Region 10 NPDES Program and Permit Quality Review

Washington

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Executive Summary

Purpose and Approach

This report presents results of a Program and Permit Quality Review (PQR) of the Washington Department of Ecology (Ecology) National Pollutant Discharge Elimination System (NPDES) permitting program. The U.S. Environmental Protection Agency (EPA) Region 10, under the authority of the Clean Water Act (CWA) to provide oversight of state NPDES programs, conducted the PQR in 2021. A fundamental priority for EPA is helping states ensure that their NPDES permits are consistent with federal requirements.

The review examined Ecology's NPDES administrative record for selected permits, and it gathered information from the state about its NPDES program structure and organization. As part of the review, the EPA review team conducted a virtual visit during which EPA collected additional information and shared preliminary findings with the state. The review followed EPA's national NPDES PQR Standard Operating Procedures (SOPs), 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. EPA established the following national topic areas for the fiscal year (FY) 2018 – 2022 PQR cycle:

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

Ecology administers 405 individual NPDES permits and 21 general permits that cover 5,228 permittees. As of September 3, 2021, 44 percent of Ecology's NPDES individual permits are current.

Major Findings

The PQR found that NPDES permits issued by Ecology were generally well-developed and consistent with federal regulations. Ecology has continued to refine and maintain useful resources, including its Permit Writer's Manual, SOPs, permit and fact sheet shells (i.e., templates), and other template documents for permit writers, enabling consistent development of defensible permits and informative fact sheets.

The PQR recognizes the many state-specific challenges faced by the state, including permitting for per- and polyfluoroalkyl substances (PFAS) and perfluorooctanoic acid (PFOA) compounds, conducting reasonable potential analyses (RPAs) for pollutants in the absence of numeric water quality criteria, and the implementation of NPDES permitting for nutrients. The PQR identified areas for improvement associated with updating guidance language in the fact sheet shells to bolster the rationale for effluent limitations.

In addition to these items listed above, the report provides an overview of the Ecology NPDES permitting program.

Action Items

The PQR identifies 11 essential and 15 recommended action items. Essential action items must be addressed by Ecology to meet NPDES regulations and will be subject to agreed-upon milestones and due dates as part of a workplan to be developed. Essential action items from this PQR concern permit application completeness, final effluent limitations, documentation of effluent limitation development, pretreatment, food processor permit inspections, and industrial user monitoring. Essential and recommended action items from this PQR are listed in Table 4 and Table 5, respectively, at the end of this document.

Ecology reviewed and provided comments on the draft PQR report in January 2024. Upon clarification from the state, EPA and the state resolved minor discrepancies with certain findings, but the state agreed to address many of the proposed action items, particularly through improvements to permit and fact sheet shells in order to provide clearer guidance to permit writers.

I. PQR BACKGROUND

The National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Reviews (PQRs) are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, the U.S. Environmental Protection Agency (EPA) promotes national consistency, and identifies successes in implementation of the NPDES program as well as opportunities for improvement in the development of NPDES permits. Previously, EPA conducted a PQR of the Ecology NPDES permitting program on August 29–31, 2016. The PQR summary report is available at: https://www.epa.gov/sites/default/files/2017-09/documents/npdes_pqr_washington_june_2017.pdf. The evaluation team identified various action items to improve the Washington NPDES permitting program. As part of the current PQR, EPA requested updates from Ecology on the progress on those action items. The status update for action items is included in Sections VI and VII of this report, Tables 2 and 3. Since the last PQR, Ecology has updated its Permit Writer's Manual[1] and continues to regularly update its permit templates, fact sheet templates, and reasonable potential calculation spreadsheet. Of the six (6) action items identified during the last PQR as being Essential[2] tasks, two (2) have been resolved and the remainder represent actions that are either longer-term activities or lower-level actions which Ecology is still addressing. In addition, EPA identified fifteen (15) recommended action items to improve Washington's program; Ecology has implemented some of the recommended actions and is in the process of evaluating and implementing other recommended actions. Sections VI and VII of this report contain a detailed review of the progress on action items identified during the last PQR.

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

- **Essential Actions -** "Essential" action items address noncompliance with respect to a federal regulation. EPA has provided the citation for each Essential action item. The permitting authority must address these action items in order to comply with federal regulations.
- **Recommended Actions -** "Recommended" action items are recommendations to increase the effectiveness of the state's or Region's NPDES permit program.

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

[1] https://apps.ecology.wa.gov/publications/documents/92109.pdf

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

EPA's review team, consisting of seven regional staff and two HQ contractor staff, conducted a review of the Washington NPDES permitting program. EPA conducted the PQR remotely, meaning materials were reviewed off-site, with files Ecology was able to provide electronically. Further, the remote PQR included interviews and discussions conducted via several conference calls. An opening interview was held on October 12, 2021, a discussion with Ecology staff regarding specific permit questions on October 13 and 14, 2021, and a closing meeting on October 15, 2021.

The Washington PQR included reviews of core permit components and national topic areas, as well as discussions between the PQR review team and Ecology staff addressing their program status and permit issuance process. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and any correspondence, reports, or documents that provide the basis for the development of the permit conditions and related administrative process. The PQR also included conversations between EPA and the state on program status, the permitting process, responsibilities, organization, staffing, and program challenges the state is experiencing.

EPA reviewed a total of 20 permits as part of the PQR. Of these, 17 permits were reviewed for the core review, and 5 permits were reviewed for national topic areas. Some permits were reviewed for both the core review and one or more topic area reviews. Permits were selected based on issuance date and the review categories that they fulfilled.

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. The core review focused on the *Central Tenets of the NPDES Permitting Program*[3] to evaluate the Ecology NPDES program. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states.

Topic Area Reviews

The national topics reviewed in the Ecology NPDES program were: Permit Controls for Nutrients in Non- Total Maximum Daily Load (TMDL) Waters, Small Municipal Separate Storm Sewer System (MS4) Permit Requirements, and Effectiveness of Publicly Owned Treatment Works (POTW) NPDES Permits with Food Processor Contributions. These reviews provide important information to Ecology, EPA Region 10, EPA HQ, and the public on specific program areas.

Regional topic area reviews target regional-specific permit types or particular aspects of permits. Region 10 elected not to conduct an optional, regional topic area review.

[3] https://www.epa.gov/npdes/central-tenets-npdes-permitting-program

II. STATE PROGRAM BACKGROUND

A. Program Structure

Ecology programs address Air Quality; Environmental Assessment; Hazardous Waste and Toxics Reduction; Nuclear Waste; Shorelands and Environmental Assistance; Solid Waste Management; Spill Prevention, Preparedness, and Response; Toxics Cleanup; Water Quality; and Water Resources. The NPDES program is within the Water Quality program, with staff located at both the headquarters and each of the regional offices. The NPDES program also collaborates with other Ecology programs including the Environmental Assessment program for water quality modeling and ambient receiving water quality data, and the Solid Waste Management program for biosolids permitting and specific industrial permitting.

Ecology is headquartered in Lacey with six regional offices across the state (Southwest, Northwest, Central, and Eastern regional offices, and the Vancouver and Bellingham field offices). The headquarters office is responsible for overall NPDES program implementation, providing permitting policy direction, tools, and guidance to regional and field offices, as well as direct administration for NPDES general permits. All general permits are written in the headquarters office, except Fresh Fruit Packing (WAG437023), written by the Central Regional Office and Upland Fin-Fish Hatchery (WAG137020), written by the Southwest Regional Office. Headquarters staff also perform administrative tasks (e.g., processing notices of intent (NOIs), discharge monitoring reports (DMRs), transfers, etc.) for the Construction and Industrial Stormwater general permits. Headquarters' office staff write, manage, and inspect 49 of Ecology's complex individual NPDES permits in the Industrial Section of the Solid Waste program. The Industrial Section operates differently from other Ecology programs in that all permits across different media (water, air, waste, etc.) are managed by the same section and permit manager. In addition, headquarters staff also maintain certain NPDES permitting tools such as individual permit shells, fact sheet shells, and Ecology's own Permit Writer's Manual. Headquarters is also responsible for creating and maintaining information technology (IT) tools, in direct coordination with the agency central IT office. Headquarters also provides permit writing and technical support for one permit that is issued by a separate state agency, the Energy Facility Site Evaluation Council (EFSEC).

Ecology's regional and field office staff are responsible for performing field inspections, providing technical assistance, and performing enforcement for all individual permits, except for the complex industrial permits administered by Ecology's headquarters' Industrial Section. For general permits, these responsibilities are shared between headquarters and regional staff in different ways depending on the specific permit needs.

In addition to Ecology's Water Quality program staff that write and administer NPDES permits, there are staff in other Ecology programs that support and manage NPDES permits including:

- **Ecology Solid Waste Management Program** – Ecology staff in the Industrial Section issue permits for specific larger industrial sectors.
- **Ecology's Nuclear Waste Program** – Ecology staff in the Nuclear Waste program manage permits for the Hanford nuclear site.

- **Energy Facility Site Evaluation Council (EFSEC)** – This agency permits two generating stations (the Energy Northwest Columbia Generating Station and Grays Harbor Energy Center) but continues to rely on Ecology for permit writing and oversight for their NPDES permits. Work for these permits is managed through a Memorandum of Agreement (MOA) and negotiated contracts between Ecology and EFSEC.

Ecology's permit development team includes an array of staff: permit writers, permit implementation team, regional inspectors, regional permit administrators, modelers, and engineering specialists. Ecology indicated that there are 51 NPDES permit writers statewide, comprising 43 individual permit writers and 8 general permit writers. On average, each permit writer drafts approximately 2–3 permits each year.

In addition to the staff specified above, permit development is supported by 12 members of an internal Permit Data Quality workgroup who provide IT planning and support for permits. There are 10–12 administrative staff throughout the state who provide support, along with three members of headquarters' communications team. There are two full-time equivalents (FTEs) who conduct economic analyses for general permits. Two positions in Ecology's headquarters maintain statewide consistency by writing the state's Permit Writer's Manual, coordinating the Permit Writer's Workgroup and the Permit Data Quality workgroup, and maintaining the business side of Ecology's Permitting and Reporting Information System (PARIS) permit database. Headquarters also retains 8 information technology security operations (ITSO) FTEs contracted to the Water Quality program who are responsible for maintaining permit-related programs, including PARIS and the WQWebPortal for submitting DMRs and NOIs. Further, there are also one general permit coordinator, approximately five unit supervisors, and at least one section manager who have extensive permit writing experience and support staff with expertise when needed. Ecology also funds one-half FTE for ongoing permit support from Ecology's Environmental Assessment program. Permit writers also consult with cooperating natural resource agencies (e.g., Fish and Wildlife), the Shorelines Environmental Assistance (SEA) program for State Environmental Policy Act (SEPA) reviews, the Ecology water quality standards (WQS) and TMDL coordinator within the Water Quality program (to ensure impaired waters and TMDLs are addressed appropriately), and the state attorney general's office to ensure consistency with state rulings.

Ecology uses both formal and informal training to train new permit writers and to provide ongoing training to experienced permit writers. All new permit writers attend EPA's NPDES Permit Writers' course to gain basic permit writing knowledge. Specific knowledge is gained through on-the-job experience. Internal workgroups are used to transfer knowledge, discuss issues, and make decisions about permitting practices and policies. There is a workgroup for general permit writers and another for individual permit writers that meet quarterly or every other month.

Ecology has developed and incorporated reliable tools and guidance into permit writing processes; some of these tools are accessible on Ecology's website and are available to the public. Additional resources are available to permit writing staff internally through their Permit Writer's SharePoint site. Ecology developed its Permit Writer's Manual in 1989. Ecology's Permit Writer's Manual documents the process of writing a permit (mostly individual permits,

but it does have a chapter for general permits). The document has been revised over the years to keep pace with Ecology's current permitting practices. Updates can be spurred by new laws (state or federal), court decisions, technology, industries, or a variety of other factors. The Permit Writer's Manual guides writers through the process of writing a permit from highly technical considerations, including calculating effluent limits, to procedural requirements such as public involvement. The Permit Writer's Manual brings together law, policy, and technical expertise into a single document that is available to the public to review. In addition to the Permit Writer's Manual, Ecology permit writers consult the Criteria for Sewage Works Design (referred to as the "Orange Book"), Infiltration and Inflow Guidance, Mixing Zone Guidance, and the PermitCalc Excel® Workbook used for evaluating reasonable potential and calculating effluent limitations. Other guidance is available to permit writers through the Permit Writer's SharePoint site, including permit and fact sheet shells, and the Permit Writer's Workgroup's decisions and notes that document important permitting practices and policies.

There are shells permit writers must use when writing permits and fact sheets. Ecology has shells for individual industrial and municipal permits and fact sheets (two permit shells and two fact sheet shells). These shells are maintained by a specialist at headquarters with support from the Permit Writer's Workgroup. The Permit Writer's Workgroup revises the permit shell periodically based on recommendations brought to the Workgroup by permit writers. General permits and associated fact sheets are not generated using templates, though the General Permit Writer's workgroup is currently documenting the general permit development and reissuance process and may soon begin developing templates. Individual permits are written from shells or rewritten from existing permits when reissued. General permit drafts are either rewritten based on existing permits for reissuances or are developed from scratch, based on permit development guidance and a stakeholder process, for new general permits. The draft coverages are reviewed for administrative completeness and issued on that basis. Ecology developed the PermitCalc Excel® workbook for permit writers' use. The workbook incorporates current information about WQS and allows the permit writer to calculate reasonable potential for each parameter by entering statistics derived from DMR data, which can be automatically calculated by PARIS.

Ecology has numerous data systems to support the NPDES program and NPDES permit writing in general. The following data systems facilitate NPDES permit management and data availability internally and externally to the public. The Water Quality program currently has 8 ITSO FTEs contracted through an MOA, plus one additional FTE support staff (currently vacant) to maintain and update these data systems. NPDES permit data flows from Ecology's PARIS database to EPA's Integrated Compliance Information System (ICIS) database at the end of each day. These systems allow for electronic reporting of DMR and other permit-required data directly by the permittee.

PARIS – The basic permit database that contains information on about 95 percent of the permits issued by Ecology (except, at the present time, CAFOs and aquatic pesticide permits). Includes basic permit data, submittals, and DMRs, as well as data from PARIS flows to EPA's ICIS database on a nightly basis.

WQWebPortal – This is a collection of applications all bound together with a single authentication (sign-in) system. Permittees can use the WQWebPortal to apply for a limited set of permits and submit DMRs and other submittals for most permits (again, except for CAFOs and aquatic pesticide permits).

Other Systems – Ecology maintains a letter mailing system connected to PARIS (WebDocs); a database for construction stormwater certification (CESCL); and a database for wastewater treatment plant operator certification. The SecureAccess Washington (SAW) database is used for permitting information regarding control of aquatic mosquitos and aquatic plants and algae.

Additional Ecology databases provide an array of data used by permit writers, including Environmental Monitoring Data, Environmental Information Management (EIM) Environmental Data, Water Quality Atlas, Facility Site Database, and Pollutant Waters 303(d) Listing.

Ecology provides guidance for the Water Quality program's quality assurance/quality control (QA/QC) process in its Permit Writer's Manual, which describes the QA/QC process for individual and general permits. Permits are reviewed by the writer, their supervisor, and the section or regional manager who signs the permit, as well as a permit specialist at headquarters.

An implementation team comprised of the permit writer, regional permit managers/inspectors, and any other staff directly involved in the management of the permit reviews general permits. Staff in the Program Development Section at Ecology headquarters review general permits before issuance. Peer review occurs within the section or regional office responsible for issuing the individual permit. Each office establishes its own peer review processes. Some distribute documents and request comments; others may provide oral presentations to peers. Prior to issuance, both the unit supervisor and the section manager review the permit. Ecology does not use statewide QA/QC checklists for permits. However, many of the functions of a checklist are built into the individual permit shells. For example, each shell contains language that may or may not be used in the permit, and text that explains the conditions under which the language should be used. Additionally, individual sections may develop their own QA/QC checklists.

Individual permits undergo substantially similar QA/QC processes. There are variations depending on the peer review process established in the region or section. The general permit QA/QC process differs from the individual permit process. General permits rely more on review by their team. In addition, because all but two of them are written from the same section, the same unit supervisors and section manager provide management review.

B. Universe and Permit Issuance

Based on information provided by Ecology, as of September 14, 2021, the universe of NPDES and pretreatment permits includes the following:

- 211 POTWs
    - 43 major and 168 non-major
- Individual Stormwater Permits

    - 0 permits (all stormwater permitting is under general permits; individual permits with stormwater components are not tracked separately)
- 194 non-POTWs
    - 27 major and 167 non-major
- 21 general permits that cover numerous categories including:
    - 3,763 stormwater dischargers
        - 1,126 industrial permittees
        - 2,514 construction permittees
        - 123 municipal permittees
    - 1,465 non-stormwater general permittees.
- 117 state waste discharge permits to significant industrial users (SIUs) in non-approved pretreatment programs
    - 70 SIUs
    - 47 categorical industrial users (CIUs)
- 266 indirect discharge permits to SIUs in approved pretreatment programs.
    - 161 SIUs
    - 105 CIUs

Ecology reported that 42 major individual and 185 non-major individual permits are administratively continued, which equates to 44 percent of individual permits being current. In addition, 4 general permits, or 19 percent, are administratively continued. Ecology continues to make concerted efforts towards reducing the permit backlog, but it is still larger than it was during the last PQR. Development of the new Puget Sound Nutrient General Permit, the pandemic, and staffing limitations have contributed to the backlog since the last PQR. Ecology has recently received additional funding and permanent FTEs through the state legislature and the cap on municipal permit fees has been removed; this will allow Ecology to increase regional permitting staff and reduce the backlog over the next few years.

C. State-Specific Challenges

Ecology discussed certain topics as challenges the program faces, including permitting per- and polyfluoroalkyl substances (PFAS) and perfluorooctanoic acid (PFOA) compounds and conducting reasonable potential analyses (RPAs) for pollutants in the absence of numeric water quality criteria, in particular for contaminants of emerging concern (CECs) and polybrominated diphenyl ethers (PBDEs). In addition, Ecology faces challenges with addressing nutrients in NPDES permits when a dissolved oxygen (DO) or pH impairment (Category 5) has not led to the development of an EPA-approved TMDL or Advanced Restoration Plan with nutrient wasteload allocations (WLAs). This challenge has contributed to the current infeasibility of deriving water quality-based effluent limitations (WQBELs) for nutrients in the Puget Sound Nutrient General Permit (PSNGP). Ecology expects ongoing Puget Sound modelling work to lead to WLAs and enable the development of WQBELs for nutrient discharges from wastewater treatment plants in Puget Sound.

Ecology will continue to discuss these issues during their monthly meetings with EPA Region 10.

D. Current State Initiatives

Ecology added new engineering design guidance on biological nutrient removal to its "Criteria for Sewage Works Design" manual[4] in 2022. In the 2021-23 biennial budget, the state Legislature appropriated $9 million for a grant program[5] to help municipalities prepare and plan for future treatment facility upgrades and implement operational modifications necessary to maximize nutrient removal from existing treatment processes. This grant program will provide affected municipalities with financial assistance to address the PSNGP requirements. Eligible applicants for funding are the 42 municipalities that operate the 58 wastewater treatment plants that discharge to Puget Sound that will be covered by the permit.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Background

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

Program Strengths

Ecology's final fact sheets provided a thorough description of the facility history, facility operations and wastewater treatment processes, expected waste streams, and receiving water information.

Areas for Improvement

Permits and fact sheets did not speak to whether the facility is classified as a major or non-major.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•Consider updating fact sheet shells to include a statement indicating the facility's designation (major or non-major).

[4] https://apps.ecology.wa.gov/publications/SummaryPages/9837.html

[5] https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Puget-Sound-Nutrient-Reduction

2. Permit Application Requirements

Background and Process

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

Ecology uses federal application forms for individual NPDES permits; application forms are linked on Ecology's website[6] and in an application reminder letter that Ecology sends to permittees in advance of the application due date. In addition, individual permits require submittal of applications to administratively continue authorization to discharge under the permit. NOIs for coverage under general permits are contained in state forms that are unique to each general permit and updated with each reissuance cycle. General permits may include the deadline for application submittal, but during the reissuance process, Ecology provides advance notice to permittees for the 180-day submittal deadline. Ecology sends an email or letter to permittees 90 days prior to the application submittal deadline that includes instructions on how to apply electronically. Ecology permit writers and inspectors coordinate to ensure that permittees reapply as appropriate. Ecology requires submittal of NOIs for new activities 60 days prior to commencement of the anticipated discharge. Ecology's PARIS database tracks application due dates and submittal progress. Ecology's statute requires certain applications, including applications for new or increased discharges, to be issued for public notice. Applicants are responsible for publishing the notice in a newspaper of general circulation within the county in which the discharge is proposed.

Permit administrators and permit managers conduct a completeness review of individual NPDES applications and general permit NOIs. Ecology permit writers may also share responsibility for conducting completeness reviews of NOIs because the volume of NOIs creates a significant burden for the permit administrator and permit manager when they are responsible for administering the general permits. Permit staff conduct outreach to applicants to request additional information that was absent from the initial application submittal. Upon receiving a complete application, staff will send a notification letter to applicants indicating their application is deemed complete.

Ecology permitting supervisors assign permits to permit writers generally based on expertise and familiarity with the specific permit. General permits are assigned to staff who will manage the permit throughout the entire permit cycle, including drafting and administering the permit; this improves the protections afforded by the permits if the staff who developed the permit conditions is the same as who implements the permit. For general permits, each permit is assigned to a specific position, generally one permit per position (MS4, Construction stormwater, Sand & Gravel, etc.), but sometimes multiple permits (all the Aquatic Pesticide

[6] https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits#forms

permits are assigned to the same permit writer). For some general permits, especially stormwater general permits, regional staff serve on a workgroup with the headquarters permit writer through the permit development process. Permit writing positions are recruited and filled according to their ability to write the assigned permits. Individual permits are assigned to the region in which the facility is located, and thereafter assigned to permit writing staff by unit supervisors.

Program Strengths

Permit administrative records consistently included permit application packages reflecting use of the correct forms, given the timing of applications and permits selected for review. Ecology's website directed applicants to the current EPA NPDES application forms (updated as of 2019).

Areas for Improvement

A number of applicants for major municipal facilities did not provide the appropriate Whole Effluent Toxicity (WET) testing results in accordance with 40 CFR 122.21(j)(5)(ii) and (iv). In addition, applicants for certain non-municipal facilities did not provide test results for certain pollutants as required by 40 CFR 122.21(g)(7)(v).

Action Items

Essential	• Applications for major municipal facilities should be considered incomplete unless they include the appropriate WET testing results in accordance with 40 CFR 122.21(j)(5)(ii) and (iv) • Applications for non-municipal facilities should be considered incomplete unless they conform to effluent testing requirements at 40 CFR 122.21(g)(7)(v).
Recommended	• The PQR did not identify any recommended action items for this section.

B. Developing Effluent Limitations

1. Technology-based Effluent Limitations

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

TBELs for POTWs

Background and Process

POTWs must meet secondary or equivalent to secondary standards (including limits for biochemical oxygen demand (BOD), total suspended solids (TSS), pH, and percent pollutant

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

Ecology's POTW permits implement appropriate federal secondary treatment standards for POTWs. In addition, POTW permit fact sheets include a useful description of the treatment system, wastewater treatment process, and applicability of federal secondary treatment standards.

Program Strengths

All POTW permits reviewed appropriately included effluent limitations that were based on federal secondary treatment standards and expressed in correct forms and units. POTW permit fact sheets provided a good understanding of the treatment system and wastewater treatment processes.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•The PQR did not identify any recommended action items for this section.

TBELs for Non-POTW Dischargers

Background and Process

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

Chapter 4 of Ecology's Permit Writer's Manual discusses the process and considerations for deriving TBELs, including discussion of implementing ELGs. Ecology also develops effluent

limitations on a case-by-case basis using BPJ, under Washington state authority (Revised Code of Washington (RCW) 90.48), to ensure that facilities provide "all known, available, and reasonable methods of prevention, control, and treatment," or "AKART." AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge. Ecology permit writers determine whether ELGs constitute AKART and consistently describe the analysis in permit fact sheets. An Ecology permit fact sheet reviewed stated, "As a general rule, if the effluent guidelines for a particular category are 5 years old or less, they are considered to be AKART." Further, the fact sheet states that Ecology will analyze ELGs that are more than 10 years old, to determine whether the ELGs constitute AKART, or whether requirements in addition to ELGs may be necessary to ensure permit conditions conform with AKART.

Permit writers establish TBELs for non-municipal facilities based on applicable ELGs and other technology standards. As a minimum baseline, Ecology uses EPA's ELGs for TBELs. Ecology permit writers also implement state AKART methods of prevention, control, and treatment requirements, which may be more stringent than EPA's ELGs. Section 3 of Chapter 4 within Ecology's Permit Writer's Manual details procedures for evaluating and implementing AKART requirements in Ecology's permits. Ecology's Permit Writer's Manual also details procedures for evaluating and implementing effluent limitations based on BPJ. For most permit types, Ecology permit writers generally understand standard industry practices (AKART for a specific industry) and determine if these standard practices will become permit conditions/requirements.

Non-municipal stormwater general permits include specific design criteria and require best management practices for pollution prevention, which are then incorporated into facility-specific stormwater pollution prevention plans (SWPPPs) for construction sites and industrial facilities; or Stormwater Management Program Plans (SWMPs) for MS4s. Guidance documents that contain design standards and pollution prevention requirements are incorporated by reference into permits. Permit writers include certain permit conditions that are in addition to federal requirements. Permit writers consult EPA's ELGs to determine whether the design standards and pollution prevention requirements are an appropriate basis for permit requirements. In the absence of guidance documents, permit writers incorporate approaches directly into general permits to control or minimize pollutants discharged to waters (e.g., liner requirement in the CAFO general permit or practices specific to construction sites).

Non-municipal permit fact sheets include discussions of facility history, operations, and industrial and wastewater treatment processes. Fact sheets also identify ELGs that are applicable to the facility's discharge and discuss the determination of applicability.

Program Strengths

Fact sheets for non-municipal permits provided a thorough background of permit history, facility operations and expected waste streams, and wastewater treatment processes. Fact sheets also included appropriate documentation of effluent limitation calculations. In addition, fact sheets provided consistent discussion of the application of AKART in permits.

Areas for Improvement

Fact sheets should describe the applicability (and non-applicability where appropriate) of ELG subcategories/standards to the facility and operations within the facility. The fact sheet for one industrial facility appeared contradictory in places: it stated that the facility is subject to the ELG for timber products (40 CFR Part 429) but did not clearly describe how or why the ELG did or did not apply or how the waste streams were routed for treatment within the facility. The fact sheet for this industrial facility would be strengthened by describing the details of 40 CFR Part 429 Subpart A and its applicable limits, and how or why these limits did or did not apply to the facility.

Action Items

Essential	•The PQR did not identify any essential action items for this section
Recommended	•Fact sheets would be strengthened by providing a thorough explanation of how limits or conditions in the referenced ELGs do or do not apply to the facility.

2. Reasonable Potential and Water Quality-Based Effluent Limitations

Background

The NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state WQS, including narrative criteria for water quality. To establish such WQBELs for particular pollutants, the permitting authority evaluates whether any pollutants or pollutant parameters cause, have the reasonable potential to cause, or contribute to an excursion above any state WQS.

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

- determined the appropriate WQS 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 TMDLs.

Process for Assessing Reasonable Potential

Ecology's permit writers conduct the RPA following procedures detailed in section 4 of chapter 7 in Ecology's Permit Writer's Manual and using the PermitCalc spreadsheets. PermitCalc is a collection of spreadsheets to assist Ecology's NPDES permit writers in assessing compliance with WQS and in developing WQBELs. Both resources provide detailed guidance to permit writers on evaluating the need for and procedures for developing WQBELs, and they ensure consistency in permits. Ecology's methodology for RPA and limit development is based on EPA's *Technical Support Document for Water Quality-based Toxics Control (TSD)*[7]. The PermitCalc tool provides detailed instructions on how to evaluate the need for WQBELs.

Permit writers identify pollutants of concern based on effluent characterization data provided in permit applications or routine monitoring data submitted to Ecology's database electronically. Dischargers are required to monitor for priority pollutants through permit testing requirements or application testing requirements. Consistent with Ecology's Permit Writer's Manual, permit writers conduct an analysis of reasonable potential according to the statistical methods in EPA's TSD for those priority pollutants that are detected in sampling and for which numeric water quality criteria apply. WET is assessed to determine reasonable potential for narrative criteria, or where there are no applicable numeric criteria, based on the acute toxicity performance standard (no test showing less than 65 percent survival in 100 percent effluent) and chronic toxicity performance standard (no toxicity in a concentration of effluent representing the edge of the acute mixing zone). Permit writers evaluate all available data from the permit term and do not censor or exclude data unless the permit writer determines the data are not representative of the NPDES discharge. Dischargers covered by general permits might not provide sufficient data with general permit NOIs; therefore, permit writers may review data from the previous permit term to consider in the RPA. Ecology noted that permit fact sheets typically include discussion of specific pollutants that are detected in the sampling events and the RPA for those pollutants. Permit fact sheets address instances where data are excluded from the RPA, providing what data are excluded and the basis for not including the data as part of the RPA. When no facility-specific effluent data are available for a pollutant of concern, such as for new discharges, permit writers typically only apply TBELs, and rely on monitoring requirements in the initial permit cycle to inform potential future WQBELs. If

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

necessary, WQBELs would either be implemented in future permit cycles, or through an earlier permit modification.

The permit writer identifies the receiving stream to which the facility discharges and refers to Ecology's Water Quality Atlas[8] to identify impaired water bodies and applicable TMDLs. The permit writer may consult with the WQS and TMDL Coordinators to ensure that all applicable TMDLs are addressed in the permit.

Permit writers consider ambient data in the RPA; Ecology maintains an ambient monitoring program and the EIM Database to house environmental monitoring data across multiple media (e.g., water, air, soil, sediment). Ecology's Permit Writer's Manual provides guidance on how to evaluate ambient data and advises the use of zero as a default value where reliable data are not available.

Process for Developing WQBELs

Ecology's permit writers develop WQBELs, using the PermitCalc spreadsheet tool and following the procedures prescribed by Ecology's Permit Writer's Manual and consistent with EPA's TSD. The approach for calculating WQBELs is directly based on EPA's TSD. Section 5 of Chapter 7 in Ecology's Permit Writer's Manual guides permit writers through the process of evaluating the results of the RPA and developing appropriate permit conditions. PermitCalc worksheets include detailed instructions within each worksheet.

Washington's WQS, at Washington Administrative Code (WAC) 173-201A-400, specify allowable mixing zones and implementation procedures. In addition, Appendix C of Ecology's Permit Writer's Manual provides guidance on how to calculate dilution in mixing zones. WAC 173-201A-400(2) requires that dischargers fully apply AKART prior to being authorized a mixing zone. Dischargers are required to submit documentation that AKART is being fully applied, with any application or request for a mixing zone. Ecology's Permit Writer's Manual states that Washington's WQS also require that water quality criteria not be violated outside of the boundary of a mixing zone as a result of the discharge for which the mixing zone was authorized. Therefore, this also means that if ambient receiving water already exceeds the water quality criteria, a mixing zone is not allowed. WAC 173-201A-400(6) requires that the size of the mixing zone be minimized. To that end, WAC 173-201A-400(7) defines maximum allowable sizes of mixing zones for rivers, estuaries, and open ocean waters. Section 7 of Appendix C of Ecology's Permit Writer's Manual describes restrictions applicable to downstream distance, waterbody width, and flow. Specific models discussed include Cornell Mixing Zone Expert System (CORMIX), RiverPlume 6 (a worksheet in the PermitCalc workbook), and Visual Plumes. Permit writers select the appropriate model to use based on conditions at the site (marine vs. freshwater discharges, for instance). For stormwater permits, permit writers may model discharge flows using the Western Washington Hydrologic Model (WWHM), a continuous-flow model based on Hydrological Simulation Program--Fortran (HSPF, a U.S. Geological Survey model). Permit writers have access to and rely heavily on modeling expertise within Ecology to perform modeling work and provide technical assistance. Modeling experts

[8] https://apps.ecology.wa.gov/waterqualityatlas/wqa/map

are also available to review and assess modeling done by contractors. Permit fact sheets discuss application of Ecology's mixing zone policy and may reference external documents used to develop WQBELs. Further, the response to comments document may include additional calculations used to develop WQBELs.

Washington maintains five categories of waterbody quality status. Permit writers consult the Water Quality Atlas to identify impairments relative to discharge locations and facility outfalls. Ecology ensures that discharges to "Category 5" impaired waters meet water quality criteria at the end-of-pipe. Ecology interprets "impaired segments" literally in that they consider the impairment status for the waterbody at the point of discharge, as opposed to considering downstream impairments. Where a TMDL applies to the discharge, the permit reflects the conditions and limitations required by the TMDL. The permit fact sheet shells include multiple options for permit writers to select text appropriate to the permitting scenario, related to impaired waters and TMDLs. In general permits, permit writers implement TMDLs in one of two ways: including an appendix that lists TMDL requirements specific to affected water bodies or identifying TMDL requirements in the permit coverage letter (e.g., for construction and industrial stormwater general permits).

Program Strengths

Reasonable Potential

Ecology provided permit writers with excellent technical resources, including tools and guidance documents. Ecology's Permit Writer's Manual and PermitCalc tool contained relevant and accurate technical guidance for evaluating the need for WQBELs and conducting RPAs in a consistent and transparent manner. The permit and fact sheet shells also provided permit writers with useful writing prompts and direct links to guidance documents. The Permit Workgroup customized the permit and fact sheet shells to automate permit generation, guide permit writers, and provide text options to choose from to address common scenarios. The shells included notational text to describe the appropriate conditions for each text option, to assist permit writers in selecting the most appropriate text. The shell documents supported consistent development of permit conditions and supporting rationale. Fact sheets consistently identified receiving waters, impairment status, applicable TMDLs, and applicable water quality criteria in designated sections. In addition, fact sheets appropriately documented the RPA and results.

WQBEL Development

Permit writers developed WQBELs appropriately and employed consistent approaches in calculating WQBELs, applying mixing zones, and considering applicable TMDLs. Permit fact sheets included sufficient detail in discussions of Ecology's application of mixing zones and subsequent calculation of WQBELs.

Areas for Improvement

Reasonable Potential

Fact sheets would be strengthened if permit writers clearly identified and discussed all pollutants of concern (POCs), such as pollutants identified in applicable ELGs, believed present due to industrial uses, or pollutants contributing to an impairment, rather than just those for which effluent monitoring data exist. EPA also recommends consistent use of the term 'pollutants of concern'.

EPA also recommends that permit writers consider qualitative RPA when facility-specific effluent data are not available for POCs.

WQBEL Development

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	•Reasonable Potential •The PQR did not identify any essential action items for this section. •WQBEL Development •The PQR did not identify any essential action items for this section.
Recommended	•Reasonable Potential •Consider updating fact sheet shells to include specific discussion of the determination of POCs, ensuring all POCs are identified and discussed (not just POCs for which monitoring data exist). •Consider qualitative RPA when facility-specific effluent data are not available (e.g. new discharges, new impairments, or other newly identified POCs), as discussed in EPA's Permit Writers' Manual (Section 6.3.3). •WQBEL Development •The PQR did not identify any recommended action items for this section.

3. Final Effluent Limitations and Documentation

Background and Process

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

quality of surface waters, or if appropriate, allow for some degradation. EPA's WQS regulations at 40 CFR 131.12 outline the common elements of the antidegradation review process.

In addition, permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. TBELs should include assessment of applicable standards and data used in developing effluent limitations. Further, the actual calculations used to develop effluent limitations should be clearly documented in the permit fact sheet (40 CFR Part 124.56). The procedures implemented for determining the need for WQBELs as well as the procedures explaining the basis for establishing, or for not establishing, WQBELs should be clear and straightforward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

Ecology's fact sheets include descriptions of facility operations and wastewater treatment processes. In addition, their fact sheets clearly identify the regulatory basis and indicate whether effluent limitations are TBELs or WQBELs and include discussions that demonstrate that permit writers considered both in developing final limitations.

Fact sheet appendices provide documentation of Ecology's development of TBELs for non-municipal facilities as well as the RPA and calculations for subsequent development of WQBELs where the RPA deemed WQBELs are necessary. Permit writers characterize receiving waters with identification of water quality criteria, designated uses, impairment status, and available ambient data. Further, fact sheets clearly delineate Ecology's evaluations of narrative and numeric criteria.

Section 15 of Chapter 2 in Ecology's Permit Writer's Manual addresses anti-backsliding and guides permit writers through the process of evaluating whether less stringent effluent limitations are allowable.

WAC 173-201A-300 describes the state's antidegradation policy and the three tiers are described in WAC 173-201A-310 through 330. The Water Quality program maintains a stand-alone guidance document, *Supplemental Guidance on Implementing Tier II Antidegradation*, to assist permit writers implementing the Tier II antidegradation rules found at WAC 173-201A-320. As stated in the supplemental guidance document, Ecology's "Tier II analysis consists of an evaluation of whether or not the proposed degradation of water quality that would be associated with a new or expanded action would be both necessary and in the overriding public interest." The guidance document provides a flow chart for permit writers to consult during their analysis. The permittee generally conducts the Tier II analysis and submits it with an engineering report that is reviewed by engineering staff and the permit writer. WAC 173-240 specifies requirements for the Tier II analysis to justify lack of impact to water quality. For general permits, Ecology invites the public to inform the agency on whether the discharge is in overriding public interest, to solicit public feedback that would be considered in the determination of final permit coverages.

Program Strengths

Ecology implemented appropriate procedures to develop TBELs and WQBELs. Final effluent limitations were clearly presented in Ecology's permits and were established in appropriate units and forms. Permit fact sheets adequately documented the development of TBELs for POTWs and non-POTWs, including a useful description of facility history, operations, and treatment processes. Fact sheet appendices clearly provided calculations of TBELs for non-POTWs. Ecology's fact sheets provided clear discussions of the basis for effluent limitations, including identification of TBELs and WQBELs, and described the effluent limitation development process and provided supporting calculations. Permit fact sheets consistently and clearly demonstrated the permit writer applied the most stringent of TBELs and WQBELs.

Areas for Improvement

One fact sheet for an industrial facility did not provide a clear discussion that adequately linked the facility operations to the applicable ELG, and in some discussions, appeared contradictory to the ELGs. Although Ecology's Permit Writer's Manual addresses anti-backsliding, fact sheets consistently lacked a discussion of anti-backsliding and antidegradation, either as template language when conditions were not made less stringent than the previous permit, and in specific instances where effluent limitations were made less stringent than those in the previous permit.

Action Items

Essential	•Consistent with requirements of 40 CFR 124.8(b)(4), permit fact sheets must include discussion of the basis for permit conditions, which would include anti-backsliding and antidegradation where permit effluent limitations are less stringent than existing limitations, or where increased loadings are permitted.
Recommended	•Ensure permit fact sheets clearly describe the applicability of ELGs to the facility.

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 keep appropriate records. 40 CFR 122.41(l) requires the permittee to provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual reporting of monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the

methods for the collection and analysis of such samples. In addition, 40 CFR 122.48(b) requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify appropriate monitoring locations to ensure compliance with the permit limitations and provide the necessary data to determine the effects of the effluent on the receiving water. A complete fact sheet will include a description and justification for all monitoring locations required by the permit. States may have policy or guidance documents to support determination of appropriate monitoring frequencies; documentation should include an explicit discussion in the fact sheet providing the basis for establishing monitoring frequencies, including identification of the specific state policy or internal guidance referenced. Permits must also specify the sample collection method for all parameters required to be monitored in the permit. The fact sheet should present the rationale for requiring grab or composite samples and discuss the basis of a permit requirement mandating use of a sufficiently sensitive 40 CFR Part 136 analytical method.

Chapter 13 of Ecology's Permit Writer's Manual provides guidelines for developing monitoring requirements in permits, with specific guidance on monitoring requirements for POTWs, industrial and commercial facilities, WET, stormwater, and receiving water monitoring. Ecology's permit shells also provide permit writers with detailed guidance on establishing monitoring and reporting requirements. The combination of the Permit Writer's Manual and permit shells enables Ecology's permit writers to consistently establish monitoring and reporting requirements necessary to determine compliance with permit conditions and obtain meaningful data. The permit shells include relevant prompts for permit writers to consider, not only related to sample type and frequency, but also specific parameter and units, permit application monitoring requirements, and requests for reduction in monitoring frequency. Ecology's Permit Writer's Manual references 40 CFR 122.48 and WAC 173-220-210(1) for monitoring requirements.

Ecology indicated that individual NPDES permits include an attachment that provides the agency's best understanding of acceptable analytical test methods and detection limits, to address monitoring requirements for application data and routine compliance monitoring data. NPDES general permits contain language specifying the requirement to use sufficiently sensitive analytical methods approved under 40 CFR Part 136 and specify analytical methods and detection limits in monitoring tables.

Program Strengths

Ecology established appropriate monitoring requirements in NPDES permits for municipal and non-municipal facilities. Ecology adequately considered the type of treatment process, effluent variability, and compliance history in establishing monitoring requirements. Ecology's permits clearly identified monitoring locations, parameter name, units, frequency, and sample type in

the Monitoring tables in permit section S2. In addition, permits contained a table summary of permit report submittals, providing a clear list of reporting requirements. Permits appropriately and clearly required the electronic submittal of DMRs.

Areas for Improvement

Although individual permits discussed the required use of acceptable analytical test methods and detection limits, they did not clearly discuss the need for permittees to use sufficiently sensitive EPA-approved analytical methods.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•Permits should explicitly require permittees to use sufficiently sensitive analytical methods approved under 40 CFR Part 136 and include a direct reference to 40 CFR 122.44(i)(1)(iv) for clarity.

D. Standard and Special Conditions

Background and Process

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

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

Ecology developed boilerplate General Conditions that incorporate federal standard conditions; the boilerplate language is updated as required. Ecology's permits include federal standard conditions in the "General Conditions" (e.g., G1, G2…G21) section as boilerplate language. Ecology establishes certain standard conditions on an individual basis; however, it also includes a general condition, "Other Requirements of 40 CFR" (numbered G11 in the permit), that states, *"All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference."* A review of the core permits and the permit shells indicates that permits do not

contain all standard conditions explicitly, but General Condition G11 does incorporate federal standard conditions contained in 40 CFR 122.41 and 122.42 by reference. Further, the review indicated that certain general or special conditions incorporated directly into this permit lack certain portions of the federal standard condition language.

Examples of special conditions that Ecology might establish in an individual permit include solid waste handling and control conditions, spill control plans, mixing studies, stormwater pollution prevention plans and best management practices, receiving water studies, and sediment monitoring. Ecology's Permit Writer's Manual provides guidance for developing special permit conditions, and permit and fact sheet shells provide permit writers with relevant text to include in the respective documents. Ecology's general permit writers include general conditions applicable to the general permit and ensure the general conditions are consistent with federal standard conditions, using the more stringent of state and federal standard conditions.

WAC 173-220-140 authorizes the use of compliance schedules in Ecology's NPDES permits, "…to achieve compliance with applicable effluent standards and limitations, water quality standards, and other legally applicable requirements…" Ecology's Permit Writer's Manual includes guidance for implementing compliance schedules. Six of the core individual permits reviewed contained compliance schedules. Some of these included report submittals as milestones; and one was granted to obtain a pretreatment program.

WAC 173-201A-420 establishes general provisions for water quality variances. Ecology considers granting variances for individual dischargers, multiple dischargers, or for specific water bodies. Entities initiating a variance request or applying for coverage for an individual, multi-discharger, or water body variance must submit information required by WAC 173-201A-420(3). The decision to grant a variance is a formal rulemaking process subject to public and intergovernmental participation.

Program Strengths

Ecology's permit shells are a valuable tool for permit writers to ensure consistency in establishing permit conditions, both special and general conditions. The resources available to permit writers provide useful guidance to ensure permits include appropriate conditions.

Areas for Improvement

Permits included a general condition that incorporates the federal standard conditions at 40 CFR 122.41 and 122.42 by reference. Certain standard conditions were also included explicitly. The permits reviewed included the following federal standard conditions by broad reference only:

- Need to halt or reduce activity not a defense (122.41(c)),
- Duty to Mitigate (122.41(d)), and
- Reporting Requirements for Anticipated Noncompliance (122.41(l)(2)).

In addition, certain federal standard conditions that were incorporated explicitly into the reviewed permits contained only a portion of the federal standard condition language, which could be misleading (noted specifically below):

- Duty to Comply: Contained some penalties language; however, it was not as extensive as that in the federal standard condition 122.41(a)(2) and (3).
- Duty to Reapply: Special Condition required submittal of a permit renewal application 180 days prior to permit expiration; however, it lacked federal language contained in 122.41(b).
- Permit Actions: Missing language from 40 CFR 122.41(f): "The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition."
- Inspections and Entry: Missing the language from 40 CFR 122.41(i): "(including an authorized contractor acting as a representative of the Administrator) …"
- Planned Changes Reporting Requirements: Missing language from 40 CFR 122.41(l)(1)(ii): "This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1)."

Washington's compliance schedule regulations and implementation were inconsistent with federal compliance schedule regulations at 40 CFR 122.47. WAC 173-220-140 indicates that compliance schedules are used "…with respect to any discharge which is found not to be in compliance with applicable effluent standards and limitations, applicable water quality standards, or other legally applicable requirements listed in WAC 173-220-130…", whereas federal regulations require that compliance schedules only be allowed for the first NPDES permit issued to a new source or a new discharger when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction but less than three years before commencement of the relevant discharge, or for recommencing dischargers only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised less than three years before recommencement of discharge.

Some compliance schedules were for TBELs, which are not allowed by 40 CFR 122.47 since the compliance deadline for technology-based standards have already passed. One compliance schedule included interim milestones that exceeded 1 year between milestones and date of compliance, and did not demonstrate how the final date of compliance was determined to be the soonest possible date for which the discharge could comply, which is inconsistent with 40 CFR 122.47. Based on information described in several fact sheets, compliance schedules appeared to be applied for any new or more stringent limit without indicating if the compliance schedule is "appropriate" or "necessary" per 40 CFR 122.47. As identified in EPA's memo Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits[9], "In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the discharger cannot immediately comply with the WQBEL upon the effective date of the permit."

[9] https://www.epa.gov/sites/default/files/2015-09/documents/memo_complianceschedules_may07.pdf

Additionally, some compliance schedules contained a list of activities but did not clearly identify for which permit limits the compliance schedule is meant to achieve compliance.

Further, Ecology's permits broadly applied the term "compliance schedule" to activities that do not qualify as compliance schedules under 40 CFR 122.47, such as special monitoring studies or enforcement compliance activities. One compliance schedule established interim limits but a monitoring study to collect data in order to determine final WQBELs, which is not the appropriate use of a compliance schedule since it did not identify final enforceable limits per 40 CFR 122.47 and the activities did not aid in achieving final limitations. Permits should clearly make the distinction between permit compliance schedules used to help a discharger come into compliance with new or revised limits and other special conditions used for other purposes, such as special studies to determine appropriate limits or enforcement compliance activities for noncompliance with previous/existing limits.

Action Items

Essential	•Ecology must ensure that the use of compliance schedules are appropriate and that compliance schedules are implemented consistent with 40 CFR 122.47.
Recommended	•Revise general conditions that are explicitly included in permits to include all of the language contained in the federal standard conditions at 40 CFR 122.41 and applicable conditions at 122.42. •Revise permits and fact sheets to clearly distinguish permit compliance schedules from enforcement compliance schedules or other special conditions such as special monitoring studies.

E. Administrative Process

Background and Process

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.8 and 40 CFR 124.56); coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR 124.11 and 40 CFR 124.12); responding to public comments (40 CFR 124.17); and modifying a permit (if necessary) after issuance (40 CFR 124.5). EPA discussed each element of the administrative process with Ecology and reviewed materials from the administrative process as they related to the core permit review.

Following the permit writer's development of the draft permit package, Ecology provides the draft permit to the permittee for review for 30 days, prior to the public notice period. Ecology publishes a Public Notice of Draft Permit (PNOD) for individual permits in major newspapers and distributes them by mail to parties of record, which are those parties that have requested to be informed about specific permits. The public notice period is 30 days and may be extended

if Ecology determines an extension will result in greater or more meaningful public input. According to the Permit Writer's Manual, Ecology will public notice a revised draft permit when a significant revision to the draft originally public noticed has taken more than 9 months to complete and there were comments from the first public notice or if new information received causes the effluent limitations or loadings to increase. If the permit is a major, the revised draft will also be provided to EPA Region 10 for approval. Ecology posts public notices for general permits using a register or distributes to interested parties via a listserv. Ecology informs natural resource agencies, all tribes, and EPA Region 10 as a part of the public notice process for general permits.

For certain permits, Ecology may hold public informational meetings, workshops, or a public hearing. According to Ecology's Permit Writer's Manual, formal public hearings are held whenever the permit section supervisor deems that there is sufficient interest and a likelihood of meaningful public comment on a permit to warrant hearings. Ecology appoints a hearings officer to conduct the public hearing for an NPDES permit.

Ecology makes draft permits and final permits available through PARIS. A consolidation of responses to comments received on draft permits is included in an appendix to the fact sheet. Response to comment documents will, at times, provide supporting documentation or justification for permit limitations and requirements to supplement the fact sheet discussion.

A wastewater discharge permit is an administrative action of the Department of Ecology and is subject to both state administrative hearings and court appeals. Appeals of a final permit are brought to the Pollution Control Hearings Board (PCHB). The PCHB is an independent agency of the state of Washington, composed of three members appointed by the governor for terms of 6 years. The members are qualified by experience or training in environmental matters. At least one member is a lawyer, and not more than two members are of the same political party.

Ecology's Permit Writer's Manual outlines the general appeal process as:

- The permit, order, or penalty is issued by the Department.
- The recipient has 30 days to appeal to the PCHB with a copy served to Ecology.
- Upon receipt of a correct appeal, the board will set a hearing date. The hearing date is usually 4 to 6 months from the time of appeal. The filing of an appeal does not stop the requirements of the permit or order. However, the appealing party may also request a stay of the requirements of the permit or order until the time the appeal is decided. The PCHB will ask Ecology to respond to the request for stay and may schedule a separate hearing on the request. The PCHB has the option of moving the appeal hearing date up and hearing both issues.
- The hearing is held, and a decision is issued.

During the PQR, Ecology noted that certain types of permits are appealed frequently, including stormwater general permits, pesticide general permits, and permits with effluent limitations for toxics and nutrients. Generally, appeals are initiated by active stakeholder groups and

permittees. Further, third party litigation related to stormwater has increased interest in stormwater general permits.

Program Strengths

Ecology consistently implemented public notice processes, guided by Ecology's Permit Writer's Manual and standardized templates for administrative letters and documents. Fact sheets reliably included the response to comments document in a clear and consistent format.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•The PQR did not identify any recommended action items for this section.

F. Administrative Record and Fact Sheet

Background and Process

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis;[10] all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

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

Current federal NPDES regulations (40 CFR 124.56 and 124.8) require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

Ecology maintains the permit administrative record in both hard copy and electronic format. The PARIS database is the central repository for major permit documents including public draft permits, fact sheets, response to comments documents, and final permits for individual and general permits. In addition, the PARIS database houses records related to correspondence, permit-related monitoring and reporting data, and compliance information. Further, Ecology also maintains a webpage for each general permit type. Working documents for general permits are usually maintained on Ecology's SharePoint site. Physical copies of documents are maintained in permit files, which are either in Ecology's Headquarters or regional offices, depending on which office administers the permit. After a certain period of time as determined by their retention schedules, physical documents are sent to Central Records and then to the State Archives for storage. Ecology permit writers use a checklist to ensure permit administrative records contain appropriate documentation.

WAC 173-220-060 requires that every permit must have a fact sheet. Section 2 of Chapter 14 within Ecology's Permit Writer's Manual details the minimum information that must be summarized in fact sheets. For example, Ecology's regulation requires that fact sheets summarize the following:

- The type of facility or activity that is subject of the application.
- The location of the discharge in the form of a sketch or detailed description.
- The type and quantity of the discharge.
- The conditions in the proposed permit.
- The legal and technical grounds for the draft permit determination, including an explanation of how permit conditions meet both technology-based and water quality-based requirements of state and federal law.
- The effluent standards and limitations applied to the proposed discharge.
- The applicable WQS, including identification of the uses for which receiving waters have been classified.
- How the draft permit addresses use or disposal of residual solids generated by wastewater treatment.
- The procedures for formulation of final determinations, more detailed than that provided in the public notice, including:
    - The 30-day comment period;

- Procedures for requesting a public hearing; and
- Any other procedures by which the public may participate in the formulation of the final determinations.

Ecology maintains individual fact sheet shells (templates) to accompany municipal and non-municipal permits. The permit shells provide detailed and thorough guidance enabling permit writers to develop consistent and logical fact sheets. Ecology's fact sheets include the response to comments document as an attachment.

Program Strengths

Permit administrative records were readily accessible via the PARIS database. Ecology's final fact sheets provided many relevant components in a single package, including the fact sheet, public notice information, and responses to comments. The fact sheet shell documents were a useful tool for ensuring consistent development and organization of permit fact sheets. Fact sheets provided clear discussions of the overall basis for effluent limitations, including reference to regulatory requirements, documentation of effluent limitation development calculations, and additional supporting references (e.g., mixing zone analyses), either directly in the fact sheet or as appendices to the fact sheet.

Areas for Improvement

Fact sheets would be strengthened with a clearer connection regarding the timeline for permit expiration, renewal application submittal, and administrative extension. Certain fact sheets were not clear with respect to the timing of previous permit expiration and subsequent reapplication and administrative extension. In addition, fact sheets would be strengthened with a better link or description of the rationale for changes in permit limits from the previous permit. At least two reviewed permits included effluent limitations that were revised between the draft and final permit; however, the fact sheet discussions were not sufficient to understand why the limit had been revised (i.e., new WQS, new data). As described earlier in section III.B.1, certain fact sheets for non-municipal facilities lacked clear explanation of the applicability of ELGs to the discharge.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•Ensure fact sheets clearly describe the timeline of permit reapplication and administrative extension relative to the previous permit's expiration. •Update fact sheet templates to include clear prompts for permit writers to clearly describe the basis for all revisions to permit limitations, even in cases where only the parameter form has changed.

IV. NATIONAL TOPIC AREA FINDINGS

National topic areas are aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national scale. National topic areas are reviewed for all state PQRs. The PQR addressed the following national topics areas: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small MS4 Permit Requirements.

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

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

Federal regulations at 40 CFR 122.44(d)(1)(i) require permit limits to be developed for any pollutant which causes, has the reasonable potential to cause, or contributes to an impairment of state WQS, whether those standards are narrative or numeric.

Washington does not have numeric WQS for nitrogen or phosphorus. It has numeric criteria for response variables – dissolved oxygen (DO) and pH, guidance values for phosphorus in lakes, and a narrative criterion for aesthetics.

Ecology has guidance for setting lake-specific phosphorus criteria (WAC 173-201A-230). Ecology determines impairment by applying action values designated by ecoregion. Lakes are assessed using the action levels and the narrative standards to determine impairment, which can lead to development of a TMDL.

Ecology does not have rules or policies to provide translations of these narrative criteria into numeric values for use in permitting or listing a waterbody on the 303(d) list. Ecology is considering developing nutrient-specific permitting guidance consistent with more recent guidance and studies (e.g., Review of USEPA Methods for setting Water Quality-Based Effluent Limits for Nutrients, June 2014). Ecology's Permit Writer's Manual (Section 3.1.2) does discuss the far-field impacts of nutrients, particularly phosphorus.

When TMDLs for DO and pH are in place, Ecology includes numeric nutrient limits for point sources based on wasteload allocations. In instances without such TMDLs in place, while Ecology does not have numeric criteria for nitrogen or phosphorus, Ecology analyzes individual discharge points for dissolved oxygen and pH impacts on the receiving waters. Ecology uses AKART (See Section 3 of Ecology's Permit Writer's Manual) analysis to establish technology-

based numeric limits where there is sufficient information to determine AKART. Predating federal regulations, AKART is used to establish TBELS, and it can be equivalent to federal ELGs or more stringent. In the case of POTWs and nutrients, Ecology uses AKART to establish technology-based limits more stringent than the federal secondary treatment standards.

To assess how nutrients are addressed in the Ecology NPDES program, EPA Region 10 reviewed the City of Cashmere POTW and the City of Granite Falls Sewage Treatment Plant (STP), although the City of Cashmere discharges to a river with a DO and pH TMDL. The City of Cashmere POTW permit includes concentration and loading limits for total phosphorus from the Wenatchee River Watershed Dissolved Oxygen and pH TMDL – Water Quality Improvement Report (2009). In addition, the permit requires biweekly sampling of total phosphorus in its effluent to measure compliance with permit limits. The permit also requires annual sampling of Total Kjeldahl Nitrogen (TKN) and nitrate plus nitrite to collect data for TMDLs or other water quality studies. Ecology did not do a further RPA for nutrients.

The City of Granite Falls STP permit does not include concentration and loading limits for nutrients. The fact sheet describes a TMDL analysis to address DO impairments in the Pilchuck River, the receiving water for the City of Granite Falls STP that will require soluble reactive phosphorus (SRP), temperature, and BOD limits were necessary to address DO WQS. The permit requires quarterly sampling of nitrate plus nitrite, TKN, and total phosphorus and biweekly sampling of SRP between June 1 and September 30. Ecology expects to include TMDL-based wasteload allocations for SRP and BOD as effluent limits in the next permit cycle.

The fact sheet explained that more frequent SRP monitoring will help calculate an effluent limit based on the WLA for discharges from the City of Granite Falls STP when the TMDL is finalized. The draft TMDL does not set specific limits for nitrogenous BOD (NBOD), via ammonia or TKN loading, nor carbonaceous BOD (CBOD). The NBOD and CBOD are expected to be controlled through management of the overall BOD loading. The model suggests the plant's typical level of NBOD has a very small impact on DO in the Pilchuck River.

In addition to these permits, EPA and Ecology discussed Washington's approach to addressing nutrients, focused on the Puget Sound, which includes the PSNGP. EPA also reviewed the draft PSNGP and fact sheet, which was available in October 2021 during the PQR Review. Puget Sound is impaired for DO and pH, but Ecology has not completed a TMDL in the Puget Sound. The PSNGP draft and final permit required monitoring for various nutrients and related parameters and required a nutrient optimization plan when numeric benchmarks for total inorganic nitrogen (TIN) are exceeded. Numeric benchmarks are set to current TIN loading. The final permit requires large and medium dischargers to evaluate a range of AKART goals, including the feasibility of achieving 3 mg/L TIN, which will inform Ecology's decisions about technology-based goals or limits. The fact sheet stated that a TMDL-equivalent plan, the Puget Sound Nutrient Reduction Plan, was being developed that would include allocations that would be a basis for WQBELs in the next permit. The PSNGP addresses 58 point sources, so it represents a significant investment in resources. EPA evaluated the draft permit and fact sheet and provided comments on August 13, 2021, supporting Ecology's PSNGP, while also reiterating the importance of including WQBELs in the next permit.

Program Strengths

Generally, Ecology has included nutrient limits in permits where TMDLs establish nutrient wasteload allocations. While Washington does not have numeric criteria for nitrogen or phosphorous, Washington uses AKART analysis and other tools and processes to establish numeric limits where there is sufficient information. The PSNGP required large and medium dischargers to evaluate AKART, including the feasibility of technology to achieve an effluent TIN level of 3 mg/L. Ecology was requiring nutrient monitoring in its permits to provide information for TMDLs and for AKART analysis that can inform potential nutrient limits in future permits.

Areas for Improvement

Ecology did not have rules or policies that translate these narrative criteria into numeric values for use in permitting or listing a waterbody on the 303(d) list. Additionally, the state did not use any of the other options for translating narrative set forth in 122.44(d)(1)(vi). Permits did not generally include numeric nutrient limits in permits, unless a TMDL with nutrient wasteload allocation had been completed. Permits did not generally require AKART analysis for nutrients other than in the PSNGP.

Action Items

Essential	•The PQR did not identify any essential action items in this section.
Recommended	•Include numeric nutrient limits in permits, when possible, including considering reference nutrient conditions, AKART, existing watershed modeling, and other available tools. •Develop nutrient-specific permitting guidance consistent with more recent guidance and studies (e.g., Review of USEPA Methods for setting Water Quality-Based Effluent Limits for Nutrients, June 2014). •Require AKART analysis for facilities that contribute to nutrient or nutrient-related problems in receiving waters.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

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

Background

Indirect discharges of food processors can be a significant contributor to noncompliance at recipient POTWs. Food processing discharges contribute to nutrient pollution (e.g., nitrogen, phosphorus, ammonia) to the nation's waterways. Focusing specifically on the Food Processing Industrial Sector will synchronize PQRs with the Office of Enforcement Compliance and Assurance (OECA)'s Significant Non-compliance (SNC)/National Compliance Initiative (NCI).

The goal of the PQR was to identify successful and unique practices with respect to the control of food processor discharges by evaluating whether appropriate controls are included in the

receiving POTW NPDES permit and documented in the associated fact sheet or statement of basis; as well as by compiling information to develop or improve permit writers' tools to be used to improve both POTW and industrial user compliance.

The PQR also assessed the status of the pretreatment program in Washington as well as specific language in POTW NPDES permits. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

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

In total, the approved programs listed below in Table 1 issue permits to 266 SIUs. Of those SIUs, 105 are CIUs, including 1 middle tier categorical industrial user (MTCIU). There are 18 permitted non-significant categorical users (NSCIUs). Ecology issues SIU permits in non-approved POTW service areas. Ecology permitted 117 SIUs, of which 47 were CIUs. Ecology does not use the MTCIU or NSCIU classifications.

RCW 90.48.160 requires permits for any "commercial or industrial operation" which discharges wastewater to POTWs. Furthermore, RCW 90.48.260 gives Ecology broad authority to incorporate into the state pretreatment program those elements of the EPA program established under the Clean Water Act.

Ecology's website provides the following pretreatment tools:

- 2020 Ecology webpage
- Permit Guidance
- Pretreatment Tools
- Guidance Manual: Using NEWLLqq.xlsm to Develop Local Discharge Limitations Local limits spreadsheet instructions. http://www.ecy.wa.gov/programs/wq/permits/guidance.html (November 25, 2016)
- Local Limits Spreadsheet
- Permit Writers Manual - Chapter X: Pretreatment
- Guidance Manual for Performing an Industrial User Survey
- Guidance Manual for Developing Local Discharge Limits

In addition, Ecology's PARIS database provides some information about approved programs, including for SIUs. For each SIU, there is a PARIS "file" which contains electronically submitted pretreatment annual reports, monitoring data, Ecology's inspection reports, and other submitted reports and information. For a given POTW, PARIS identifies whether there is an approved pretreatment program. Ecology could develop a separate pretreatment webpage to include more useful information for the public such as dates of program approval, number of SIU/CIU, and compliance data. Since 2019, Ecology has not issued any state waste discharge permits to SIUs within approved pretreatment programs.

Neither Ecology's website nor the PARIS database provides easily accessible information about approved programs. In 2019, Ecology reported the following municipalities have approved pretreatment programs:

Table 1: 2019 Washington Municipalities with Approved Pretreatment Programs

Regional Office	Name of Control Authority	NPDES Permit Numbers
Northwest	King County	WA0029581, WA0029181, WA0032182, WA00225527, WA0032247
	Lynnwood	WA0024031
	Everett	WA0024490
Southwest	Vancouver	WA0024350, WA0024368
	Tacoma	WA0037087, WA0037214
	LOTT Clean Water Alliance	WA0037061
	Pierce County	WA0039624
	Port Angeles	WA0023973
Central	Yakima	WA0024023
	Richland	WA0020419
	Kennewick	WA0044784
Eastern	City of Spokane	WA0024473
	Spokane County	WA0093317
	Walla Walla	WA0024627
	Quincy	WA0021067
	Pasco	WA0044962

Two food processing industrial user permits were reviewed as part of the PQR: One for the City of Yakima, which has an approved pretreatment program, and one for the Three Rivers Regional Wastewater Authority (TRRWA), which does not. Ecology has not issued any state waste discharge permits to SIUs for the City of Yakima and the surrounding contributing jurisdictions since 2019. However, Ecology continues to issue state waste discharge permits to SIUs at TRRWA. The responses to the checklists were based on a review of permit records (including permit, fact sheet, application), discussions with Ecology's pretreatment

coordinators, and additional sources. In addition, for the city with an approved pretreatment program, the most recent pretreatment report and pretreatment compliance audit were also reviewed. Ecology pretreatment staff are aware of the technical guidance dated November 3, 2016, *Best Practices for NPDES Permit Writers and Pretreatment Coordinators to Address Toxic and Hazardous Chemical Discharges to POTW*[11]. Ecology staff know to reference this document when dealing with toxics and hazardous chemicals from industrial users. Because TRRWA does not have an approved pretreatment program, Ecology issued the permit to Foster Farms, a food processor which was identified as an SIU in the jurisdiction of TRRWA.

The City of Yakima issued an indirect discharge permit to Del Monte, a food processor SIU, in 2001 that expired in 2006. At the time of the PQR review, Ecology had not provided EPA with any records indicating that the City of Yakima had reissued the indirect discharge permit to Del Monte. However, more recent records (2019-2021) show that Del Monte has been sampled and inspected by the City of Yakima in 2019, and annually thereafter.

Program Strengths

Ecology's NPDES permits had a dedicated pretreatment section (S6) that clearly delineated the roles and responsibilities of the Control Authority (CA) and Industrial Users (IUs) in accordance with 40 CFR 403. Section S6 of the permit presented all the essential elements of an approved pretreatment program for successful program implementation including legal and local limits development, modifications, monitoring, record keeping, reporting, and compliance/enforcement.

Areas for Improvement

Although Ecology's PARIS database provided some information about approved POTW pretreatment programs, neither Ecology's website nor the PARIS database provided easily accessible information about these approved programs. At the time the PQR was conducted, the City of Yakima was receiving discharges from an SIU that has not had an effective indirect discharge permit since 2006. There appeared to be a lack of effective follow up with the CA and SIU regarding the lack of an indirect discharge permit and its implementation such as permit issuance.

[11] https://www.epa.gov/sites/default/files/2016-11/documents/memobestpractices_npdes-pretreatment-r.pdf

Action Items

Essential	•Require the City of Yakima to take appropriate corrective actions to address an unpermitted SIU, Del Monte, as required under 40 CFR 403.8 and in accordance with the City's NPDES permit, section S6 Pretreatment. •Require the City of Yakima to comply with all applicable sampling and inspection requirements under 40 CFR 403.8 and in accordance with the City's NPDES permit, section S6 Pretreatment. •Require the City of Yakima to take approriate corrective actions against Del Monte to comply with sampling and reporting requirements under 40 CFR 403.12 and in accordance with the City's NPDES permit, section S6 Pretreatment. •Require all CIUs (including MTCIUs and NSCIUs) to be reported appropriately on NPDES POTW application forms in accordance with 40 CFR 122.21(j)(6). •Require that all CIUs (including MTCIUs and NSCIUs) and SIUs be reported in annual reports for approved POTW Programs in accordance with 40 CFR 403.12(i).
Recommended	•Include more facility information for CIUs/SIUs identified in its fact sheets. •Create a dedicated pretreatment webpage to provide more access to the public including the regulated community. •Identify in the Performance Partnership Agreement (PPA), the POTWs without pretreatment program approval where Ecology issues state waste discharge permits. In addition, the PPA should clearly identify the universe of SIUs for which Ecology is issuing indirect discharge permits and performing as the CA, and the receiving POTW.

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

Background

EPA updated the Phase II small MS4 permitting regulations in 2016 to clarify: (1) the procedures to be used when coverage is by 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)).

Ecology currently administers four general permits to authorize regulated municipal stormwater discharges in Washington: the Phase I Municipal Stormwater General Permit; the Eastern Washington Phase II Municipal Stormwater General Permit; the Western Washington

Phase II Municipal Stormwater General Permit; and the Washington State Department of Transportation municipal stormwater permit.

As part of this PQR, EPA reviewed the Eastern Washington Phase II Municipal Stormwater Permit (EWA Permit) for consistency with the Phase II small MS4 stormwater permit regulations.

Ecology reissued the EWA Permit in July 2019, and the permit became effective on August 1, 2019. The EWA Permit is a comprehensive general permit that includes all mandatory requirements, including TMDL related requirements, in the permit text. The EWA Permit fully complies with the updated MS4 permitting regulations.

Program Strengths

The EWA Permit was a well written Phase II MS4 permit with clear, specific, and measurable provisions that fully complied with the MS4 permitting regulations. The permit clearly articulated the expectations for cities, counties and other publicly owned "non-traditional" MS4s such as universities and ports. For several minimum control measures, the permit provided additional time for new permittees brought into the program from the 2010 census to come into compliance with the requirements of the permit. The deadlines were consistent with deadlines found in permits for new permittees both within the state and across the nation.

Areas for Improvement

In order to be fully compliant with general permit regulations at 40 CFR 122.28(b)(2), EPA recommends that Ecology consider a means of including, incorporating by reference, or summarizing the content of the NOI form in the EWA Permit and other MS4 general permits. NPDES regulations at 40 CFR 122.28(b)(2)(ii) require the contents of the NOI be specified in a general permit and require the data elements in appendix A to 40 CFR Part 127. At the time the PQR was conducted, Ecology employed a single electronic NOI that regulated entities use to request coverage under one of the applicable MS4 General Permits. The current EWA Permit referred to the NOI submittal deadlines and other details, yet the permit text did not explicitly summarize or incorporate the NOI as a permit appendix, nor incorporate it by reference.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•Consider a means of including, incorporating by reference, or summarizing the content of the NOI form in the EWA Permit (and other MS4 general permits) pursuant to 40 CFR 122.28(b)(2)(ii).

V. REGIONAL TOPIC AREA FINDINGS

EPA Region 10 has elected not to include the optional Regional Topics in this review.

VI. REVIEW OF PROGRESS ON ESSENTIAL ACTION ITEMS FROM 2016 PQR

This section provides a summary of the main findings from the last PQR and provides a review of the status of the state's efforts in addressing the action items identified during the last PQR, conducted August 2016. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that address deficiencies or noncompliance with respect to federal regulations as "Category 1". EPA is now referring to these action items going forward, as Essential. In addition, previous PQR reports identified recommendations to strengthen the state's program as either "Category 2" or "Category 3" action items. EPA is consolidating these two categories of action items into a single category: Recommended.

Table 2: Essential Action Items Identified During 2016 PQR

Program Area	Action Item Title	Status Update
Basic Facility Information and Application	Revise the application process to ensure complete applications including attachments, diagrams, authorized signature, analytical data, priority pollutant scans and WET test data are submitted at least 180 days prior to the permit expiration date and that all analytical detection level are sufficiently sensitive.	**(In progress)** Ecology's application process and the review for completeness are described in Section III.A.2 of this PQR. The PQR also identified Essential Action Items in Section III.A.2 and Table 3 in Section VIII, which state that the permit application should include all data required by regulations and WET testing in future permit applications. Other information such as authorized signature, analytical data, and priority pollutant scans were observed in this PQR.
Effluent Limitations Documentation	Revise permit writer guidance and/or fact sheet template to ensure effluent limits are adequately justified in the administrative record including anti-backsliding, antidegradation and compliance schedules.	**(In progress)** Ecology's fact sheet templates for municipal (October 2021) and industrial dischargers (December 2019), include a comprehensive section on antidegradation and compliance schedules. They do not include an anti-backsliding section. Ecology's Permit Writer's Manual was updated in 2018 and includes sections on anti-backsliding, antidegradation, and compliance schedules. During this PQR, however,

Program Area	Action Item Title	Status Update
		several permits reviewed did not sufficiently describe the rationale for anti-backsliding and antidegradation. Therefore, these are included as essential action items in Section VIII, Table 3 of this document.
Water Quality-Based Effluent Limitations	Revise permit writer guidance and/or fact sheet template to ensure permits include both long-term and short-term effluent limits for all final WQBELs and revise fact sheet template to flag the need to justify such limits are impracticable. (Note that the 2016 PQR cites to 122.45(d), which references the need for limits expressed as monthly average and daily maximum for non-POTWs and monthly average and weekly average for POTWs, unless impracticable.)	**(Resolved)** Section 3.3.8 of Ecology's Permit Writer's Manual describes the reasonable potential analysis and derives monthly and daily maximum limits, where reasonable potential is present. The guidance does not specifically state that Section 3.3.11 of Ecology's permit writer guidance further provides different scenarios in which WQBELs would be developed and discusses interim and final limits, though not explicitly monthly and daily maximum limits. In this PQR, the permits reviewed included monthly/weekly and daily maximum limits.
Nutrients	Develop procedures for conducting reasonable potential analyses for nutrients that cause or have the reasonable potential to cause or contribute to state WQS excursions. Revise permit writer's guidance and/or fact sheet templates to ensure reasonable potential analysis is conducted for nutrients for facilities known to discharge nitrogen or phosphorus to receiving waters known to have nutrient impairments.	**(In progress)** Ecology has procedures in place to make reasonable potential determinations, but not specifically for nutrients. As stated in Section 3.1.2 of Ecology's Permit Writer's Manual and confirmed by Ecology, Ecology has focused on developing DO TMDLs across the state and also the Nutrient Source Reduction Plan for Puget Sound. This plan includes a general permit for 57 domestic treatment plants discharging to the greater Puget Sound Area, which Ecology issued in December 2021 after the PQR reviews were completed. Without nutrient surface water quality criteria, Ecology must rely on complex modeling tools to develop limits for facilities that have reasonable potential. Thus far, Ecology has not

Program Area	Action Item Title	Status Update
		developed a better mechanism for establishing nutrient limits in NPDES permits.
Pretreatment	Survey all approved pretreatment programs to identify programs that must modify their pretreatment program to adopt all required mandatory provisions of the Streamlining Rule and process all program updates as needed.	**(Resolved)** Ecology staff use the EPA Pretreatment Compliance Audit Checklist when conducting audits. This checklist includes information about reviewing program updates to conform with the required streamlining provisions. The streamlining rule was promulgated in 2005. All programs that were approved prior to 2005 have been evaluated during an audit for incorporation of the required streamlining provisions. Any deficiencies are addressed during audits. Programs approved after 2005 include all required provisions as part of their program package for Ecology review.
Reauthorization	Revise permit writer guidance and/or fact sheet template to improve the permit reauthorization process that will ensure all the data submitted with the application is evaluated and considered in reissuing the permit, and that the permit fact sheet association with permit reauthorization meets the requirement of 40 CFR 124.	**(Resolved)** Ecology's Permit Writer's Manual was revised in 2018. Chapter 2, Section 16 was added to address the reauthorization requirements.

VII. RECOMMENDED ACTION ITEMS FROM 2016 PQR

This section provides a summary of the recommendations from the last PQR, conducted in August 2016 and notes any state efforts to act on those recommendations. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that are recommendations to strengthen the state's program as either "Category 2" or "Category 3" action items. EPA is consolidating these two categories of action items into a single category: Recommended.

Table 3: Recommended Action Items Identified During 2016 PQR

Program Area	Action Item Title	Status
Technology-based Effluent Limitations	Use Ecology's QA/QC process and/or checklist to ensure secondary, equivalent to secondary or BPJ limits are explained in the fact sheet to ensure the record indicates that the limits were developed considering all of the criteria.	**(Resolved)** Washington's domestic wastewater treatment standards (WAC 173-221) include alternative standards for facilities that meet specific criteria. The current fact sheet shell includes instructions for the permit writer on how to apply and explain any alternative limits.
	Revise permit writer guidance and/or fact sheet template to ensure where a benchmark is included in permit, and clearly explain the source and basis for the benchmark in the fact sheet, including why a limit is not needed.	**(In progress)** Revisions to the Permit Writer's Manual and fact sheet shells will include additional guidance on benchmarks.
	Revise permit writer guidance and/or fact sheet template to ensure that the basis for any BPJ limits is explained in the relevant fact sheet.	**(Resolved)** Fact sheet shells instruct the permit writer to discuss each technology-based limit and the basis for that limit, and refer the permit writer to Chapter 4 of the Permit Writer's Manual.
Water Quality-Based Effluent Limitations	Revise the fact sheet template to ensure that the fact sheets clearly identify how the pollutant of concern were identified.	**(In progress)** Ecology fact sheets do not use the term "pollutants of concern", but they explain all considerations for various WQ criteria and list toxic pollutants that were analyzed for reasonable potential. Ecology will consider adding a specific listing of "pollutants of concern" to the fact sheets to clarify this issue.
	Revise the fact sheet template to ensure fact sheets include reasonable potential analysis for all pollutants of concern with sufficient detail including assumptions about background data for the receiving water.	**(In progress)** Comprehensive RPA spreadsheets are updated regularly; As mentioned above, Ecology will consider adding a specific listing of "pollutants of concern" to the fact sheets, which will make it more clear to crosswalk pollutants of concern with associated analyses.

Program Area	Action Item Title	Status
	Revise the permit and/or fact sheet template to ensure permit limits are included for all pollutants for which there is a finding of reasonable potential.	**(Resolved)** Fact sheet templates show that limits are required for all pollutants with reasonable potential,
Monitoring and Reporting	Revise the permit and/or fact sheet template to ensure the monitoring locations are clearly identified especially in industrial permits.	**(Resolved)** Monitoring requirements and locations are clearly identified in permit section S2.
Pretreatment	EPA recommends that Ecology develop criteria for when a municipality should develop an approved pretreatment program to reduce reliance on state issued pretreatment permits. Since Ecology does not have the resources to fully comply with the requirements at 40 CFR 403.10(f) and 40 CFR 403.8(f), Ecology should consider developing an action plan to require POTWs to develop and implement pretreatment programs.	**(Not pursuing)** See action items in the pretreatment category for 2021. Ecology has not developed an 'action plan'. However, Ecology has made progress in approving municipalities to implement the pretreatment program in their respective cities. Washington continues to claim that they are implement a hybrid pretreatment program. Ecology is working on getting more of their unapproved programs to develop approvable pretreatment programs. For example, since the last PQR, the City of Bellingham, Pasco and Discovery Clean Water Alliance all have approved pretreatment programs.
Stormwater (Construction)	The permit does not describe a process for permit coverage denials.	**(Not pursuing)** WAC 173-226 provides a provision for denial of permit coverage. In the event an application for coverage is denied, Ecology responds with a letter explaining the denial and includes provisions for appealing the denial decision.
Stormwater (Industrial)	The Industrial Stormwater General Permit does not adequately address discharge to TMDL waters and TMDL development should address stormwater.	**(Not pursuing)** The ISGP contains extensive and detailed requirements for discharges to TMDL waters.
Basic Facility Information and Application	Final permits, even electronic versions in PARIS, should have some indication of appropriate signature. EPA relied on the electronic record of	**(Not pursuing)** It does not appear that applications on PARIS include a signature.

Program Area	Action Item Title	Status
	permit available in PARIS. However, original (hard copy) permits were signed.	
Effluent Limitations Documentation	Consider including a table comparing proposed effluent limits (and basis) with the limits in the previous permit in all fact sheets.	**(Resolved)** The fact sheet templates include explicit directions comparing proposed limits to current limits.
Standard and Special Conditions	Ensure federal regulations are met and standardize the general conditions section in the permit shell.	**(In progress)** These are included in the permit shells, but there is a 2021 PQR recommended action item suggesting that general conditions be more explicitly included in permits in a standard manner, include all of the language contained in the federal standard conditions at 40 CFR 122.41 and applicable conditions at 122.42.
Administrative Process (including public notice)	EPA suggests that the beginning and end date on public notices be included in the public notices online version. Some notices only include the publication day, but not the end date.	**(Resolved)** Public notices include the beginning and end dates.
Pretreatment	Provide more transparent data on Ecology's website or PARIS about Ecology's Pretreatment Program (e.g., criteria for requiring POTW to have an approved program, listing of approved programs, etc.).	**(In progress)** See 2021 action items.

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

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

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

- **Essential Actions -** Proposed "Essential" action items address noncompliance with respect to a federal regulation. EPA has provided the citation for each Essential action item. The permitting authority is expected to address these action items in order to comply with federal regulations. As discussed earlier in the report, prior PQR reports identified these action items as Category 1. Essential actions are listed in Table 4 below.
- **Recommended Actions -** Proposed "Recommended" action items are recommendations to increase the effectiveness of the state's or Region's NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended actions are listed in Table 5 below.

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

Table 4: Essential Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Permit Application Requirements	• Applications for major municipal facilities should be considered incomplete unless they include the appropriate WET testing results in accordance with 40 CFR 122.21(j)(5)(ii) and (iv). • Applications for non-municipal facilities should be considered incomplete unless they conform to effluent testing requirements at 40 CFR 122.21(g)(7)(v).
Reasonable Potential and WQBELs	• Ensure that permit fact sheets include a discussion of an RPA evaluation for all pollutants of concern, which would include pollutant parameters identified in ELGs or for which TBELs were developed (40 CFR 124.56(a)).
Final Effluent Limitations and Documentation	• Consistent with requirements of 40 CFR 124.8(b)(4), permit fact sheets must include discussion of the basis for permit conditions, which would include anti-backsliding and antidegradation where permit effluent limitations are less stringent than existing limitations, or where increased loadings are permitted.
Standard and Special Conditions	• Ecology must ensure that the use of compliance schedules are appropriate and that compliance schedules are implemented consistent with 40 CFR 122.47.
Pretreatment: Food Processing Sector	• Require the City of Yakima to take appropriate corrective actions to address an unpermitted SIU, Del Monte, as required under 40 CFR 403.8 and in accordance with the City's NPDES permit, section S6 Pretreatment.

	• Require the City of Yakima to comply with all applicable sampling and inspection requirements under 40 CFR 403.8 and in accordance with the City's NPDES permit, section S6 Pretreatment. • Require the City of Yakima to take appropriate corrective actions against Del Monte to comply with sampling and reporting requirements under 40 CFR 403.12 and in accordance with the City's NPDES permit, section S6 Pretreatment. • Require all CIUs (including MTCIUs and NSCIUs) to be reported appropriately on NPDES POTW application forms in accordance with 40 CFR 122.21(j)(6). • Require that all CIUs (including MTCIUs and NSCIUs) and SIUs be reported in annual reports for approved POTW Programs in accordance with 40 CFR 403.12(i).

Table 5: Recommended Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Facility Information	• Consider updating fact sheet shells to include a statement indicating the facility's designation (major or non-major).
TBELs for Non-POTW Dischargers	• Fact sheets would be strengthened by providing a thorough explanation of how limits or conditions in the referenced ELGs do or do not apply to the facility.
Reasonable Potential and WQBELs	• Consider updating fact sheet shells to include specific discussion of the determination of POCs, ensuring all POCs are identified and discussed (not just POCs for which monitoring data exist). • Consider qualitative RPA when facility-specific effluent data are not available (e.g. new discharges, new impairments, or other newly identified POCs), as discussed in EPA's Permit Writers' Manual (Section 6.3.3).
Final Effluent Limitations and Documentation	• Ensure permit fact sheets clearly describe facility operations, specifically as they relate to the applicability of ELGs.
Monitoring and Reporting Requirements	• Permits should explicitly require permittees to use sufficiently sensitive analytical methods approved under 40 CFR Part 136 and include a direct reference to 40 CFR 122.44(i)(1)(iv) for clarity.

Standard and Special Conditions	• Revise general conditions that are explicitly included in permits to include all of the language contained in the federal standard conditions at 40 CFR 122.41 and applicable conditions at 122.42. • Revise permits and fact sheets to clearly distinguish permit compliance schedules from enforcement compliance schedules or other special conditions such as special monitoring studies.
Administrative Record and Fact Sheet	• Ensure fact sheets clearly describe the timeline of permit reapplication and administrative extension relative to the previous permit's expiration. • Update fact sheet shells to include clear prompts for permit writers to clearly describe the basis for all revisions to permit limitations, even in cases where only the parameter form has changed.
Nutrients in Non-TMDL Waters	• Include numeric nutrient limits in permits, when possible, including considering reference nutrient conditions, AKART, existing watershed modeling, and other available tools. • Develop nutrient-specific permitting guidance consistent with more recent guidance and studies (e.g., Review of USEPA Methods for setting Water Quality-Based Effluent Limits for Nutrients, June 2014). • Require AKART analysis for facilities that contribute to nutrient or nutrient-related problems in receiving waters.
Pretreatment: Food Processing Sector	• Include more facility information for CIUs/SIUs identified in its fact sheets. • Create a dedicated pretreatment webpage to provide more access to the public including the regulated community. • Identify in the PPA, the POTWs without pretreatment program approval where Ecology issues state waste discharge permits. In addition, the PPA should clearly identify the universe of SIUs for which Ecology is issuing indirect discharge permits and performing as the CA, and the receiving POTW.
MS4s	• Consider a means of including, incorporating by reference, or summarizing the content of the NOI form in the EWA Permit (and other MS4 general permits) pursuant to 40 CFR 122.28(b)(2)(ii).