

**Final**

**Region 5 NPDES Program and Permit Quality  
Review**

**Illinois**

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## Executive Summary

### ***Purpose and Approach***

This report presents results of a Permit Quality Review (PQR) of the Illinois Environmental Protection Agency (IEPA) National Pollutant Discharge Elimination System (NPDES) program located in Region 5. The PQR was conducted in 2018 by the U.S. Environmental Protection Agency (EPA) under the authority of the Clean Water Act (CWA) to provide oversight of the state NPDES program. Helping states ensure that their NPDES permits are consistent with Federal requirements is a fundamental priority for EPA.

The PQR examined IEPA's NPDES administrative record for selected permits, gathered information from the State about their NPDES program structure and organization, and visited the IEPA main office where the EPA review team collected additional information and shared preliminary PQR findings with the state. The PQR followed the EPA's national PQR standard operating procedure (SOP), examining permit and program "core" elements, and permit requirements associated with national topic areas for the current PQR cycle. Core elements include permit administration, effluent limits, monitoring requirements, standard conditions, and special conditions. Topic areas for the fiscal year (FY) 2018 – 2022 PQR cycle 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.

IEPA administered 1,148 individual effective permits with a total of 1,476 individual permits. IEPA also administered 12 general NPDES permits between October 1, 2015 and January 1, 2018. From this universe, the PQR selected permits that had not already undergone EPA real-time review. The selection methodology met the minimum number of permit types and facility sizes called for by the SOP. In all, 13 permits were reviewed: 8 municipal permits, 4 non-municipal individual permits, and the small Municipal Separate Sanitary Sewer System (MS4) general permit (GP).

### ***Major Findings***

The Permit Section of the IEPA Bureau of Water, Division of Water attains minimum expectations to uphold the mission of the Clean Water Act (CWA) through its NPDES program despite pressures due to ongoing agency-wide staffing reductions and budget constraints. IEPA takes initiative to assist NPDES permit renewal applicants through an automated process that sends application reminders to permittees well in advance of the 180-day permit application deadline. This advanced notification not only helps permittees submit timely applications but also supports IEPA efforts to reduce permit backlog.

The Permit Section utilizes technical resources of the Water Quality Standards (WQS) Section and Field Offices to provide specialized technical input for NPDES permit development. Within the Permit Section, staff maintain and build permitting expertise through EPA online NPDES resources, and through mentoring where experienced permit writers are paired with less experienced staff. Moreover, since 2014, IEPA has encouraged an NPDES permitting approach that requires

municipalities to identify and implement measures to reduce nutrient loads and builds on adaptive and innovative approaches to control nutrients in the watershed.

The PQR disclosed no instances where permit conditions failed to conform with federal regulations. However, supporting documentation (e.g., applications, public notice documents and fact sheets) was not always complete to the degree expected by EPA. Reviewers found that some applications did not include all applicable elements described by 40 CFR Part 122.21. In addition, some public notices lacked information about the receiving water and sludge disposal practices as required by 40 CFR Part 124.1. Fact sheets were unduly brief when identifying the regulatory basis of effluent limitations required by 40 CFR Part 124.8.

### ***Action Items***

The PQR identifies 6 essential and 40 recommended action items. Many of the action items were shared with IEPA managers as preliminary findings during the PQR site visit in June 2018.

Essential action items must be addressed by IEPA to meet NPDES regulations and will be subject to agreed-upon milestones and due dates for completion. Essential action items from this PQR concern administrative procedures, nutrient pollution, and storm water controls. For instance, fact sheets must contain all elements required by 40 CFR Part 124.56, and permits must incorporate phosphorus conditions based on watershed agreements. Additionally, upon renewal in 2021, the MS4 General Permit must be updated to comply with the newly issued MS4 Remand Rule.

IEPA is expected to consider recommended action items to more fully implement EPA guidance/policy or otherwise improve program effectiveness. Recommended action items from this PQR include maintaining more detailed permit documentation, developing new written procedures in areas such as reasonable potential analysis and monitoring frequency, and upgrading the electronic administrative record.

EPA is available to assist IEPA in addressing all action items and will annually track IEPA's progress with essential action items. The status of all action items will be reported during the next IEPA PQR cycle.

IEPA reviewed and commented on the draft PQR report and a conference call was conducted to discuss recommendations and multiple technical/numeric changes were made to the final report after the discussion.

## I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Permit Quality Reviews (PQRs) include 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, the U.S. Environmental Protection Agency (EPA) promotes national consistency, identifies successes in implementation of the NPDES program, and uncovers opportunities for improvement in the development of NPDES permits. PQRs use standardized checklists to examine the administrative record of recently issued NPDES permits. They include a questionnaire to gather information from the state about their NPDES program, structure, and operations. They also involve a site visit at the state office where additional information is gathered and preliminary PQR findings are discussed.

This PQR report identifies action items from a PQR of the IEPA NPDES permits program in 2018. The action items are identified within sections III and IV of this report and are divided into two categories -- essential and recommended action items -- to signify their importance and priority.

- **Essential Action Items** - Address nonconformance with the federal regulation(s) cited with the essential action item. The permitting authority must address essential action items.
- **Recommended Action Items** - Increase the effectiveness of the state's NPDES permit program by more fully implementing EPA guidance/policy or otherwise improving program effectiveness. The permitting authority is expected to consider recommended action items for follow-up.

EPA intends to work closely with IEPA to ensure progress is made in addressing essential action items. Essential action items are expected to be among the list of "follow up actions" currently established as an indicator performance measure and tracked under the EPA's Strategic Plan Water Quality Goals. The status of all action items will be reported during the next IEPA PQR cycle.

### A. PQR Staffing and Timeline

EPA conducted the desktop portion of the review in early fiscal year (FY) 2018 utilizing standard checklists to evaluate state files for core components and national topic areas. Files reviewed included the permit application, permit, fact sheet, correspondence, reports, and other documents from IEPA electronic files.

In all, 15 EPA Region 5 staff participated in the PQR, including staff from the NPDES Programs Branch, Water Quality Branch, Watersheds and Wetlands Branch, and Office of Regional Counsel. In addition, the PQR relied on the support and assistance of IEPA staff who completed an advanced questionnaire, transmitted requested files, reserved a workspace for the on-site review team, and were available for discussion during the on-site event. The PQR on-site review

team consisted of 4 EPA Region 5 technical and managerial staff, 1 EPA Headquarters staff, and 1 EPA Headquarters contractor. The on-site event took place at the IEPA Springfield office from June 20 to 22, 2018. Following the visit, the EPA Headquarters contractor developed a first draft of the *Region 5 NPDES Permit Quality Review Illinois* report and worked with EPA to complete the final version.

## B. Core and Topic Area Review

Reviewers examined selected permits and supporting documentation, assessed these materials using standard PQR tools, and conferred with permit writers about the permit development process. Two types of reviews were completed. Core reviews evaluate similar issues or types of permits in all states to focus permit quality on the *Central Tenets of the NPDES Permitting Program*.<sup>1</sup> National topic area reviews evaluate requirements applicable to specific themes determined to be important on a national scale. The three National topics areas for FY 2018 to 2022 PQR cycle 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.

## C. Permit Selection

To capture current permitting practices, the PQR reviewed 13 permits issued within 3 years prior to the state visit. As shown in Table 1, of the permits selected, 8 are individual municipal (POTW) permits, 4 are individual non-municipal (non-POTW) permits, and one is the Municipal Separate Sanitary Sewer (MS4) general permit (GP). Of the 12 individual permits, all were reviewed for core permitting areas and 9 were reviewed for one or more national topic areas.

The permit selection process began by assigning a random and unique 8-digit number to each of the permits, with the larger the number the greater the selection preference. Any permit already reviewed by the EPA’s real-time review was excluded. A screening by size category, discharge type, and national topic area followed to allow the selection to meet the National targets of at least 8 permits for the topic areas and representation of major and minor permits. In addition, the selection considered the location of permittees across the state to ensure that they are not all clustered in one location or watershed. The locations are shown in Figure 1.

Table 1. Permits Selected for the PQR

| Reference # | Discharge Type |          | National Topic Area |              |          | Size Category |       |
|-------------|----------------|----------|---------------------|--------------|----------|---------------|-------|
|             | POTW           | Non-POTW | Small MS4           | Pretreatment | Nutrient | Minor         | Major |
| 1           |                | X        |                     |              |          | X             |       |

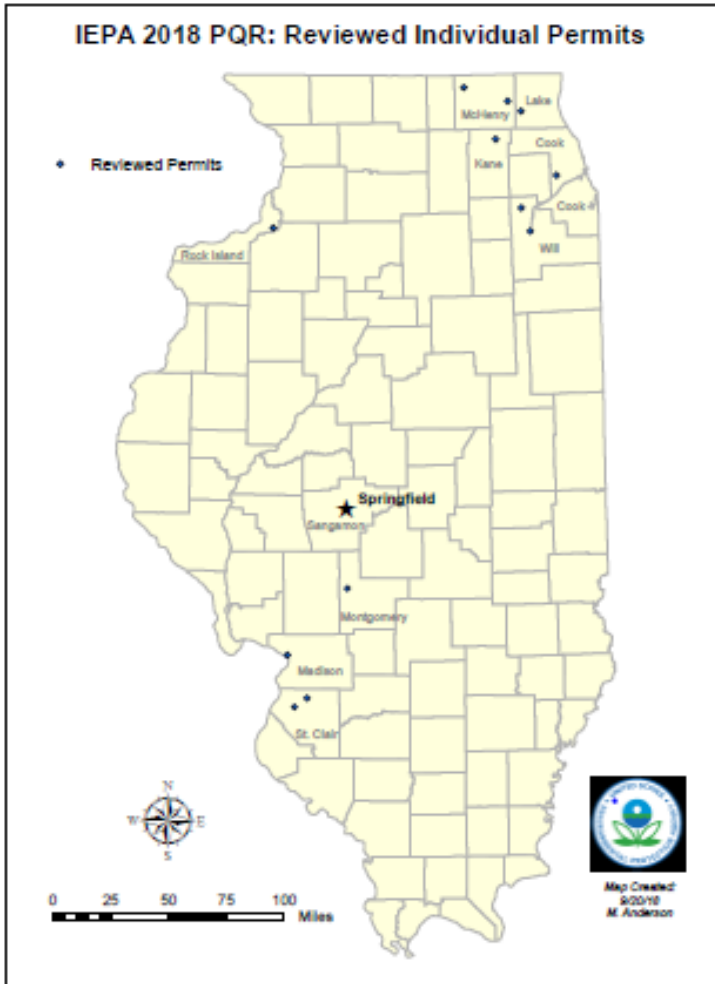
<sup>1</sup> <https://www.epa.gov/npdes/central-tenets-npdes-permitting-program>

NPDES Program and Permit Quality Review

|          |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|
| 2        |   | X |   |   |   | X |   |
| 3        | X |   |   | X |   |   | X |
| 4        | X |   |   | X | X |   | X |
| 5        | X |   |   |   |   |   | X |
| 6        | X |   |   |   |   |   | X |
| 7        | X |   |   |   |   |   | X |
| 8        | X |   |   |   | X |   | X |
| 9        |   | X |   |   | X |   |   |
| 10       |   | X |   |   | X |   | X |
| 11       | X |   |   | X | X |   | X |
| 12       | X |   |   | X | X |   | X |
| 13       |   |   | X |   |   |   |   |
| Total 13 | 8 | 4 | 1 | 4 | 6 | 2 | 9 |



Figure 1. Reviewed Individual Permit Discharge Locations and County Name



## II. STATE PROGRAM BACKGROUND

### A. Program Structure and Operations

IEPA is the NPDES permitting authority for the state of Illinois, having received authorization to administer and implement the NPDES program on October 23, 1977. IEPA is not authorized to implement the Industrial Pretreatment Program. As EPA is responsible for administering and implementing the Industrial Pretreatment Program, EPA develops pretreatment permit conditions and works with IEPA so that these conditions are incorporated into POTW NPDES permits.

The IEPA NPDES program is managed by the Bureau of Water, Division of Water Pollution Control which is also responsible for the state's construction/operating permit program. The Division includes the Permit Section which is organized into three units (Industrial Unit, Municipal Unit, and Facility Evaluation Unit) and the Water Quality Standards (WQS) Section which provides permit support. Both Sections operate out of the central office in Springfield. Central office staff are largely responsible for drafting, reviewing and administering NPDES permits. Administrative staff in the central office support permitting activities through the processing of mailings and records and scanning permit documents into the electronic administrative record.

The Field Operations Section (FOS) is available to provide permitting support out of regional offices in Champaign, Collinsville, Des Plaines, Marion, and Peoria. Regional staff primarily conduct field inspections and compliance evaluations, and if an inspection is timed near the permit expiration, they will remind the permittee that the application is due for renewal. In the Marion regional office, in southern Illinois, one staff person drafts NPDES permits for coal mines.

The Permit Section employs 19 full-time permit writers, including 4 within the Industrial Unit and 9 within the Municipal Unit. A third unit, the Facility Evaluation Unit, develops permits for sand and gravel mines and concentrated animal feeding operations (CAFOs), and processes CWA Section 401 certifications for CWA Section 404 permits issued by the U.S. Army Corps of Engineers. The CWA Section 401 certification for the EPA's NPDES Vessel General Permit was processed by the Industrial Unit.

IEPA estimates that on average, a Permit Section full time equivalent (FTE) develops about 33 NPDES permits (not including stormwater general permits) per year. This workload per FTE may be increasing if Permit Section staffing levels continue to decrease as they have over the past 3 years with a reduction in force of 9 FTE (8 technical and 1 administrative staff).

The Permit Section continues to value and promote staff development by encouraging experienced permit writers to mentor less experienced staff, and by providing access to technical resources such as conferences and webinars including the EPA's NPDES Permit Writers' Course online modules.

The permit development process is initiated when a Unit Manager assigns a permit action to the permit writer. Once assigned, the permit writer requests WQS staff to provide input and recommendations on water quality-based conditions, including projected effluent limitations based on factors such as total maximum daily loads (TMDL) and water quality modeling.

Permit writers generally follow guidance on permit development as presented in the EPA's NPDES Permit Writer's Training (<https://www.epa.gov/npdes/npdes-training>). The Permit Section does not have an SOP for NPDES permit development. Permit writers employ templates and spreadsheets to write fact sheets, public notices, permits, and special conditions. Boilerplate is used for standard conditions. Templates and boilerplate are updated as needed (i.e., not reviewed on a set schedule). Standard conditions were last updated one to two years

ago, primarily to include electronic reporting (e-reporting) requirements. Staff ensure that special conditions are updated to reflect changes in regulations.

The WQS Section uses a customized spreadsheet to conduct reasonable potential analysis (RPA). The RPAs are generally based on procedures described in the EPA's "Technical Support Document for Water Quality-based Toxics Control" (TSD). More information about development of water quality-based permit requirements is provided in the Core Review Findings section of this report.

Once drafted, NPDES permits are signed off by the Unit manager and/or Permit Section manager before further processing and distribution. Permit development documentation and correspondence are maintained with the permit record. Upon issuance of the final NPDES permit, the permit records and monitoring data are imaged by the IEPA Division of Records Management located in the Central office and made available as a pdf file. IEPA utilizes a tracking system called "Docuware" to store completed permits. In Docuware, there is one file for the completed permit and a separate file is kept for supporting information. The IEPA NPDES permits are available online at:

<https://external.epa.illinois.gov/DocumentExplorer/Attributes>

## **B. Universe and Permit Issuance**

The IEPA NPDES program currently administers 1,476 individual permits and 12 GPs. As shown in Figure 2, most individual permits are minor permits, and a slight majority of the overall total covers non-municipal discharges. There are 41 non-municipal major permits compared to 109 major municipal permits. According to IEPA, significant industries in the state include oil refineries, numerous coal, natural gas and nuclear power stations, chemical plants, steel mills, and grain processors. Table 2 identifies the state's 12 GPs with their issuance and expiration dates. The GPs cover a total 5,719 permittees, more than half of which are stormwater dischargers. The extent of GP coverage is shown graphically in Figure 3.

Figure 2. Number of Individual Permits

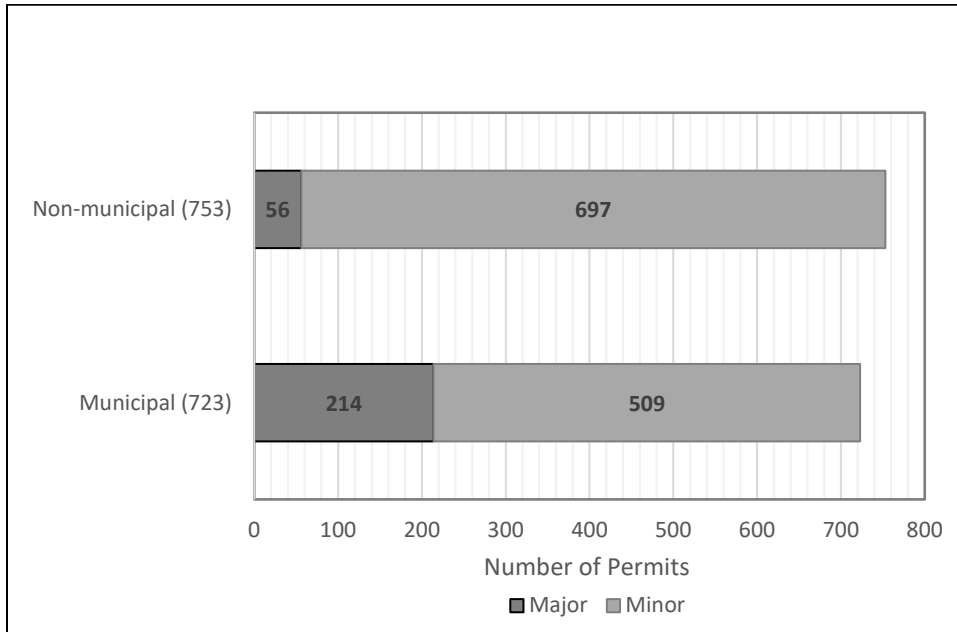
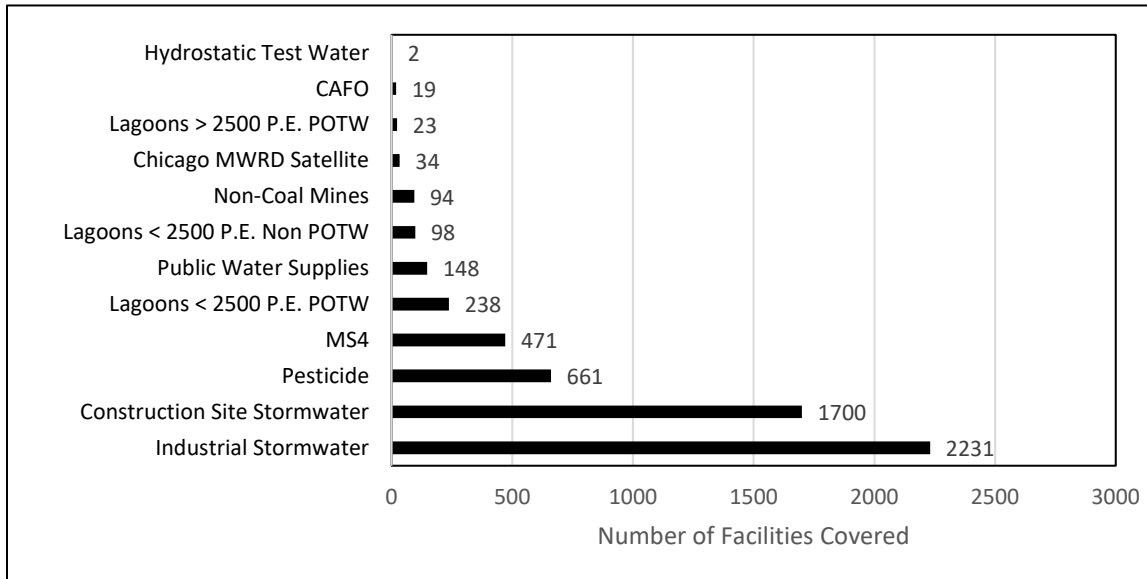


Table 2. NPDES General Permits

| NPDES Number | General Permit Name   | Issuance Date | Expiration Date | Number of Permitted Facilities |
|--------------|---|---------------|-----------------|--------------------------------|
| ILR00        | Industrial Stormwater   | 4/05/2017     | 3/31/2022       | 2231                           |
| ILR10        | Construction Site Stormwater  | 8/03/2018     | 7/31/2023       | 1700                           |
| ILR40        | MS4   | 2/10/2016     | 2/28/2021       | 471                            |
| ILG551       | Lagoons < 2500 P.E. Non POTW  | 7/10/2013     | 6/30/2018       | 98                             |
| ILG580       | Lagoons < 2500 P.E. POTW  | 7/10/2013     | 6/30/2018       | 238                            |
| ILG582       | Lagoons > 2500 P.E. POTW  | 7/10/2013     | 6/30/2018       | 23                             |
| ILG64        | Public Water Supplies   | 6/16/2017     | 5/31/2022       | 148                            |
| ILG67        | Hydrostatic Test Water  | 4/23/2018     | 3/31/2023       | 2                              |
| ILG840       | Non-Coal Mines  | 3/01/2019     | 2/29/2024       | 94                             |
| ILG87        | Pesticide   | 10/14/2016    | 10/31/2021      | 661                            |
| ILM580       | (Chicago) Metropolitan Water Reclamation District (MWRD) Combined Sewer System Satellites | 4/25/2003     | 5/31/2008       | 34                             |
| ILA01        | Concentrated Animal Feeding Operations  | 10/20/2009    | 9/30/2014       | 19                             |

Figure 3. General Permit Coverage



### C. State-Specific Challenges

IEPA faces challenges common to many state agencies due to reductions in staffing and budgets. Despite these challenges, IEPA maintains a strong NPDES program and has made strides towards addressing permit backlog and developing nutrient controls but does not have resources necessary to address legal authority concerns, memorandum of agreement (MOA) revisions, or developing permits for on-site surface discharging systems.

### D. Current State Initiatives

IEPA has been engaged with external stakeholders including watershed groups to collaborate on permit requirements to control nutrient discharges. IEPA participates in voluntary efforts through the 2015 Illinois Nutrient Loss Reduction Strategy (INLRS), an IEPA and Illinois Department of Agriculture strategy to reduce nutrient loss to Illinois waters and the Gulf of Mexico from point and non-point sources. The initial focus has been on phosphorus reduction through permit limits on major municipal wastewater treatment plants. More information on the INLRS and other IEPA efforts directed at nutrient reduction is provided in the Section IV.A., Permit Controls for Nutrients in Non-TMDL Waters.

IEPA sends reminder letters to permittees 300 and 210 days prior to the expiration date of the NPDES permit to inform permittees that the application is due.

## III. CORE REVIEW FINDINGS

### A. Basic Facility Information and Permit Application

#### 1. Facility Information

**Background**

Basic facility information is essential for developing technically sound, complete, clear, and enforceable permits. For this reason, information regarding facility type, location, processes and other factors is required by NPDES permit application regulations (40 CFR 122.21). To support the issuance process, fact sheets must provide a sufficiently detailed description of the type of facility or activity subject to a draft permit.

**Program Strengths**

All permits contained appropriate discharger name, facility location, and receiving stream identification.

**Areas for Improvement**

Permits did not identify a precise physical location of monitoring points for outfalls. Municipal permits identify the influent sampling location as “Influent samples shall be taken at a point representative of the influent.” An industrial permit identified the outfall not by location but by its sources (e.g., treated sanitary waste, process waste, boiler blowdown). Overall, permits do not identify the outfall location so that it can be found without additional documents.

Outfall locations may not always be verified by the permit writer. The outfall latitude/longitude in one application was incorrect, and the error was carried over to the fact sheet.

The review found that most maps were poor quality and flow schematic diagrams lacked detail, making it difficult to check facility information in detail. The poor image quality may be a result of electronic scanning and is discussed further in Section III.E, Administrative Record and Fact Sheet. The Permit Section does not have an SOP to provide a reference for staff of the permit development and issuance process.

**Action Items (Facility Information)**

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>   |
| Recommended | <ul style="list-style-type: none"> <li>•During permit development, verify the accuracy of the reported discharge location and monitoring point.</li> <li>•Take steps to ensure facility location maps and process flow schematics have sufficient detail and that the detail is not lost when paper files are transferred as digital records.</li> <li>•Develop a Permit Section SOP for permit development and issuance.</li> </ul> |

**2. Permit Application**

**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 permitted to use their own forms provided the applications 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.

The IEPA uses federal application forms. Incoming applications are received in hard copy, stamped received and logged in to the IEPA tracking system. They are then forwarded to the permit writer assigned to the permit renewal action who proceeds to evaluate the application for technical completeness. According to 40 CFR 122.21(e), the state shall not issue an individual NPDES permit until IEPA receives an application form and any supplemental information which are completed to the state's satisfaction. IEPA reviews applications to ensure appropriate forms are submitted. However, while the state uses checklists for this, they do not document whether the permit writer reviewed the application for completeness.

The permit writer reviews the application in view of federal requirements and information in state inspection reports, discharge monitoring report (DMR) data, and the existing NPDES permit. Correspondence was found in the permit record asking the applicant for information missing from the application, demonstrating that the permit writer follows up with the applicant to fill in gaps. However, the administrative record does not document whether permit applications were reviewed. The process of documenting an application's completeness is discussed in Section III.D, Administrative Process.

The permit writer forwards a copy of the application to staff in the WQS Section who review it along with DMR data to identify pollutants of concern and make recommendations for water quality-based requirements. This process is discussed further in Section III.B.2, Reasonable Potential and Water Quality-Based Effluent Limitations.

### *Program Strengths*

Permit applications are date-stamped by the Permit Section to clearly show when the application was received. All permit applications were received at least 180 days prior to the expiration date of their permit.

### *Areas for Improvement*

Some permits lacked a complete data set for whole effluent toxicity (WET) and priority pollutants for major POTWs as required by 40 CFR 122.21(j)(4)(iv) and (vi). Also, applications did not always identify the analytical methods used for analysis of chemical parameters or whether sufficiently sensitive analytical methods were used.

**Action Items (Permit Applications)**

|             |   |
|-------------|---|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>  |
| Recommended | <ul style="list-style-type: none"> <li>•Document in the permit record that the application form and information supplemental to the application are completed to the State’s satisfaction (40 CFR 122.21(e)).</li> <li>•Ensure that major POTW applicants understand that their application must include a complete data set for whole effluent toxicity (WET) and priority pollutants (40 CFR 122.21(j)(4)(iv) and (vi)).</li> <li>•Ensure that all applicants identify the analytical methods used for analysis of chemical parameters or whether sufficiently sensitive analytical methods were used (40 CFR 122.21(j)(4)(viii)).</li> </ul> |

**B. Developing Effluent Limitations**

**1. Technology-based Effluent Limitations**

NPDES regulations at 40 CFR 125.3(a) require that permits include technology-based requirements where applicable. This section assesses whether technology-based effluent limitations (TBELs) and monitoring requirements are established appropriately in municipal and non-municipal permits to represent the minimum level of control required.

**a. Municipal TBELs**

**Background and Process**

Municipal facilities or POTWs must meet secondary or equivalent to secondary standards (including standards for BOD, TSS, pH, and percent pollutant removal), and must contain numeric limits for these parameters (or authorized alternatives) in accordance with 40 CFR Part 133. The Illinois Pollution Control Board (IPCB) is the governing body responsible for establishing discharge control standards used by IEPA to set state TBELs in NPDES permits. IPCB standards for POTWs are codified in Title 35 of the Illinois Administrative Code (IAC), Part 304.120 for deoxygenating wastes and 304.125 for pH. Limitations based on state standards must be at least as stringent as those based on Secondary Treatment Standards in 40 CFR Part 133.

All eight municipal permits contained TBELs at least as stringent as federal requirements. TBELs based on state standards for CBOD and TSS are expressed as monthly average and daily maximum; however, secondary treatment standards at 40 CFR 133.102 call for daily maximum and 7-day average limits. This is acceptable when the daily maximum limit is at least as stringent as the 7-day average limit.

The 85 percent minimum removal requirement is in a footnote on the effluent limitations table. The permits do not require that percent removal be reported on the DMR. Instead, municipal



permits require that results of influent BOD (or CBOD) and TSS monitoring are reported on DMRs so that IEPA can calculate compliance with percent removal.

***Program Strengths***

Municipal permits appropriately implement TBELs for BOD (or CBOD), TSS and pH, and percent removal for BOD (or CBOD) and TSS. The limitations appear to be in the appropriate form and units, provided the daily maximum limitation is no greater than the federal 7-day average limitation.

***Areas for Improvement***

The permit record does not indicate why 7-day average limitations are not included or that the state determined that the daily maximum is as stringent as the 7-day average. This determination should be clearly stated and documented.

***Action Items (Municipal TBELs)***

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>   |
| Recommended | <ul style="list-style-type: none"> <li>•When a municipal permit does not impose a 7-day average limits for BOD (or CBOD) and TSS, the permit record should explain that a 7-day average limit is not necessary because the daily maximum limits for BOD (or CBOD) and TSS are at least as stringent as Secondary Treatment 7-day average standards at 40 CFR 133.102(a)(2).</li> </ul> |

***b. Non-municipal TBELs***

***Background and Process***

Non-municipal permits 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 considered for the 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 basis using BPJ in accordance with the criteria outlined at 40 CFR 125.3(d).

IEPA calculates TBELs for non-municipal facilities, using 35 IAC Part 304 standards, federal categorical effluent guideline standards, and best professional judgement (BPJ) determinations. For BPJ, the IEPA evaluates the best degree of treatment, through a treatability analysis based on data generated during the permit cycle. The IEPA indicated that Part 304 standards are not designed to be equivalent to ELG standards since unlike ELGs they are not industry specific.

***Program Strengths***

TBELs are determined correctly. Industrial Unit staff develop “industrial permit review notes” to document permit limits development for non-municipal permits. These notes provide useful background for the administrative record to document development of effluent limitations and other permit requirements.

***Areas for Improvement***

The state follows the EPA’s Permit Writer’s Manual to set non-municipal TBELs. There appears to be no additional state procedures or guidance for this purpose.

***Action Items (Non-municipal TBELs)***

|                    |   |
|--------------------|---|
| <b>Essential</b>   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>  |
| <b>Recommended</b> | <ul style="list-style-type: none"> <li>•Provide additional documentation in industrial permit review notes on whether the TBELs have been verified as applicable and if ELGs have been updated since the last permit issuance. Notes should also confirm that industrial permits apply a reasonable measure of actual production as required by 40 CFR 122.45(b) for production-based TBELs, and ensure that non-process flow contributions including stormwater are considered.</li> </ul> |

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

***Background and Process***

According to 40 CFR 122.44(d), permits must include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state WQS, including narrative water quality criteria. To establish WQBELs, the state must evaluate whether any pollutants or pollutant parameters has a reasonable potential (RP) to cause, have the reasonable potential to cause, or contribute to an excursion above any applicable WQS. This is known as a reasonable potential analysis (RPA).

The PQR assessed the processes employed by IEPA 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).

Staff in the WQS Section determine the need for a WQBEL through an RPA. RPAs are conducted on a statistical basis and on a parameter-by-parameter basis. The WQS Section considers available data, use attainment status of the receiving water and TMDL applicability, biomonitoring needs, and antidegradation/anti-backsliding.

RPA calculation procedures are built into a spreadsheet pre-formatted with formulas for that purpose. Formulas consider sample size, water quality criteria, parameter-specific translators, and statistical data outliers. IEPA does not have documented procedures for determining an appropriate time period for the data set, but 5 years seems to be an upper limit.

35 IAC Part 352 contains IEPA rules for determining WQBELs for discharges to the Lake Michigan Basin. Calculations are based on the EPA's "Technical Support Document for Water Quality-based Toxics Control" (TSD) for lognormal distributions, to derive average and maximum projected effluent limits from long-term average values. In certain cases, the WQS Section may calculate a specific coefficient of variation for the data set. For sample sizes of 5 or more, IEPA uses a 95<sup>th</sup> percentile at a 95<sup>th</sup> percent confidence interval to develop the RP multiplier. The calculation assumes a coefficient of variation of 0.6 if sample size is 10 or less, which is consistent with 40 CFR 132, appendix F.5.B.1.

To determine RP for the acute water quality criteria, the maximum effluent concentration reported is compared to the acute criterion. To evaluate RP for chronic criteria, the average effluent concentration is converted by the multiplier and compared to the chronic criterion. The spreadsheet determines data outliers based on the approach in Standard Methods. Available mixing is not normally considered.

There is no equivalent IEPA rule for discharges outside the Lake Michigan Basin and the procedures are not written elsewhere in guidance documents.

Ambient data are not evaluated in the RPA unless a mixing zone or zone of initial dilution (ZID) is considered. The IEPA's mixing zone policy considers three scenarios: (1) Mixing is allowed for the chronic and single-value standards. In cases where IEPA is confident that the available dilution is sufficient, IEPA allows up to 25% of receiving stream in mixing; (2) Mixing zone where the applicant has defined their mixing zone for chronic standards; and (3) a ZID is established for acute standards based on a mixing study conducted by major dischargers. 35 IAC Section 302.102 prohibits a ZID unless the permittee applies for one. For major facilities and select minor facilities that request a ZID, IEPA requires that the discharger submit modeling results from an appropriate model for review.

In the recent past, models have included CORMIX and Visual Plumes models. IEPA maintains in-house databases for ambient water quality data and effluent quality data. A web-based tool (Resource Management Mapping Service (RMMS)) helps identify the stream segments and characteristics such as biologically significant stream segment, biological stream integrity, and dissolved oxygen water quality standards. The EPA's Assessment Database Version 2 (ADBv2) provides stream assessment information. The EPA's Integrated Compliance Information System (ICIS)—NPDES provides access to Discharge Monitoring Report (DMR) data.

If granted, the ZID would be defined in the permit. For major facilities and nutrients, the WQS Section's approach is to look at each stream segment until the point where it reaches a major water body; however, these are not documented as an SOP.

The WQS Section also considers TMDLs by first determining if the receiving water is shown on State's Integrated Water Quality Report (IR) which identifies impaired waters on the State's CWA Section 305(b) list and probable causes of impairment on the CWA Section 303(d) list. Based on the most recent IR submitted by IEPA to EPA (2016 IR), 10 of the 12 individual permits selected for this PQR discharge to one or more General Use waters listed as impaired by factors such as the extent of littoral vegetative cover, sedimentation/siltation, and/or flow regime alterations. Only 2 of the 10 have completed TMDLs. According to 40 CFR 130.7(b)(4), any waterbody listed by the state as impaired needs to be prioritized for TMDL development

### *Program Strengths*

The Permit Section applies WQS Section recommendations when determining WQBELs. WQBELs are determined on a pollutant by pollutant basis. IEPA has established procedures for establishing WQBELs as projected effluent limits for Lake Michigan basin discharges.

The WQS Section uses a customized spreadsheet it created to calculate RPA and WQBELs.

The WQS Section evaluates all available data when performing the water quality assessment and thoroughly documents the information considered in the assessment, via memoranda to the permitting staff.

### *Areas for Improvement*

IEPA lacks guidance and SOPs regarding WQBEL determination for waters outside of the Lake Michigan Basin. The IEPA's program would be strengthened with written procedures for translating WQS into WQBELs both inside and outside the Lake Michigan Basin.

The WQS Section's spreadsheet appears to cover appropriate formulas but it requires considerable data entry which, done manually, can be labor intensive and can result in QA concerns. One staff person in the WQS Section is relied upon almost exclusively for data entry into the spreadsheet and to providing technical WQBEL recommendations. Providing one staff trained in conducting RPAs creates resource risks. The IEPA's program would be strengthened with additional staff trained and available to assist this individual with RPAs.

Fact sheets make no reference to WQS Section memoranda that provide the most relevant and complete background information for WQBELs. The IEPA's program would be strengthened if

fact sheets referred to specific WQS Section memoranda available in the administrative record and included a summary of how WQBELs are determined. A municipal fact sheet identified RP for zinc; however, a search of the administrative record disclosed that a second WQS Section memorandum for this permit was prepared providing an updated RPA showing no RP for zinc. The fact sheet was not updated to reflect the revised RP recommendations, leading to an inconsistency between the fact sheet and permit record. Additional file research was necessary to make the appropriate connection.

**Action Items (Reasonable Potential and WQBELs)**

|             |   |
|-------------|---|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>  |
| Recommended | <ul style="list-style-type: none"> <li>•Provide written procedures for determining RPA.</li> <li>•Work with the WQS Section to develop written SOPs for translating WQS into projected permit limits. This would include how RPA and WQBELs are determined as well as the administrative process for sharing this information with the Permit Section.</li> <li>•Take measures to supplement staffing levels so that more are trained and available to conduct RPAs and WQBEL, and for QA/QC support.</li> <li>•The IEPA should develop a thorough fact sheet discussion of WQBELs development; at a minimum, create a connection between the permit's fact sheet and the WQS Unit's water quality assessment memoranda.</li> </ul> |

**3. Final Effluent Limitations**

**Background and Process**

Permits must include all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations that ensure 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 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, IEPA is required by 35 IAC Section 302.105(c)(2) to 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 WQS regulations at 40 CFR 131.12 outline the common elements of the antidegradation review process.

Permit writers evaluate TBELs and WQBELs and identify in fact sheets the regulatory basis for each effluent limitation. However, IEPA’s fact sheets do not clearly identify whether an effluent

limitation is a TBEL or a WQBEL. Readers must refer to the regulatory citation to determine the basis for the effluent limitation.

Permit writers consider anti-backsliding and antidegradation requirements before issuing final effluent limitations. In certain scenarios, the state’s average discharge standards will be more stringent than federal maximum limits, and in these scenarios the fact sheet would be strengthened with a clear discussion of the considerations. Antidegradation is further considered if a permit writer sends a memorandum to the WQS Section specifically requesting an antidegradation review; this review may be triggered by new or increased loadings. The antidegradation memoranda are included as part of the permit record.

***Program Strengths***

Permits express limitations in a table for each outfall or monitoring location. The review found no evidence that limits failed to consider the most stringent of WQBEL and TBEL requirements.

***Areas for Improvement***

While IEPA’s antidegradation procedures appear consistent with 35 IL Administrative Code 302.105 and IEPA’s backsliding procedures appear consistent with 40 CFR 122.4 (l), the development of a SOP related to antibacksliding and antidegradation would help inform permit writers on the required analysis and facilitate consistent documentation of findings within the record.

***Action Items (Final Effluent Limitations)***

|                    |   |
|--------------------|---|
| <b>Essential</b>   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>  |
| <b>Recommended</b> | <ul style="list-style-type: none"> <li>•Develop procedures to ensure consistent and transparent evaluation of permit actions for anti-backsliding and antidegradation.</li> </ul> |

***4. Documentation of Effluent Limitations Development***

***Background and Process***

The permit administrative record should contain complete documentation of the development of all effluent limitations. TBELs should include an assessment of applicable standards, identify sources of data used in developing effluent limitations, and provide 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.

As required by 40 CFR 124.8, IEPA's fact sheets contain a brief description of facility operations and activity which is the subject of the permit. This includes a brief description of the wastewater treatment processes, but without a general flow schematic. Fact sheets should stand on their own as much as possible to describe the basis of permit conditions.

Memoranda generated by the WQS Section identify information considered during the RPA and the results of the RPA. However, fact sheets lack a connection to this information.

WQS Section staff maintain electronic copies of water quality assessment spreadsheets, assessments, and other supporting documents. but this information is not retained in or referenced by the administrative record.

### *Program Strengths*

Fact sheets are written in a standard, predictable format.

Fact sheets include an easy to follow summary table for each parameter showing effluent monitoring, limitations and supporting regulation (i.e., basis for the effluent limitation).

The administrative record includes the WQS Section memoranda regarding WQBEL recommendations.

Fact sheets describe the receiving water impairment status and the potential cause of impairment.

The administrative record is stored electronically and includes correspondence, fact sheets, permit application, and final permit.

### *Areas for Improvement*

Fact sheets would be strengthened with an improved discussion and linkage of the WQS Section's memoranda and recommendations to the basis for effluent limitations. The fact sheets also lack detailed discussions of the RPA and resulting effluent limitations. In general, fact sheets accompanying municipal permits lack adequate documentation of the process for evaluating RP and developing WQBELs. In addition, the fact sheet accompanying a non-municipal permit lacks a thorough explanation of how the IEPA determined the appropriate ELG categorization and lacks justification of the limitation for total residual chlorine.

Fact sheets lack discussion of specific data from the permit application that was considered in the evaluation of the need for effluent limitations. Therefore, if data were reported as detected in measurable concentrations on the application, or if parameters are checked "believed present" but without data, the fact sheet does not consistently discuss these data and determine whether they present a reason for concern or additional evaluation.



The fact sheets would be improved by including a similar discussion as that contained in the WQS Section’s memoranda, as the WQS Section staff provide a thorough discussion of the water quality assessment and recommendations.

In reference to impairment status, fact sheets should cite the relevant integrated report (including the report year) in place of or in addition to citing CWA Sections 305(b) or 303(d). If a waterbody is listed as impaired, the fact sheet should identify whether a TMDL has been approved and if it applies to the discharge. Latitude and longitude of the discharge point are consistently missing from the fact sheet and should be added.

**Action Items (Documentation of Effluent Limitations Development)**

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>   |
| Recommended | <ul style="list-style-type: none"> <li>•Ensure that fact sheets clearly present the basis for all effluent limitations and permit requirements.</li> <li>•Provide greater detail in discussions of TBELs based on ELGs, including the categorization process.</li> <li>•Include in the permit a more exact description of the outfall and monitoring locations.</li> </ul> |

**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 to sufficiently 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.



***Program Strengths***

The IEPA establishes appropriate monitoring requirements in NPDES permits for municipal and non-municipal facilities. IEPA adequately considers effluent variability, compliance history, variation in discharge frequency (i.e., production-based variability, batch discharges) in establishing monitoring requirements.

***Areas for Improvement***

The IEPA’s permits include general language referring to monitoring locations; IEPA permits would be strengthened with more descriptive language identifying monitoring locations.

***Action Items (Monitoring and Reporting Requirements)***

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>   |
| Recommended | <ul style="list-style-type: none"> <li>•Develop guidance for setting monitoring requirements and sample type.</li> <li>•Same recommendation as above in the "Documentation of Effluent Limitations" section (III.B.4)—Include in the permit a more exact description of the outfall and monitoring locations.</li> </ul> |

**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 categories of dischargers contain additional standard conditions. Permits may not alter or omit any required 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 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 (40 CFR 122.44(k)) or permit compliance schedules (40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

IEPA includes standard conditions as Attachment H to the NPDES permit. Attachment H is boilerplate text consistent with federal standard conditions. It was last revised and updated about two years ago in consultation with EPA. The standard conditions for bypass and upset are not included in Attachment H but is incorporated by reference to 40 CFR 122.41(m) and (n)

within a special condition. Page one of the permit refers to Attachment H as an enforceable part of the permit.

IEPA special conditions include, as appropriate: pretreatment program general provisions; fiscal data reporting; biomonitoring requirements; requirements related to sludge; combined sewer discharge authorization and long-term control plans; adaptive approaches to control nutrient discharges; compliance management operation and maintenance (CMOM); compliance schedules including schedules to optimize treatment plant processes or operation for phosphorus reduction; and watershed studies. Watershed-study special conditions were developed in collaboration with outside stakeholders, including watershed groups. Where applicable, special conditions also regulate blending and wet weather excess flow outfalls. Excess flow outfalls and blending are allowed only when the main outfall(s) is receiving maximum design flows. The permits specify the volume of flow that must be exceeded to allow the excess flow or blended discharge. Excess flow outfalls must also meet secondary treatment standards. Elsewhere, permits include special conditions that apply bypass conditions to discharges that have not received secondary treatment.

### *Program Strengths*

IEPA includes appropriate standard permit conditions in NPDES permits. IEPA has worked with EPA to improve clarity and enforceability of special conditions for excess flow. IEPA's collaboration with watershed groups to introduce innovative nutrient control approaches in special conditions is also a program strength. IEPA periodically reviews and updates standard condition language.

### *Areas for Improvement*

IEPA's periodic review and update of standard condition language is a strength; however, the review and update should be done more frequently to ensure permits remain current with regulations. In addition, IEPA includes certain permit requirements as footnotes to tables or effluent limitations. For example, percent removal requirements in municipal permits are included as footnotes. To improve clarity, IEPA should consider including requirements as specific, stand-alone statements.

**Action Items (Standard and Special Conditions)**

|             |   |
|-------------|---|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul>  |
| Recommended | <ul style="list-style-type: none"> <li>•Review and update standard condition language more frequently, to ensure permits remain consistent with current regulations.</li> <li>•As much as possible, put permit requirements in the body of the permit and avoid placing them in a footnote (e.g., percent removal requirements).</li> </ul> |

**E. Administrative Process*****Background and Process***

Administrative process refers to the following permitting elements: 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 of these elements with IEPA, and reviewed materials from the administrative process as they related to the core permit review.

IEPA uses a template to generate public notices in a consistent format and level of detail. The standard IEPA administrative process includes public notice, comment period, comment response, and hearings. Fact sheets are developed at the same time as the rest of the permit and are part of the public notice. Fact sheets are typically not revised after the close of the public comment period unless a major error is discovered. Once a permit is written and approved by the Unit manager, the permit goes through a 15-day pre-public notice review by the permittee. After the 15 days, the permit is reviewed and edited per comments, and once approved by the Unit manager, the draft permit is placed on 30-day public notice. Major permit notices are published in a local newspaper. The IEPA indicated that public hearings are rare. Once the 30-day public comment period ends, the comments are addressed. The permit is sent to EPA Region 5 for review if IEPA has been notified by Region 5 that they will be reviewing the draft permit. None of the permits reviewed were contested, so documentation about hearings was not assessed. The PQR review found no public notices in a language other than English.

***Program Strengths***

The IEPA strives to have the permit on public notice by the time the current permit expires, and to have the permit issued within six months of permit expiration. Using an automated process, IEPA administrative staff send out renewal application reminder letters approximately 300 days and again 210 days prior to the permit expiration date. This administrative practice helps assure that permittees meet this obligation for continued permit coverage and have sufficient time to prepare a complete application.

Once a permit is issued, permit documents including the permit and permit development records are filed electronically and maintained as the permit record.

***Areas for Improvement***

According to 40 CFR 122.21(b), NPDES permittees who wish to continue coverage after the permit expiration date must reapply for NPDES coverage 180 days prior to the permit expiration date. For individual permits, regulations at 40 CFR 124.3(a)(2) and 123.25(a)(24) require that the state shall not begin processing of an NPDES permit until the applicant has fully complied with the application requirements in 40 CFR 122.21. NPDES regulations at 40 CFR 122.21(e)(1) require that the state shall not issue a permit before receiving an application completed to his or her satisfaction.

The PQR found that all permits applications were received at least 180 days prior to permit expiration but there was no statement in the permit record that the application was completed to a level considered satisfactory by the state. This section of the PQR recommends that permit writers document that the application was checked for completeness. Section III.F of the PQR recommends that the state include in the administrative record documentation that the application was checked for completeness and the date completeness was determined.

***Action Items (Administrative Process)***

|             |   |
|-------------|---|
| Essential   | <ul style="list-style-type: none"> <li>•The PQR did not identify any action items for this section.</li> </ul>  |
| Recommended | <ul style="list-style-type: none"> <li>•Permit writers are urged to ensure that the permit record includes documentation that they reviewed the permit application for completeness.</li> </ul> |

**F. Administrative Record and Fact Sheet**

***Background and Process***

Federal regulations at 40 CFR 124.9 identify the required content of the administrative record for a draft permit, and at 40 CFR 124.18 identify the requirements for a final permit. Authorized state programs should have equivalent documentation in their administrative record so that it contains all documentation necessary to justify permit conditions. This includes, the permit application and supporting data; draft permit; fact sheet or statement of basis;<sup>2</sup> all items cited

<sup>2</sup> 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

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, rationale for a “time limited WQS” (if allowed under 35 IAC Part 104, Subpart E), contact information, and procedures for issuing the final permit. Generally, the administrative record for NPDES permits issued by IEPA 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.

Upon issuance of the final NPDES permit, the permit record is imaged by IEPA’s Records Department and paper copies are destroyed. The administrative record is kept as an electronic file, usually a single long PDF. The record includes applicable permit development correspondence. Monitoring and reporting data are reported electronically and stored in the Integrated Compliance Information System (ICIS). Compliance records, when used for permit development, are maintained as paper files.

### *Program Strengths*

The IEPA has a standardized process for developing and storing the administrative record. Administrative records appeared to be complete. However, the format of the administrative record can be difficult to work with since all documents are scanned into one unsearchable PDF without a table of contents. Depending on the permit, the PDF can be hundreds of pages and many megabytes.

Fact sheets generally included basic descriptions of facility operations and wastewater treatment processes. But, would be strengthened with more detailed narrative describing facility operations, wastewater treatment processes, basis for limitations, and (if the permit involves a receiving water in non-attainment) TMDL status.

### *Areas for Improvement*

Fact sheets do not consistently include a complete discussion of permit limits, including clear statements of whether the limits are technology or water quality-based, discussion of allowed dilution or any regulatory mixing zones, discussion of the process for determining RP for a pollutant to cause or contribute to a water quality exceedance, and discussion of selection of the most stringent limits. In addition, fact sheets contain very little explanation of potential antidegradation and backsliding issues. Further, fact sheets lacked discussion of stream

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widespread public interest; is a Class I sludge management facility; or includes a sewage sludge land application plan.

impairment status unless the stream was non-attainment. In addition, fact sheets lacked adequate detail regarding the TMDL status of receiving streams, while most of the applicable waters had impairments.

Certain public notices reviewed lacked some information required by 40 CFR 124.10. For example, most public notices reviewed lacked mention of sludge disposal processes. In addition, at least one public notice lacked identification of the receiving stream. Multiple administrative records reviewed lacked clear documentation of whether public comments were received or if there was a response to any comments.

The administrative record should identify whether comments were received during the public notice period and the state's response to the comments. If no comments were received, the record should so indicate.

The fact sheet for a municipal permit failed to discuss the RPA process, findings, and supporting information for an effluent limit for zinc. In addition, the fact sheet for another municipal permit lacked overall detail and supporting documentation related to zinc being a pollutant of concern. The team's review revealed there appears to be a lack of transparency between the changes made in the draft and final fact sheets because the permit record lacked clear documentation of changes made between the draft and final permits.

While permit records, for permits that have been finalized, are maintained in electronic format, they would be improved with the ability to search electronic files. The organization of the electronic version of the administrative record (i.e., having various components of the record merged into a single digital file) makes it difficult to follow how the record fits together and to identify discrete record documents.

Fact sheets include a table showing the regulation associated with each monitored and limited parameter; however, the table does not cite to a specific code. For example, the table would cite 35 IAC Section 304.120 Deoxygenating Wastes for suspended solids requirements as opposed to the more specific 35 IAC Section 304.120(d) setting BOD and TSS requirements on dischargers in the Lake Michigan basin.

Fact sheets do not clearly illustrate that the permit writer compared TBELs and WQBELs and selected the more stringent as the effluent limitation. Nor do they provide a general statement that would indicate this process is conducted. Further, the fact sheets lack a consistent discussion of anti-backsliding and antidegradation requirements.

*Action Items (Administrative Record and Fact Sheet)*

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>• Ensure that all public notices include the sludge use and disposal information required by 40 CFR 124.10(d)(vi).</li> </ul>   |
| Recommended | <ul style="list-style-type: none"> <li>• <u>Administrative Record</u>. Include background information about recent compliance history.</li> <li>• <u>Administrative record</u>. Ensure that scanned documents are text-searchable and indexed to improve file searchability.</li> <li>• <u>Administrative Record</u>. Ensure that all major comments received during the public comment period are identified along with how those comments were addressed. Indicate if there are no comments.</li> <li>• <u>Administrative Record</u>. Identify whether a public hearing was requested and whether one was held.</li> <li>• <u>Administrative Record</u>. Record the date the permit application was reviewed for completeness and the outcome of that review.</li> <li>• <u>Administrative Record</u>. Provide data showing that the permit writer established the most stringent between TBEL/WQBEL and State/Federal standards.</li> <li>• <u>Fact Sheet</u>. Include more information about receiving water use impairment status, and where impairment exists the TMDL status.</li> <li>• <u>Fact Sheet</u>. Clearly present the basis for all effluent limitations and permit requirements at an appropriate reference level (e.g., 35 IAC Section 304.123(b)(1) vs. 35 IAC Section 304.123).</li> <li>• <u>Fact Sheet</u>. Incorporate more thorough descriptions of facility operations and wastewater treatment process.</li> <li>• <u>Fact Sheet</u>. Provide a reference to relevant documentation in the permit record, including the WQS Section's water quality assessment memoranda and industrial permit review notes.</li> <li>• <u>Fact Sheet</u>. Add a statement to fact sheets for industrial discharges as to whether the reissued permit does or does not permit an increase to the facility's DAF, DMF, concentration limitations or load limitations.</li> </ul> |

**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 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. For this section, waters that are not protected by a TMDL are considered. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions.

Federal regulations at 40 CFR § 122.44(d) require NPDES permits to include effluent limits for any pollutant with the reasonable potential to cause or contribute to an excursion above any State water quality standards, whether those standards are narrative or numeric. To assess how nutrients are addressed in the IEPA NPDES program, EPA reviewed all 12 individual permits selected for the PQR and identified 4 for further evaluation based on the national topic.

To evaluate permit limitations and special conditions for nutrients, the EPA review considered supporting documentation in the individual permit's administrative record as well information about the receiving water in the 2016 IR which, as stated above in Section B.2., identifies impaired waters on the State's CWA Section 305(b) list and probable causes of impairment on the CWA Section 303(d) list. The EPA review also considered how permits applied narrative and numeric WQS established by the IPCB at 35 Ill. Adm. Code Section 302, and effluent standards at 35 Ill. Adm. Code Section 304 for nutrients (total phosphorus and total nitrogen). The narrative and numeric WQS are summarized below:

- Narrative. Narrative WQS are found at 35 Ill. Adm. Code 302.203, 302.403, and 302.515. According to IEPA, "These exclusively [and nearly identical] narrative standards apply only to the protection of aesthetic quality in Illinois waters."
  - 35 Ill. Adm. Code 302.203 Offensive Conditions - Protects General Use waters by prohibiting "sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin."
  - 35 Ill. Adm. Codes 302.403 Unnatural Sludge – States that the Chicago Area Waterway System and Lower Des Plaines River, "shall be free from unnatural sludge or bottom deposits, floating debris, visible oil, odor, unnatural plant or algal growth, or unnatural color or turbidity."
  - 35 Ill. Adm. Code 302.515 Offensive Conditions - States that, "Waters of the Lake Michigan Basin must be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin."
- Numeric. IPCB total phosphorus standards apply to reservoirs and lakes with a surface area of 20 acres or more (35 Ill. Adm. Code Section 302.205).

As discussed in Section III.B.2. of this report, regulations at 40 CFR 122.44(d) require the permitting agency to conduct an RPA and set a WQBEL when the agency makes an



affirmative demonstration that a discharge has a reasonable potential to cause an excursion above a state water quality standard. These regulations apply to all criteria, including narrative criteria; see 40 CFR 122.44(d)(1)(iii) – (vii). IEPA does not have a process to generate numeric effluent limits that translate its narrative criteria into limits for use in permit development. Moreover, the section of the Illinois Administrative Code dealing with effluent limits in permits, 35 Illinois Adm. Code 309.143(a), does not specifically include the requirements found at 40 CFR 122.44(d)(1)(iii) through (vi).

IEPA may interpret its narrative criteria on a site-specific basis or by establishing a statewide policy. It can supplement the narrative criteria with other relevant information as appropriate. In certain circumstances, IEPA may implement the narrative by setting effluent limits on an indicator parameter for the pollutant of concern.

Of the reviewed permits, those that discharge nutrients directly to or upstream of river systems impaired due to the narratives of littoral vegetative cover, dissolved oxygen, and/or algae do not have total phosphorus or total nitrogen WQBELs. In other words, where there is impairment of narrative standards and no TMDL, IEPA did not conduct an RPA to determine reasonable potential of an excursion above a state water quality standard.

IEPA recognizes the importance of a multi-faceted approach to address the complexities of nutrient-related water pollution control and initiated additional activities and tools (as outlined in an IEPA letter to EPA, November 2, 2011) to control nutrient discharges. Among the range of approaches:

- If a discharge is to a nutrient impaired receiving water, the permit will require monitoring to collect data for the future TMDL and will include a reopener for more stringent effluent limits based on the outcome of the future TMDL or watershed study.
- If a permittee is part of a local watershed group, the permit will incorporate special conditions to participate with the watershed group on projects to address the narrative standard through adaptive management approaches such as trading, and the permit will include a reopener to revise nutrient limits based on trading agreements if they take place.

Meanwhile, IEPA continues to develop permits using current regulatory tools.

In conjunction with INLRS<sup>3</sup>, IEPA requires a 1.0 mg/L monthly average total phosphorus limitation for any POTW with a design average flow of 1.0 MGD or more when the facility is upstream of a waterbody or segment that has been identified to have an impairment related to phosphorus<sup>3</sup> and incorporates requirements for a nutrient

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<sup>3</sup>As mentioned in Section II.D. of this report, the INLRS or Illinois Nutrient Loss Reduction Strategy is a strategy developed in 2015 and being implemented by the IEPA and Illinois Department of Agriculture to reduce nutrient loss to Illinois waters and the Gulf of Mexico from point and nonpoint sources.

assessment reduction plan (NARP) in permits for major municipal discharges upstream of or directly to a waterbody that has been identified by IEPA to have an impairment related to phosphorus. All four municipal permits that discharge to nutrient impaired receiving waters include a 1.0 mg/L total phosphorus limit and NARP elements.

IEPA's additional activities and tools mentioned above and the INLRS, while not official policy or procedure documents, assure greater consistency when developing nutrient permit conditions. The INLRS applies specifically to discharges to the Mississippi River Basin.

The two industrial permits reviewed for this section do not include effluent limits for total phosphorus. However, one of the industries discharges 275 pounds per day total phosphorus to the Mississippi River basin leading eventually to the Gulf of Mexico where hypoxia is a concern. *Industrial NPDES Permit Review Notes* for this permit refer to an Illinois appellate court judgement and opinion (Illinois Appellate Court for the First District, Case No. 1-15-0971, *Prairie Rivers Network, et al. v. the Illinois Pollution Control Board, the Illinois Environmental Protection Agency; and Metropolitan Water Reclamation District of Greater Chicago*) to support standard conditions for controlling total phosphorus loads to protect water quality in the receiving water or another water potentially impacted by the discharge. The state worked successfully with the permittee to negotiate requirements for a feasibility study and plan to optimize and reduce phosphorus and nitrogen discharge loads. The permit includes a special condition to "prepare and submit to the Agency a feasibility study that identifies the method, timeframe, and costs of reducing phosphorus levels in the discharge to consistently meet a potential future effluent limit of 1 mg/L, 0.5 mg/L, and 0.1 mg/L and reducing total nitrogen levels to a future target concentration of 10 mg/L."

Looking ahead, IEPA will expand implementation of the state's new nutrient permitting approach (developed throughout 2018) to require an effluent limit of 0.5 mg/L total phosphorus annual geometric mean, rolling 12-month basis, applicable to most major POTWs beginning by 2030 (although exceptions are included). Further, where IEPA has determined that a facility has the potential to cause or contribute to a nutrient impairment, the permittee will be required to provide a plan by 2023 to document how the facility will remove relevant dissolved oxygen and offensive condition impairments. The new approach also includes suggested special condition language to encourage the installation of biological phosphorus removal (BPR) treatment.

Three of the municipal permits have total phosphorus limits beginning on the permit effective date, and one includes a compliance schedule with interim monitoring-only for total phosphorus. This permittee (with interim monitoring) is unique from the others in that it is part of a watershed group leading efforts to reduce nutrients from point and non-point sources. This permit includes a compliance schedule allowing up to 11 years to meet the 1.0 mg/L total phosphorus limit, and special conditions for continued participation in the watershed group and deliverables demonstrating progress in controlling nutrients to the watershed.

These watershed group special conditions establish enforceable timeframes for permittee-led efforts to optimize nutrient reduction, and they promote collaboration among diverse stakeholders. Currently, there are six watershed groups in Illinois (Fox Watershed, Upper DesPlaines Watershed, Lower DesPlaines Watershed, Dupage River/Salt Creek Watershed, Lower DuPage Watershed, and the North Branch Chicago River Watershed) which include about 85 dischargers, local governments, and environmental advocacy groups.

### *Program Strengths*

- Permits correctly apply IEPA rules at 35 IAC Sections 302 and 304 for total phosphorus.
- The INLRS supports a strategy to address nutrients now while also working toward long-term goals.
- Permit writers appropriately factor unique circumstances of the discharger when establishing nutrient limitations and special conditions.
- Permits build on existing programs to restore and protect waters that are impaired or threatened to become impaired.

### *Areas for Improvement*

IEPA should continue to incorporate their agreements with the Illinois Association of Wastewater Agencies and other non-governmental organizations in major municipal NPDES permits to reduce the total phosphorus loadings in the receiving stream. For greater regulatory certainty, permits should continue to make progress towards implementing the narrative water quality standard for nutrients using a numeric limit(s), consistent with requirements at 40 CFR 122.44, including sections 122.44 (d)(1)(iii) through (vi).

Fact sheets or other supporting documentation should refer to supporting documentation that support the intent and basis of special conditions including adaptive management, process optimization, capital improvement, etc.

If the discharge is to an impaired water but does not yet have an approved TMDL, the permit record should identify the TMDL status. At a minimum, it should state whether the TMDL is approved and if approved, what permit requirements are based on the TMDL.

To support 35 Ill. Adm. Code 304.123(c), the permit record should document that the state assessed where the discharge is in proximity to a downstream lake/reservoir with a surface area greater than 20 acres. Similarly, the permit record should document if downstream rivers within a reasonable distance are nutrient impaired.

In one industrial permit, a total nitrogen limitation was established based on the TBEL (40 CFR 432), but that limit is less stringent than current effluent quality. This approach is acceptable

provided that the discharge, as authorized by the limit, does not cause or contribute to a violation of the WQS.

**Action Items (Permit Controls for Nutrients in Non-TMDL Waters)**

|             |  |
|-------------|--|
| Essential   | <ul style="list-style-type: none"> <li>• The PQR did not identify any essential action items for this section.</li> </ul>  |
| Recommended | <ul style="list-style-type: none"> <li>• For greater regulatory certainty, IEPA should continue making progress toward establishing effluent limits in permits for any pollutant with the reasonable potential to cause or contribute to an impairment of water quality standards, whether those water quality standards are numeric or narrative, consistent with requirements at 40 CFR 122.44, including sections 122.44(d)(1)(iii) through (vi).</li> <li>• IEPA should continue to implement its approach to controlling phosphorus from major municipalities in the State, as well as developing approaches for ensuring phosphorus limits are developed for industrial dischargers and minor municipalities.</li> <li>• Consolidate written standard operating procedures for nutrients in one place as a guide for permit writers.</li> <li>• Document in the permit record whether the state assessed the discharge proximity to a downstream lake/reservoir with a surface area greater than 20 acres. Similarly, the permit record should document if downstream rivers within a specified, reasonable distance are nutrient impaired.</li> </ul> |

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

*Background*

The PQR National topic area *Effectiveness of POTW NPDES Programs with Food Processor Contributions* evaluates successful and unique practices with respect to food processor industrial users (IUs) by evaluating whether appropriate controls are included in the receiving POTW’s NPDES permit and documented in the NPDES permit fact sheet or statement of basis. This topic area aligns with the EPA Office of Enforcement Compliance and Assurance National Compliance Initiative, [Reducing Significant Noncompliance with National Pollutant Discharge Elimination System Permits](#) by gathering information that can be used to provide permit writers with tools to maintain or improve POTW and IU compliance with respect to conventional pollutants and nutrients.

The food processing sector manufactures edible food stuffs and products (such as dairy, meat, vegetable, bakery, grains) from raw animal, vegetable, and marine material. The main constituents of food processing wastewaters are conventional pollutants (BOD<sub>5</sub>, TSS, oil and grease (O&G), pH, and bacteria) and non-conventional pollutants (such as phosphorus and ammonia). These pollutants are compatible with the POTW treatment system. However, the

POTW may not be designed or equipped to treat the intermittent or high pollutant loadings that can result from food processing indirect discharges.

The General Pretreatment Regulations at 40 CFR 403.5(c)(1) require POTWs with approved pretreatment programs to continue to develop and apply local limits (LLs) as necessary to control any pollutant that can reasonably be discharged into the POTW by an IU in sufficient amounts to pass through or interfere with the treatment works, contaminate its sludge, cause problems in the collection system, or jeopardize workers. POTWs that do not have approved pretreatment programs may also be required to develop specific LLs as circumstances warrant (40 CFR 403.5(c)(2)). LLs and other site-specific requirements are enforced by the POTW through IU control mechanisms.

The General Pretreatment Regulations require an Approval Authority to ensure that all substantive parts of the POTW’s pretreatment program are fully established and implemented, including control mechanisms a POTW issues to its IUs to reduce pollutants in the indirect discharge (See 40 CFR 403.11). EPA Region 5 serves as the Approval Authority for facilities in Illinois; IEPA is not an Approval Authority since it does not have an EPA-approved state pretreatment program (See 40 CFR 403.10). NPDES programs involve both NPDES permitting and pretreatment authorities. Because this PQR report is concerned primarily with state programs, findings and action items pertaining to the state NPDES program are discussed in this section, whereas a slightly more comprehensive discussion including action items applicable to the EPA Region 5 pretreatment program is provided as Appendix A.

Table 3 identifies the Pretreatment and NPDES requirements considered during this PQR. With regard to the Pretreatment Program, the terms Director and Permitting Authority refer to the EPA Region 5 Regional Administrator and EPA Region 5, respectively. The term Control Authority refers to the POTW with an approved pretreatment program, and EPA Region 5 for the POTW without an approved pretreatment program.

*Table 3. Regulatory Focus for this Section of the PQR*

| Citation                     | Description  |
|------------------------------|--|
| 40 CFR 122.42(b)             | POTW requirements to provide adequate notice of new pollutants   |
| 40 CFR 122.44(j)             | Pretreatment Programs for POTW   |
| 40 CFR 124.3(a) and (c)      | The POTW must submit a timely and completed application for an NPDES permit or NPDES permit renewal  |
| 40 CFR 124.8(a) and (b)      | The permitting authority must prepare a fact sheet for every draft permit for a major NPDES facility. Fact sheets must briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit including references |
| 40 CFR 403.5(a), (b) and (c) | National pretreatment standards: Prohibited discharges   |
| 40 CFR 403.3                 | Definitions  |
| 40 CFR 403.8                 | Pretreatment Program Requirements: Development and Implementation by POTW  |
| 40 CFR 403.10                | Development and submission of NPDES State pretreatment programs  |

|               |   |
|---------------|---|
| 40 CFR 403.11 | Approval procedures for POTW pretreatment programs and POTW granting of removal credits |
|---------------|---|

**Findings**

**Pretreatment Program Coverage**

As shown in the table below, 102 POTWs in Illinois receive indirect discharge from one or more significant industrial users (SIUs). This number of POTWs is equivalent to approximately 20 percent of all POTW NPDES permittees statewide (See *Section II.A. of the PQR report for a description of the universe of IEPA NPDES Permits*). Among them, about half (48 POTWs) have an approved pretreatment program, making the POTW Control Authority for a total of 804 SIUs. EPA Region 5 serves as the Control Authority for 89 SIUs distributed across 54 POTWs without an approved pretreatment program.

*Table 4. Illinois SIUs by Pretreatment Program Status*

| SIU Description                   | Number of SIU(s) Controlled by an Approved Pretreatment Program (48 POTWs) | Number of SIU(s) Not Controlled by an Approved Pretreatment Program (54 POTWs) | Total      |
|-----------------------------------|--|--|------------|
| Categorical Industrial User (CIU) | 334  | 52   | <b>371</b> |
| Non-CIU                           | 470  | 37   | <b>507</b> |
| <b>Total SIU</b>                  | <b>804</b>   | <b>89</b>  | <b>893</b> |

<sup>[1]</sup> Data source: EPA Region 5 collected this data through the ICIS database.]

<sup>[2]</sup> Data source: EPA Region 5 provided this data from an internal IU monitoring database.]

EPA Region 5 determined that only a small number of SIUs are food processors. Table 5 shows that 371 of the 893 SIUs, are Categorical Industrial Users (CIUs), covered by Federal categorical pretreatment standards (See 40 CFR 403.8(f)(1)(ii)). There are currently no Federal categorical pretreatment standards for food processors, so none of the 371 CIUs are so designated due to wastewater from food processors.

EPA selected permits for this topic area using the process outlined in Section I.C. of this report coupled with review of: data retrieved from EPA’s ECHO (Enforcement and Compliance History Online) and ICIS (Integrated Compliance Information System for NPDES) databases; annual reports submitted to EPA Region 5 by POTWs with approved pretreatment programs; and discussions with IEPA. In addition, EPA Region 5 contacted several POTWs by telephone to confirm whether the POTW has one or more food processor IUs.

Table 5 identifies the five NPDES permits selected for this topic area.<sup>4</sup> All five have a sewer use ordinance controlling their IUs; however, only the two POTWs with an approved pretreatment program (Village of Bolingbrook–STP #3 and Village of Carol Stream) have SUOs approved by EPA Region 5 in accordance with 40 CFR 403. Table 5 shows minimum standards for IUs through the SUO local limits (LLs) and/or surcharge controls for conventional pollutants. The type of control (LL or surcharge) and parameters controlled vary by SUO: all five regulate BOD<sub>5</sub> and TSS;

<sup>4</sup> The Village of Carol Stream (IL0026352) was reviewed for this topic area but was not part of the Core Review.

three control O&G and fats, oils and grease (FOG); and two control phosphorus and ammonia nitrogen. SUOs are available online for the five POTWs and hyperlinked in the table below.

*Table 5. Permits Selected for the Pretreatment Topic Area*

| Permittee<br>(SUO is linked)                    | Permit No. | Approved Program? | DAF (MGD)        | No. of SIUs <sup>1</sup> | No. of Food Processor IUs <sup>1</sup> | Example of SUO Controls   |
|---|------------|-------------------|------------------|--------------------------|--|---|
| <a href="#">City of Joliet Eastside</a>         | IL0022519  | Yes               | 18.2             | 28                       | 1                                      | BOD and TSS surcharge   |
| <a href="#">Village of Bolingbrook - STP #3</a> | IL0069744  | No                | 2.8              | 1                        | 1                                      | BOD and TSS surcharge   |
| <a href="#">Village of Wauconda</a>             | IL0020109  | No                | 1.9              | 5                        | 2                                      | BOD, TSS, COD, ammonia, O&G, pH, and phosphorus limits; BOD, ammonia, TSS, and phosphorus surcharge |
| <a href="#">City of Harvard</a>                 | IL0020117  | No                | 1.8              | 0                        | 2 <sup>4</sup>                         | BOD, TSS, TDS, Ammonia, O&G, phosphorus, pH local limits  |
| <a href="#">Village of Carol Stream</a>         | IL0026352  | Yes               | 6.5 <sup>2</sup> | 6 <sup>3</sup>           | 1 <sup>5</sup>                         | BOD, FOG, TSS limits; BOD, TSS, and FOG surcharge   |

<sup>1</sup>Based on the information provided in the permit application, unless otherwise noted.

<sup>2</sup>Based on information provided in the March 2016 PCI performed by EPA Region 5. Had permitted the food processor as a CIU, 432.74 (Subpart G).

<sup>3</sup>Based on the POTW's 2017 pretreatment annual report for the POTW.

<sup>4</sup>Region 5 identified a dog food treat manufacturer and a microbrewery using Reference USA and ECHO.

<sup>5</sup>The March 2016 PCI report indicates that at the time of the PCI, the POTW had permitted the food processor as a CIU, subject to the categorical pretreatment standards at 40 CFR 432.74 (Subpart G). However, the POTW's 2017 pretreatment annual report lists the food processor as a non-categorical SIU.

***Program Strengths***

The five NPDES permits reviewed for this topic area include the notification requirements at 40 CFR 122.42(b), applicable to all POTWs.

For POTWs with an approved pretreatment program:

- NPDES permits include requirements to implement the General and Specific prohibitions established at 40 CFR 403.5(a)(1) and (b).
- NPDES permit special conditions and fact sheet include language that the permittee must maintain legal authority to fully implement the POTW pretreatment program in accordance with the General Pretreatment Regulations at 40 CFR Part 403, state, and



local laws and regulations, and the approved POTW pretreatment program and any subsequently approved modifications.

- NPDES permits identify the dates the pretreatment programs were initially approved.
- Fact sheets identify the number of noncategorical SIUs and CIUs and the POTW design average flow (DAF), and state that EPA is the pretreatment approval authority.

For POTWs with food processor IUs but without an approved pretreatment program, each NPDES permit includes special conditions to submit a report to IEPA and EPA Region 5 that briefly describes the permittee's pretreatment activities and provides an updated list of SIUs. The report must be submitted within six months of the permit effective date. This special condition is consistent with the approach shown below, where in 2014 after discussing pretreatment NPDES conditions with EPA Region 5, IEPA began to include the following NPDES permit special conditions dependent on the POTW's pretreatment program approval status and DAF:

1. POTWs with approved pretreatment program – NPDES special conditions require pretreatment program implementation as well any modifications to update the industrial pretreatment program as necessary (e.g., the sewer use ordinance, enforcement response plan, and local limits re-evaluation). The special condition also requires an update to the program to include streamlining provisions, if applicable.
2. POTW with DAF equal to or greater than 5.0 MGD and without an approved pretreatment program – NPDES special conditions require submittal of an industrial waste survey (IWS) to Region 5 for determination of the need for additional requirements to develop an approved pretreatment program.
3. POTW with DAF less than 5.0 MGD and without an approved pretreatment program – NPDES special conditions require submittal of a pretreatment activity report to IEPA and EPA Region 5 identifying what, if any, pretreatment activities the POTW is performing or has performed recently and to identify any IUs present.

Certain IEPA permit conditions went above and beyond which was shown in two permits. One permit (Village of Bolingbrook-STP #3, less than 5.0 MGD and no approved pretreatment program) includes an additional special condition (Special Condition 18) allowing the permittee 18 months from the permit effective date to submit to EPA Region 5 and IEPA an IU inventory providing more detail about their IUs. This special condition 18 requires that the POTW develop a pretreatment program should EPA Region 5 notify them that a pretreatment program is necessary based upon review of the IU inventory. Another permit without an approved pretreatment program (Village of Wauconda), incorporates by reference a state enforcement order addressing requirements for the POTW to implement pretreatment through the order.

### *Areas for Improvement*

#### NPDES Permits and Fact Sheets



Under 40 CFR §122.42(b), NPDES permits for all POTWs must require POTWs to provide “adequate notice to the Director” concerning new introduction of pollutants to the POTWs from an IU, or substantial change in the volume or character of the indirect discharge. The NPDES permit standard conditions for the permits reviewed in this topic area include this requirement but with two areas that could be improved with additional specificity. First, the special conditions do not include a timeframe for the POTW to provide adequate notice and while a timeframe for this notification is not required by federal regulations, the incorporation of a timeframe, when appropriate, in the permit would improve POTW accountability and permit enforceability. Second, the special conditions only require the POTW to provide adequate notice to IEPA. They should also require the notice be provided to EPA Region 5. Therefore, to enhance permit enforceability and program efficiency, it is recommended that the permit special condition which requires the POTW to “provide adequate notice to the Director...” also require that the POTW provide the notice to both IEPA and to EPA Region 5 and that it specify a reasonable timeframe to provide the notice after the POTW becomes aware of changes identified in 40 CFR §122.42(b).

NPDES permit special conditions appropriately require implementation of the pretreatment program, and “any subsequent modifications thereto.” However, the permit only identifies the date EPA originally approved the pretreatment program and no subsequent modification approval dates are provided. EPA Region 5 has approved modifications to numerous pretreatment programs since their initial approval date. While special condition language with the initial approval date “and any subsequent modifications thereto” is acceptable, it is recommended that IEPA also include the approval date(s) of the most recent pretreatment program modification in the special condition, or at minimum, provide that information in the fact sheet.

The NPDES permit application for the Village of Bolingbrook-STP #3 indicated that the food processor located in Bolingbrook discharges more than 25,000 gpd to the POTW, which would qualify the industry as a SIU. According to Harvard’s Chamber of Commerce website, a new distillery and breweries have opened in Harvard. EPA’s Toxic Release Inventory also identifies food processing IU self-identified discharges to the City of Harvard and Village of Bolingbrook-STP #3 POTWs, but the IUs were not identified in the permit applications. Although it is unclear whether the IUs identified meet the definition of a SIU, the IEPA should confer with EPA Region 5 about whether all SIUs and CIUs are correctly identified and properly classified (See 40 CFR 122.21 (j)(6)). If new dischargers come online after NPDES permit issuance, information reported under 40 CFR 122.42(b) notification should be provided to both EPA Region 5 as Control Authority and IEPA as NPDES Authority. For more information on resources for identifying industrial users, refer to EPA’s guidance document, *Best Practices for NPDES Permit Writers and Pretreatment Coordinators to Address Toxic and Hazardous Chemical Discharges to POTWs*.

NPDES special conditions for the Village of Bolingbrook-STP #3 appropriately include requirements to submit an IU report and to potentially develop a pretreatment program. However, the fact sheet is deficient in that it does not address pretreatment or indirect discharges. The NPDES permit application for Village of Bolingbrook-STP #3 identifies one IU, a

food processor discharging more than 25,000 gpd to the POTW. This flow would qualify the food processor as a SIU. The fact sheet overlooks the IU and states only that the applicant is engaged in treating domestic wastewater, without mentioning industrial wastewater contributions or the permit requirement to develop a pretreatment program. NPDES requirements at 40 CFR 124.8(a), state that fact sheets shall briefly set forth the principal facts in preparing the draft permit. The presence of IUs and pretreatment language are principle facts. The POTW permit and fact sheet should clearly state whether the POTW is required to develop or implement an approved pretreatment program and any additional pretreatment controls.

Pretreatment special condition 18 for the Village of Bolingbrook—STP #3 includes a reopener clause that the permit “may be modified to eliminate the requirement to develop a Pretreatment Program should further developments during the preparation of the program warrant its discontinuance.” IEPA should ensure that any permit modification is consistent with applicable laws and regulations and provide a brief summary of the permit modification in the permit record.

The permit application for the Village of Wauconda lacks a description of the industrial processes that affect or contribute to each SIU discharge. The permit application identifies one IU as a CIU but indicates that the IU is not subject to categorical pretreatment standards and does not specify a category.

The fact sheet for the Village of Wauconda NPDES permit application Form F states “No” in response to whether there is an approved pretreatment program. However, the POTW’s NPDES permit and fact sheet contain conflicting language regarding the existence of a pretreatment program. The fact sheet dated September 01, 2016, states: “This treatment works does not have an approved pretreatment program. There are 4 non-categorical SIUs and 1 CIU.” The NPDES permit requires the POTW to comply with consent order No. 04 Ch 1206, issued by the People of the State of Illinois and IEPA, filed December 10, 2004. Part VIII.B of the consent order requires the POTW to implement and enforce a pretreatment program and submit an annual pretreatment report to IEPA. The POTW permit and fact sheet should clearly state whether the POTW is required to develop and implement a pretreatment program.

IEPA should institute an NPDES permit application review process that ensures that all potential SIUs and CIUs are identified and properly classified in Section F of the POTW NPDES application. 40 CFR 122.21(j)(6). The permit application and the fact sheet for the Village of Wauconda state that there are four non-categorical SIUs and one CIU. This is inconsistent with the SIU information elsewhere in the permit application which reports that none of the five CIUs are subject to a categorical pretreatment standard. During permit application review, the IEPA permit writer should confer with EPA Region 5 about whether all SIUs and CIUs are correctly identified and properly classified based on a comparison of information available in the POTW’s annual reports.

NPDES permits for POTWs with approved pretreatment programs require program implementation, but the requirements are incorporated by reference to federal regulations

rather than listed explicitly. To improve permit clarity, NPDES permits for POTWs with approved pretreatment programs should spell out the general and specific prohibitions found at 40 CFR Section 403.5(a)(1) and (b), rather than simply incorporating these requirements by reference.

Permit documentation reviewed for the five permits did not identify the POTW treatment facility's organic (conventional) and nutrient loading capacities (see definition of SIU, i.e.,  $\geq 5\%$  POTW hydraulic or organic capacity). Fact sheets did not state whether the treatment facility accepts hauled-in waste (which might affect loading), nor did they characterize IU waste-streams even though the POTW's SUOs have local limits and/or surcharge values for conventional pollutants or nutrients. In addition, the fact sheets did not identify whether food processors are classified as SIUs. Inclusion of this information in the NPDES permit record is important for documenting the rationale for the POTW's monitoring requirements. It is recommended that the permittee with food processor SIU(s) be required to report the POTW's organic loading capacity as part of the permit application and that the NPDES permit fact sheet: notes whether the POTW accepts hauled waste; identifies and characterizes contributing industrial dischargers to clarify the need for a pretreatment program; and denotes the domestic/industrial loading that may affect the POTW. During permit development, the permit writer will confer with EPA Region 5 about whether all SIUs are correctly identified and properly classified. This information will provide a record of the types of industrial discharges known at the time of permit issuance and distinguish them from new waste streams accepted after permit issuance (see notification requirements of 40 CFR 122.42(b)).

EPA Region 5 is responsible for overseeing POTWs with approved pretreatment programs to ensure that SUOs and discharge permits have appropriate local limits and monitoring conditions. Further discussion between IEPA and EPA Region 5 is recommended for the state to ascertain whether monitoring frequencies in NPDES permits are appropriate or could be aligned more effectively with IU monitoring requirements (or conversely, for EPA Region 5 to determine if the POTW's requirements to monitor LL's should align more closely with NPDES requirements). Additionally, the Region and State should work together to ensure that where EPA Region 5 is the Control Authority, POTW treatment plant capacities are properly evaluated and requirements for the POTW and industry are appropriate.

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

|           |  |
|-----------|--|
| Essential | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for this section.</li> </ul> |
|-----------|--|

|             |   |
|-------------|---|
| Recommended | <ul style="list-style-type: none"> <li>•IEPA permit writers should confer with EPA Region 5 to ensure that the NPDES permit applications includes a complete and accurate description of all IUs or potential SIUs, including a description of any industrial waste hauled into the POTW treatment facility, and a citation to and category name of applicable categorical guidelines. [40 CFR 122.21(j)(6); 40 CFR 123.25 (24) in reference to 40 CFR 124.3 (a)(c): “review for completeness every application for an EPA-issued permit.”]</li> <li>•NPDES permits should require a timeframe for the POTW to provide “adequate notice to the Director” under 40 CFR 122.42(b) concerning new introduction of pollutants to the POTW from an IU, substantial change in the volume or character of the indirect discharge, etc.</li> <li>•NPDES permits should require the POTW to submit “adequate notice” to both EPA Region 5 and IEPA regarding the change in quantity in effluent discharge to the POTW (required by 40 CFR 122.42(b)), ensuring that the Region is aware of changes that may require the POTW to develop or modify a pretreatment program.</li> <li>•NPDES permits for POTWs with approved pretreatment programs should provide explicit language regarding the general and specific prohibitions found at 40 CFR Section 403.5(a)(1) and (b), rather than incorporating these requirements by reference.</li> <li>•NPDES permits and fact sheets for POTWs with federally approved pretreatment programs should identify the approval date(s) of the currently effective pretreatment program not just the date the program was first approved. [40 CFR 403.8(c) “Incorporation of approved programs in permits,” and 122.24(a)(b) Fact sheet and content of fact sheet].</li> <li>•POTW NPDES permit and fact sheet should clearly state whether the POTW is or is not required to develop or implement a federally approved pretreatment program.</li> <li>•POTW fact sheets should provide a brief summary of the basis of or need for any special condition requiring a modified pretreatment program and provide a brief summary of the basis for any permit reopener clause including those involving pretreatment.</li> </ul> |
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**C. Small Municipal Separate Storm Sewer System (MS4) Permit Requirements**

**Background**

The PQR reviewed the state’s small General Permit for Small Municipal Separate Storm Sewer Systems (Small MS4 GP) 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)).

IEPA’s Small MS4 GP became effective March 1, 2016 and expires February 28, 2021. This GP was written and issued prior to the MS4 Remand Rule, which became effective on January 9, 2017. EPA expects permitting authorities to comply with the final rule when the next permit is issued following the expiration date of the current permit.

### *Program Strengths*

- The GP requires permittees to develop a Stormwater Management Plan (SWMP).
- The GP consistently uses mandatory language, such as “must” or “shall” when describing permit requirements.
- The GP includes multiple requirements for each of the Six Minimum Control Measures (MCMs), which have the potential to be made more clear, specific and measurable draft permit requirements in the next iteration of the GP under the MS4 Remand Rule.

### *Areas for Improvement*

- Specify, within the GP, how and where MS4 SWMPs should be documented to provide clarity for both the permittee and permitting authority.
- Eliminate instances of ambiguous language, such as “to the maximum extent practicable” and “as necessary”.
- Incorporate clear, specific, and measurable permit terms and conditions for the Six Minimum Measures (MCMs).
- Include additional requirements for discharges to impaired waters. There are no NOI requirements to list any stream segments that the MS4 discharges to, and to denote if they are listed as impaired.

**Action Items (Small MS4 Permit Requirements)**

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| <p>Essential</p>   | <ul style="list-style-type: none"> <li>•When the Small MS4 Permit expires in 2021, the following needs to be addressed:</li> <li>•As it relates to 40 CFR 122.34(b), the GP is not sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IEPA should develop clear, specific and measurable goals for each of the 6 MCMs. IEPA should consider the MS4 permitting compendia produced by EPA and other similar post-MS4 Remand Rule General Permits (most Region 5 states will have analogous permits issued by the time IEPA is ready to reissue) as examples.</li> <li>•As it relates to 40 CFR 122.34(b), the GP is not sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IEPA should eliminate from the GP each vague or ambiguous modifier (e.g. "maximum extents practicable," "as much as possible," "unless infeasible," and "short term") unless a definition is included in the GP.</li> <li>•As it relates to 40 CFR 122.34(c), the GP lacks requirements for MS4s to denote any impaired water bodies within their boundaries. IEPA should modify the NOI to include an area for MS4s to note any impaired water bodies, and their source of impairment.</li> <li>•As it relates to 40 CFR 122.34(c), the GP lacks any requirements related to impaired water bodies. IEPA should develop a section of this GP which includes clear, specific, and measurable requirements for impaired water bodies. Depending on the type of MS4 GP, a comprehensive or two-step approach could be included in the GP in a manner that would pertain to all permittees, or it could be specifically described in the second step authorization.</li> </ul> |
| <p>Recommended</p> | <ul style="list-style-type: none"> <li>•The GP should be clear about how or where MS4s SWWMPs should be documented.</li> <li>•The SWWMP section of the GP should provide more detail regarding how IEPA expects to manage SWWMP oversight. This should include detailing where MS4s should keep, post, or disseminate their SWMP, and define the details that must be included.</li> </ul>  |

**V. 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 the IEPA NPDES permit programs, as discussed throughout sections III and IV 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** - 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 items are listed in Table 6 below.

**Recommended Actions** - Recommended action items are for IEPA consideration to improve the effectiveness of its NPDES program. Prior reports identified these action items as Category 2 and 3. Recommended action items are listed in Table 7 below.

Tables 6 and 7 identify the essential and recommended action items from the Core Review Findings and National Topic Area Findings in Sections III of this report. EPA is available to assist IEPA in addressing all action items and will annually track IEPA's progress particularly with essential action items. The status of all action items will be reported during the next IEPA PQR cycle.

Table 6. Essential Action Items from the 2018 - 2022 PQR Cycle

| Topic  | Essential Action Item  |
|--|--|
| Administrative Record and Fact Sheet                                   | <ul style="list-style-type: none"> <li>• Ensure that all public notices include the sludge use and disposal information required by 40 CFR 124.10(d)(v).</li> </ul>  |
| Small Municipal Separate Storm Sewer System (MS4s) Permit Requirements | <ul style="list-style-type: none"> <li>• When the Small MS4 Permit expires in 2021, the following needs to be addressed:</li> <li>• As it relates to 40 CFR 122.34(b), the GP is not sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IEPA should develop clear, specific and measurable goals for each of the 6 MCMs. IEPA should consider the MS4 permitting compendia produced by EPA and other similar post-MS4 Remand Rule General Permits (most Region 5 states will have analogous permits issued by the time IEPA is ready to reissue) as examples.</li> <li>• As it relates to 40 CFR 122.34(b), the GP is not sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IEPA should eliminate from the GP each vague or ambiguous modifier (e.g. "maximum extents practicable," "as much as possible," "unless infeasible," and "short term") unless a definition is included in the GP.</li> <li>• As it relates to 40 CFR 122.34(c), the GP lacks requirements for MS4s to denote any impaired water bodies within their boundaries. IEPA should modify the NOI to include an area for MS4s to note any impaired water bodies, and their source of impairment.</li> <li>• As it relates to 40 CFR 122.34(c), the GP lacks any requirements related to impaired water bodies. IEPA should develop a section of this GP which includes clear, specific, and measurable requirements for impaired water bodies. Depending on the type of MS4 GP, a comprehensive or two-step approach could be included in the GP in a manner that would pertain to all permittees, or it could be specifically described in the second step authorization.</li> </ul> |



Table 7. Recommended Action Items from the 2018 - 2022 PQR Cycle

| Topic   | Recommended Action Item   |
|---|---|
| Facility Information                              | <ul style="list-style-type: none"> <li>• During permit development, verify the accuracy of the reported discharge location and monitoring point.</li> <li>• Take steps to ensure facility location maps and process flow schematics have sufficient detail and that the detail is not lost when paper files are transferred as digital records.</li> <li>• Develop a Permit Section SOP for permit development and issuance.</li> </ul>   |
| Permit Applications                               | <ul style="list-style-type: none"> <li>• Document in the permit record that the application form and information supplemental to the application are completed to the State's satisfaction (40 CFR 122.21(e)).</li> <li>• Ensure that major POTW applicants understand that their application must include a complete data set for whole effluent toxicity (WET) and priority pollutants (40 CFR 122.21(j)(4)(iv) and (vi)).</li> <li>• Ensure that all applicants identify the analytical methods used for analysis of chemical parameters or whether sufficiently sensitive analytical methods were used (40 CFR 122.21(j)(4)(viii)).</li> </ul>  |
| Municipal TBELs                                   | <ul style="list-style-type: none"> <li>• When a municipal permit does not impose a 7-day average limits for BOD (or CBOD) and TSS, the permit record should explain that a 7-day average limit is not necessary because the daily average limits for BOD (or CBOD) and TSS are at least as stringent as Secondary Treatment 7-day average standards at 40 CFR §133.102(a)(2).</li> </ul>  |
| Non-municipal TBELs                               | <ul style="list-style-type: none"> <li>• Provide additional documentation in industrial permit review notes on whether the TBELs have been verified as applicable and if ELGs have been updated since the last permit issuance. Notes should also confirm that industrial permits apply a reasonable measure of actual production as required by 40 CFR 122.45(b) for production-based TBELs and ensure that non-process flow contributions including stormwater are considered.</li> </ul>   |
| Reasonable Potential and WQBELs                   | <ul style="list-style-type: none"> <li>• Provide written procedures for determining RPA.</li> <li>• Work with the WQS Section to develop a written SOPs for translating WQS into projected permit limits. This would include how RPA and WQBELs are determined as well as the administrative process for sharing this information with the Permit Section.</li> <li>• Take measures to supplement staffing levels so that more are trained and available to conduct RPAs and WQBEL, and for QA/QC support.</li> <li>• Develop a thorough fact sheet discussion of WQBELs development; at a minimum, create a connection between the permit's fact sheet and the WQS Unit's water quality assessment memoranda.</li> </ul> |
| Final Effluent Limitations                        | <ul style="list-style-type: none"> <li>• Develop procedures to ensure consistent and transparent evaluation of permit actions for anti-backsliding and antidegradation.</li> </ul>  |
| Documentation of Effluent Limitations Development | <ul style="list-style-type: none"> <li>• Ensure that fact sheets clearly present the basis for all effluent limitations and permit requirements.</li> <li>• Provide greater detail in discussions of TBELs based on ELGs, including the categorization process.</li> </ul>  |

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|                                       | <ul style="list-style-type: none"> <li>• Include in the permit a more exact description of the outfall and monitoring locations.</li> </ul>  |
| Monitoring and Reporting Requirements | <ul style="list-style-type: none"> <li>• Develop guidance for setting monitoring requirements and sample type.</li> <li>• Same recommendation as above in the "Documentation of Effluent Limitations" section (III.B.4)—Include in the permit a more exact description of the outfall and monitoring locations.</li> </ul>   |
| Standard and Special Conditions       | <ul style="list-style-type: none"> <li>• Review and update standard condition language more frequently, to ensure permits remain consistent with current regulations.</li> <li>• As much as possible, put permit requirements in the body of the permit and avoid placing them in a footnote (e.g., percent removal requirements).</li> </ul>  |
| Administrative Process                | <ul style="list-style-type: none"> <li>• Permit writers are urged to ensure that the permit record includes documentation that they reviewed the permit application for completeness</li> </ul>  |
| Administrative Record and Fact Sheet  | <ul style="list-style-type: none"> <li>• <u>Administrative Record</u>. Include background information about recent compliance history.</li> <li>• <u>Administrative record</u>. Ensure that scanned documents are text-searchable and indexed to improve file searchability.</li> <li>• <u>Administrative Record</u>. Ensure that all major comments received during the public comment period are identified along with how those comments were addressed. Indicate if there are no comments.</li> <li>• <u>Administrative Record</u>. Identify whether a public hearing was requested and whether one was held.</li> <li>• <u>Administrative Record</u>. Record the date the permit application was reviewed for completeness and the outcome of that review.</li> <li>• <u>Administrative Record</u>. Provide data showing that the permit writer established the most stringent between TBEL/WQBEL and State/Federal standards.</li> <li>• <u>Fact Sheet</u>. Include more information about receiving water use impairment status, and where impairment exists the TMDL status.</li> <li>• <u>Fact Sheet</u>. Clearly present the basis for all effluent limitations and permit requirements at an appropriate reference level (e.g., 35 IAC Section 304.123(b)(1) vs. 35 IAC Section 304.123).</li> <li>• <u>Fact Sheet</u>. Incorporate more thorough descriptions of facility operations and wastewater treatment process.</li> <li>• <u>Fact Sheet</u>. Provide a reference to relevant documentation in the permit record, including the WQS Section's water quality assessment memoranda and industrial permit review notes.</li> <li>• <u>Fact Sheet</u>. Add a statement to fact sheets for industrial discharges as to whether the reissued permit does or does not permit an increase to the facility's DAF, DMF, concentration limitations or load limitations.</li> </ul> |

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| <p>Permit Controls for Nutrients in Non-TMDL Waters</p>                      | <ul style="list-style-type: none"> <li>• For greater regulatory certainty, IEPA should continue making progress toward establishing effluent limits in permits for any pollutant with the reasonable potential to cause or contribute to an impairment of water quality standards, whether those water quality standards are numeric or narrative, consistent with requirements at 40 CFR § 122.44, including sections 122.44(d)(1)(iii) through (vi).</li> <li>• IEPA should continue to implement its approach to controlling phosphorus from major municipalities in the State, as well as developing approaches for ensuring phosphorus limits are developed for industrial dischargers and minor municipalities.</li> <li>• Consolidate written standard operating procedures for nutrients in one place as a guide for permit writers.</li> <li>• Document in the permit record whether the state assessed the discharge proximity to a downstream lake/reservoir with a surface area greater than 20 acres. Similarly, the permit record should document if downstream rivers within a specified, reasonable distance are nutrient impaired.</li> </ul>  |
| <p>Effectiveness of POTW NPDES Permits with Food Processor Contributions</p> | <ul style="list-style-type: none"> <li>• IEPA permit writers should confer with EPA Region 5 to ensure that the NPDES permit applications includes a complete and accurate description of all IUs or potential SIUs, including a description of any industrial waste hauled into the POTW treatment facility, and a citation to and category name of applicable categorical guidelines. [40 CFR 122.21(j)(6); 40 CFR 123.25 (24) in reference to 40 CFR 124.3 (a)(c): “review for completeness every application for an EPA-issued permit.”]</li> <li>• NPDES permits should require a timeframe for the POTW to provide “adequate notice to the Director” under 40 CFR §122.42(b) concerning new introduction of pollutants to the POTW from an IU, substantial change in the volume or character of the indirect discharge, etc.</li> <li>• NPDES permits should require the POTW to submit “adequate notice” to both EPA Region 5 and IEPA regarding the change in quantity in effluent discharge to the POTW (required by 40 CFR §122.42(b)), ensuring that the Region is aware of changes that may require the POTW to develop or modify a pretreatment program.</li> <li>• NPDES permits for POTWs with approved pretreatment programs should provide explicit language regarding the general and specific prohibitions found at 40 CFR Section 403.5(a)(1) and (b), rather than incorporating these requirements by reference.</li> <li>• NPDES permits and fact sheets for POTWs with federally approved pretreatment programs should identify the approval date(s) of the currently effective pretreatment program not just the date the program was first approved. [40 CFR 403.8(c) “Incorporation of approved programs in permits,” and 122.24(a)(b) Fact sheet and content of fact sheet].</li> <li>• POTW NPDES permit and fact sheet should clearly state whether the POTW is or is not required to develop or implement a federally approved pretreatment program.</li> </ul> |

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|   | <ul style="list-style-type: none"> <li>• POTW fact sheets should provide a brief summary of the basis of or need for any special condition requiring a modified pretreatment program and provide a brief summary of the basis for any permit reopener clause including those involving pretreatment.</li> </ul>  |
| <p>Municipal Separate Storm Sewer Systems (MS4s) Topic Area</p> | <ul style="list-style-type: none"> <li>• The GP should be clear about how or where MS4s SWWMPs should be documented.</li> <li>• The SWWMP section of the GP should provide more detail regarding how IEPA expects to manage SWWMP oversight. This should include detailing where MS4s should keep, post, or disseminate their SWMP, and define the details that must be included.</li> </ul> |

## Appendix A. Recommended Action Items for EPA Region 5 (Effectiveness of Pretreatment Programs with Food Processor Contributions in Illinois)

### Background

This appendix to the Illinois Environmental Protection Agency (IEPA) 2018 Permit Quality Review (PQR) addresses the National topic area of *Effectiveness of POTW NPDES Programs with Food Processors*. This appendix states the Essential and Recommended action items for EPA Region 5 to complete in this topic area.

EPA Region 5 is responsible for overseeing POTWs with approved pretreatment programs to ensure that SUOs and discharge permits have appropriate local limits and monitoring conditions. Further discussion between IEPA and EPA Region 5 is recommended for the state to ascertain whether monitoring frequencies in NPDES permits are appropriate or could be aligned more effectively with IU monitoring requirements (or conversely, for EPA Region 5 to determine if the POTW’s requirements to monitor LL’s should align more closely with NPDES requirements). Additionally, the Region and State should work together to ensure that where EPA Region 5 is the Control Authority, POTW treatment plant capacities are properly evaluated and requirements for the POTW and industry are appropriate.

### Action Items (EPA Region 5)

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| <p>Essential</p>   | <ul style="list-style-type: none"> <li>•The PQR did not identify any essential action items for Region 5.</li> </ul>   |
| <p>Recommended</p> | <ul style="list-style-type: none"> <li>•EPA Region 5 should ensure that approved POTW Pretreatment Programs properly classify their SIUs and apply pretreatment standards and conditions into SIU control mechanisms. 40 CFR 403.8(f)(2)(i-iii) requires the POTW to assess the SIUs and categorize their discharge and use that information to draft the control mechanisms.</li> <li>•EPA Region 5 should evaluate POTW organic loading capacity to address the need for new or additional control mechanisms for food processor IUs thereby ensuring the POTW is protected from conventional and nutrient pollutant loads that could overwhelm the wastewater treatment plant.</li> </ul> |