BOD, TSS, flow, TKN, O&G, pH |
| Bay Valley Foods | IA002858 | New Hampton | Dried food products | SIU | 23,000 | BOD, TSS, flow, TKN, O&G, pH |
| Osceola Foods | IA0041815 | Osceola | Pork processing | SIU | 223,000 | BOD, TSS, flow, TKN, O&G, pH |
| Farmland Foods | IA0023302 | Denison | Hog slaughter | SIU | 1,149,000 | Flow, BOD, TSS, pH |
| Tyson Foods | IA0023302 | Denison | Beef processor | SIU | 200,000 | Flow, BOD, TSS, pH |
| Quality Food Processors | IA0023302 | Denison | Cooked meat products | SIU | 58,000 | Flow, BOD, TSS, pH, TKN, O&G |
| APC Inc | IA0023302 | Denison | Pork plasma, dried blood products | SIU | 72,5000 | Flow, BOD, TSS, pH, TKN |

¹ Based on information included in the industrial user's permit. SIU permit no. same as receiving POTW as their discharge limits are included in the City's permit

² Based on information included in the industrial user's fact sheet.

Permit Contents for non-Pretreatment Program Cities

It is Iowa DNR's policy that all industries meeting the definition of Major Contributing Industry be covered either by a state-approved Treatment Agreement or permitted by one of the 20 POTWs having an approved Pretreatment program. Iowa DNR's definition of Major Contributing Industry is identical to EPA's Significant Industrial User (but without the allowance for nonsignificant Categorical industries). POTW permit requirements differ depending on whether the POTW is a Program city. Permits for non-Program cities have less complicated and fewer requirements than Program cities. All of the non-Program cities reviewed had NPDES permits containing identical requirements regarding their Major Contributing Industries.

There are three primary elements for regulating Major Contributing Industries in non-Program cities:

- The first element contains written notification requirements that must be met depending on one of three conditions:
 - The first condition requires notification 180 days prior to the introduction of pollutants into the POTW from a significant industrial user.
 - The second notification requirement is a 60-day notification for any proposed expansion, production increase, or process modification that may result in the discharge of a new pollutant or an increase in quantity that would exceed limitations contained in an existing Treatment Agreement.
 - The third is a 10-day notification requirement before wastes can be received from any new SIU. The notification must include a new or revised Treatment Agreement in accordance with state requirements – the citation of which is presented.

- The second element states that the Permittee shall require all users to comply with Sections 204(b), 307, and 308 of the CWA. It then lists what each of the section in the CWA addresses:
 - 204(b) requires the SIU pay its proportionate share of the costs of the POTW (presumably, this would require the non-Program city to develop and implement an extra-strength surcharge program);
 - 307 requires the city to require of SIUs that they comply with EPA Pretreatment standards that prevent interference or pass through; and
 - 308 requires the City to allow state and EPA to sample, inspect and copy records at reasonable times.

- The third element requires the City to limit, monitor, and submit to Iowa DNR the sample results for all SIUs who are contained in the permit with limits and monitoring frequencies.

These requirements were last revised June 16, 2009. In general, this language satisfactorily establishes requirements for any non-Pretreatment city to notify the Iowa DNR of new SIUs (SIU as defined by the General Pretreatment Regulations); establish treatment agreements with those SIUs, the limits of which are approved by Iowa DNR; and enforce those limits through monitoring and reporting.

The third element also refers to the tables of limits and sampling frequencies, developed in the Treatment Agreement process and written into the city's permit. For food processors, the pollutants regulated are those for which the city is also regulated, and for which the municipal plant is designed to treat: BOD, TSS, and TKN, at a minimum. The Treatment Agreement limits that are established in the City's NPDES permit are based on plant design capacity—essentially, the limits are considered local limits as per 40 CFR 403.5(c). To ensure they are calculated correctly, Iowa DNR requires all Treatment Agreements between a POTW and an industrial user receive approval from Iowa DNR. Once approved, the numeric limits in the Treatment Agreement are incorporated into the city's NPDES permit with sampling frequencies also established by Iowa DNR.

Where the Iowa DNR determines that a city should develop a Pretreatment program, the permit's Standard Conditions contain a clause for *Permit Modification, Suspension, or Revocation* which allows that the permit may be "modified..." for those reasons specified in state code 567-64.3(11) IAC. A review of 567-64.3(11) IAC revealed that it allows for modification for any cause listed in 40 CFR 122.62. 40 CFR 122.62(9) provides that a permit can be modified to require the development of a Pretreatment program.

Sufficient sampling frequency is necessary to enable reliable compliance determination and ensure limits are effective. The General Pretreatment Regulations require a minimum of one sample every six months, but this is insufficient for reliable compliance determination with permit limits. The Iowa DNR recognizes this and has established a greater frequency designed to provide a clearer picture. The following table presents both the receiving POTW's influent and effluent monitoring requirements as well as the contributing SIU's sampling requirements. Iowa DNR requires both cities and industries to sample at a rate greater than typically observed.

| City | City Flow, mgd | Influent Sampling Frequency BOD, TSS ¹ | Effluent Sampling Frequency BOD, TSS ¹ | SIU | SIU Flow, mgd | Effluent Sampling Frequency BOD, TSS ¹ |
|-------------|----------------|---|---|-------------------------|---------------|---|
| Hospers | 0.241 | 2, 1 per week | 2, 1 per week | Premium Iowa Pork | 0.120 | 2, 1 per week |
| Osceola | 1.16 | 2 per week | 2 per week | Osceola Foods | 0.223 | 2, 1 per week |
| New Hampton | 1.32 | 4 per week | 4 per week | Sparboe Foods | 0.215 | 2, 1 per week |
| New Hampton | 1.32 | 4 per week | 4 per week | Bay Valley Foods | 0.023 | 2, 1 per week |
| Denison | 2.26 | 2 per week | 3, 5 per week | Farmland Foods | 1.149 | 4 per week |
| Denison | 2.26 | 2 per week | 3, 5 per week | Tyson Foods | 0.20 | 2 per week |
| Denison | 2.26 | 2 per week | 3, 5 per week | Quality Food Processing | 0.058 | 2, 1 per week |
| Denison | 2.26 | 2 per week | 3, 5 per week | APC Inc. | 0.073 | 2 per week |

¹frequency for BOD and TSS, respectively. If only one number, value applies to both BOD and TSS

Permit Requirements for Pretreatment Program Cities

Pretreatment program cities are also required to implement the Pretreatment program through requirements found in the NPDES permit in a section entitled either *Significant Industrial User Limitations, Monitoring and Reporting Requirements* (Marshalltown permit) or *Major Contributing Industries Limitations, Monitoring and Reporting Requirements* (Dubuque permit).

The Marshalltown permit contains five requirements while the Dubuque permit contains six. It appears that the Marshalltown Pretreatment requirements are updated from suggestions discussed in the previous PQR. Given that the Dubuque permit is expired, the following discussion and analysis will only discuss the Marshalltown permit.

The first element of the Marshalltown permit is the second element of the permit requirements for the non-Pretreatment cities, which is that all industrial users must comply with Sections 204(b), 307, and 308 of the CWA. Each section is defined as for non-Program cities.

The second element requires the POTW permit holder to “continue to implement the Pretreatment program approved” and “any amendments thereto.”

The third element requires the POTW to submit by March 1 of each year an annual report describing the program activities for the preceding calendar year. No specific information is itemized that will be required in the report. Nor does it state the report format shall be that supplied to them by Iowa DNR (which is the state’s practice). This has not caused any problems for implementation as all Program cities use the Iowa DNR report form. The Region reviewed the report form and found it adequately addresses the report elements required by the General Pretreatment Regulations. The PQR revealed one minor deficiency; however, this will be corrected when moving to electronic reporting for the annual report for calendar year 2020.

Element four contains the requirement for the POTW to evaluate the adequacy of its local limits and lists four items it must specifically address. The first item requires the city to identify each pollutant that can cause interference/pass through, an NPDES permit violation, worker health and safety issues, or degrade sludge quality. In practice, this is interpreted to mean the 15 minimum pollutants identified in EPA’s current (2004) guidance manual, which includes 10 metals plus BOD₅, TSS, and Ammonia.

The second required item of element four is to identify the Maximum Allowable Headworks Loading (MAHL) for each of the city’s wastewater treatment plants (if there is more than one).

Item three of element four requires the development of Maximum Allowable Industrial Loadings (MAILs) after taking into account uncontrollable sources.

Finally, item four of element four requires the analysis to be completed and a report submitted within one year of the permit’s issuance. The report should contain an explanation on how the analysis was conducted and a presentation of all calculations made addressing the previous three enumerated requirements. The city must also submit a description of how MAIL’s will be allocated to SIUs.

The permit language for reevaluating local limits is well written and comprehensive. At the time of permit issuance, a specific date is inserted into the requirement, so it is clear when the evaluation is due. This is easier to track by both Iowa DNR and the permittee.

Element five of the Pretreatment implementation requirements states that the city shall evaluate its approved Pretreatment program for compliance with 40 CFR Part 403 and the Iowa Administrative Code 567-Chapter 62. The permittee must submit the analysis to Iowa DNR within one year of permit issuance. Where deficiencies are found, the permittee must also submit a proposal for modifications to correct the deficiencies.

Permit Applications and Fact Sheets

Iowa DNR’s permit application contains industrial user information in Form 30 Part D. The form asks whether the applicant has a Pretreatment program, and if so, the date of program approval. The applicant, regardless of having an approved Program, must provide the number of SIUs and CIUs discharging to it. The form then requires specific information for every SIU,

including identification of whether the facility has caused treatment plant problems at the receiving POTW, but states that if the applicant has an approved Pretreatment program, the information is not required (because the information is contained in the Pretreatment Program annual report).

Additional information required by Part D addresses receipt of RCRA/CERCLA hazardous waste and wastewater. The objective is to determine if any RCRA hazardous wastes were received by truck, rail, or dedicated pipe, which would classify the facility as a treatment, storage, and disposal (TSD) facility as defined under RCRA. The application form requests information on CERCLA discharges including volumes, sources, discharge type, constituents, and treatment methods prior to discharge.

Permit rationales (fact sheets) use information contained in the permit application to document the basis for the permit. The Marshalltown permit rationale indicates the Pretreatment program approval date, but does not list dates for any program modifications. The Marshalltown permit rationale lacks discussion on the industrial contributors regulated by the city's Pretreatment program; however, the permit rationales for non-Program cities contain detailed discussion of the limits that will be applied through the Treatment Agreement to the SIUs discharging to the city.

Program Strengths

Iowa DNR has adequately identified the universe of food processing industries and regulates the industries through the Treatment Agreement process.

DMRs submitted by non-Pretreatment program cities contain all of the sampling data required by the NPDES permit. This provides more detailed information than the DMR system, as the DMR only requires the monthly average and highest daily maximum (or highest 7-day average, if applicable). The DMRs also report all samples collected at any industry covered by a Treatment Agreement.

Sampling frequencies for both industries and the receiving POTWs are appropriate to reliably determine compliance with permit limits. Permits establish sampling frequencies that are sufficient to evaluate whether the city or industry is able to maintain consistent compliance.

The city's NPDES permit contains process sampling requirements that illustrate the internal workings of the plant. For activated sludge plants, for instance, the measurements of the mixed liquor suspended solids (MLSS) will identify any dumps or slugs by the industry and the stress placed on the plant operations potentially affecting the plant's ability to maintain compliance.

Areas for Improvement

Non-Categorical Significant Industrial Users are not tracked as closely as Categorical SIUs in cities which do not have Pretreatment programs. The e-Reporting rule, however, will require these facilities become part of the national database (ICIS/NPDES). The e-Reporting rule requires tracking of Non-Categorical Significant Industrial Users beginning in December 2020.

The PQR revealed that dates of the most recent Pretreatment Program audits or Pretreatment Compliance Inspection are not routinely entered in ICIS when state inspections occur. The PQR team did not determine how many audits/PCIs were conducted and which ones were not reported in ICIS. The Iowa DNR has been experiencing issues with the flow of data from the Field Office Compliance Database (FOCD) to ICIS, and these issues have resulted in missing audit/PCI dates in ICIS. The Iowa DNR is currently working on a fix for these data flow issues.

Action Items

Recommended

- Start tracking Non-Categorical Significant Industrial Users in ICIS/NPDES
- Track inspection dates and audit dated in ICIS

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

Background

As part of this PQR, EPA reviewed two of the state's small MS4 permits 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)).

The NPDES program requires regulation of stormwater discharges from certain municipal separate storm sewer systems (MS4s). Large and Medium MS4s are subject to Phase I regulations which entail a different set of federal regulations than those which govern the Phase II small MS4s. Iowa DNR has two Phase I MS4s, Des Moines and Cedar Rapids, both of which have current permits. The rest of regulated MS4s consist of 45 small MS4s. Since the beginning of Phase II implementation, Iowa DNR has chosen to write individual permits for small MS4s rather than cover them under a general permit. The individual permits contain specific requirements for the six minimum measures required by 40 CFR 122.34. As with the other stormwater permits, the permits are written by the central office, but all follow-up work is done by the field offices, including receipt and review of annual reports and ordinances developed to meet permit conditions. If annual reports are not submitted, the field offices are responsible for notifying the MS4.

The Phase II stormwater regulations were recently modified in response to a court remand in *Environmental Defense Center, et al. v. EPA*, 344 F.3d 832 (9th Cir. 2003). The modifications,

known collectively as the “MS4 Remand Rule¹⁰” (Federal Register, December 9, 2016, Vol. 81, No. 237, Page 89320) include some new requirements for small MS4 permits. The key MS4 Remand Rule provisions that apply directly to the individual small MS4 permits issued by Iowa DNR are the following: (1) each permit must include “terms and conditions 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” (referred to as the “MS4 permit standard”); and (2) that the terms and conditions of the permits which satisfy the federal requirements must be expressed in “clear, specific, and measurable terms.”

The Council Bluffs MS4 permit and the Sioux City MS4 permit were reviewed as part of this program review. The permits include requirements for all of the requirements of 40 CFR 122.34, a number of which are expressed in clear, specific, and measurable ways. The permit rationales list receiving waterbodies, and note impairments, as well as the way in which the permit provisions address the impairments.

Program Strengths

Iowa DNR MS4 permits address a number of the requirements of 40 CFR 122.34 in clear, specific, and measurable ways consistent with the Phase II regulations as modified by the MS4 Remand Rule.

Clear, specific, and measurable requirements were notable in the following areas:

- Specifying the need for a stormwater hotline and a stormwater webpage (Sioux City)
- Requiring establishment of a Stormwater Advisory Committee (Sioux City, Council Bluffs)
- Requiring all storm drains to be stenciled (Sioux City)
- Illicit Discharge Detection and Elimination (IDDE) – deadline for eliminating illicit discharges (Sioux City, Council Bluffs)
- Construction - Required compliance with the state’s Construction General Permit (CGP); required quarterly inspections (Sioux City, Council Bluffs)
- Pollution prevention – required annual inspections of above-ground components of the MS4; inventory of municipal entities applying pesticides and fertilizer (Sioux City)

Although the MS4 permits contain some features found in EPA’s MS4 permit compendium, Iowa DNR may want to consider using more examples found in the compendium of other clear, specific and measurable terms during future development of permit conditions. These documents are posted on EPA’s website at <https://www.epa.gov/npdes/municipal-sources-resources>.

Areas for Improvement

While the permit rationale notes that some of the BMPs should reduce pollutants which are causing impairments, the permit could require the permittee to focus more on pollutants of

¹⁰ Remand Rule <https://www.govinfo.gov/content/pkg/FR-2016-12-09/pdf/2016-28426.pdf>

concern. For example, where a permit requires that public education materials be tailored as needed, it could also require that the permittee consider the types of public information that can specifically address pollutants of concern contributing to stream impairments. Iowa DNR should continue to require permittees to implement BMPs targeted towards reducing pollutants of concern which have caused stream impairments.

Action Items

Recommended

- Future permits should continue to require permittees to implement BMPs targeted towards reducing pollutants of concern contributing to or causing stream impairments.

V. REGIONAL TOPIC AREA FINDINGS

A. Thermal Dischargers and Cooling Water Intake Structures (CWA sections 316(a) and 316(b))

Background

Section 316(a) of the Clean Water Act authorizes thermal discharge variances from point sources. Section 316(b) requires facilities that employ cooling water intake structures to minimize adverse environmental impacts associated with the withdrawal of cooling water. Adverse environmental impacts occur when facilities impinge aquatic organisms on their cooling water intake screens, entrain them within their cooling systems, or otherwise negatively affect habitats that support aquatic species.

Many facilities are updating 316(a) Variances. Power plants discharge lost heat and can have a reasonable potential to exceed state water quality standards. Section 316(a) of the Clean Water Act allows higher discharges of heat if biological studies warrant the variance. Several facilities in Iowa are conducting fisheries studies as part of this next permit cycle.

The 316(b) rules include new requirements for permittees and permitting authorities. Larger facilities have completed monitoring for entrainment (small organisms that are pulled in with cooling water) and will be preparing applications that are a combination of biological, engineering, and economic studies.

The Coal Combustion Residue (CCR) rules required facilities to make changes to discharges and piping related to coal ash impoundments. While the revised Steam Electric Effluent Guidelines are expected in Fall 2020.

Due to regulatory changes, such as those mentioned above, the primary goal of the review was to address the future needs of Iowa DNR's ability to process power plant permits. This review method involved discussions with Iowa DNR staff that work on 316 (a) and (b) issues,

specifically, temperature thermal variances and implementation requirements of water intake structures in permits for large steam electric power plants.

Iowa DNR has four industrial permit writers, two of them work on power plant permits in addition to other duties. Iowa DNR estimates that power plant permits are getting a major overhaul on a six-month to two-year cycle. Iowa DNR indicated that power plants permitting, will be a large workload in the near future.

Program Strengths

Iowa DNR has dedicated staff to process power plant permits.

Areas for Improvement

Power plant permits are dominating the time of industrial permit writers at the expense of other permits.

Action Items

The PQR team did not identify any action items in this section.

B. Stormwater

Background

The Clean Water Act requires regulation of certain stormwater discharges. The implementing NPDES regulations require permitting of stormwater discharges from construction sites over one acre, as well as certain industrial activities and municipal separate storm sewer systems (MS4s). Any state which is authorized to implement the NPDES program also has responsibility for implementing the stormwater regulatory program. Iowa DNR implements all aspects of the federally mandated stormwater program.

Staff in the DNR central office write all stormwater permits and authorizations to discharge under the general permits. After authorization, inspections and other enforcement activities are administered by the six Iowa DNR field offices. The central office maintains a website to assist with the permitting needs of the regulated community, including instructions and forms for obtaining coverage under the general permits.

Most stormwater discharges (with a few exceptions) in Iowa are permitted through general permits; however, MS4s in Iowa are permitted individually. EPA completed checklists for general permits and individual permits reviewed during the PQR .

Industrial Stormwater

Iowa DNR administers two general stormwater permits for those industrial facilities which are required to obtain authorization to discharge stormwater. General Permit No. 3, which is effective from March 1, 2018 through February 28, 2023, covers stormwater discharge from asphalt plants, concrete batch plants, rock crushing plants and construction sand and gravel facilities. At the time of the review, there are 564 facilities covered by General Permit No. 3.

General Permit No. 1, which is also effective from March 1, 2018 through February 28, 2023, covers all other non-construction industrial stormwater discharges that are not covered by General Permit No. 3. There are currently about 1,470 facilities covered by General Permit No. 1. There are currently six industrial facilities which are covered by individual stormwater-only permits.

One of the main requirements of an industrial stormwater permit is the requirement to develop and implement a facility-specific Stormwater Pollution Prevention Plan (SWPPP). Both general permits and the individual permit reviewed require the development of a SWPPP. The permit does not require that the SWPPP be submitted to Iowa DNR but does require that the facility make the SWPPP available if requested by Iowa DNR.

In addition to the general industrial stormwater permits, the PQR team reviewed an individual permit for Roquette America Inc. This operation is a large wet corn milling facility situated on the west bank of the Mississippi River. The facility has been the subject of enforcement actions and is making improvements to its stormwater management. The permit for the facility is extensive and authorizes outfalls with process waste water, and stormwater, and mixtures of process and stormwater. The permit establishes numeric effluent limits for certain outfalls, including those to which effluent guidelines apply. In addition to effluent limits, the facility is required to implement a SWPPP. The stormwater portions of the permit adequately address the federal permitting requirements.

Construction Stormwater

General Permit No. 2 is Iowa DNR's permit for construction sites which disturb more than one acre. The permit is effective from March 1, 2018 through February 28, 2023, and at the time of the review, covers 4,372 sites. Applications for coverage under the general construction stormwater permit are submitted to the central office where basic information is logged into a state database. The central office then processes the application and issues coverage under the general permit. Any inspections that might occur are initiated out of the field offices. The general permit does not require the permittee to submit the Stormwater Pollution Prevention Plan (SWPPP) unless the Iowa DNR requests it. If a notice of termination is not submitted for the project in a timely manner, then the central office sends out a letter of warning to either renew the permit or submit a notice of termination.

In addition to General Permit No. 2, the PQR involved review of an individual construction stormwater permit for Whitecap Addition residential development. Iowa DNR regulations require that discharges to "Outstanding Iowa Waters" (in this case West Okoboji Lake) be permitted by individual permits.

The NPDES effluent guidelines which govern construction sites are found at 40 CFR 450.21, and both permits address all requirements. The permits also include provisions implementing Iowa DNR's topsoil preservation requirements.

Program Strengths

Iowa DNR is implementing all aspects of the federally mandated stormwater program for both industrial and construction stormwater dischargers. Iowa DNR either uses site-specific or general permits to implement the stormwater program.

Areas for Improvement

Industrial Stormwater

By the time the Iowa DNR general permit is renewed in 2023, EPA should have issued a revised Multi Sector General Permit (MSGP). That MSGP will contain the latest improvements suggested by a review of the MSGP by the National Academy of Science. EPA would highly recommend that Iowa DNR review the reissuance of EPA's MSGP for any improved permit requirements that should be incorporated into Iowa DNR's industrial stormwater permits.

While the Iowa DNR general permits require certain industries to conduct discharge monitoring on an annual basis, it does not provide the permittee any direction or guidance on how to use the information obtained by the monitoring. EPA's MSGP contains benchmark levels that monitoring results can be compared against as a guide to whether the actions implemented under a SWPPP are sufficiently effective. Iowa DNR should consider adding benchmarks to its reissued industrial stormwater permits. Likewise, a comparison of monitoring results against Iowa water quality standards to determine the efficacy of the SWPPP requirements would support protection of water quality standards.

Iowa DNR should consider requiring that the permittee maintain records of the training required by the permit.

Construction Stormwater

EPA has made some minor changes to regulatory requirements which highlight the fact that the requirements are intended to focus on water quality. Iowa DNR should consider adopting the modified language in the next permit.

The state has produced an "Iowa Construction Site Erosion Control Manual," available on its website, which can be used when developing a SWPPP; however, the permit does not reference the manual in any way. Iowa DNR should consider referencing the manual in the next permit, as it is a useful resource for SWPPP developers.

Action Items

Recommended

- Industrial Stormwater
 - Review the 2020 reissuance of EPA's MSGP for any improved permit requirements that should be incorporated into Iowa DNR's industrial stormwater permits.
 - Consider adding benchmarks to its reissued industrial stormwater permits.
 - Consider requiring that the permittee maintain records of the training required by the permit.
- Construction Stormwater
 - EPA has made some minor changes to regulatory requirements which highlight the fact that the requirements are intended to focus on water quality. Consider adopting the modified language in the next permit.
 - Consider referencing the Iowa Construction Site Erosion Control Manual in the next permit, as it is a useful resource for SWPPP developers.

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

This section provides a summary of the main unresolved findings from the previous PQR, dated March 24, 2014, and provides a review of the status of the State’s efforts in addressing the action items. As discussed previously, 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. In addition, previous PQR reports identified 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.

Table 1. Essential Action Items Identified During Last PQR 2014

| Program Area | Action Item Title | Status Update |
|---|---|---|
| <i>Water Quality-Based Effluent Limitations</i> | As required by 40 CFR 122.45(d) Iowa DNR must include short-term limits for <i>E. coli</i> in all continuously discharging publicly owned treatment works permits that have <i>E. coli</i> limits | (In progress) Historical Status: Iowa DNR did not include short-term limits for <i>E. coli</i> in all continuously discharging publicly owned treatment works permits that have <i>E. coli</i> limits, as required by 40 CFR 122.45(d); Current Status: Stalled due to the Wasteload Allocation Procedure that was submitting in August 2017. EPA and Iowa DNR are in ongoing negotiations on this issue, Next Steps: continue negotiations to determine a path forward. |
| | Iowa DNR must establish limits based EPA approved uses for receiving waterbodies, not on disapproved uses | (In progress) Historical Status Updates: Iowa DNR did not include WQBELs based on EPA established uses for receiving waterbodies. Current Status: Iowa DNR has submitted the 4 th UAA for EPA approval. Next Steps: Iowa DNR is in negotiations with EPA R7 in efforts to work on this issue. |
| <i>Monitoring and Reporting</i> | Iowa DNR must include chronic non-lethal WET limitations in NPDES permits. | (In progress) Historical Status Updates: Iowa DNR does not include chronic non-lethal WET limitations in permits. Current Status: This is stalled. Next Steps: Continue conversations with Iowa DNR on this issue. |

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the unresolved recommendations from the previous PQR, dated March 24, 2014, and notes any State efforts to act on those recommendations. As discussed previously, 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.

Table 2. Recommended Action Items Identified During 2014 PQR

| Program Area | Action Item Title | Status |
|--------------|--|------------------|
| Pretreatment | <p>Recommended Action Item: Iowa DNR should consider adding a sentence or clause to the permit Pretreatment implementation language that also cites implementation of the General Pretreatment Regulations at 40 CFR Part 403. This would ensure that a permit that refers to a wrong approval date would still have Pretreatment implementation requirements.</p> <p><i>State Response: This change has not been implemented. However, all permits have been updated to include correct implementation dates.</i></p> | (Not pursuing) |
| Stormwater | <p>Recommended Action Item: 2 - During the process of reissuing the next iteration of GP #1, Iowa DNR should add more specificity and clarity to the language for notifications, frequencies, and deadlines, in order to make those provisions more enforceable by regulatory bodies.</p> <p><i>State Response: This change has not been implemented.</i></p> | (Not pursuing) |

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 Iowa DNR 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.

Table 3. Essential Action Items from FY 2018-2022 PQR Cycle

| Topic | Action(s) |
|--|---|
| WQBELs Development | <ul style="list-style-type: none"> • As required by 40 CFR 122.45(d) Iowa DNR needs to start including short-term limits for <i>E. coli</i> in all continuously discharging POTW permits that have <i>E. coli</i> limits. • Iowa DNR must continue to establish limits based on EPA approved uses for receiving waterbodies, not on disapproved uses. |
| Establishing Monitoring and Reporting Requirements | <ul style="list-style-type: none"> • Long-standing unmet action item. Iowa DNR needs to include chronic nonlethal WET protection in its permits per 40 CFR 122.44. |
| Standard and Special Conditions | <ul style="list-style-type: none"> • Include e-Reporting as required by 40 CFR 127.16 in the standard conditions section for all permits. |

Table 4. Recommended Action Items from FY 2018-2022 PQR Cycle

| Topic | Action(s) |
|---|---|
| Reasonable Potential | <ul style="list-style-type: none"> • Include consistent supporting documentation in the WWPIE. |
| WQBELs Development | <ul style="list-style-type: none"> • Adopt the 2012 Recreational Criteria, 2013 Ammonia Criteria, 2015 Human Health criteria, 2016 Selenium Criteria and 2016 Cadmium Criteria during the next triennial review or provide an explanation per 40 CFR 131.20(a) if the State does not adopt the new or revised criteria for which EPA has published new or updated criteria per the CWA 304(a). • Address the Narrative Translator Procedure during the next triennial review. |
| Final Effluent Limitations | <ul style="list-style-type: none"> • Continue to finalize the Antidegradation Implementation Procedures |
| Administrative Process | <ul style="list-style-type: none"> • Iowa DNR should include all the supporting permitting documentation in the WWPIE system such as the application, WLA and documentation why draft permits are different from final permits for all permits. |
| Administrative Record and Fact Sheet | <ul style="list-style-type: none"> • Include WLA in all electronic permit files. |
| Nutrients | <ul style="list-style-type: none"> • Continue to ensure optimization studies are completed as soon as practical. |
| Pretreatment: Food Processing Sector | <ul style="list-style-type: none"> • Start tracking Non-Categorical Significant Industrial Users in ICIS/NPDES • Track inspection dates and audit dated in ICIS |
| Municipal Separate Storm Sewer Systems (MS4s) | <ul style="list-style-type: none"> • Future permits should continue to require permittees to implement BMPs targeted towards reducing pollutants of concern which have caused impairments. |
| Stormwater Regional Topic Area 2 | <ul style="list-style-type: none"> • Industrial Stormwater <ul style="list-style-type: none"> • Review the 2020 reissuance of EPA’s MSGP for any improved permit requirements that should be incorporated into Iowa DNR’s industrial stormwater permits. • Consider adding benchmarks to its reissued industrial stormwater permits. • Consider requiring that the permittee keep records of the training required by the permit. • Construction Stormwater |

NPDES Program and Permit Quality Review

- | | |
|--|--|
| | <ul style="list-style-type: none">• EPA has made some minor changes to regulatory requirements which highlight the fact that the requirements are intended to focus on water quality. Consider adopting the modified language in the next permit• Consider referencing the Iowa Construction Site Erosion Control Manual in the next permit, as it is a good resource for SWPPP developers. |
|--|--|