Region 8 NPDES Program and Permit Quality Review

Wyoming

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Executive Summary

The United States Environmental Protection Agency, Region 8 (EPA) performed a remote National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) of the Wyoming Department of Environmental Quality (WDEQ) NPDES program on April 26–29 and performed a PQR close-out meeting with WDEQ on May 6, 2021. At the time of the PQR, Wyoming administered 542 individual NPDES permits and, as of April 26, 2021, 99 percent of WDEQ's permits were current.

The PQR examined 11 permits for discharges in Wyoming issued by the WDEQ and several WDEQ permitting policies. The PQR also focused on several national and regional priority areas including:

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

Overall, the PQR revealed that the WDEQ's permits and fact sheets/statements of basis reviewed by EPA were generally consistent with the federal regulatory requirements. However, although these permits commonly conformed to most of the national NPDES requirements, EPA identified several concerns including: some permit applications lacked appropriate analytical data; certain standard permit conditions were absent from permits reviewed; some permits did not align with Wyoming Administrative Rules and procedures; and fact sheets/statements of basis and permit records lacked sufficient documentation for certain permit limitations and conditions.

As part of its NPDES program implementation, WDEQ has developed internal standard operating procedures to support development of defensible permits and to provide permit writers with a core foundation for permitting procedures. Since some of the permit deficiencies appeared to stem from essential processes used, EPA has recommended that WDEQ update the permit template to include all federal standard conditions requirements, including the use of sufficiently sensitive analytical methods. EPA has also recommended that WDEQ continue to update and develop protocols and standard operating procedures, in particular to address application requirements, documentation of application completeness, and procedures for conducting reasonable potential analyses (RPAs). In addition, EPA recommended that WDEQ further develop justifications for permit conditions and modify all applicable WDEQ template documents to ensure regulatory requirements are met.

In addition to the items listed in the paragraphs above, the report provides an overview of the WDEQ program and identifies specific areas where EPA and WDEQ can work together to continue to strengthen permit language and documentation in Wyoming Pollution Discharge Elimination System (WYPDES) permits.

WDEQ reviewed and provided comments on the draft PQR report on January 21, 2022. WDEQ agreed with many of the draft PQR's findings and recommendations and committed to take action to address many of the proposed action items. Several of these actions and improvements are already underway.

I. PQR BACKGROUND

NPDES PQRs are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program as well as opportunities for improvement in the development of NPDES permits. Prior to the 2021 PQR, EPA conducted a PQR of the Wyoming Pollutant Discharge Elimination System (WYPDES) Program on April 19–21, 2013. The PQR summary report is available at: https://www.epa.gov/sites/production/files/2016-03/documents/final_-_wy_pqr_report_2013_7-17-2015-508.pdf. During the 2013 PQR, the evaluation team proposed various action items to improve the WYPDES permitting program. As part of the current 2021 PQR, EPA requested updates from Wyoming on the progress on those action items. Of the 13 action items identified during the last PQR as being Essential[1] tasks, 10 have been resolved and the remainder represent actions that are either longer-term activities or lower-level actions which the Wyoming is still addressing. In addition, EPA identified Recommended action items to improve Wyoming's program; Wyoming has chosen to implement some of them and some of them are still in the process of implementing. Section VI of this report contains a detailed review of the progress on action items identified during the last PQR.

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

- **Essential Actions -** Proposed "Essential" action items address noncompliance with respect to a federal regulation. 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 -** Proposed "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 on an annual basis and are reviewed during subsequent PQRs.

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

EPA's review team, consisting of three regional staff and one Headquarters (HQs) contractor staff, conducted a review of the WYPDES permitting program. Due to COVID-19 concerns, the PQR was conducted remotely, meaning a review of materials was conducted off-site using electronic materials provided to the EPA by WDEQ. Further, the remote PQR included interviews and discussions conducted via several conference calls. An opening interview was held on April 26, 2021, a discussion with WDEQ staff regarding specific permit questions on April 29, 2021, and a PQR close-out meeting on May 6, 2021.

The Wyoming PQR included reviews of core permit components and national and regional topic areas, as well as discussions between the PQR review team and WDEQ 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 sheets/statements of basis, and any correspondence, reports or documents that provide the basis for the development of the permit conditions and related administrative process. The PQR also included conversations between EPA and the state on program status, the permitting process, responsibilities, organization, staffing, and program challenges the state is experiencing.

A total of 11 permits were reviewed as part of the PQR, all of which were reviewed for the core review, 8 permits were reviewed for national topic areas, and 9 permits were reviewed for regional topic areas. The regional topic areas are unique to Wyoming's permit program. Some permits were reviewed for both the core review and one or more topic areas reviews. Permits were selected based on issue date and the review categories that they fulfilled.

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*[2] to evaluate the WYPDES 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 WYPDES program were: Permit Controls for Nutrients in Non-TMDL Waters, Small MS4 Permit Requirements, and Effectiveness of POTW NPDES Permits with Food Processor Contributions.

Regional topic area reviews target regionally-specific permit types or particular aspects of permits. The regional topic area selected by EPA Region 8 was WET testing. These reviews provided important information to Wyoming, EPA Region 8, EPA HQs and the public on specific program areas.

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

II. STATE PROGRAM BACKGROUND

A. Program Structure

The WDEQ, Water Quality Division (WQD or Division) administered the WYPDES Program. Wyoming received authority to administer the NPDES program on January 30, 1975 (authorization to regulate federal facilities was granted on May 18, 1981) and the general permits program on September 24, 1991. The WQD included the WYPDES, Watershed Protection, Groundwater, and Water and Wastewater Sections. EPA Region 8 administered the Biosolids and Pretreatment programs in Wyoming.

The main WDEQ office was in Cheyenne, Wyoming. The main office was responsible for program oversight for the permitting and compliance and enforcement programs. Staff in the main office drafted permits, inspected facilities, developed enforcement actions, reviewed compliance, and maintained files. WDEQ also had field offices in Casper, Lander, Rock Springs, and Sheridan, where additional inspectors were located. In addition, the WYPDES permit files were maintained in the Cheyenne office.

The WYPDES program had five full-time permit writer positions. At the time of the PQR, three of the permit writer positions were vacant (and were expected to be filled by May 30, 2021). Permit writers received training as well as internal mentoring to support their development. All new permit writers would complete EPA's 5-day NPDES Permit Writers' Course, WET training, and Mixing Zone training when possible. The permit writers also received training from other industrial and collegiate sources. In addition, the Division has developed protocol documents, addressing both administrative and technical issues, to assist new permit writers with the permit development process.

The state maintained the WYPDES database for managing NPDES permitting information. Data from the WYPDES database was extracted and sent through Central Data Exchange (CDX) then uploaded to EPA's Integrated Compliance Information System (ICIS).

Upon receipt of an application, the permit supervisor would make permit assignments based on the facility type (i.e., POTW or non-POTW). WDEQ used a checklist for the permit application that also helped to track the routing of the application and overall permit development process. The permit writer ensured the application was complete and then pulled the past 5-10 years of DMR data (for existing facilities), in addition to any enforcement history. The permit writer consulted WDEQ listings of impaired waters and checked for any TMDL requirements. For facilities discharging to perennial waters, the permit writer compiled updated United States Geological Survey (USGS) flow and chemistry data for the receiving water, if it was available.

Generally, an application completeness review was performed within 30 days of receipt of the application. Staff would follow up with applicant as soon as possible if more information or clarification was needed. WDEQ had a goal to complete application review and draft the permit within 30 days of receipt of all final information, in particular, for most of what they consider boilerplate permits and straightforward permit renewals (e.g., where there were no changes in facility operations, production, or treatment). WDEQ provides the first internal draft to the

permittees as a courtesy, especially where permits include new limitations or conditions. WDEQ issued most permits within 180 days of receipt of the application.

As the permit writer reviewed the application and started developing the permit, they consulted with other NPDES staff as necessary or if certain expertise was needed (e.g., coal-fired power plants). Coordination with TMDL and water quality modelers happened on an ongoing basis. The permitting group held monthly meetings with the TMDL group, where staff shared information on waters that were to be listed as impaired, issues with TMDL development, and updates on point sources in targeted watersheds. Open communication existed between the two groups for coordination outside of the monthly meetings as well. In addition, staff from the records management group supported NPDES permitting by ensuring information received was compatible with WDEQ's in-house data management system, the WYPDES Database, and conducting an administrative review of applications. Staff from the WQD laboratory also supported NPDES permitting staff.

As noted above, WDEQ considered data from the last 5-10 years to include in the permit development; if older data were relevant (or if the history is notable), the fact sheets/statements of basis would discuss this determination. Permits usually retained the effluent limits from the previous permit to be conservative and consistent and data was occasionally cited to meet the anti-backsliding provision for new information (only if data did not violate effluent limitations from the past 5-10 years), but this was rare. In certain cases, where a permittee requested terminating a limit (or if compliance with the limit is costly, such as radium monitoring), WDEQ would analyze the data for reasonable potential and provide the basis for any elimination of limits in the fact sheet/statement of basis. WDEQ would also typically cite data if the permit was adding a new effluent limit. In some cases, a permit may have included a request for additional data for specific pollutants based on newly observed or detected data where reasonable potential indicated a new limit was needed, and the permit would reference DMR data and any new data received with the permit application. Similar approaches were used to consider changes in monitoring frequencies.

The WYPDES Permitting Program maintained many permit templates for individual permits and general permit authorizations, categorized by facility type. The templates were modified to meet the specific requirements for facilities. All draft and final permits were also saved on a common server for staff to reference. The state had not developed spreadsheets to calculate reasonable potential, but used a spreadsheet developed by EPA Region 8.

WDEQ permit writers conducted peer reviews of all permits prior to public notice. Peer reviews were guided by a permit review checklist that included key elements such as accuracy of effluent limitations, receiving water descriptions, outfall locations, permit and fact sheet/statement of basis clarity, formatting, and consistency with internal references. Permit writers received the permit review checklist with notes and markups, following completion of peer reviews. Compliance staff also reviewed permits prior to and after public notice to ensure that permit effluent limitations and monitoring requirements were consistent with those included in the DMR module setup, and to evaluate any effluent limitations or monitoring requirements that were changed as a result of public comments. Prior to final issuance,

management reviewed the permits to ensure that all permit requirements were consistent with WDEQ's goals and priorities.

The administrative record was kept in the permit file or electronically in the WYPDES database or SharePoint server. The WYPDES database housed more current and working permit development files and was constantly being updated. SharePoint was considered more of an archive system and generally used for historical permit documents. Monitoring and reporting, compliance, and other permit related files were also maintained in the WYPDES database.

B. Universe and Permit Issuance

The WYPDES Program administered individual permits for 24 major facilities (18 POTWs and 6 non-municipal), 512 minor non-stormwater facilities (76 POTWs and 436 non-municipal), and 6 individual stormwater facilities, based on information obtained from WDEQ on April 20, 2021. In addition to these individual permits, the Program administered general permits that provided coverage for 10 MS4s, 771 industrial/mining stormwater facilities, and 350 large construction storm water sites (excluding temporary construction activities). The Program also had 62 permits from the non-stormwater NPDES general permits.

WDEQ indicated that significant industries within the state included oil and gas facilities, mining, and construction activities.

WDEQ reported that one major permit was administratively continued.

C. State-Specific Challenges

WDEQ did not indicate the agency was facing specific challenges affecting the WYPDES program; however, it had experienced staffing resource issues that were common to many authorized states. At the time of the PQR, WDEQ reported three permitting vacancies out of a permitting staff of five.

D. Current State Initiatives

WDEQ had several ongoing goals or initiatives:

- Maintain a zero or very low permit backlog.
- Ensure adequate resources for the permit program.
- Develop an electronic email system to send out reminder letters for permit applications.
- Transition to ICIS and NetDMR from their current eDMR database in 2021.
- Continue to implement and upgrade a website or portal to collect permit fees, receive electronic permit applications, and house final permits. WDEQ reported they would continue to use the electronic submittals system because they gained process efficiencies. Use of the electronic system by applicants increased from 20 percent (pre-COVID-19 pandemic) to 70 percent and was still climbing at the time of the PQR.

Related, in WDEQ's efforts to become paperless, WDEQ transmitted final permits via email, with a link to the final permit housed on WDEQ's website. Historically, WDEQ sent final permits by mail with a formal cover letter.

- WDEQ is also currently coordinating with EPA Region 8 staff on an initiative in the Boysen Watershed related to comprehensive NPDES planning for point sources within the Wind River Reservation and state jurisdictional areas upstream of Wind River Canyon (Class 1 water).

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/statements of basis must include a description of the type of facility or activity subject to a draft permit.

Program Strengths

The permits reviewed included permit issuance, effective, and expiration dates, authorized signatures, and specific authorization-to-discharge information. Fact sheets/statements of basis contained a sufficient description of the facility operations and the wastewater treatment processes. In addition, fact sheets/statements of basis provided useful facility and outfall location information relative to receiving waters, including specific receiving water body names and waterbody classifications.

Areas for Improvement

The PQR team observed that the same NPDES permit number was listed in the permit for two non-POTW facilities. In addition, one permit included a permit issuance date that was after the permit effective date. EPA recommends WDEQ implement thorough quality assurance (QA) practices to ensure permits reflect accurate information.

Action Items

Essential	•The PQR did not identify any essential action items for this PQR component.
Recommended	•WDEQ should ensure thorough QA practices are implemented so that permits and related documents contain accurate information (e.g., permit numbers).

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.

The WYPDES Program provided written notification to the permittee that they need to submit a renewal application at least 180 days prior to the permit expiration date. At the beginning of each calendar year, permitting supervisors identified permit expirations that would occur during the year and sent permittees an advance notice that the permit would expire during the year. Staff also considered permits that were set to expire early in the next calendar year, to ensure they had provided sufficient notice for re-application. The electronic letter (usually a single email to the group of permittees) also directed the permittees to the WDEQ webpage where they can download a copy of the WYPDES permit application. In June of each year, staff also sent reminders to facilities whose permits would expire during the second half of the year. Therefore, renewal reminders were scheduled to be emailed to permittees twice in the 12-month period prior to expiration. This process was a courtesy, as the burden of submitting a renewal application was on the permittee, per the "Duty to Re-apply" section included in all WYPDES permits.

WDEQ used its own WYPDES permit application forms, and there were no significant differences between the WDEQ and EPA forms. WDEQ had previously worked with EPA to update the forms in September 2020. Permittees could access the WDEQ website for individual application forms (http://deq.wyoming.gov/wqd/discharge-permitting/resources/individual-permit-apps-for-discharges/), complete a fillable PDF, and submit the application electronically. WDEQ indicated that some applicants continued to submit hard copy applications through U.S. mail. Electronic files of the applications were posted to the "Smartsheet Incoming Mail" system for document handling and distribution. WDEQ staff then manually added information to the WYPDES database. Manual data entry would result in some data entry errors and inefficiency; however, a new system was in development to have applications completed and submitted

online. This would populate the WYPDES database directly and enable applicants and WDEQ staff to manage their documents directly. The new system, "nVIRO", is anticipated to be operational by April 2022.

The WYPDES program manager assigned applications to permit writers according to facility type. At the time of the PQR, there was one full-time senior permit writer and three staff permit writer vacancies, which were in the process of being filled. As permit writer vacancies were filled, the workload would be redistributed. Clerical staff simultaneously processed permit fees and entered basic permit tracking and contact information into the WYPDES database. To maintain a flow of documents through the process, staff had a goal of assigning applications within a few hours of receiving them. WDEQ indicated that WYPDES received the highest volume of files and documents in the Division. At the time of the PQR, the WYPDES program comprised 20-30 percent of WQD staff but received approximately 70 percent of the documents and correspondence (e.g., stormwater Notices of Intent (NOIs), Notices of Termination (NOTs), pretreatment related, applications).

Once a permit was assigned, the permit writer led the application review to determine if the application was technically complete. The WYPDES permit supervisor also supported this review by ensuring that the technical aspects of application were complete, worded clearly, and that screening parameters were complete. Applications were cross-checked with the records management group, which ensured that the information received was compatible with the WYPDES website. Also, these staff ensured that applications were formatted correctly, had the correct fees, and were otherwise consistent with current practices. A third level of review was conducted during peer review of draft permits.

The permittee was then notified, in writing, if the application was technically inadequate. In the case of technically inadequate applications, the notification (sent via email) included a list of information/requirements that must be submitted in order for the application to be considered technically complete and indicated a date by which the information was to be submitted. The permittee was typically allowed a few weeks to gather the required information. Permit application information request letters (and related correspondence with the applicant) were maintained as part of the administrative record in the WYPDES database. WDEQ did not send notification or confirmation notices that applications were complete.

Once an application was been deemed to be complete and information entered into the database, the application was processed based upon date of receipt with the oldest applications being processed first.

Program Strengths

Permit records reviewed during the PQR included the appropriate application forms and signatures. In addition, WDEQ had updated their application forms in accordance with recent federal regulatory updates promulgated in the NPDES Applications and Program Updates Rule.

Areas for Improvement

At the time of the review, certain permit applications reviewed for major POTWs lacked analytical results for three sampling events for pollutants listed in Part 122, Appendix J, Table 2, in accordance with 40 CFR 122.21(j)(4)(iv) and (vi), which requires at least three samples for pollutants listed in Part 122, Appendix J, Table 2. In addition, applications for major POTWs lacked appropriate WET testing results consistent with 40 CFR 122.21(j)(5)(ii) and (iv), and Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2, Appendix E. One POTW permit application also did not provide the results of nutrient (i.e., phosphorus and nitrogen) monitoring. Since this information is required to be submitted in the application, per Appendix E of the "Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters," (effective 3/23/2015), the data or a note to the file waiving any application requirements that are not required to be submitted should be documented in the permit file as part of the application completeness review.

WDEQ's records also lacked documentation that WDEQ determined permit applications were complete. Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 required 45 days to complete application reviews and meet Table E2 requirements. As indicated previously, WDEQ did not send notification or confirmation notices that applications were complete. However, Section 5(b) of the "Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters" (effective 3/23/2015) indicates the administrator shall provide a notice of completeness or deficiency within 45 days of receipt of the application. If a notice of completeness or deficiency is not issued to the applicant within 45 days of receipt of the application, the administrator shall issue a letter of explanation to the applicant which specifies the expected date of the completeness determination.

Action Items

Essential	•Ensure that major POTW applications include a complete data set for priority pollutants (40 CFR 122.21(j)(4) and (5)), and in accordance with Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters (Effective 3/23/2015). •Send a notification of completeness or expected date of the completeness determination to permittees for applications, as per Section 5(b) of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters (Effective 3/23/2015).
Recommended	•The PQR did not identify any recommended action items for this PQR component.

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/statements of basis and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

TBELs for POTWs

Background and Process

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

WDEQ established effluent limitations for biochemical oxygen demand (BOD) (or carbonaceous BOD, or CBOD), total suspended solids (TSS), and pH for POTWs based on federal secondary treatment standards, which are also included in Wyoming's Water Quality Rules and Regulations, Chapter 2. Certain POTW permits for lagoon treatment facilities included alternate limitations to the BOD and TSS effluent limitations established in the federal secondary treatment standards.

Program Strengths

POTW permits reviewed included numerical BOD and TSS limits that were consistent with secondary treatment requirements, including minimum percent removal requirements. Further, these limits were expressed in appropriate units and forms.

Areas for Improvement

The fact sheets/statements of basis for POTW permits that included alternate effluent limitations to the BOD and TSS limitations based on secondary treatment standards lacked sufficient justification for the alternate limitations for BOD and TSS. In one example, the fact sheet/statement of basis indicated that the lagoon facility could not meet the BOD and TSS secondary treatment standard; however, there was no discussion of an analysis the permit writer conducted to support the determination. In addition, certain POTW permits included daily maximum effluent limitations of 90 mg/L for BOD and TSS; however, accompanying fact sheets/statements of basis lacked discussion on how the effluent limitations were determined. Consistent with 40 CFR 124.56, fact sheets/statements of basis must contain necessary explanation of the derivation of specific effluent limitations, including an explanation of how alternate effluent limitations were developed.

Additionally, some permits included daily maximum limits for BOD and TSS; however, there was no discussion on how these limits were established. Based on discussions with WDEQ during the PQR review, these were included in Chapter 1: Wyoming Surface Water Quality Standards. Upon review of the Appendix B Water Quality Criteria parameter specific limitations in Chapter 1 and Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, PQR reviewers could not identify the source of the daily maximum values for BOD or TSS. If the basis for these limits is included in either of these chapters, WDEQ should include a reference in the fact sheet/statement of basis to the applicable criteria/section as the source of these numeric values. If these daily limits are not included in Wyoming Surface Water Quality Standards Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 1 or Chapter 2, WDEQ should provide additional background in the fact sheet/statement of basis on how these values were established.

The Town of Hudson permit (WY0020664) contains "alternate" standards ("treatment equivalent to secondary treatment") because the permittee has waste stabilization ponds (the NPDES permit uses the term "lagoon systems") and claims that secondary treatment standards cannot be met.[3] The fact sheet, however, does not document why secondary treatment standards cannot be met. Regarding technology-based limits, the fact sheet states:

> "This facility has demonstrated the inability to meet the National Secondary Treatment Standards of 85% percent removal of BOD. Therefore, it qualifies for the alternate lagoon limit of 65% for percent BOD reduction." Further the fact sheet states, "The facility has demonstrated the inability to meet the National Secondary Treatment Standard of 30 mg/L monthly average for TSS, so this permit qualifies for the "alternate" limits for lagoon systems for TSS of 100 mg/L, monthly average."

The federal regulations at 40 CFR 133.103(c) allow for adjustment "of minimum levels of effluent quality set forth in 40 CFR 133.105(b)(1), (b)(2), and (b)(3) for treatment works subject to this part, to conform to the suspended solids concentrations achievable with waste stabilization ponds, provided that: (1) Waste stabilization ponds are the principal process used for secondary treatment; and (2) operation and maintenance data indicate that the suspended solids values specified in 40 CFR 133.105(b)(1), (b)(2), and (b)(3) cannot be achieved."

Permit writers must ensure that the Town of Hudson fact sheet proves and documents that the POTW cannot meet secondary treatment standards and that it meets all requirements for allowing for adjustment of secondary standards as required at 40 CFR 133.103(c).

[3] The percent removal limit for BOD is only 65% in the permit, while the secondary treatment standards for BOD and TSS are 85% removal. The permit does not include a removal limit for TSS. Further, the TSS limits exceed secondary standards at 100 mg/L (MA), 150mg/L (WA), 300 mg/L (DM).

Action Items

Essential	•WDEQ must ensure that permit fact sheets/statements of basis include adequate explanation of the derivation of specific effluent limitations, in particular an explanation of how alternate effluent limitations and daily maximum BOD and TSS limits were developed, in accordance with 40 CFR 124.56. •Permit writers must ensure that fact sheets/statements of basis prove and document that a POTW cannot meet secondary treatment standards and that it meets all requirements for allowing for adjustment of secondary treatment standards as required at 40 CFR 133.103(c).
Recommended	•The PQR did not identify any recommended action items for this PQR component.

TBELs for Non-POTW Dischargers

Background and Process

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

Three non-POTW permits were reviewed during the core permit review. Fact sheets/statements of basis for the permits reviewed generally provided useful descriptions of the facilities; however, lacked discussion of facility categorization for purposes of applying ELGs, such as discussion of whether the facility was an existing or new source. Fact sheets/statements of basis clearly identify applicable ELGs. WDEQ indicated there are no facilities for which permit writers developed effluent limitations based on BPJ.

Program Strengths

WDEQ appropriately established TBELs in non-municipal WYPDES permits in the correct form and units. In addition, the fact sheets/statements of basis provided an adequate description of facility operations and treatment processes. Further, fact sheets/statements of basis

consistently identified the applicable federal ELGs and state technology standards that were considered in the development of TBELs for the facility. Fact sheets/statements of basis for non-POTW permits included appendices that detailed ELG-based TBELs development.

Areas for Improvement

Certain fact sheets/statements of basis for non-POTW facilities lacked discussion of facility categorization in terms of whether the facility is an existing or new source relative to the applicability of ELGs.

Action Items

Essential	•Section F, Administartive Record and Fact Sheet, addresses the essential action item regarding documentation of existing and new sources.
Recommended	•WDEQ should ensure fact sheets consistently describe facility operations, including discussion of facility categorization and whether the facility is an existing or new source, relative to the applicability of ELGs.

2. Reasonable Potential and Water Quality-Based Effluent Limitations

Background

The NPDES regulations at 40 CFR 122.44(d)(1)(i) and particularly 122.44(d)(1)(vii)(A)(2) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such "water quality-based effluent limits" (WQBELs), the permitting authority must evaluate whether any pollutants or pollutant parameters cause, have the reasonable potential to cause, or contributes to an excursion above any State water quality standard (WQS).

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

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

- calculated such limits or other permit conditions.

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

Process for Assessing Reasonable Potential

The permit writer determined the stream classification, water quality criteria associated with the stream classification, and uses of the receiving stream. They also identified pollutants of concern based on review of application data, pollutant scans, and overall research of the facility. Permit writers evaluated data from a variety of sources to evaluate reasonable potential including NPDES permit application, DMR data, or other intake and effluent characterization data (e.g., pretreatment sampling data at POTWs). Permit writers considered effluent monitoring data from the previous 5–10 years. Permit writers also considered ambient water quality data, when available, from USGS, data collected by permittees in accordance with permit requirements, and water quality data collected by other WDEQ program areas.

WDEQ permit writers used an RPA spreadsheet tool developed by EPA Region 8, following EPA's *Technical Support Document for Water Quality-Based Toxics Contro*l (TSD), and implemented the calculations within the spreadsheet. WDEQ indicated they did not maintain separate procedures regarding evaluating reasonable potential. Permit writers conducted the RPA for all known pollutants in the discharge. WDEQ indicated preference to have at least five data points to conduct an RPA; however, permit writers will evaluate reasonable potential if there are fewer data points. Where there are fewer data points (e.g., 3–5 results), WDEQ will typically determine that an effluent limitation is required; therefore, they encourage permittees to provide additional data to ensure a broader set of data is considered in the RPA. However, WDEQ required monitoring or screening data in applications for new dischargers before a permit was issued. If the facility was not in operation, WDEQ requested they develop a best estimate of effluent quality and provide data on their operating and treatment system. The permit writer then analyzed reasonable potential with that information and established effluent limits based on those data and known pollutants of concern.

WDEQ permit writers typically considered ambient water quality data in calculating WQBELs (e.g., upstream concentration and flow of receiving water) based on USGS gaging station data. Where USGS data were not available (which was common for dischargers located in more remote areas), other sources were reviewed, including site-specific sampling from the applicant or WDEQ. As related to the data used, WDEQ did not generally rely on default values; however, zero could be assumed in some cases as an interim measure, depending on the pollutant.

Permit files included limited documentation of RPAs; the typical documentation observed during the PQR consisted of spreadsheet files for select parameters.

Process for Developing WQBELs

Following consideration of TBELs, permit writers develop WQBELs for those pollutants that demonstrated reasonable potential. Typically, if there is a TMDL, the WQBEL is based on a WLA

calculation for acute and chronic limits. The requirements (TBEL and WQBEL) are then compared and typically, the most stringent is then incorporated into the permit.

Mixing zones implementation was based upon the WDEQ Implementation Policy for Mixing Zones, an addendum to Chapter 1 of the Wyoming Water Quality Rules and Regulations. Complete mixing was determined under certain conditions, but was not assumed by default. The mixing zone policy also imposed size constraints:

> "Except for the zone of initial dilution, which is the initial 10% of the mixing zone, the mixing zone shall not contain pollutant concentrations that exceed the acute aquatic life values (see Appendix B). In addition, there shall be a zone of passage around the mixing zone which shall not contain pollutant concentrations that exceed the chronic aquatic life values (see Appendix B). Under no circumstance may a mixing zone be established which would allow human health criteria (see Appendix B) to be exceeded within 500 yards of a drinking water supply intake or result in acute lethality to aquatic life".

In addition, the maximum size of a mixing zone is:

- mixing zones for streams and rivers shall not exceed one-half of the cross-sectional area or a length 10 times the stream width at critical low flow, whichever is more limiting.
- mixing zones in lakes shall not exceed 5 percent of the lake surface area or 200 feet in radius, whichever is more limiting.

The fact sheets/statements of basis discussed any assumptions or findings relating to mixing zones if a mixing zone was employed in the permit.

Permit writers used a hardness-dependent metals limit calculator (with formulas derived from Chapter 1 footnotes on hardness adjustment for each applicable metal) in all permits on an as-needed basis depending upon stream classification. In addition, permit writers used a USGS model for determining critical low flow (i.e., 7Q10) values. Further, staff used a wasteload allocation spreadsheet which includes Tier 2 antidegradation adjustments for final effluent limits.

WDEQ permit writers documented WQBELs calculations in fact sheets/statements of basis in narrative and tabular format and original spreadsheet files were maintained in the administrative record.

Program Strengths

Reasonable Potential

Permit writers consistently identified receiving streams, waterbody classifications, and designated uses. Fact sheets/statements of basis discuss pollutants of concern on an individual basis and data considered in the RPA (if performed) including hardness considerations.

WQBEL Development

If a rationale was included in the fact sheets/statements of basis, WYPDES permits included WQBELs that were consistent with the rationale provided in fact sheets/statements of basis. If methods were documented, WDEQ permit writers typically utilized appropriate procedures and methods for developing WQBELs.

Areas for Improvement

Reasonable Potential

Fact sheets/statements of basis did not consistently discuss the receiving stream's impairment status and TMDL applicability. In addition, the review indicated that permit files did not clearly demonstrate that permit writers conducted RPAs during every permit renewal. For example, one facility was required to monitor for a parameter in the previous permit; however, the fact sheet/statement of basis for the reissued permit lacked discussion of the determination of the final effluent limitation for that parameter, consistent with 40 CFR 122.44(d)(1)(i). In another permit, the fact sheet/statement of basis did not clearly document that the permit writer considered all available data for ammonia limit removal, as no actual ammonia discharge monitoring data or RPA was included. The determination appeared to be based on background instream data from USGS stations only, but no actual facility discharge data was included in the evaluation to determine whether discharge characteristics for ammonia were at or below those assumed. Furthermore, another POTW permit review identified that discharge data provided by a facility included a value for Bis(2-ethylhexyl) phthalate which exceeded the priority pollutant limit indicated in Appendix B of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 1: Wyoming Surface Water Quality Standards. However, there was no documentation of an RPA for this pollutant.

In general, WDEQ records and fact sheets/statements of basis lacked clear documentation of RPAs and development of WQBELs, which was a finding identified during the 2013 PQR. (40 CFR 122.44 (d)(1)(ii)) Further, fact sheets/statements of basis did not consistently include statements regarding RPA determinations, as required by 40 CFR 124.56.

WQBEL Development

Fact sheets/statements of basis did not consistently describe the determination of dilution allowances, in accordance with 40 CFR 122.44 (d)(1)(ii) and 40 CFR 124.56, and it was unclear, in at least one permit, whether an identified dilution factor was actually applied to the final permitting limits.

Action Items

Essential	•<u>Reasonable Potential</u> •WDEQ must ensure that permit writers conduct RPAs in accordance with NPDES regulations and provide sufficient documentation to demonstrate that reasonable potential was evaluated. (40 CFR 122.44 (d)(1)(ii)) •WDEQ must ensure that fact sheets/statements of basis include clear statements and findings of the RPA results, consistent with 40 CFR 124.56. •<u>WQBEL Development</u> •WDEQ must ensure that fact sheets/statements of basis include adequate documentation of the permit writer's determination of dilution allowances (40 CFR 122.44 (d)(1)(ii) and 40 CFR 124.56)
Recommended	•<u>Reasonable Potential</u> •The PQR did not identify any recommended action items for this PQR component. •<u>WQBEL Development</u> •The PQR did not identify any recommended action items for this PQR component.

3. Final Effluent Limitations and Documentation

Background and Process

Permits must include all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations that ensure that all applicable CWA standards are met. The permitting authority must identify the most stringent effluent limitations and establish them as the final effluent limitations in the permit. In addition, for reissued permits, if any of the limitations are less stringent than limitations on the same pollutant in the previous NPDES permit, the permit writer must conduct an anti-backsliding analysis, and if necessary, revise the limitations accordingly. In addition, for new or increased discharges, the permitting authority should conduct an antidegradation review, to ensure the permit is written to maintain existing high quality of surface waters, or if appropriate, allow for some degradation. The NPDES regulations at 40 CFR 131.12 outline the common elements of the antidegradation review process.

In addition, permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for WQBELs as well as the procedures explaining the basis for

establishing, or for not establishing, WQBELs should be clear and straight forward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

WYPDES fact sheets/statements of basis clearly described the facility type, operations, and treatment processes. Fact sheets/statements of basis for non-POTWs included an appendix that detailed the development of TBELs that were based on ELGs. Permits established TBELs based on facility type; however, sometimes without ample documentation of alternate effluent limitations for POTWs.

WYPDES fact sheets clearly identified the receiving waterbody, applicable water quality standards, designated uses, and pollutants of concern. Fact sheets/statements of basis discussed receiving streams' impairment status; however, did not consistently discuss applicability of TMDLs. Though certain fact sheets/statements of basis included greater detail and documentation, discussion of RPAs was inconsistent across the permits and accompanying fact sheets/statements of basis reviewed.

For waters that are listed as impaired or have a TMDL, permit staff coordinated with staff from the Watershed Protection group, which maintained an active list of impaired waters or waters with finalized TMDLs. If there was no TMDL for the 303(d) listed water, then the limit for the impaired constituent was set equal to the water quality standard and incorporated into the permit. If the discharge was directly to an impaired receiving water or likely to reach a downstream impaired water, the effluent limits were adjusted accordingly (i.e. no assimilative capacity available for dilution). In most cases, the permit would have had an effluent limit and required monitoring. For waters with a TMDL, effluent limits were incorporated into the permit directly from the TMDL load allocation. The Watershed Protection Group (which developed TMDLs) was asked to review the permit for accuracy prior to public notice. They also maintained a current list of all point source discharges and associated effluent limits and DMR data for each TMDL in effect; these data were provided to them on a continual basis from the WYPDES permitting group to assist in tracking TMDL implementation.

WDEQ maintained a formal antidegradation implementation policy, and an antidegradation review was conducted for every permit. A default value of 20 percent of assimilative capacity was usually given but other options were available through the implementation policy. The antidegradation process was documented in the fact sheet/statement of basis and permit quality spreadsheet.

According to WDEQ, antidegradation was considered for all WQBELs. Permit writers followed the Implementation Policy for Antidegradation, an addendum to Chapter 1 of the Wyoming Water Quality Rules and Regulations. In some cases, documentation in the fact sheet/statement of basis identified which level of antidegradation protection was applied (based on receiving water classification).

WDEQ also indicated that anti-backsliding was considered for all permits but triggered when an effluent limit was less stringent than what was included in the previous permit. Often, the less stringent limit was allowed if it was based on new information or new regulations and, on occasion, if it was beyond the permittee's control. The fact sheet/statement of basis for the permit cited compliance with anti-backsliding requirements. When a permit renewal or major modification included an effluent limit which was less stringent than previous permit limit, the fact sheet/statement of basis would typically cite the provision which allowed it (new information, correction of error, etc.).

Program Strengths

WYPDES permits included TBELs based on facility type, and accompanying fact sheets/statements of basis typically provided a general understanding of the basis for TBELs. TBELs were usually established in the correct units and forms, as appropriate for the facility type.

Areas for Improvement

WYPDES fact sheets/statements of basis did not describe the basis (TBEL or WQBEL) for each of the final effluent limits. For example, for one POTW that flowed to both 3B and 2AB classified waters, the basis was not clearly indicated for using only the 3B (and not 2AB, which was more protective) receiving water designation requirements for establishing *E. coli* and total residual chlorine effluent limitations. Further, the records reviewed did not generally document that a comparison of technology- and water quality-based limits was performed, and the most stringent limit selected. In addition, WQBELs were not consistently established as both long-term (e.g., AMEL) and short-term (e.g., MDEL) effluent limitations, for certain parameters such as oil and grease, and some metal parameters. For one permit reviewed, the fact sheet/statement of basis also did not provide clear justification for the decision-making process for designated uses of the receiving water(s) (e.g., the recreational category selected for *E. coli*). During the PQR, WDEQ indicated that a mapping tool was used to establish the recreational classifications used for *E. coli* limit determination (e.g. "infrequently used full body contact", etc.); however, neither the fact sheet/statement of basis or WDEQ could provide additional detail on this process or documentation for the basis of how designations were established by the mapping tool (e.g., what and how was mapping performed, how/when these categories were established and updated, etc.).

Additionally, the limits for ammonia did not appear to be consistent between fact sheet/statement of basis calculations and implemented permitted limits. In one POTW permit, ammonia was removed from the renewal permit and the WET dilution effluent limit for another POTW was implemented as less stringent (i.e., more dilution allowed for passing result); however, there was no anti-backsliding specific discussion in either fact sheet/statement of basis. (CWA section 402(o) prohibits backsliding).

One fact sheet/statement of basis reviewed was also unclear as to why a flow limit was applied as a monthly average instead of as a maximum allowable limitation (the design capacity for the facility was indicated to be 6 million gallons per day (MGD) and the wasteload allocation (WLA)

was calculated using the volume as a maximum), which would allow for periods of flow that exceeded 6 MGD and not be representative of the WLA calculated.

Action Items

Essential	•WDEQ must ensure that fact sheets/statements of basis include complete documentation of the basis for final effluent limitations (i.e., TBEL or WQBEL), including a demonstration that the permit writer compared TBELs and WQBELs and the most stringent limitation was established as the final limitation, appropriate water class designations were used for limit determinations, justifications for designated uses, and alignment of WLA calculations with permitted limits. (40 CFR 124.56) •WDEQ must ensure that anti-backsliding was evaluated and documented, when reissued permits established effluent limitations that were less stringent than those in the previous permit.
Recommended	•The PQR did not identify any recommended action items for this PQR component.

C. Monitoring and Reporting Requirements

Background and Process

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

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual reporting of monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48 requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify appropriate monitoring locations to ensure compliance with the permit limitations and provide the necessary data to determine the effects of 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 Part 136 analytical method.

Monitoring requirements for WYPDES permits were based on effluent limits (all limited pollutants must be monitored at least annually), compliance history, and any data needs applicable to the effluent and receiving waters. WDEQ did not have a written policy for monitoring requirements. Typically, monitoring requirements carried forward from the previous permit, unless there was a specific reason to change the monitoring requirements.

Typical reporting requirements included monthly, quarterly, semi-annual, or annual sampling with semi-annual or quarterly reporting based on pollutant and permit type. Facilities with an adverse compliance history may have seen an increase in sampling or reporting frequency upon renewal. Pollutants for which insufficient data existed to make a reasonable potential determination may also have received sampling requirements to obtain additional data (most often in new permits).

WDEQ considers many factors when determining the monitoring and reporting frequency for a permit:

- Reporting timeframes were set in accordance with monitoring timeframes. As an example, if a permittee had to conduct monitoring daily, the submittal would most likely have been monthly, whereas if monitoring was semi-annual, then reporting would have been semi-annual.

- If the permittee exhibited a pattern of non-compliance or inconsistency with water quality from the plant, the permit writer may have increased the frequency of monitoring.

- Federal or state requirements also dictated the frequency of monitoring.

Permits required the permittee to comply with 40 CFR 136 and WDEQ indicated they required the use of sufficiently sensitive methods. WDEQ also worked with their lab personnel (who refer to the CFRs) to define an appropriate detection limit. As an example, when a detection limit may actually be below the water quality standard, the permit writer worked with the lab personnel to establish an appropriate detection limit. The permit writer would then ensure the detection limit was consistently applied.

In cases of insufficient data, staff reevaluated the new data submitted at the next permit renewal. However, WDEQ reserved the ability to intervene sooner and review new data to revise the permit if there was significant concern to reopen and revise.

WET monitoring adjustments may be handled administratively using an existing permit provision that allowed for review of WET monitoring data, permit history, and imposition of a minor permit modification to change alternating WET test species.

WDEQ transmitted raw data from dischargers to ICIS nightly. ICIS subsequently generated reports that identified issues.

Program Strengths

The reviewed permits consistently identified appropriate monitoring locations, frequencies, and sample types; based on the facility, discharge type and corresponding limit basis.

Areas for Improvement

WDEQ permits did not require the use of sufficiently sensitive EPA approved methods, in accordance with 40 CFR 122.44(i)(1)(iv). In addition, at the time of the review, permits did not require permittees to submit DMRs electronically, consistent with 40 CFR Part 127. Two POTW permits also lacked specific identification of influent monitoring locations (for BOD and TSS influent sampling), in accordance with 40 CFR 122.41(j), and two POTW permits contained inconsistent reporting timeframes identified in different parts of the permit (i.e., quarterly in WET section vs. first half of the calendar year in Reporting section). EPA recommends that WDEQ develop and document a clearly defined process for determining appropriate monitoring frequencies. Additionally, it is recommended that the language be adjusted in the "Reporting" section of the permits to incorporate "influent", "receiving", and any other type of monitoring specified in the permits to make it clear that all monitoring is to be reported on this schedule (not just "effluent monitoring obtained during previous month").

Action Items

Essential	•WDEQ must ensure permits require the use of sufficiently sensitive EPA approved analytical methods in accordance with 40 CFR 122.41(i)(1)(iv) and 40 CFR 136.1(c). •WDEQ must ensure permits require permittees to submit DMRs electronically, consistent with 40 CFR Part 127. •WDEQ must ensure that POTW permits specifically identify influent monitoring locations, consistent with 40 CFR 122.41(j). •WDEQ must ensure consistent reporting intervals are specified in the permit, in accordance with 40 CFR 122.41(l)(iii)(4).
Recommended	•WDEQ should develop and document a clearly defined process for determining appropriate monitoring frequencies. •WDEQ should adjust permit language in the "Reporting" section of the permits to incorporate "influent", "receiving", and any other type of monitoring specified in the permits.

D. Standard and Special Conditions

Background and Process

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

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

WDEQ permits included conditions to implement narrative water quality standards (e.g., "There shall be no discharge of floating solids or visible foam in other than trace amount, nor shall the discharge cause formation of a visible sheen or visible hydrocarbon deposits on the bottom or shoreline of the receiving water.") Other special conditions included aesthetic degradation restrictions, erosion control, operation and maintenance, signage, or facility access. Permits may also have required specialized investigations of downstream soils or groundwater in affected areas.

The WYPDES Program used boilerplate templates to generate the special conditions and standard conditions for the permits. The source of standard conditions was from the Chapter 2 of the Wyoming Water Quality Rules and Regulations and the federal requirements (40 CFR 122.41 and 122.42). The template was last updated in December 2020.

Program Strengths

WDEQ permits included standard conditions with consistent organization, which allowed for easy identification of specific standard permit requirements. The use of boilerplate language for standard conditions ensured consistency across permits. WDEQ boilerplate language for standard conditions was updated recently, in December 2020.

Areas for Improvement

The following standard conditions were absent from permits reviewed:

- 122.41(a)(1) reference to sewage sludge standards, (2), and (3).
- 122.41(i) Inspection and Entry.
- 122.41(j)(5) Penalties for subsequent violations.
- 122.41(k)(2) Penalty for signatory requirements.
- 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 122.42(a)(1)."

- 122.41(l)(1)(iii) Planned changes related to sludge use or disposal.
- 122.41(l)(4) Monitoring reports: No language for 40 CFR 127 electronic reporting requirements.
- 122.41(l)(5) Compliance Schedules.
- 122.41(l)(6) Twenty four hour reporting: Missing language for notification for bypasses and SSOs.
- 122.41(l)(7) Other non-compliance: Missing language for notification for bypasses and SSOs.
- 122.41(m)(1)(ii) Definition of severe property damage. Additionally, the language for electronic submission of information for a bypass was also missing.
- 122.41(n)(2) "No determination made during administrative review of claims that non-compliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review."

In addition, two permits without compliance schedules contained the following wording in the "Power Failures" section:

"Power Failures
In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:
a. In accordance with a schedule of compliance contained in Part I,…"

It was unclear what "schedule of compliance" is being referred to in this section and whether it is considered a requirement subject to a "compliance schedule" in the permits. This wording should be evaluated by WDEQ to ensure it accurately aligns with the requirements (i.e., no compliance schedule exists) of the permits.

The following recommendations are suggested:

- Signatory requirement: Recommend adding language defining "responsible corporate officer" and "executive officer" or citing CFR for definition so it is clear to permittee who may sign.
- Transfers: Recommend adding in specific language, per the CFR, that "This permit is not transferable to any person except after notice to the Director", so it is very clear to the permittee that notice is required.
- Bypass: The following language was contained in the permit, but it was unclear how the language was implemented in line with a bypass situation: "Return of removed substances to the discharge stream shall not be considered a bypass under the provisions of this paragraph." WDEQ should include additional clarification and/or examples in its documented processes for how/when this situation would apply.
- For POTWs: the permit contained the additional standard condition at 40 CFR 122.42(b)(1)–(3) for POTWs regarding notification of new introduction of pollutants and new industrial users; however, it is recommended that the duration of the discharge also be added so that the overall effluent quantity can be determined per the CFR requirement: " *the quality and quantity of effluent introduced into the POTW,*".

Currently, only the nature, concentration, average and max flow are requested in this portion of the permits.

Action Items

Essential	•As per the details provided in the section above, WDEQ must ensure that permits include all standard conditions consistent with the federal standard provisions established in 40 C.F.R. 122.41, and in alignment with permitted requirements (i.e., power failure language).
Recommended	•Recommendations are detailed in section above.

E. Administrative Process

Background and Process

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

The WYPDES Program had a standard operating procedure for the administrative process for permit publication and responding to public notice comments. The WYPDES Program rarely had hearings but if a hearing was proposed, Chapter 2 defined the process for the hearing.

The WYPDES Program was responsible for publishing the public notice (PN) of the proposed permit. WYPDES public notices occur once per month, generally beginning on the third Friday of each calendar month. Additional or special public notices were run if necessary. Each public notice contained multiple draft WYPDES permits. State regulations required that the PN be published in a newspaper that had statewide circulation; only one newspaper satisfied that requirement. Notifications were also sent out to permittees, affected landowners, and interested parties that had signed up for a mailing list. The public notice itself with reviewable application materials and draft permits was located on WDEQ's web site. The public comment period lasted at least 30 days and comments received during the period were included in the administrative record.

WDEQ managed PNs on the WDEQ website, with clickable links to draft permits and applications. Starting in March 2021, the public had the ability to submit electronic comments

directly through an online comment portal. Staff still sent a short PN reminder to the newspaper to meet regulatory requirements; this notice directed readers to the website.

Public comments were submitted in writing or electronically for any WYPDES permit. The comment period deadline was specified in the public notice announcement. Comments from EPA were received in any format and were typically provided directly to the WYPDES permit writer. Comments and response to comments were maintained as part of the administrative record in WYPDES database.

As required by Chapter 2 of the state permitting regulations, WDEQ responded in writing to public comments at the time a final action was taken on the permit. Any changes to the permit that resulted from the comments were noted in the response letter and in the permit fact sheet or statement of basis. For small typographical edits or minor wording changes that were intended for clarification and/or noted by the applicant themselves during public comment, a confirmation email was generally sent to the permittee in lieu of a formal letter. The email summarized any changes made or rejected. If WDEQ received multiple comments from different parties (which was rare), staff sent out individual letters to each commenter and addressed each comment individually. If a large volume of comments was received, WDEQ developed a formal response document organized by comment category. Three permits that were reviewed did not contain documentation on if public comments were received and if the WDEQ provided responses to the public comments.

A public meeting could be requested during the comment period. The WDEQ Administrator and Director granted or denied these meeting requests. If granted, WDEQ issued a PN for the meeting, invited the public, and documented the discussion in the record.

Hearings for WYPDES permit final actions (issuance or denial of a permit) could be requested within 30 days of the signature date of the final action. That request was made by the appellant to the state Environmental Quality Council, pursuant to the provisions of the Wyoming Environmental Quality Act, Wyoming Administrative Procedures Act, and Chapter 2 of the Wyoming Water Quality Rules and Regulations.

WYPDES permits were rarely appealed. The program had not received a permit appeal in over 10 years.

EPA was the only entity who could object to WYPDES permits and any permit objection received by the WYPDES Program would be reviewed. EPA has not objected to any permits since the 2013 PQR review. If an objection were sent to WYDEQ, it could be a request for additional information from the WYPDES Program (interim objection). The WYPDES Program would seek to work with EPA to come to a resolution, typically accomplished through meetings or phone calls. The permit could be modified as a result of the objection. A response to the objection would then be provided to EPA, and if EPA lifted the objection, the permit would be issued.

Program Strengths

Public notice documents were readily available for review. It appeared that WDEQ implemented consistent public notice procedures.

Areas for Improvement

Records reviewed did not consistently include language regarding public notice, any significant comments received, and WDEQ response to comments; this finding was also made during the 2013 PQR.

Action Items

Essential	•WDEQ's administrative record must consistently contain a record of all of the comments received during the public notice period as well as consistently provide responses to the comments received during the public comment period. (40 CFR 124.17) This is a repeat finding from the 2013 PQR.
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 must have equivalent documentation. The record must contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit must contain the permit application and supporting data; draft permit; fact sheet or statement of basis;[4] all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

Current regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and

[4] 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.

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 included 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.

The permit writer drafted the fact sheet/statement of basis for all permits.[5] Each facility type or general permit type had its own template.

There were four parts of the administrative record: Draft permits, Applications (including supplemental materials), Correspondence (including comments and responses), and Data/DMRs. The administrative record was kept in the permit file or electronically in the WYPDES Database or SharePoint server.[6] The record contained the final permit and fact sheet/statement of basis, permit review checklist, permit application, public notice and comments if any, and responses to public notice comments.

Program Strengths

WDEQ fact sheets/statements of basis were consistently organized and contained similar levels of detail across the permit records reviewed for the PQR.

Areas for Improvement

WDEQ fact sheets/statements of basis lacked contact information for the permit writer, such as their phone number, which is required by 40 CFR 124.8(b)(7). In addition, permit records did not clearly document whether permits were revised between the draft and final permits. It is recommended that a statement regarding the public notice be incorporated into the fact sheet/statement of basis to document comments received and the responses. It is also recommended that a statement be included indicating whether or not changes were made to the draft permit (after public notice) prior to finalizing the permit.

Public notices for many of the permits reviewed contained brief descriptions of the business conducted at the facility as required by 40 CFR 124.10(d)(iii). In addition, 40 CFR 124.10(d)(vii) required public notices to include a general description of the location of each existing or proposed discharge point and the sludge use and disposal practice; this information was lacking from public notices reviewed.

WDEQ fact sheets/statements of basis lacked complete discussions of the facility categorization relative to the applicability of ELGs, specifying whether the facility was an existing or new

[5] For individual permits, WDEQ uses the term Statement of Basis. For general permits, WDEQ uses the term Fact Sheet. Each serves the same function.

[6] The WYPDES database houses more current and working files and is constantly being updated. SharePoint is more of an archive system and generally used for much older permit documents.

source. Fact sheets/statements of basis also lacked necessary explanations for the derivation of effluent limitations.

Action Items

Essential	•Fact sheets must include calculations or other necessary explanation of the derivation of specific effluent limitations, consistent with 40 CFR 124.56. This includes facility categorization relative to the applicability of ELGs specifying whether the facility is an existing or new source. •WDEQ must include permit writer contact information in fact sheets/statements of basis, consistent with 40 CRR 124.8(b)(7). •Public notices must include a general description of the location of each existing or proposed discharge point and the sludge use and disposal practice, in accordance with 40 CFR 124.10(d)(vii). •WDEQ must ensure that public notices contain a brief description of the business conducted at the facility or activity described in the permit application or the draft permit, in accordance with 40 CFR 124.10(d)(iii).
Recommended	•Recommended that a statement regarding the comments received and response be incorporated into the fact sheet/statement of basis to document public notice comments received and the responses. It is also recommended that a statement be included indicating whether or not changes were made to the draft permit (after public notice) prior to finalizing the permit.

IV. NATIONAL TOPIC AREA FINDINGS

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

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

Nutrient pollution is an ongoing environmental challenge, however, nationally permits often lack nutrient limits. It is vital that permitting authorities actively consider nutrient pollution in their permitting decisions. Of the permits that do have limits, many are derived from wasteload allocations in TMDLs, since state criteria are often challenging to interpret. For this section, waters that are not protected by a TMDL are considered. These waters may already be

impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions. For the purposes of this program area, ammonia is considered as a toxic pollutant, not a nutrient.

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

To assess how nutrients are addressed in the Wyoming NPDES program, EPA Region 8 reviewed 7 permits as well as Section 35-11-110(a) of the Wyoming Environmental Quality Act, Wyoming Nutrient Strategy, Appendix E of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality, and Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters. The Wyoming Nutrient Strategy identifies priority items and next steps to address nutrient pollution in Wyoming's surface waters. The following website provides more information about this strategy: *https://deq.wyoming.gov/water-quality/watershed-protection-2/surface-water-quality-standards/nutrient-pollution/*

EPA Region 8 staff reviewed the nutrient requirements for the following permits:

1. Holly Frontier Cheyenne Refinery, WY0000442 (Non-POTW, Major)
2. Buffalo Wastewater Treatment Plant, WY0021024 (POTW, Major)
3. Hudson Wastewater Lagoon, WY0020664 (POTW, Minor)
4. City of Laramie Wastewater Treatment Plant, WY0022209 (POTW, Major)
5. Jackson Wastewater Lagoon, WY0021458 (POTW, Major)
6. Torrington Wastewater Lagoon, WY0020231 (POTW, Major)
7. Sheridan Wastewater Treatment Plant, WY0020010 (POTW, Major)

Program Strengths

Based on discussions with WDEQ during the PQR, Wyoming indicated that nutrient monitoring is required for all major POTWs, and in all Boysen Reservoir Basin WYPDES permits upon renewal (regardless of discharge type or volume). Additional permits around the state could also receive nutrient monitoring if nutrients are a pollutant of concern or the facility is discharging to an impaired water or TMDL-affected water. WDEQ was not conducting reasonable potential analysis for facilities discharging nutrients and no nutrients limits were included in permits.

All permits with nutrient monitoring could be found by querying the parameters in WDEQ's WYPDES eDMR system. In addition, any future permits that might need nutrient monitoring would be tracked according to major POTW status, and facility location (e.g., inside Boysen Reservoir Basin or not). All impaired and TMDL-affected waters in Wyoming were also tracked by WYPDES. WDEQ also indicated that there were no TMDL' or impairments for nutrients directly, except ammonia (which, as stated above, is not considered a nutrient for the purposes of this review).

Areas for Improvement

Based on the reviews, EPA identified the following areas for nutrients improvements:

Some permits included nutrient language, while others did not. For example, the Hudson Wastewater Lagoon permit included the nutrient language: "NUTRIENT MONITORING FOR BOYSEN RESERVOIR BASIN." Based on sampling in recent years, WDEQ had determined that Boysen Reservoir is at risk for recurring blue-green algae blooms. The reservoir was used as a public drinking water supply and was popular for immersion-based and other recreational activities. Blue-green algae blooms were caused by heavy loads of nutrients into a waterbody, and could be a public health threat. Therefore, in order to identify potential contributions of nutrients to the reservoir from point source discharges, WDEQ was including nutrient monitoring requirements for all WYPDES permitted facilities discharging upstream of Boysen Reservoir. WDEQ was collecting nutrients data and planned to establish water quality standards for nutrients in the future. Pursuant to Section 35-11-110(a) of the Wyoming Environmental Quality Act, this permit required routine monitoring for Total Nitrogen, Total Ammonia-Nitrogen, Nitrate +Nitrite Nitrogen, Total Phosphorus and Orthophosphate-Phosphorus."

Additionally, the Torrington Wastewater Lagoon and Sheridan Wastewater Treatment Plant permits included the following nutrient language: "WY requires routine monitoring for Total Nitrogen, Total Ammonia-Nitrogen, Nitrate +Nitrite Nitrogen, Total Phosphorus and Orthophosphate-Phosphorus for Major POTWs Permits. As part of an effort to address negative impacts of nutrient pollution (i.e., excessive amounts of nitrogen and phosphorus) to Wyoming's surface waters, the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD) and the Wyoming Nutrient Work Group developed the Wyoming Nutrient Strategy (strategy). The following website provides more details about the strategy." https://deq.wyoming.gov/water-quality/watershed-protection/surface-water-quality-standards/nutrient-pollution/

However, EPA did not find any similar nutrient language in the Buffalo Wastewater Treatment Plant, City of Laramie Wastewater Treatment Plant or Jackson Wastewater Lagoon permits. Additionally, these permit applications did not provide the results of nutrient (e.g., phosphorus and nitrogen) monitoring. All of these facilities were POTWs with flow of 0.1 MGD or more and Appendix E of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality, Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015, includes application requirements for POTW applications and states, "Unless otherwise indicated, all applicants with a design flow greater than or equal to 0.1 MGD must sample and analyze for the pollutants listed in Table E2."

Table E2 Effluent Parameters for Selected POTWS
Ammonia (as N)
Chlorine (total residual, TRC)
Dissolved oxygen
Nitrate/Nitrite
Kjeldahl nitrogen
Oil and grease
Phosphorus
Total dissolved solids

Since this information was required to be submitted in POTW applications, the data or a note to file waiving any application requirements that are not required to be submitted needed to be documented in the permit files as part of the application completeness review.

Upon review, the City of Laramie Wastewater Treatment Plant (WY0022209) and Jackson Wastewater Lagoon (WY0021458) permits did not contain consistent nutrient monitoring requirements, despite being similar major POTW facility types (e.g., Jackson does not have orthophosphate phosphate monitoring but Laramie does; Laramie does not have TKN monitoring but Jackson does). The statements of basis did not contain any justification or rationale for the selection of the differing nutrient monitoring requirements. In order to ensure consistent implementation in WYPDES permits, EPA recommended that a standard list of nutrient monitoring requirements be developed for similar facility categories (e.g., POTWs, Boysen Reservoir Basin permits, etc.) that supported the goals/initiatives of the Wyoming nutrient strategy.

The Holly Frontier Cheyenne Refinery (WY0000442) permit indicated that the Holly Frontier Refinery used phosphate-based chemicals for their operation (permit application indicated phosphorus concentration as high as 5.3 mg/L) that may have resulted in a significant nutrient contribution in the discharge. However, the permit did not include nutrient monitoring requirements. Therefore, EPA recommended that nutrient monitoring be included for non-POTW facilities with the potential to be significant nutrient contributors. The monitoring data could then be used to determine reasonable potential to develop limitations in future permits, to support the goals/initiatives of the Wyoming nutrient strategy.

Action Items

Essential	•WDEQ must ensure that the permit applications provide the results of nutrient (e.g., phosphorus and nitrogen) monitoring, or a note to the file waiving the requirement, as per the application requirements in Appendix E of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality, Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015.
Recommended	•EPA recommended that a standard list of nutrient monitoring requirements be developed for similar facility categories (e.g., POTWs, Boysen Reservoir Basin permits, etc.), that supported the goals/initiatives of the Wyoming nutrient strategy. •EPA recommended that nutrient monitoring be included for non-POTW facilities with the potential to be significant nutrient contributors, such as facilities that use or produce nutrients in facility processes. The monitoring data could then be used to determine reasonable potential to develop limitations in future permits, to support the goals/initiatives of the Wyoming nutrient strategy.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

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

Background

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

The food processing sector manufactured edible foodstuffs such as dairy, meat, vegetables, baked goods, and grains from raw animal, vegetable, and marine material. The main constituents of food processing wastewaters were conventional pollutants (biochemical oxygen demand [BOD], total suspended solids [TSS], oil and grease [O&G], pH, and bacteria) and non-conventional pollutants (such as phosphorus and ammonia). These pollutants were compatible

with POTW treatment systems. However, POTWs may not be designed or equipped to treat the intermittent or high pollutant loadings that can result from food processing indirect discharges.

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

The General Pretreatment Regulations required an Approval Authority to ensure that all substantive parts of the POTW's pretreatment program are fully established and implemented, including control mechanisms a POTW issued to its IUs to reduce pollutants in the indirect discharge (see 40 CFR 403.11). WDEQ had the authority to issue NPDES permits to POTWs; however, Wyoming was not delegated to implement the pretreatment program. Therefore, EPA Region 8 was the Approval Authority for Wyoming POTWs.

Table 1 identifies the pretreatment and NPDES requirements considered during this PQR. In this table, the terms Director and Permitting Authority referred to EPA Region 8. The term Control Authority referred to the two POTWs with approved pretreatment programs (City of Laramie and Cheyenne Board of Public Utilities) or to EPA Region 8 for the two POTWs without approved pretreatment programs (City of Buffalo and Town of Hudson).

Table 1. Regulatory Focus for this Section of the PQR

Citation	Description
40 CFR 122.42(b)	POTW requirements to provide adequate notice of new pollutants to the Director
40 CFR 122.44(j)	Pretreatment Programs for POTW
40 CFR 124.3(a) and (c)	The POTW must submit a timely and completed application for an NPDES permit or NPDES permit renewal
40 CFR 124.8(a) and (b)	The permitting authority must prepare a fact sheet for every draft permit for a major NPDES facility. Fact sheets must briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit including references.
40 CFR 403.5(a), (b) and (c)	National pretreatment standards: Prohibited discharges
40 CFR 403.3	Definitions
40 CFR 403.8	Pretreatment program requirements: Development and implementation by POTW
40 CFR 403.10	Development and submission of NPDES state pretreatment programs
40 CFR 403.11	Approval procedures for POTW pretreatment programs and POTW granting of removal credits

40 CFR 403.12	Annual POTW reports

Program Strengths

As shown in Table 2, Wyoming had six approved pretreatment programs overseen by EPA Region 8. There were 22 significant industrial users (SIUs) in approved programs in Wyoming, 3 of which are categorical industrial users (CIUs). EPA Region 8 permitted one indirect discharger, a nonsignificant categorical industrial user (NSCIU), in a non-approved POTW. The NSCIU permitted by EPA Region 8 was a metal finisher that discharged less than 100 gallons per day of process wastewater (permit No. WYPF00101). "Non-approved POTWs" or "non-approved program" in this section referred to POTWs that did not have approved pretreatment programs. Because Wyoming did not have pretreatment program authority, Region 8 was the control authority of the IUs in these non-approved POTWs.

Also shown in Table 2, six of the seven POTWs in Wyoming, or approximately 86 percent of all NPDES-permitted POTWs receiving indirect discharges from one or more SIUs, had approved programs.

Table 2. Wyoming IUs by Pretreatment Program Status

IU Description	Number of SIU(s) Controlled by an Approved Pretreatment Program (6 POTWs)[1]	Number of SIU(s) Controlled by the Approval Authority in Non-approved Programs [1]	Total
CIU	**3**	1[2]	**4**
Non-CIU	**19**	0	**19**
Total SIU	**22**	**1**	**23**

[1] *Data source: EPA Region 8 email communication on September 27, 2021 and subsequent phone conversations.*
[2] NSCIU permitted *by EPA Region 8.*

Wyoming DEQ Permitting Process – Pretreatment

Wyoming DEQ had been delegated authority to issue NPDES permits directly to POTWs in Wyoming. EPA Region 8 was the Approval Authority for Wyoming POTWs with respect to the pretreatment program. EPA Region 8 provided general program oversight and implemented the pretreatment program to ensure that program elements such as annual pretreatment program reports and program modifications, such as local limits and updates to municipal ordinances, were submitted as required by the NPDES permit. According to the Region 8 Pretreatment Coordinator, the permitting group and Pretreatment Coordinator did not coordinate during the initial development of the NPDES permit. The Pretreatment Coordinator reviewed the draft NPDES permit and determined whether a POTW needed to develop a pretreatment program. If so, the POTW permit was modified to include appropriate pretreatment permit requirements. It was recommended that the permit writer and Pretreatment Coordinator coordinate during

the entire permitting process to ensure appropriate pretreatment language is captured in the NPDES permit.

According to the Pretreatment Coordinator, he did not review NPDES permit applications but did review the permit fact sheets to determine whether the permit writer appropriately evaluated industrial contributions for the reasonable potential analysis. The EPA Region 8 Pretreatment Coordinator identified SIUs in POTWs without approved ("non-approved") pretreatment programs on an ongoing basis. EPA reviewed service areas of non-approved programs. If a CIU was found, EPA would notify the IU of its requirements and would oversee the IU accordingly through administrative orders or through notices of discharge requirements. If a non-categorical SIU was identified, EPA would have required the POTW to develop an approved pretreatment program. The Pretreatment Coordinator also evaluated whether the justification for requiring or not requiring a pretreatment program was appropriate.

IU Permits Reviewed

As part of the PQR, EPA reviewed two permits for POTWs with approved pretreatment programs and two permits for non-approved POTWs. Permits for POTWs with approved programs were reviewed to determine whether they met all requirements in Table 1. The permits for non-approved programs were reviewed to determine whether they comply with POTW requirements to notify the Director of changes in influent and effluent and requirements to identify any SIUs at 40 CFR 122.42(b) and 40 CFR 122.44(j)(1).

EPA Region 8 selected the four POTWs to be reviewed based on the potential for food processing facility dischargers; however, no food processing SIUs were found and there was no information available on non-SIU food processing facilities. Because the overall focus of recent PQRs had been on the impacts of food processing facilities on POTWs, this PQR highlighted the POTWs' NPDES permit conditions and whether they were protective of the POTW if food processing wastes would be received.

Table 3 identifies the four NPDES permits selected for review, as well as the types of controls for IUs established in the respective municipal sewer use ordinances (SUOs). The table identifies LLs if established for conventional pollutants, nutrients, and other pollutants of concern. An SUO for one of the non-approved POTWs (Town of Hudson) was not available online. SUOs reviewed for the two POTWs with approved pretreatment programs contained controls on some conventional pollutants. The SUO for Laramie contained LLs for pH, and surcharges for BOD and TSS. The Cheyenne – Crow Creek SUO included LLs for, BOD, TSS and oil and grease (vegetable). The design flow among these four POTWs ranged from 1.8 MGD to 6.5 MGD. There was no design flow available for the Town of Hudson (the population is 458).

Table 3. NPDES Permits Selected for the Pretreatment Topic Area

Permittee	Permit No.	Approved Pretreatment Program?	Design Flow (MGD)	No. of SIUs[1]	No. of Food Processors[1]	Example of SUO Controls
City of Laramie	WY0022209	Yes	6	5	0	LLs for pH, As, Cd, Cr(T), Cr(III), Cr(VI), Cu, Pb, Hg, Mo, Ni, Se, Ag, Zn, BTEX, TPH. Surcharge for BOD and TSS.
Cheyenne Board of Public Utilities – Crow Creek[2]	WY0022381	Yes	6.5	7	0	LLs (lbs/day) for As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Ag, Zn, BOD, TSS, LL (mg/L) for Benzene, BTEX, TPH, Total Fats, Oils, Grease (vegetable)
City of Buffalo	WY0021024	No	1.8	0	0	No local limits in SUO
Town of Hudson	WY0020664	No	N/A[3]	0	0	SUO not available

[1] Based on the information provided in the annual report or permit application.
[2] Cheyenne Board of Public Utilities local limits resolution https://www.cheyennebopu.org/files/assets/bopu/user-resources-division-documents/water-reclamation/industrial-pretreatment-program-ipp/local-limits-resolution-2014-12.pdf
[3] Not available in the NPDES permit, fact sheet, or application

Table 4 presents discharge permit conditions in the NPDES permits for the POTWs reviewed. The table presents limits and monitoring frequencies for total phosphorus, ammonia, BOD, TSS, and oil and grease. These parameters were the main constituents of food processing wastewater and were the focus of recent PQRs (although, as stated above, food processor IU information is not available for this PQR).

Table 4. POTW NPDES Discharge Permit Conditions

POTW	Pollutant Monitoring Frequency and Limit[1]									
	Total P		Ammonia		BOD		TSS		O&G	
	frequency	*limit*	*frequency*	*limit*	*frequency*	*limit*	*frequency*	*limit*	*frequency*	*limit*
City of Laramie	Quarterly	N/A	Weekly	1.05 – 3.76 mg/L MA[2] 2.72 – 7.14 mg/L DM[2]	Weekly	30 mg/L MA 45 mg/L WA 90 mg/L DM	Weekly	30 mg/L MA 45 mg/L WA 90 mg/L DM	Weekly	10 mg/L DM

POTW	Pollutant Monitoring Frequency and Limit[1]									
	Total P		Ammonia		BOD		TSS		O&G	
	frequency	*limit*	*frequency*	*limit*	*frequency*	*limit*	*frequency*	*limit*	*frequency*	*limit*
						>85% removal		>85% removal		
Cheyenne Board of Public Utilities – Crow Creek	N/A	N/A	2/week	May - Sept: 2.7 mg/L MA, 21.14 mg/L DM Nov – Apr: 4.59 mg/L MA, 26.88 mg/L DM	CBOD[3]	CBOD[3] 25mg/L, MA 40mg/L WA, 80mg/L,DM	2/week	*30 mg/L, MA* 45 mg/L, WA 80 mg/L, DM	Annually	10 mg/L DM
City of Buffalo	N/A	N/A	2/month	Apr -Sept 1.79 mg/L MA, 3.83 mg/L DM Oct – Mar 1.26 mg/l MA, 3.83 mg/L DM	2/month	30 mg/L MA 45 mg/L WA 90 mg/L DM >85% removal	2/month	30 mg/L MA 45 mg/L WA 90 mg/L DM >85% removal	N/A	N/A
Town of Hudson	Quarterly	N/A	Quarterly	N/A	Monthly	30 mg/L MA 45 mg/L WA 90 mg/L DM >65% removal	Monthly	100 mg/L MA 150 mg/L WA 300 mg/L DM	N/A	N/A

[1] Not applicable is abbreviated N/A, daily maximum is abbreviated DM, weekly average is abbreviated WA, monthly average is abbreviated MA.
[2] The permit for Laramie has different limits for each month. This is the range.
[3] CBOD can be substituted for BOD. See 40 CFR 133.102(a)(4).

IU Permits Reviewed for PQR

No IU permits were reviewed for this PQR. EPA determined that there were no SIU food processors discharging to the POTWs studied for this PQR and that there was no documentation (e.g., control mechanism, fact sheet) available for any food processing IUs.

Program Strengths

All Programs

All POTW permits reviewed required notification and impact assessment of significant changes in industrial flow or character in accordance with 40 CFR 122.42(b). This helped to ensure that the POTWs were able to adjust as needed to potential changes in discharges from food processors, and other IUs, to prevent disruption to the POTW operations.

Approved Programs

The Laramie and Cheyenne – Crow Creek NPDES permits incorporated all pretreatment requirements by stating that the permittees must operate a POTW pretreatment program in accordance with the federal General Pretreatment Regulations at 40 CFR Part 403 and the approved pretreatment program and any approved modifications.

Both permits contained requirements at 40 CFR 122.44(j)(2)(ii) that required a written technical evaluation of the need to revise local limits following permit issuance or reissuance and included due dates for submissions.

Both permits reviewed with approved programs contain appropriate limits consistent with secondary treatment standards in 40 CFR 133.102 for BOD, TSS, and pH and required not less than 85% removal of BOD and TSS. In fact, they exceeded secondary treatment standards in that they also included a daily maximum of 90 mg/L for BOD and TSS.

The Laramie NPDES permit contained limits for the following pollutants of concern for food processors: pH, ammonia, BOD, TSS, O&G; and contained monitoring only requirements for phosphorus. Furthermore, the Laramie SUO included a LL for pH and surcharge levels for BOD and TSS.

The Cheyenne – Crow Creek permit contained limits for pH, CBOD, TSS, ammonia, and O&G. The permit contains monitoring-only requirements for total nitrogen, nitrites/nitrates, Total Kjeldahl Nitrogen, and total phosphorus. The POTW's SUO included limits for, BOD, TSS, and Total Fats, Oils, and Grease (vegetable).

Non-Approved Programs

The Buffalo permit contained appropriate limits consistent with secondary treatment standards in 40 CFR 133.102 for BOD, TSS, and pH and required not less than 85% removal of BOD and TSS. The Buffalo permit also contained a daily maximum limit of 90 mg/L for BOD and TSS, which exceeded secondary standards. The City of Buffalo's permit also contained seasonal limits for ammonia.

The Town of Hudson permit contain quarterly monitoring-only requirements for ammonia, total nitrogen, nitrites/nitrates, and phosphorus. The Buffalo permit requires annual monitoring-only for nitrites/nitrates, Total Kjeldahl Nitrogen, oil and grease, and total phosphorus.

The Hudson and Buffalo permits state that the permits could be amended to require a pretreatment program and discussed what would be required for development of a pretreatment program.

Areas for Improvement

All Programs

None of the fact sheets stated whether a pretreatment program was required. It was noted that the permits for the POTWs with approved programs stated that a program was required and the permits for non-approved programs stated that a program could be required, if determined to be necessary. However, the fact sheets should have explicitly stated whether a pretreatment program was required, or not.

The fact sheets did not mention whether hauled waste was accepted at the POTWs. Permit fact sheets should specify whether the POTW accepted hauled waste and provided more information on hauled waste types, volumes, discharge locations, and whether hauled waste contributions were included in the reasonable potential analysis. Permit writers should have considered including POTW organic capacity and identified and characterized contributing hauled waste in the NPDES permit fact sheet.

Although all of the POTW NPDES permits reviewed required dischargers to meet the notification requirements of 40 CFR 122.42(b), none of the permits identified the timeframe for "adequate" notice under 40 CFR 122.42(b). It was recommended that permit writers included a timeframe for notification of any new introduction of pollutants and substantial changes in the volume or character of pollutants being introduced into that POTW.

Approved Pretreatment Programs

The *Wyoming Pollutant Discharge Elimination System Application for Permit to Discharge From Sewage Treatment Facilities* was not consistent with EPA Form 2A and did not request specific information on IUs. The application form simply asked "Does the treatment works have, or is it subject to, an approved pretreatment program? Yes/No" and "Provide the number of SIUs and CIUs that discharge to the treatment works." This did not meet the requirements at 40 CFR 122.21(j)(6)(i) and (ii) which specify the following information that applicants must provide about industrial discharges:

> (i) Number of significant industrial users (SIUs) and non-significant categorical industrial users (NSCIUs), as defined at 40 CFR 403.3(v), including SIUs and NSCIUs that truck or haul waste, discharging to the POTW; and
>
> (ii) POTWs with one or more SIUs shall provide the following information for each SIU, as defined at 40 CFR 403.3(v), that discharges to the POTW:
>
> (A) Name and mailing address;

> (B) Description of all industrial processes that affect or contribute to the SIU's discharge;
>
> (C) Principal products and raw materials of the SIU that affect or contribute to the SIU's discharge;
>
> (D) Average daily volume of wastewater discharged, indicating the amount attributable to process flow and non-process flow;
>
> (E) Whether the SIU is subject to local limits;
>
> (F) Whether the SIU is subject to categorical standards, and if so, under which category(ies) and subcategory(ies); and
>
> (G) Whether any problems at the POTW (e.g., upsets, pass through, interference) have been attributed to the SIU in the past four and one-half years.

Permit writers must ensure that the NPDES permit application included a description of all IUs, identifies any applicable categorical classification, and included all IU information required at 40 CFR 122.21(j)(6)(i) and (ii). Industrial user impacts should be reviewed with respect to POTW organic capacity to ensure that POTWs did not accept excess loading.

The fact sheets did not provide sufficient detail about IU discharge characteristics or discuss how specific industrial contributions were considered in the reasonable potential analysis. Both fact sheets stated that industrial contributions were considered in the reasonable potential analysis. Cheyenne fact sheet stated, "based on pretreatment sample results and reasonable potential analyses, the following are also constituents of concern for which there are effluent limits and monitoring requirements: selenium, copper, and cadmium." Under Industrial Pretreatment Provisions, the fact sheet for Laramie stated that "Water quality analyses performed at the facility during the previous permit term have been reviewed and reasonable potential analyses calculated for effluent constituents having concentrations greater than non-detect. Reasonable potential to exceed Wyoming's Water Quality Standards in the receiving stream does not exist for any of these constituents." Permit writers should have ensured that fact sheets for POTWs with pretreatment programs described industrial users in more detail and specified whether the reasonable potential analysis included analysis of pollutants common for the types of industries discharging to the POTW.

The fact sheets for Laramie and Cheyenne – Crow Creek did not specify the basis for requiring the POTW to implement a pretreatment program. It was noted that the permits stated that the industrial pretreatment requirements "are intended to ensure that industrial discharges to the plant do not cause an upset of the system or violation of the effluent limits that are established in the permit." This language in the permits was a general statement applicable to any POTW, and the permits did not state why each particular POTW was required to have a program (e.g., presence of CIU discharges, exceedances of NPDES limits attributed to industrial discharges). Inclusion of this information in the POTW NPDES permit fact sheets was important for documenting the rationale for POTW's monitoring and sampling requirements. Fact sheets should have specified the basis and rationale for requiring a pretreatment program. See 40 CFR 403.8(a) for the criteria. The fact sheets did not identify and characterize the contributing

industrial dischargers. Permit writers should have considered including POTW organic capacity and identified and characterized contributing industrial discharges in the NPDES permit fact sheet.

The fact sheets did not have program approval dates or modification dates. The permits reviewed identified the pretreatment program approval dates; however, they did not include any program modification dates. It was recommended that the permit writer specify the modification dates, if applicable, in permits and fact sheets, as a means of determining whether the program included current federal regulations.

Action Items

Essential	•Permit writers must ensure that the NPDES permit application included all IU information required at 40 CFR 122.21(j)(6)(i) and (ii).
Recommended	•Permit writers and pretreatment staff should coordinate during the entire permitting process to ensure appropriate pretreatment language was captured in the NPDES permit. •Permits writers should ensure that fact sheets stated whether a pretreatment program was required to be developed and/or approved program to be implemented, or not, and the basis for the requirements of the permit. •Permit fact sheets should specify whether the POTW accepted hauled waste and whether hauled waste contributions were included in the reasonable potential analysis. •Permit writers should include a timeframe (define "adequate") for notification of any new introduction of pollutants and substantial changes in the volume or character of pollutants being introduced into that POTW. • Permit writers should ensure that fact sheets for POTWs with pretreatment programs described industrial users in more detail and specified whether the reasonable potential analysis included analysis of pollutants common for the types of industries discharging to the POTW. •Permit writers should specify the modification dates of pretreatment programs, when applicable, in fact sheets and permits.

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

Background

EPA updated the 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)). EPA did not evaluate the Small MS4 Permit Requirements during the PQR as WDEQ had not updated its Phase II MS4 general permit since the MS4 Remand Rule was finalized. The Phase II MS4 general permit had been administratively extended since it expired on September 30, 2013. Therefore, no review could be conducted on WDEQ's Phase II MS4 general permit.

Program Strengths

Not evaluated. EPA did not evaluate the Small MS4 Permit Requirements during the PQR as WDEQ had not updated its Phase II MS4 general permit since the MS4 Remand Rule was finalized. The Phase II MS4 general permit had been administratively extended since it expired on September 30, 2013. Therefore, no review could be conducted on WDEQ's Phase II MS4 general permit.

Areas for Improvement

WDEQ needed to update the Phase II MS4 general permit to meet the requirements of the MS4 Remand Rule.

Action Items

Essential	•WDEQ needed to update the Phase II MS4 general permit, which had been administratively extended since 2013, to meet the requirements of the EPA's 2016 MS4 Remand Rule (see 40 CFR 122.28(d)), 40 CFR 122.34(a) and (b), and 40 CFR 122.34(a)). This is a repeat Essential Action Item from the 2013 PQR review.
Recommended	•The PQR did not identify any recommended items for this PQR component.

V. REGIONAL TOPIC AREA FINDINGS

A. Whole Effluent Toxicity

Whole Effluent Toxicity (WET) was a term used to describe the aggregate toxic effect of an aqueous sample (e.g., effluent wastewater discharge) as measured by an organism's response, upon exposure, to the sample (e.g., lethality, impaired growth or reproduction). WET tests replicated the total effect and environmental exposure of aquatic life to toxic pollutants in an effluent without requiring the identification of the specific pollutants. WET testing was a vital component of water quality standards implementation through the NPDES permitting process and supported meeting the goal of the CWA (Section 402) to "...maintain the chemical, physical and biological integrity of the nation's waters."

WET tests were designed to predict the impact and toxicity of effluent discharges from point sources into waters of the U.S. WET limits developed by permitting authorities were included in NPDES permits to ensure that the state or tribal water quality criteria for aquatic life protection (e.g., WET) were met. WET monitoring requirements that were representative of the discharge effluent (40 CFR 122.44(d)(1)(ii)) were included in NPDES permits to generate WET data used to determine whether RP for WET had been demonstrated. If RP had been demonstrated, then a WET limit must be included in the permit (40 CFR 122.44(d)(1)(iv) and (v)). WET test results are also used in determining compliance with NPDES WET permit limits.

Background

WDEQ implemented the WET program through its WYPDES permits. At the time of the previous 2013 PQR, it appeared that a “WYPDES Process for Conducting a Reasonable Potential Analysis” document was used to determine the need for WET limits and provided guidance to permit writers to evaluate effluent toxicity, major/minor status, existence of a pretreatment program, WET data, and RPA for WET on a case-by-case basis. However, during the 2021 PQR, there was no indication that the document was still being utilized or that WDEQ had a written procedure for conducting RPA for WET. There was also no documented procedure to determine WET requirements (e.g., chronic vs. acute testing needed) and the standard practice was to generally assume that continuous dischargers had a chronic effect (i.e., received chronic testing permit requirements) and periodic dischargers had an acute affect (i.e., received acute testing requirements). Additionally, discharges to Class 3 waters were typically only considered as candidates for chronic permit requirements, regardless of discharge frequency.

At the time of the 2021 PQR, less than one full-time employee (FTE) was dedicated to fulfilling the WET Coordinator role and permit writers typically referenced available EPA WET training and EPA Freshwater WET Methods to implement WET in WYPDES permits. When asked during the 2021 PQR, WDEQ did not identify any specific difficulties or concerns encountered with WET implementation or any additional assistance/support from EPA that was needed for WYPDES WET program implementation.

During the 2021 PQR, permit and fact sheet/statement of basis reviews were performed for the following “major” facilities to evaluate WET implementation, monitoring and limitations based on the WYPDES general procedures and 40 CFR 122.44(d) regulations, and boilerplate language:

1. Holly Frontier Cheyenne Refining LLC (WY0000442)
2. Crow Creek Water Reclamation Facility (WY0022381)
3. Dry Creek Water Reclamation Facility (WY0022934)
4. Big Eagle Mine (WY0025950)
5. Buffalo Wastewater Treatment (WY0021024)
6. Sheridan Wastewater Treatment (WY0020010)
7. Torrington Wastewater Lagoon (WY0020231)
8. Jackson Wastewater Lagoon (WY0021458)
9. Laramie Wastewater Treatment (WY0022209)

Of the nine permits, two required acute WET testing only, five required chronic WET testing only and one required both chronic and acute WET testing. One (Buffalo Wastewater Treatment) had no requirement for WET testing and four permit files (Crow Creek Water Reclamation Facility, Dry Creek Reclamation Facility, Jackson Wastewater Lagoon and Laramie Wastewater Treatment) contained permits with minor modifications to utilize a permit provision allowing for testing of alternating species, contingent on passing five WET tests during the permit term. This provision was implemented to allow for sample reduction for permittees upon successful completion of passing samples; however, it was unclear what justification and basis was used to allow for the use and approval of alternating species.

When implementing WET in discharge permits, WDEQ indicated that two categories of permittees automatically received WET limits: major municipals (i.e., POTWs over 1 MGD) and coal bed methane facilities. Coal bed methane facilities (e.g., dischargers of produced water from the Big George coal formation as defined by geographic boundary within the Powder River Basin) were generally determined to have reasonable potential for WET permit limits based on a WDEQ-initiated study of produced waters in the early 2000s. Permits that did not fall into these main two categories (i.e., major POTWs and coal bed methane facilities) could be evaluated for potential toxic effects on a case-by-case basis using available information (e.g., WET screening). However, WDEQ indicated that renewal permits outside of the two main categories were generally assumed not to have a WET effect if they did not have previous WET requirements or limitations, and a demonstration of WET RPA for renewal permits without preexisting permit requirements was not generally performed.

WDEQ indicated that RPA documentation was typically not provided to demonstrate consideration of a potential pollutant that ultimately did not receive a limit (i.e., to justify exclusion from the permit). Permit fact sheets/statements of basis only discussed WET reasonable potential if the result of an RPA provided a baring on the permit (e.g., to add or drop an existing effluent limit). Therefore, in cases where RPA documentation was available, it was only for parameters with "cause" that had already been established; not necessarily for determining the "potential" of parameters to cause or contribute to excursions of WDEQ standards. In general, however, EPA found that documentation of WET RPAs was limited and not always available in the permit file or fact sheet/statement of basis statement of basis even for those pollutants with a permitted effluent limit.

When information was needed to determine reasonable potential, a common practice for industrial permits (e.g., minor oil treater facilities using treatment chemicals) was to implement

a one-time WET screening test requirement through the WYPDES permits. The WET screening was required within 6 months of the renewal being active and inclusion of permitted WET requirements and limits was contingent on the WET screening results. If the facility did not pass the WET screening test(s), the facility's permit would be modified within the current permitting cycle to include WET limitations and requirements.

Program Strengths

Based on the previous 2013 PQR, the WYPDES program has had a noted increase of WET implementation in its permits over the years. Additionally, WDEQ implements standard boilerplate language across WYPDES permits which helps to ensure consist implementation of WET requirements and includes special condition language for Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) requirements and reopener provisions.

Areas for Improvement

During the PQR, WDEQ indicated that all "major" POTW permits were assumed to have reasonable potential for WET and included WET limits and monitoring requirements. However, the permit for the Buffalo Wastewater Treatment Facility (WY0021024) did not contain WET requirements or limitations. Based on the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015, "a Major facility means: (A) For municipal wastewater treatment facilities, 1) those facilities with design flows greater than one million gallons per day or with an approved industrial pretreatment program and 2) which have been designated by the director and Regional Administrator of the EPA as a major facility." The Buffalo Wastewater Treatment Facility had a design flow of 1.8 MGD based on its permit application and met the definition of a "major" facility as defined above.

For the "major" permits reviewed during the 2021 PQR, application documents did not provide the results of WET tests (i.e., for at least 4 quarters or 4 years of annual data). WDEQ indicated that they do not require WET data submission with permit applications since data was typically accessed from the WDEQ DMR database. However, since the information was required to be submitted in the application by 40 CFR 122.21 (j)(5) and Appendix E(a)(iii) and (a)(vii)(C) of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015, the data, a note to file waiving any application requirements, or an indication by the applicant in the application itself that such data has already been previously submitted to WDEQ (i.e., DMR data), must be documented in the permit file as part of the application completeness review.

During the 2021 PQR, WDEQ indicated that each permit writer determined the need for WET requirements and limitations in assigned permits. However, similar to observations in the previous 2013 PQR, the permits containing WET limitations and requirements did not provide clear information or RPA in the fact sheet/statement of basis for the assessments used to determine selection of WET requirements or the type of testing (i.e., chronic vs. acute) required in the permits. Additionally, WET implementation of chronic vs. acute testing requirements did not appear to be consistent throughout the permits, based on the types of facilities and justifications (when available), as provided below:

- Two permits (Holly Frontier Cheyenne Refining LLC and Big Eagle Mine) provided the same justification for the decision to select chronic vs. acute requirement(s) (i.e., the facilities were "considered by the U.S. EPA as a "major" discharger"). However, each permit implemented the requirements differently. One permit applied both chronic and acute requirements and the other applied acute only requirements. Additionally, it was unclear how and when this justification was applied since all nine of the aforementioned permits reviewed for WET implementation during the 2021 PQR were considered "major" facilities, but not all contained that justification, and many had different WET testing requirements.

- For permits that applied chronic testing requirements, some permits (Crow Creek Water Reclamation Facility and Dry Creek Reclamation Facility) required "no chronic toxicity" because the calculated dilution factor for the facility was less than 100:1. However, other permits utilized WLA calculations to determine specific concentrations at which chronic testing would need to pass. There was no clear overall justification as to when the WLA calculations were or were not considered when developing chronic testing limits and whether all facilities with a calculated dilution of less than 100:1 were required to be permitted with "no chronic toxicity" limits.

- Two permits (Torrington Wastewater Lagoon and Laramie Wastewater Treatment) had previously required acute WET testing. However, they were subsequently switched back to chronic WET testing in the renewal permits. There was no justification in the fact sheets/statements of basis for the decision to remove acute testing or add chronic testing.

- Two permits (Jackson Wastewater Lagoon and Big Eagle Mine) contained acute WET testing requirements. However, one was justified based on "high dilution", but the other was based on the facility being considered a "major" facility. Neither provided a clear rationale for why the "high dilution" or "major" classification justified the acute WET testing requirement. Additionally, another permit (Torrington Wastewater Lagoon) implemented chronic WET testing requirements despite the facility having a very low effluent dilution requirement for testing (e.g., 6% effluent), which would indicate a low Instream Waste Concentration (IWC) and high level of dilution. It was unclear as to what is considered "high dilution" for implementing acute vs. chronic WET testing requirements.

As previously discussed, WDEQ indicated that there was no written procedure or policy for the overall implementation of the WET program, to provide justifications or processes for how and when WET was implemented in permits. To ensure that WET requirements are implemented consistently, it was highly recommended that a general procedure or policy be developed and utilized to provide guidance for the incorporation of WET into WYPDES permits. Additionally, WET RPAs and decision-making used to determine WET limitations and acute and chronic testing requirements, must be documented in the fact sheets/statement of basis as required by 40 CFR 122.44 (d) and 40 CFR 124.56.

At the time of the 2021 PQR, WDEQ included language in its permits which provided permittees with the ability to request alternating species for sampling reduction. However, the alternating species requirements specified in the permit would not require testing of both species (e.g., *Ceriodaphnia dubia* and fathead minnows) simultaneously to evaluate potential toxicity impacts on either species during a given timeframe. EPA recommended that WDEQ utilize testing on two species concurrently for all permitted facilities to help ensure that protections remain in place for all sampled discharges, since the species utilized in WET testing are sensitive to different parameters and the alternating species regimen did not provide complete information on the WET impacts from the facilities functioning discharges. Barring the two species recommendation, if WDEQ did opt to utilize only one species to reduce testing burden for facilities, the most sensitive species must be chosen, justified, and utilized for facility-specific WET testing to ensure alignment with the CWA Section 301(b)(1)(C) mandate for protecting state WQS and NPDES reasonable potential regulations at 40 CFR Part 122.44(d)(1)(ii). This included clear documentation that alternating the test species was not avoiding possible toxicity by using a test species that was more tolerant of the discharged effluent being tested at the time. Additionally, it was recommended that supplemental caveats to the species reduction be included, such as requirements for the requesting facility to have no other compliance issues, no uncontrolled industrial users, and consistent effluent quality.

During the evaluation of the procedure used for implementing alternating WET species, EPA identified one permit file (Torrington Wastewater Lagoon) that contained a request (dated 2/16/2017) to use the alternating species provision but did not have documentation of approval/denial or a minor modification to allow WET alternating species. Therefore, it was unclear what the decision was for this request. Additionally, two permit files (Crow Creek Water Reclamation Facility and Dry Creek Water Reclamation Facility) had minor modifications for this provision but did not have documentation of a request made by the facility to use the provision. When implementing the alternating WET species provision set forth in the permit, WDEQ must ensure that documentation of the requests was maintained and that any decision-making and justification regarding approvals/denials of the requests was provided in the fact sheets/statement of basis as required by 40 CFR 124.56 with respect to effluent permit conditions.

During the PQR permit reviews, some permits contained unclear or contradictory WET conditions (i.e., did not provide clear requirements to achieve water quality standards as per 40 CFR 122.33(d) or discharge monitoring report requirements as per 40 CFR 122.41(l)(iii)(4)), as follows:

- As mentioned previously, WYPDES permits (e.g. Crow Creek Water Reclamation Facility, Dry Creek Water Reclamation Facility, Big Eagle Mine, Sheridan Wastewater Treatment, Torrington Wastewater Lagoon, Jackson Wastewater Lagoon, and Laramie Wastewater Treatment) contained boilerplate WET language regarding TIE/TRE conditions; however, the language was unclear as to how “confirmation of continuance” of effluent toxicity would be evaluated (e.g., are a specific number of follow-up tests required to determine "continuation") and at what point would the requirement for a TIE/TRE be triggered. Additionally, since the “confirmation of continuance” of effluent toxicity would be used

to determine the subsequent due date for the 45-day TIE/TRE plan, it was not clear how the 45-day TIE/TRE plan due date would be determined since "confirmation of continuance" was not well defined.

- Two permits were identified with inconsistent implementation of WET limitations throughout the permits.

    1) In the Laramie Wastewater Treatment (WY0022209) permit, WET limitations in Table A for WET indicated a requirement of "Pass" for:
        - Whole Effluent Toxicity (WET), Chronic, May through September, IC25 at 81% effluent
        - Whole Effluent Toxicity (WET), Chronic, October through April, IC25 at 67% effluent.

        However, in Section D.1. of the permit, it was stated that "Chronic toxicity occurs if, during a chronic toxicity test, the 25% inhibition concentration (IC25) calculated on the basis of test organism survival, growth or reproduction, is equal to 98% effluent for the summer recreation season or is equal to 94% effluent for the winter recreation season." There was no justification or calculations in the fact sheet/statement of basis for the determination of the 94% or 98% effluent values and they did not align with the limits set forth in Table A.

    2) In the Big Eagle Mine (WY0025950) permit, language for WET limitations and requirements was included; however, actual requirements were not listed in the permit's effluent limitation or monitoring tables. Additionally, there was a provision that stated "no acute or chronic toxicity" but the permit only contained language related to acute testing and limit requirements.

- The standard WET language in some of the permits (i.e., Crow Creek Water Reclamation Facility, Dry Creek Water Reclamation Facility, Big Eagle Mine, Sheridan Wastewater Treatment, Torrington Wastewater Lagoon, Jackson Wastewater Lagoon, and Laramie Wastewater Treatment) had inconsistent reporting timeframes identified in different sections of the permit (i.e., quarterly in the WET section vs. first half of the calendar year or monthly in the Monitoring and Reporting section).

Similar to a previous 2013 PQR finding, where chronic WET testing was required in permits, sampling requirements did not indicate the number of samples to be collected. Section 8.3.2. of the EPA's manual for Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002 (EPA's WET methods manual) recommended, "When tests are conducted off-site, a minimum of three samples are collected." It was recommended that, as applicable for chronic WET testing, the number of samples be clearly incorporated into the monitoring requirements to align with the number recommended by the EPA's WET methods manual.

Action Items

Essential	•WET requirements and limitations must be incorporated into the permit for the Buffalo Wastewater Treatment "major" facility, to align with WDEQ WYPDES permitting procedures (i.e., WDEQ had determined that all "major" POTWs had been determined to have RP for WET). •For "major" facility applications requiring WET data submission; data, a note to the file waiving any application requirements, or an indication by the applicant in the application itself that WET data had already been previously submitted to WDEQ (i.e., DMR data), must be documented in the permit file as part of the application completeness review (as required by 40 CFR 122.21 (j)(5) and Appendix E(a)(iii) and (a)(vii)(C) of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015). •WET RPAs and decision-making used to determine WET limitations, alternating species approvals, and acute and chronic testing requirements must be documented in the fact sheets/statement of basis, as required by 40 CFR 122.44 (d) and 40 CFR 124.56. •WDEQ must correct the unclear/contradictory WET requirements and language as was outlined in the section above (i.e., TIE/TRE unclear as to how "confirmation of continuance" of effluent toxicity was determined; ensure limitations and requirements for WET in the Laramie (WY0022209) and Big Eagle Mine (WY0025950) permits were consistently implemented; and align the standard WET language in the permits to ensure consistent reporting timeframes). The permits must provide clear requirements for achieving water quality standards, as per 40 CFR 122.33(d) and discharge monitoring reporting, as per 40 CFR 122.41(l)(iii)(4). •WDEQ should utilize testing on two species concurrently for all permitted facilities to help ensure that protections remain in place for all sampled discharges or, barring the two species recommendation if WDEQ did opt to utilize only one species to reduce testing burden for facilities, the most sensitive species must be chosen, justified, and utilized for facility-specific WET testing to ensure alignment with the CWA Section 301(b)(1)(C) and 40 CFR Part 122.44(d)(1)(ii). Additionally, it should be clearly documented that alternating the test species was not avoiding possible toxicity by using a test species that was more tolerant of the discharged effluent being tested at the time.
Recommended	•To ensure that WET requirements are implemented consistently, it was highly recommended that a WPDES general procedure or policy be developed and utilized to provide guidance for the incorporation of WET into WYPDES permits. •If continuing to implement the species reduction WET provision, it was recommended that supplemental caveats to the WET test species reduction (i.e., alternating WET test species) WET provision be included in permits, such as requirements for the requesting facility to have no other compliance issues, no uncontrolled industrial users, and consistent effluent quality. •It was recommended that, as applicable for chronic WET testing, the number of samples be clearly incorporated into the monitoring requirements to align with the number recommended by the EPA's WET methods manual.

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

This section provides a summary of the main findings from the last PQR and provides a review of the status of the state's efforts in addressing the action items identified during the last PQR, conducted August 19–21, 2013. 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 consolidated these two categories of action items into a single category: Recommended.

Table 5. Essential Action Items Identified During 2013 PQR

Program Area	Action Item Title	Status Update
Basic Facility Information and Permit Application	Wyoming must revise their permit applications where appropriate to be consistent with the NPDES regulations at 40 CFR 122.21. The Sewage Treatment Facilities application shall be consistent with the EPA Form 2A requirements. The Form G shall be consistent with EPA Form 1 and 2C. (Category 1)	**(Resolved)** *WDEQ updated permit applications.*
Technology-based Effluent Limitations	For facilities accepts off-site oilfield wastewater (produced water, fracking flowback, etc.) for treatment and discharge, the State shall apply the appropriate category for oil and gas extraction wastewater. For example, The Red Desert Reclamation LLC. meets the definition of a Centralized Waste Treatment (CWT) facility (40 CFR Part 437) which is any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, However, there are currently no effluent guidelines available for this facility subcategory (oil and gas extraction wastewater) in the existing CWT effluent guideline. Therefore, EPA recommends that the State conduct a BPJ analysis using the factors in 40 CFR 125.3 to determine the appropriate technology-based effluent limitations. EPA no longer recommends using the equivalent or comparable effluent guideline (e.g. in this	**(Resolved)** *WDEQ has made requested changes.*

Program Area	Action Item Title	Status Update
	case 40 CFR Part 435) for facilities that do not have an applicable effluent guideline. (Category 1)	
Water Quality-Based Effluent Limitations	WY permits need to meet Section 402(o)(1) of the Clean Water Act requirements that in the case of effluent limitations established based on state water quality standards, a permit may not be modified to contain effluent limitations which are less stringent than the limitations in the previous permit. Also, Section 402(o)(3) states that in no event shall a permit modification contain a less stringent effluent limitation if the implementation of such limitation will result in a violation of a water quality standard. Wyoming did not address EPA's concern and finalized the major modification with the removal of chloride limit to this permit (City of Rock Springs, WY0022357). (Category 1)	**(Resolved)** *WDEQ added the chloride limits for the renewal permit and allowed a compliance schedule.*
Administrative Process (including public notice)	Wyoming's administrative record must consistently contain a record of the all the comments received during the public notice period. Wyoming must consistently provide a response to the comments received during the public comment period in the final permit. (Category 1)	**(In progress)** *This is a repeat Essential Action Item in the 2021 PQR review.*
Pretreatment	Region 8 needs to ensure that all of the state of Wyoming's POTWs NPDES permits are current (Casper is expired) (Category 1).	**(Resolved)** *EPA Region 8 discusses and tracks NPDES permit backlog with the WDEQ to ensure POTW NPDES permits are current.*
	Region 8 needs to ensure that permits for POTWs that are required to have pretreatment programs (e.g.., Cheyenne) contain all pretreatment program requirements (Category 1).	**(Resolved)** *EPA Region 8 reviews public notice permits for EPA-approved Pretreatment program to ensure the Approved Pretreatment Program requirements are included.*

Program Area	Action Item Title	Status Update
	Region 8 needs to ensure that its permits for all POTWs include standard condition requirements of 40 CFR 122.42(b) (Category 1).	**(Resolved)** *EPA Region 8 reviews a representative number of permits for non-approved Pretreatment program to ensure the requirements in 40 CFR 122.44(b).*
	Region 8 needs to ensure that all of its non-program POTW permits include requirements at 40 CFR 122.44(j)(1) (Category 1).	**(Resolved)** *EPA Region 8 reviews a representative number of permits for non-approved Pretreatment program to ensure the requirements in 40 CFR 122.44(j)(1).*
	Region 8 needs to ensure that permits for all POTWs with approved pretreatment programs contain requirements for conducting local limits reevaluations as required at 40 CFR 122.44(j)(2)(ii) (Category 1).	**(Resolved)** *EPA Region 8 reviews permits in Public Notice for EPA-approved Pretreatment programs to ensure the required local limit re-evaluations are required, pursuant to 40 CFR 122.44(j)(2)(iii).*
	Region 8 needs to ensure the POTWs with approved programs have existing ERPs. The permits require the POTWs to develop, implement and maintain ERPs. If the programs do not have existing ERPs this is an enforcement action. If they do, the wording in the permits should be changed to focus on implementing and maintaining the ERP (Category 1).	**(Resolved)** *The WY Pretreatment programs currently have ERPs and this is evaluated during Pretreatment Audits and PCIs conducted by EPA.*
Stormwater	The State of Wyoming's Small Municipal Separate Storm Sewer System (MS4) general permit has not been reissued since 2008. Wyoming is currently drafting this permit and must prioritize the reissuance of the State's Small Phase II MS4 General Permit. The reissued Small Phase II MS4 General Permit must include a numeric post-construction standard."	**(In progress**) *State needs to update the Phase II MS4 general permit to meet the requirements of the MS4 Remand Rule.*

Program Area	Action Item Title	Status Update
WET	Clearly describe and document permitting decisions in fact sheets and administrative records of permits. Provide more information in fact sheets on how; WET RP is determined, acute or chronic requirements are selected, species modifications are approved, and how testing reductions are calculated and approved. (Category 1)	**(In progress)** A similar action item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	WYPDES needs to clarify WET endpoint verbiage in chronic permits correctly reflects that the test endpoints are independent measures of "survival, growth or reproduction". (Category 1)	**(Resolved)***This action item has been labeled as a "resolved" essential action item even though WDEQ has not adjusted the language. Upon further review, this item has been reconsidered as a recommendation. WDEQ is still encouraged to make this change and it has been moved to the Recommended Action Items from Last PQR, Table 4 (below).*

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the recommendations from the last PQR, conducted August 19–21, 2013, 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 consolidated these two categories of action items into a single category: Recommended.

Table 6. Recommended Action Items Identified During 2013 PQR

Program Area	Action Item Title	Status
Water Quality-Based Effluent Limitations	For all the permit files reviewed, the reasonable potential analysis was not documented in the permit file. However, the permits were issue prior to finalization of Wyoming RP policy. A record of the reasonable potential analysis must be kept as part of the permit file and a summary of the reasonable potential analysis should be included in the Statement of Basis. (Category 2)	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	Wyoming has several TMDLs approved by EPA. Wyoming will incorporate limits where appropriate as defined in the TMDL. Since Wyoming has some finalized TMDLs, they need to develop a process to utilize the TMDLs. Perhaps they could add a tab to the Permit Quality Review Spreadsheet (Category 3).	**(** Resolved **)**
Documentation (including fact sheet)	WYPDES Program should ensure permit files include complete documentation of RP analyses. (Category 2).	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	WYPDES Program could improve the quality of the SOB through a clearer discussion of the application of BPJ on a case-by-case basis to municipal facilities, where the permit lacks effluent limitations for minimum percent removal based on secondary treatment standards. A discussion of BPJ could also improve the quality of fact sheets in cases where secondary treatment standards are applied to discharges from non-municipal facilities. (Category 3).	**(** Resolved **)**
Pretreatment	Region 8 should ensure that all required information be input into ICIS on a regular basis (Category 2).	**(** Not pursuing **)**
	Region 8 should revise the permit reopener clause for non-program permits to specifically mention that they could be reopened to require a pretreatment program if deemed necessary (Category 2).	**(** In progress **)**

Program Area	Action Item Title	Status
	Region 8 should eliminate the term *significantly violated* in its permits for POTWs with approved pretreatment programs. Rather, the permits should consistently refer to significant noncompliance (Category 2).	**(** In progress **)**
	Region 8 should coordinate the sampling requirements for Industrial Waste Management and for the Initial Monitoring Report for POTWs without pretreatment programs. The submittal time frames should be coordinated (if appropriate) and the permit should clarify whether one set of sampling results can satisfy both sampling requirements (Category 3).	**(** Not pursuing **)**
	Region 8 should ensure that permits for POTWs without pretreatment programs are clear on the purpose for the sampling required under Industrial Waste. If it is to assess industrial user contributions, the permits should make this clear (Category 3).	(In progress) Region 8 evaluates a limited number of Permits with non-approved programs in public notice to ensure the appropriate Pretreatment language is incorporated.
	Region 8 should ensure that the fact sheet for Rock Springs mentions that a pretreatment program is required and its basis [40 CFR 403.8(a)] (Category 3).	(In progress) Region 8 evaluates all Permits with Approved programs in public notice to ensure the appropriate Pretreatment language is incorporated.
	Region 8 should discuss in the fact sheets for POTWs with approved pretreatment programs whether the reasonable potential analysis conducted to develop water quality-based limits included analysis of pollutants common for the types of industries discharging to the POTW (Category 3).	(In progress) Region 8 evaluates all Permits with Approved programs in public notice to ensure the appropriate Pretreatment language is incorporated.
	Region 8 should revise the fact sheet for Thermopolis to specifically state that a pretreatment program is not required at this time and state the reason why. (Category 3)	(In progress) Region 8 evaluates a limited number of Permits with non-approved programs in public notice to ensure the appropriate

Program Area	Action Item Title	Status
		Pretreatment language is incorporated.
WET	Ensure proper WET implementation where dilution factors indicate chronic conditions. (Category 2)	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	Strongly recommend the state to include specifics on WET test acceptability criteria (TAC) selections to ensure consistent and accurate testing procedures are provided in the permit for permittee and laboratory use. (Category 3)	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	Recommend WYPDES to standardize WET permit language and WET policy decisions so that WYPDES permits are consistently implemented. (Category 3)	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	Recommend that when permittees are placed on reduced monitoring, permit writers include reference to lab report and summary of WET analysis data, not DMR data alone, in permit records. (Category 3)	**(** In progress **)** A similar item was identified in the 2021 PQR and has been outlined in the "Action Items from FY2018-2022 PQR Cycle" Tables, so it will be carried forward.
	WYPDES needs to clarify WET endpoint verbiage in chronic permits correctly reflects that the test endpoints are independent measures of "survival, growth or reproduction". (Was identified as a Category 1 in previous PQR but has been reevaluated to be a recommended action item).	**(**Not started **)**

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 Wyoming's NPDES permit programs, as discussed throughout sections III, IV, and V of this report.

The proposed action items were 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 addressed noncompliance with respect to a federal regulation. EPA has provided the citation for each Essential action item. The permitting authority was 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 5 below.
- **Recommended Actions -** Proposed "Recommended" action items were 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 6 below.

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

Table 7. Essential Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Permit Application Requirements	• Ensure that major POTW applications include a complete data set for priority pollutants (40 CFR 122.21(j)(4) and (5)), and in accordance with Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015. • WDEQ shall send notification of completeness or expected date of the completeness determination to permittees for applications, as per Section 5(b) of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015.
TBELs for POTWs	• WDEQ must ensure that permit fact sheets/statements of basis include adequate explanation of the derivation of specific effluent limitations, in particular an

	explanation of how alternate effluent limitations and daily maximum BOD and TSS limits were developed, in accordance with 40 CFR 124.56. • Permit writers must ensure that fact sheets/statements of basis prove and document that a POTW cannot meet secondary treatment standards and that it meets all requirements for allowing for adjustment of secondary treatment standards as required at 40 CFR 133.103(c).
Reasonable Potential	• WDEQ must ensure that permit writers conduct RPAs in accordance with NPDES regulations and provide sufficient documentation to demonstrate that reasonable potential was evaluated. (40 CFR 122.44 (d)(1)(ii)) • WDEQ must ensure that fact sheets/statements of basis include clear statements and findings of the RPA results, consistent with 40 CFR 124.56.
WQBELs Development	WDEQ must ensure that fact sheets/statements of basis include adequate documentation of the permit writer's determination of dilution allowances. (40 CFR 122.44 (d)(1)(ii) and 40 CFR 124.56)
Final Effluent Limitations and Documentation	• WDEQ must ensure that fact sheets/statements of basis include complete documentation of the basis for final effluent limitations (i.e., TBEL or WQBEL), including a demonstration that the permit writer compared TBELs and WQBELs and the most stringent limitation was established as the final limitation, appropriate water class designations were used for limit determinations, justifications for designated uses, and alignment of WLA calculations with permitted limits. (40 CFR 124.56) • WDEQ must ensure that anti-backsliding was evaluated, and documented, when reissued permits established effluent limitations that were less stringent than those in the previous permit.
Monitoring and Reporting Requirements	• WDEQ must ensure permits require the use of sufficiently sensitive EPA approved analytical methods in accordance with 40 CFR 122.41(i)(1)(iv) and 40 CFR 136.1 (c). • WDEQ must ensure permits require permittees to submit DMRs electronically, consistent with 40 CFR Part 127. • WDEQ must ensure that POTW permits specifically identify influent monitoring locations, consistent with 40 CFR 122.41(j). • WDEQ must ensure consistent reporting intervals are specified in the permit, in accordance with 40 CFR 122.414(l)(iii)(4).
Standard and Special Conditions	WDEQ must ensure that permits include all standard conditions consistent with the federal standard provisions established in 40 CFR 122.41, and in alignment with permitted requirements (i.e., power failure language).

Administrative Process	WDEQ's administrative record must consistently contain a record of all of the comments received during the public notice period as well as consistently provide responses to the comments received during the public comment period. (40 CFR 124.17)
Administrative Record and Fact Sheet	• Fact sheets must include calculations or other necessary explanation of the derivation of specific effluent limitations, consistent with 40 CFR 124.56. • WDEQ must include permit writer contact information in fact sheets/statements of basis, consistent with 40 CFR 124.8(b)(7). • Public notices must include a general description of the location of each existing or proposed discharge point and the sludge use and disposal practice, in accordance with 40 CFR 124.10(d)(vii). • WDEQ must ensure that public notices contain a brief description of the business conducted at the facility or activity described in the permit application or the draft permit, in accordance with 40 CFR 124.10(d)(iii).
Nutrients	WDEQ must ensure that the permit applications provide the results of nutrient (e.g., phosphorus and nitrogen) monitoring, or a note to the file waiving the requirement, as per the application requirements in Appendix E of the Wyoming Administrative Rules Environmental Quality, Dept. of Water Quality, Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015.
Pretreatment: Food Processing Sector	Permit writers must ensure that the NPDES permit application included all IU information required at 40 CFR 122.21(j)(6)(i) and (ii).
Municipal Separate Storm Sewer Systems (MS4s)	WDEQ needed to update the Phase II MS4 general permit, which had been administratively extended since 2013, to meet the requirements of the MS4 Remand Rule (see 40 CFR 122.28(d)), 40 CFR 122.34(a) and (b), and 40 CFR 122.34(a)).
Whole Effluent Toxicity	• WET requirements and limitations must be incorporated into the permit for the Buffalo Wastewater Treatment "major" facility, to align with WDEQ WYPDES permitting procedures (i.e., WDEQ had determined that all "major" POTWs had been determined to have RP for WET). • For "major" facility applications requiring WET data submission; data, a note to the file waiving any application requirements, or an indication by the applicant in the application itself that WET data had already been previously submitted to WDEQ (i.e., DMR data), must be documented in the permit file as part of the application completeness review (as required by 40 CFR 122.21 (j)(5) and Appendix E(a)(iii) and (a)(vii)(C) of the Wyoming Administrative Rules Environmental Quality, Dept. of Water

	Quality Chapter 2 Permit Regulations for Discharges to Wyoming Surface Waters, Effective 3/23/2015). • WET RPAs and decision-making used to determine WET limitations, alternating species approvals, and acute and chronic testing requirements must be documented in the fact sheets/statement of basis, as required by 40 CFR 122.44 (d) and 40 CFR 124.56. • WDEQ must correct the unclear/contradictory WET requirements and language as was outlined in the section above (i.e., TIE/TRE unclear as to how "confirmation of continuance" of effluent toxicity was determined; ensure limitations and requirements for WET in the Laramie (WY0022209) and Big Eagle Mine (WY0025950) permits were consistently implemented; and align the standard WET language in the permits to ensure consistent reporting timeframes). The permits must provide clear requirements for achieving water quality standards, as per 40 CFR 122.33(d) and discharge monitoring reporting, as per 40 CFR 122.41(l)(iii)(4). • WDEQ should utilize testing on two species concurrently for all permitted facilities to help ensure that protections remain in place for all sampled discharges or, barring the two species recommendation if WDEQ did opt to utilize only one species to reduce testing burden for facilities, the most sensitive species must be chosen, justified, and utilized for facility-specific WET testing to ensure alignment with CWA Section 301(b)(1)(C) and 40 CFR Part 122.44(d)(1)(ii). Additionally, it should be clearly documented that alternating the test species was not avoiding possible toxicity by using a tests species that was more tolerant of the discharged effluent being tested at the time.

Table 8. Recommended Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Facility Information	WDEQ should ensure thorough QA practices are implemented so that permits and related documents contain accurate information.
Permit Application Requirements	WDEQ should ensure permit records include accurate documentation of permit completeness determinations.
TBELs for Non-POTW Dischargers	WDEQ should ensure fact sheets consistently describe facility operations, including discussion of facility categorization and whether the facility is an existing or new source, relative to the applicability of ELGs.
Monitoring and Reporting Requirements	• WDEQ should develop and document a clearly defined process for determining appropriate monitoring frequencies. • WDEQ should adjust permit language in the "Reporting" section of the permit to incorporate "influent", "receiving", and any other type of monitoring specified in the permits.
Standard and Special Conditions	• Recommendations as detailed in the Standard and Special Conditions section of the report.
Administrative Record and Fact Sheet	• Recommended that a statement regarding the comments received and response be incorporated into the fact sheet/statement of basis to document public comments received and the responses. It is also recommended that a statement be included indicating whether or not changes were made to the draft permit (after public notice) prior to finalizing the permit.
Nutrients	• EPA recommended that a standard list of nutrient monitoring requirements be developed for similar facility categories (e.g., POTWs, Boysen Reservoir Basin permits, etc.), that supported the goals/initiatives of the Wyoming nutrient strategy. • EPA recommended that nutrient monitoring to be included for non-POTW facilities with the potential to be significant nutrient contributors. The monitoring data could then be used to determine reasonable potential to develop limitations in future permits, to support the goals/initiatives of the Wyoming nutrient strategy.
Pretreatment: Food Processing Sector	• Permit writers and pretreatment staff should coordinate during the entire permitting process to ensure appropriate pretreatment language was captured in the NPDES permit.

	• Permits writers should ensure that fact sheets stated whether a pretreatment program was required to be developed and/or approved program to be implemented, or not, and the basis for the requirements of the permit. • Permit fact sheets should specify whether the POTW accepted hauled waste and whether hauled waste contributions were included in the reasonable potential analysis. • Permit writers should include a timeframe (define "adequate") for notification of any new introduction of pollutants and substantial changes in the volume or character of pollutants being introduced into that POTW. • Permit writers should ensure that fact sheets for POTWs with pretreatment programs described industrial users in more detail and specified whether the reasonable potential analysis included analysis of pollutants common for the types of industries discharging to the POTW. • Permit writers should specify the modification dates of pretreatment programs, when applicable, in fact sheets and permits.
Whole Effluent Toxicity	• To ensure that WET requirements are implemented consistently, it was highly recommended that a WYPDES general procedure (e.g., SOP) or policy be developed and utilized to provide guidance for the incorporation of WET into WYPDES permits. • If continuing to implement the species reduction WET provision, it was recommended that supplemental caveats to the WET test species reduction (i.e., alternating WET test species) WET provision be included in permits, such as requirements for the requesting facility to have no other compliance issues, no uncontrolled industrial users, and consistent effluent quality. • It was recommended that, as applicable for chronic WET testing, the number of samples be clearly incorporated into the monitoring requirements to align with the number recommended by the EPA's WET methods manual.