

# **Region 8 NPDES Program and Permit Quality Review Colorado**

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## Executive Summary

The United States Environmental Protection Agency, Region 8 (EPA) performed a National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) of the Colorado Department of Public Health and Environment (CDPHE) NPDES permitting program (Colorado Discharge Permit System or CDPS) on August 29–31, 2022. At the time of the PQR, CDPHE administered 380 individual CDPS permits and, as of July 2022, 32 percent of CDPHE's individual permits were current.

During the PQR, EPA examined 12 individual permits and 1 general permit issued by CDPHE and several CDPHE permitting policies. The PQR also focused on the following national and regional priority areas including:

- Permit Controls for Nutrients in Non-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
- Per- and Polyfluoroalkyl Substances (PFAS) Initiatives

Overall, the PQR revealed that CDPHE's permits and fact sheets reviewed by EPA were generally consistent with the federal regulatory requirements. However, EPA did identify the following concerns:

- Application forms for POTWs lacking requirements to submit data and information consistent with 40 CFR 122.21(j).
- Applications for non-POTWs lacking data that is requested by the application form consistent with 40 CFR 122.21(g) and absence of CDPHE outreach to obtain the data that would support application reviews and permit development decisions.
- Application technical completeness reviews occurring during permit development after significant work has been done to draft a permit.
- Certain permits for POTWs missing minimum percent removal as required by 40 CFR 133.102;
- Certain fact sheets and permit records lacking sufficient documentation for certain permit limitations and conditions; and
- Compliance schedules being implemented without a demonstration that the discharger cannot immediately comply with effluent limitations, and to provide additional time for RP data collection, inconsistent with NPDES regulations at 40 CFR 122.47 and 122.44(d)(1).

As part of its NPDES program implementation, CDPHE has developed an array of 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 standard processes used, EPA recommends that CDPHE update its permit application forms to require all data and information identified in federal

NPDES regulations and revise its fact sheet templates to provide thorough and cohesive justifications for permit conditions. In addition, EPA recommends that CDPHE strengthen its quality assurance/quality control (QA/QC) practices to ensure consistency between permits, fact sheets, and the water quality assessment document.

In addition to the items listed above, this report provides an overview of the CDPHE program and identifies specific areas where EPA and CDPHE can work together to continue to strengthen permit language and documentation in CDPS permits. The draft PQR report was provided to the CDPHE for review and comments were received on September 19, 2024.

## I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Reviews (PQRs) are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program as well as opportunities for improvement in the development of NPDES permits.

EPA previously conducted a PQR of the Colorado Department of Public Health and Environment (CDPHE) NPDES permitting program (Colorado Discharge Permit System or CDPS) on August 21–24, 2017. The PQR summary report is available at:

[https://www.epa.gov/sites/default/files/2019-08/documents/colorado\\_2017\\_pqr\\_final.pdf](https://www.epa.gov/sites/default/files/2019-08/documents/colorado_2017_pqr_final.pdf).

The evaluation team proposed various action items to improve the CPDS program.<sup>1</sup> As part of the current PQR, EPA requested updates from CDPHE on the progress on those action items. After the 2017 PQR, CDPHE developed internal procedures, guidance, and permit writer training to address some of the essential action items. CDPHE also established a stakeholder workgroup to update Part II of the NPDES permit template that contains standard conditions required by 40 CFR 122.41 and 40 CFR 122.42.

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

- **Essential Actions** - Proposed Essential action items address noncompliance with respect to a federal regulation, which EPA has cited for each Essential action item. The permitting authority must address these action items to comply with federal regulations.

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<sup>1</sup> During the 2012-2017 PQR cycle, these action items were known as “Category 1” and addressed deficiencies or noncompliance with respect to federal regulations. EPA is now referring to these action items 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.

- **Recommended Actions** - Proposed Recommended action items are recommendations to increase the effectiveness of the State's or Region's NPDES permit program.

New action items are used to augment the existing list of action items currently tracked by EPA Headquarters on an annual basis and reviewed during subsequent PQRs.

EPA's review team, consisting of two regional staff, one Headquarters (HQ) staff, and one HQ contractor staff, conducted a review of the CDPS program. The PQR was conducted remotely, meaning a review of materials was conducted off-site, with materials CDPHE was able to provide electronically. Further, the remote PQR included interviews and discussions conducted via several conference calls. An opening interview was held on August 29, 2022, a call to discuss technical questions on August 30, 2022, and a closing meeting on August 31, 2022.

The Colorado PQR included reviews of core permit components and national and regional topic areas, as well as discussions between the review team and CDPHE staff addressing their program status and permit issuance process. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and any correspondence, reports or documents that provided 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 12 permits were reviewed as part of the PQR: 11 individual permits and the Statewide Standard Small MS4 general permit. All permits, including the MS4 general permit, were reviewed for the core review; three were reviewed specifically for Permit Controls for Nutrients in Non-TMDL Waters, five permits were reviewed to evaluate Colorado's implementation of the NPDES Pretreatment permit language, and four permits were reviewed to evaluate Colorado's implementation of PFAS control initiatives. Permits were selected based on issuance date and the review categories that they fulfilled.

The permits evaluated by the EPA during the PQR include the following:

- CO0000132; Oxbow Mining LLC
- CO0000612; Public Service
- CO0000671; Holcim Inc.
- CO0001511; Lockheed Martin
- CO0020150; La Jara
- CO0021571; Fowler
- CO0024171; Westminster
- CO0026409; Broomfield
- CO0026638; Metro Water Recovery
- CO0030635; Yampa
- CO0032999; South Platte Renew
- CO0039641; Delta

## 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. Core topic reviews focus on the *Central Tenets of the NPDES Permitting Program*<sup>2</sup> and are intended to evaluate similar issues or types of permits in all states.

## Topic Area Reviews

The national topics reviewed in the CDPS program were Permit Controls for Nutrients in Non-TMDL Waters, Small Municipal Separate Storm Sewer System (MS4) Permit Requirements and Effectiveness of POTW NPDES Permits with Food Processor Contributions.

Regional topic area reviews target regionally specific permit types or particular aspects of permits. The regional topic area selected by EPA Region 8 was Per- and Polyfluoroalkyl Substances (PFAS) initiatives, in particular the CDPHE's implementation of its PFAS Policy 20-1, which became effective on July 14, 2020. These reviews provide important information to Colorado, EPA Region 8, EPA HQ, and the public on specific program areas.

# II. STATE PROGRAM BACKGROUND

## A. Program Structure

The EPA authorized Colorado to administer NPDES permitting in 1975 with subsequent authorization to administer general permits in 1982. CDPHE does not have authority to regulate federal facilities or to implement the NPDES program for pretreatment or biosolids. CDPHE has a non-authorized state program for pretreatment and biosolids.

The Clean Water Program, within the Water Quality Control Division (WQCD) of CDPHE, is responsible for administering the majority of the CDPS program which includes delegated authority for the NPDES program and state authority for discharges to state waters. The Environmental Agriculture Program (EAP) within the Division of Environmental Health and Sustainability (DEHS) administers the portion of the CDPS program that oversees beef and dairy feedlots and housed commercial swine feeding operations. The Water Quality Control Commission (WQCC) develops water quality standards (WQS) in Colorado and establishes the regulations for the CDPS program. It is a citizen board appointed by the Governor and confirmed by the state Senate for three-year terms. The WQCC also serves a quasi-judicial role in administrative hearings concerning appeals of certain decisions of the WQCD that are not addressed by CDPHE.

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<sup>2</sup> <https://www.epa.gov/npdes/central-tenets-npdes-permitting-program>

The Permits Section, within the Clean Water Program, is divided into four units, three of which directly support permit development and manage permits based on discharge type, and a fourth unit that is responsible for administration and data management. Permits Unit 1 manages NPDES stormwater and construction general permits, including MS4 permits and non-NPDES permitting of groundwater discharges and reclaimed water use; Unit 2 oversees municipal and food manufacturing permits; and Unit 3 administers industrial and natural resources extraction permits. Unit 4 is the data unit, staffed with data management professionals that assist with data collection, data entry into EPA’s Integrated Compliance Information System (ICIS-NPDES), management of electronic Discharge Monitoring Reports (eDMRs), and managing the construction stormwater permit once issued. Each Unit is led by a Unit Manager (UM), who reports to the Section Manager. The main office is in Denver; all permit support is conducted from the main office. CDPHE also maintains field offices in Grand Junction and Pueblo; however, these offices do not support NPDES permit development.

At the time of the PQR, the Permits Section was staffed at approximately 70 percent, with 11 out of 16 permit writer positions filled. CDPHE reported in the PQR Advance Questionnaire that, on average, each permit writer drafts between 1 and 3 new and renewal permits per year. Permit writers also issue permit modifications, certifications under a Master General Permit (referred to as general permit in this report), and develop water quality planning targets (WQPTs), which are planning documents used primarily for new or expanding POTWs. UMs assign permits based on staff experience, availability, and permit type. Permit writers are trained through internal mentoring by senior permit writers, workgroup leaders (WGLs), UMs, and participation in EPA’s NPDES Permit Writers’ Course during the latter part of their first year.

The WQCD develops a permit issuance schedule for individual permits annually. It follows a basin schedule, which means the Permits Section begins renewing scheduled permits the year after the WQCC basin hearing. During the annual basin hearing, the WQCC reviews *The Basic Standards and Methodologies for Surface Water*—Regulation No. 31, Volume 5 of the Code of Colorado Regulations (CCR), 1002-31 (5 CCR 1002-31), to promulgate new WQS into the basin regulations (5 CCR 1002-32 through 38). The Permits Section works closely with stakeholders to develop a work plan for permit reissuance for the upcoming year that aligns with the basin schedule. Due to a lack of resources, the Permits Section is unable to develop all the reissued permits identified in the basin schedule for the year; therefore, it applies criteria to prioritize the individual permit renewals that will be developed for each basin. Factors that the Permits Section considers in prioritizing development are publicly available and include:

- Permit status (e.g., whether it is administratively continued) and date of expiration—older, administratively continued permits are prioritized;
- Whether the existing permit ensures that current water quality standards will be protected;
- Whether the existing permit is missing needed limits, like nutrients or new total maximum daily loads (TMDLs);



- Whether the receiving streams or affected downstream segments have been newly designated as water supply, reviewable, threatened and endangered species critical habitat, or another designation that would trigger additional protections in the permit;
- Whether known changes to the facility that have or would affect water quality are planned or are occurring;
- Whether the facility will be modeled together with a higher priority facility; and
- Enforcement Unit priorities.

The WQCD develops WQPTs and preliminary effluent limitations (PELs) primarily for new or expanding POTWs. Prior to 2020, the WQCD used PELs during its design and site approval processes to ensure that facilities were designed to protect WQS. The WQCD has developed a guidance document<sup>3</sup> to inform permittees about how to obtain and use WQPTs. PELs are one kind of WQPT and are a fee-based service<sup>4</sup> under which the WQCD develops anticipated (preliminary) effluent limitations to serve as effluent quality guidance during the site design process; they “...are set at a level such that the proposed treatment facility will not cause an exceedance of applicable water quality standards.” In 2020, the WQCD adopted changes to 5 CCR 1002-22 (*Regulation 22–Site Location and Design Regulations for Domestic Wastewater Treatment Works*) and 5 CCR 1002-61 (*Regulation 61–Colorado Discharge Permit System Regulations*) to identify WQPTs as a new component of the permitting process. WQPTs also guide the facility’s treatment requirements and may be derived from existing permits, water quality assessments, a permit modification, a new permit, a PEL, or a combination of these. WQPTs consider the proposed hydraulic capacity, discharge location(s), reclaimed use(s), technology-based standards, and applicable WQS. CDPS applicants are required to submit the WQCD’s Domestic WQPT/PEL application form, available on the WQCD’s website. The WQCD reviews the WQPT/PEL application, notifies the applicant whether they will need a PEL, and begins developing the WQPT and PEL.

The ability to use a new or modified permit as a WQPT is a new process that came about with the 2020 regulatory changes to 5 CCR 1002-22 and 5 CCR 1002-61. Another change was to not require that POTWs submit an application for site approval prior to applying for a discharge permit. This allows a discharge permit, with a delayed effective date, to precede engineering site and design approval and is referred to as the “permits-first” option. The permit does not become effective without engineering site and design approval. For existing permits, the WQCD would include a compliance schedule that provides time for the new effluent limitations to become effective and requires the site location and design application to be filed by a specific date. Smaller POTWs (i.e., design capacity less than 1 MGD) are encouraged to use the permits-first option and if planning for a facility upgrade, convert their permit coverage to a general

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<sup>3</sup> <https://docs.google.com/document/d/127Bz3mnSSandbc2xdSIHo4Gs0nUHa3BhlMxexD-xKSk/edit>

<sup>4</sup> The WQCD charges fees for PELs. Upon the WQCD’s determination that a PEL is required, the WQCD sends the applicant a PEL payment request identifying the appropriate fee and payment instructions; the WQCD commences work on the PEL after full payment is received. The WQCD establishes PEL fees based on facility size and requires additional fees for discharges to multiple water bodies and PEL modifications.



permit (COG590000) with a delayed effective date reflecting the anticipated completion of facility construction. The permits-first approach for a new facility to serve a new discharge does not entail a compliance schedule but could provide for a delayed effective date. After the permit or modification is issued, the applicant applies for a WQPT using the Domestic WQPT/PEL application form. An existing permit can be used as a WQPT when certain criteria are met, including:

- The planned facility change will solely affect an existing TBEL.
- The planned facility change will only marginally decrease flows; and
- The planned facility change will not, alone, affect the current permit's limits or the facility's ability to meet those limits.

The WQCD Permits Section confers with the Engineering Section to determine whether an existing permit is appropriate to use as a WQPT. As stated in the WQPT guidance document, *"The division spends considerable time and resources, including assigning experienced permit writers to prepare PELs, to minimize the potential differences between the PELs and the eventual draft permit and to make the PELs as accurate as possible. However, an effluent limit may change between a PEL and a subsequent permit."* The WQCD concurred with this statement during the PQR and indicated that PEL development accounted for much of senior permit writers' workload.

Permit writers use the Colorado Permit Builder Tool (PBT) and the Ammonia Toxicity Model (AMMTOX) to calculate applicable water quality criteria, evaluate reasonable potential (RP), and calculate WQBELs. The PBT and AMMTOX are spreadsheets equipped with macros, formulas, and linked tabs. Permit writers also use templates with boilerplate language to develop all draft permit documents. One specific template is the Water Quality Assessment (WQA) document. The WQA template guides a large part of the permit development process, including WQBEL development. The permit writers create a facility map identifying the discharge location, then identify various attributes of the receiving water body, including the specific segment, applicable WQS and TMDLs, impairment status, ambient water quality and receiving stream flow. Permit writers employ the PBT, entering facility-specific data to identify applicable WQS, evaluate RP, and calculate WQBELs. The WQA also guides permit writers through various analyses as appropriate for the facility, including evaluation of antidegradation procedures, and parameter-specific concerns for bioaccumulative parameters, sodium adsorption ratio, electrical conductivity, and nutrient parameters.

The WQCD also maintains numerous policies to support permit development, many of which are available on CDPHE's website: <https://cdphe.colorado.gov/clean-water-policies>. Examples of the policy and guidance documents include:

- Clean Water (CW)-1: Reasonable Potential
- CW-3: Permit Compliance Schedules
- CW-13: Permit Implementation Method for Narrative Temporary Modifications

- Whole Effluent Toxicity (WET) Testing Policy
- Antidegradation Significance Determination Guidance
- Colorado Mixing Zone Implementation Guidance

WGLs and UMs in the Permits Section provide QA/QC for permit writers during review of draft permits, while the Permits Section Manager provides final review of draft permits. Permits staff do not consistently use a specific QA/QC checklist during reviews; however, some WGLs and UMs may use a checklist or process flow document as a review checklist. In general, the template documents contain prompts that function as a review checklist.

The WQCD maintains permit records online in the OnBase system and the Colorado Environmental Online Services (CEOS) platform. OnBase is the web-based viewer by which the public accesses digital Clean Water Division permit records. Permittees submit permit applications, monitoring reports, and requests for permitting actions via CEOS.

Permit documents under development, including draft permits, fact sheets, and supporting documents, are maintained on a Google drive, to which all staff maintain shared access. Once the permit documents are finalized, final versions are transferred to OnBase. All correspondence, monitoring and reporting, and compliance records are also maintained electronically in OnBase.

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

According to WQCD information from July 2022, the WQCD administers individual NPDES permits for 118 major facilities (94 POTWs and 24 non-municipal), 255 non-major facilities (162 POTWs and 93 non-municipal), and 7 individual stormwater facilities. In addition to these individual permits, the WQCD administers 3 stormwater general permits (GPs)<sup>5</sup> that cover 1,109 industrial stormwater facilities (of which 397 maintain no-exposure certifications and 79 are for metal mining) and 6,498 construction storm water sites. The WQCD administers 3 MS4 general permits (Statewide Standard Small MS4, Statewide Non-Standard Small MS4, and Cherry Creek Reservoir Basin MS4) that cover 116 MS4s.<sup>6</sup> The WQCD also administers 15 non-stormwater NPDES general permits that cover 1,435 facilities:

- Coal Mining Facilities (COG850000)
- Oil and Gas Process Water (Produced-Water Treatment Facilities) (COG840000)
- Aquatic Animal Production (COG130000)
- Sand and Gravel Mining (COG500000)
- Discharges Associated with Hydrostatic Testing of Pipelines, Tanks, and Similar Vessels (COG604000)

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<sup>5</sup>Industrial Stormwater GP (COR900000), Metal Mining Industry Stormwater GP (COR040000), and Construction Stormwater GP (COR400000).

<sup>6</sup> Statewide Standard Small MS4 GP (COR090000), Statewide Non-Standard Small MS4 GP (COR070000), and Cherry Creek Reservoir Basin MS4 GP (COR080000).

- Non-Contact Cooling Water (COG605000)
- Commercial Washing of Outdoor Structures (COG607000)
- Water Treatment Plants Not Discharging to Waters Designated Habitat for Threatened and Endangered Species (COG641000)
- Domestic Discharges under 1 MGD with Dilution  $\geq$  100:1 (COG590000)
- Domestic Discharges under 1 MGD with Dilution  $<$  100:1 (COG591000)
- Discharges from Short-term ( $<$  2 years) Construction Dewatering Activities (COG070000/COG080000)
- Discharges from Short-term ( $<$  2 years) Remediation Activities (COG317000)
- Discharges from Long-term ( $\geq$  2 years) Remediation Activities (COG318000)
- Discharges from Subterranean Dewatering Activities (COG603000)
- Discharge to Surface Water from Well Development and Pump Testing Activities (COG608000)
- Minimal Discharge (COG600000)
- Discharges from Applications of Pesticides (COG860000)

The WQCD indicated that significant permitted industries within the state include construction, oil and gas extraction, and mining, which includes construction sand and gravel operations.

The WQCD reported that 84 major individual, 173 non-major individual, and 12 general permits were administratively continued. Therefore, 68 percent of individual permits and 52 percent of general permits were administratively continued at the time of the PQR.

The EAP issues CDPS permits to a subset of the state's beef and dairy feedlots, but this portion of the program was outside the scope of this PQR.

### **C. State-Specific Challenges**

The CDPHE reported staffing shortages within the WQCD, which is a challenge common among authorized states. At the time of the PQR, CDPHE reported five permitting vacancies in WQCD, out of a permitting staff of sixteen.

### **D. Current State Initiatives**

As discussed in section II.A, the WQCD schedules permit reissuance on a basin schedule, following the WQCC's annual basin hearing; therefore, permit development aligns with recent WQS regulatory actions. The Permits Section works closely with stakeholders to develop the work plan and informs them of permits that will be reissued during the upcoming year. The WQCD indicated that stakeholders appreciate the overall process and involvement in developing the work plan and feel that issuing permits on a basin schedule provides equity and predictability for permittees.

The WQCD is addressing discharges of PFAS by establishing monitoring requirements and effluent limitations in certain NPDES permits. To do this, the WQCD is implementing *Policy 20-1*, which provides guidance on how to implement permit conditions based on an interpretation of the narrative water quality standard for PFAS.

The WQCD indicated that it is updating the PBT to improve its access and analytical capabilities.

### III. CORE REVIEW FINDINGS

#### A. Basic Facility Information and Permit Application

##### 1. Facility Information

###### *Background*

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

###### *Program Strengths*

Permits reviewed clearly presented appropriate permit issuance, effective, and expiration dates as well as proper signatures, facility location, and receiving water identification. Descriptions of facility location and addresses are very detailed and specific. Facility location is identified by street address, latitude and longitude coordinates, and legal land description. Permits identify latitude and longitude coordinates for each outfall and stream segment by name and Water Body Identification (WBID) code. Fact sheets provide a good understanding of facility operations and wastewater treatment processes.

###### *Areas for Improvement*

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

###### *Action Items*

###### Essential

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

###### Recommended

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

## 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 WQCD uses state application forms. POTWs are required to submit the CDPS Domestic Wastewater Treatment Plant Permit Application (version 5/2022) and non-POTWs are required to submit the Industrial Individual Wastewater Discharge Permit Application (version 9/2015).

The NPDES regulations at 40 CFR 122.21(j)(4)(i) requires all applicants for POTWs to submit certain effluent monitoring information in the application. The NPDES permit application effluent testing requirements at 40 CFR 122.21(j)(4)(vi) establish the minimum frequency of three samples taken within four and a half years prior to the permit application date and required information for each parameter in 40 CFR 122.21(j)(4)(ix) and (x). In addition, 40 CFR 122.21(j)(5) establishes the required effluent monitoring requirements for new and existing POTWs for WET.

The CDPS Domestic Wastewater Treatment Plant Permit Application does not include the effluent characterization data required by 40 CFR 122.21(j)(4). The CDPS Domestic Wastewater Treatment Plant Permit Application, Receiving Water Information section, requests applicants to submit “*any other studies or other analyses which you feel may help the Division in its development of effluent limitations for your facility;*” however, the statement is vague, and the form does not present it as a requirement.

The NPDES regulations at 40 CFR 122.21(g) establish the permit application requirements for existing manufacturing, commercial, mining, and silvicultural dischargers. Based on EPA’s evaluation, the current version of the Industrial Individual Wastewater Discharge Permit Application requires submittal of data and information consistent with 40 CFR 122.21(g).

Part II of CDPS permits requires submittal of a renewal application at least 180 days prior to permit expiration, in accordance with Colorado Regulation 61.4 (*Colorado Discharge Permit System Regulations*). Administrative technicians in Unit 4 of the Permits Section send out reminders to the permittee when the renewal application has not been received and requesting it 60 days prior to permit expiration. Administrative technicians also receive applications and conduct a basic administrative completeness review to determine whether all fields are filled out and the application is signed. Unit 4 staff contact the permittee if the application is deemed incomplete; if a permittee does not respond to that request, additional requests are issued and eventually the Compliance Group becomes involved. Permit writers review applications for technical completeness while they are drafting the permit and if additional information is required, they contact the permittee to obtain the information.

*Program Strengths*

Applications reviewed were signed by the appropriate officials.

*Areas for Improvement*

Four applications reviewed were submitted less than 180 days prior to permit expiration, in violation of the deadline required by the existing permits. Further, permit files for administratively continued permits did not include documentation of a technical review of completeness. In accordance with 40 CFR 122.6, an expired permit may be administratively continued if the permittee has submitted a complete and timely application. EPA recommends including documentation in the permit record that demonstrates the application is deemed complete. In addition, EPA recommends permit writers review applications for technical completeness prior to developing the permit to ensure that relevant and accurate information is obtained early in the process rather than after the permit writer has progressed through various permit development steps (e.g., data queries, analyses, and effluent limitation development).

Colorado's POTW application forms do not appear to include all the analytical data requirements consistent with NPDES application regulations at 40 CFR 122.21. This was also a finding of the previous PQR. The POTW application form must clearly indicate what data and information is required, and ensure it is consistent with NPDES application regulations. Further, requirements should be presented in a manner that enables complete recording of required data, which in turn facilitates staff review to determine whether it is technically complete and provides relevant information to support permit development, including certain types of data that would not otherwise be obtained from DMRs. Although Colorado's non-POTW application forms require data consistent with NPDES application requirements, the non-POTW applications reviewed did not include the required data. The review revealed that the non-POTW application form does not explicitly provide an area for applicants to report the data, which could cause applicants to overlook the requirement. In addition, reviewers discovered that the WQCD does not follow up with applicants to obtain the required data in order to determine the application complete.

*Action Items***Essential**

- The WQCD must ensure application forms for POTWs require data and information consistent with 40 CFR 122.21(j)(4) through (7).
- The WQCD must review non-POTW application forms submitted and ensure that the applicant submitted the data and information consistent with 40 CFR 122.21(g)(7).
- The WQCD must ensure that a complete application, as described by 40 CFR 122.21(a)(2), is submitted 180 days prior to permit expiration (for existing facilities) or discharge (new facilities) (40 CFR 122.21(d) and 122.21(e)).
- The WQCD must ensure that permit applications are timely and complete before administratively continuing an existing permit (40 CFR 122.6).

**Recommended**

- The WQCD should ensure that the permit records contain documentation regarding the technical completeness of the permit applications.
- The WQCD should consider modeling revised individual permit applications after EPA's format and organization, to ensure applications present requirements clearly and facilitate a technical completeness review.

**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 and within the statutory deadlines. Permits, fact sheets, and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether technology-based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

*TBELs for POTWs**Background and Process*

POTWs must meet secondary treatment requirements or treatment equivalent to secondary standards found in 40 CFR Part 133. POTW permits subject to the Secondary Treatment Regulation must include limits for biochemical oxygen demand [BOD], total suspended solids [TSS], pH, and percent pollutant removal for TSS and BOD or authorized alternative limits or conditions.

Colorado's Regulation 62.5(1) establishes weekly and monthly average effluent limitations for BOD, TSS, carbonaceous biochemical oxygen demand (CBOD), and percent pollutant removal for BOD, CBOD, and TSS that are consistent with federal secondary treatment standards. The regulations allow for two types of adjustment to TSS effluent limitations for waste stabilization



ponds, depending on whether the waste stabilization pond system is aerated or non-aerated. Regulation 62.5(3) also indicates that where adjusted TSS effluent limitations are granted, the 85 percent removal requirement for TSS is waived. The NPDES regulations at 40 CFR 133.103(c) allow for adjusted effluent limitations for waste stabilization ponds; however, they do not provide for a waiver from the minimum percent removal requirement.

### *Program Strengths*

CDPS POTW permits appropriately established TBELs based on federal secondary treatment standards and included proper pollutants, limit frequencies (i.e., average weekly and average monthly limit bases), and units of measurement. Further, permits appropriately established minimum percent removal requirements for BOD and TSS for POTWs that implement secondary treatment. Fact sheets for POTW permits provided a general description of wastewater treatment processes which supported the TBELs established in the permits.

### *Areas for Improvement*

Some permits reviewed for POTWs that operated a lagoon treatment system lacked minimum percent removal requirements for TSS consistent with equivalent to secondary or adjusted standards. Further, the fact sheets reviewed for those POTWs did not discuss the application of adjusted effluent limitations; rather, they provided a general citation to the state regulations (“Regulation 62”). NPDES regulations require that fact sheets provide a rationale for the application of adjusted effluent limitations.

### *Action Items*

#### Essential

- The WQCD must ensure that permits address applicable percent removal requirements for POTWs consistent with federal secondary treatment standards established at 40 CFR 133.102 and 133.105.
- Permit writers must ensure that fact sheets demonstrate 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 section.

### *TBELs for Non-POTW Dischargers*

### *Background and Process*

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Available Technology Economically Achievable (BAT) or Best Conventional

Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BAT/BCT developed on a case-by-case basis using best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

The WQCD implements TBELs through application of federal ELGs for industrial facilities and Colorado's Regulations for Effluent Limitations, Regulation No. 62. TBELs in Regulation 62 are established through the Water Quality Commission. Regulation 62.4 establishes effluent limitations for certain pollutants that apply to all CDPS permits, except where ELGs apply or where WQBELs are more stringent. Permit writers apply the guidance provided in EPA's *NPDES Permit Writers' Course* and *Permit Writers' Manual* to develop TBELs for non-POTWs. The WQCD indicated that their permit templates include directions and prompts for permit writers based on EPA's permit writers' resources. Permit writers consult available ELGs and determine applicability to the discharge and develop ELG-based effluent limitations as appropriate. The WQCD indicated there are few permits where BPJ was applied to develop TBELs and noted that in general, final effluent limits are WQBELs.

#### *Program Strengths*

CDPS permits appropriately established TBELs for non-POTWs and the record provided sufficient documentation. Overall, permit fact sheets provided an adequate description of facility operations and treatment processes relative to applicable ELGs, the specific applicability of available ELGs, and calculations for TBELs.

#### *Areas for Improvement*

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

#### *Action Items*

##### Essential

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

##### Recommended

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

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

### *Background*

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

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

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

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

### *Process for Assessing Reasonable Potential*

Colorado's Regulation 61.8(2)(b)(i)(A) requires that WQBELs be established for all pollutants which WQCD "...determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or measurably contribute to an excursion above any water quality standard, including narrative standards for water quality." EPA notes that the term "measurably" is not consistent with the federal requirements in 40 CFR 122.44(d), which may limit the scope of RP; however, the PQR review focuses on how permit writers conduct reasonable potential analysis (RPA) during permit development.

Colorado's WQS, containing numeric and narrative criteria, are established in Regulation No. 31, *The Basic Standards and Methodologies for Surface Water*. The regulation establishes statewide standards that are applicable to all state surface water as well as site-specific water use classifications and accompanying standards. Table value standards are based on criteria set forth in three tables contained in the Basic Standards regulation; these are levels of pollutants determined to be generally protective of the corresponding use classifications. They are applied

in most circumstances, unless site-specific information indicates that temporary modifications or compliance schedules, described in the next two paragraphs, are more appropriate.

Colorado's WQS (Regulation 31.7) allow for the adoption of temporary modifications to WQS *"an existing permitted discharge has a demonstrated or predicted water quality-based effluent limit compliance problem,"* and *"where the Commission determines that there is significant uncertainty regarding the appropriate underlying standard"* (e.g., if the existing quality of a water body is the result of natural or irreversible human-induced conditions). Temporary modifications are accompanied by an implementation plan and studies to eliminate the temporary modification and determine the appropriate long-term WQS.

Colorado's WQS, Regulation 31.9(2), allow for the establishment of compliance schedules *"Where the Commission has adopted new standards, temporary modifications or revised standards that have become more stringent, or where the Division has developed new interpretations of existing standards, including, but not limited to, implementation requirements through approved TMDLs and Wasteload Allocations, interim and final alternative effluent limitations for variances and antidegradation reviews; the Division may include schedules of compliance in Colorado Discharge Permit System (CDPS) permits when it determines such schedules to be necessary and appropriate."* Colorado also maintains a policy, CW-3, regarding the implementation of compliance schedules in permits.

Permit writers identify the receiving stream, obtain water quality data, review the receiving water's impairment status, and identify whether TMDLs are applicable to the discharge.

Permit writers apply the WQCD Implementation Policy CW-1, *Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential* (effective date: November 18, 2013), to evaluate the need for WQBELs in NPDES permits. The WQCD implements a quantitative and qualitative method for conducting a RPA. The first step in evaluating RP is to identify the pollutants of concern. Policy CW-1 describes how pollutants of concern are identified (e.g., pollutants detected in the effluent, pollutants with known sources or known to commonly occur in similar effluents). The second step is to determine whether the effluent data meet the minimum requirements, as described in Policy CW-1. The WQCD requires a minimum of 10 data points, 5 years old or less, to conduct a quantitative assessment. If the minimum data requirements are satisfied, the permit writer conducts a statistical analysis evaluating all recent data unless a shorter period of record is appropriate. If there are fewer than 10 data points, then according to fact sheets reviewed, *"...consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit."* Further, fact sheets state that *"A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected."*

During the quantitative assessment, permit writers follow EPA's guidance provided in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* and identify the maximum pollutant concentration, calculate the coefficient of variation, and determine the

multiplying factor to calculate the maximum estimated pollutant concentration. Permit writers compare the maximum estimated pollutant concentration to the maximum allowable pollutant concentration to determine whether a WQBEL is necessary. The RP evaluation results in either of three outcomes:

- Situation A: If the maximum value in the data set or the maximum estimated pollutant concentration is greater than the maximum allowable pollutant concentration, then a limitation will be placed in the permit.
- Situation B: If the maximum value in the data set or the maximum estimated pollutant concentration is greater than 50 percent of the maximum allowable pollutant concentration, then no limitation will be placed in the permit unless a need is indicated by the qualitative RPA, and routine monitoring will be required.
- Situation C: If the maximum value in the data set or the maximum estimated pollutant concentration is less than 50 percent of the maximum allowable pollutant concentration, then no limitation or routine monitoring will be placed in the permit unless a need is indicated by the qualitative RPA.

A qualitative RPA is conducted after (i.e., in conjunction with) a quantitative RPA or in cases where a quantitative RPA is not applicable. A qualitative RPA involves decisions based on the permit writer's judgment about specific pollutants of concern, rather than a formal statistical analysis. Examples of scenarios where qualitative RPAs might be conducted include where industry information such as ELGs and ELG development documents suggests the discharge would contain concentrations above WQS, or where pollutants are specifically added to the discharge.

RPAs and water quality assessments were well documented in the CDPS permit fact sheets as an attachment, entitled the *Water Quality Assessment* document. The WQA documents were organized consistently across permits and discuss the RPA process.

#### *Process for Developing WQBELs*

Permit writers employ the PBT to develop WQBELs, using stream-specific applicable water quality standards and ambient water quality data, in addition to facility-specific effluent monitoring data and calculated effluent coefficients of variation. The WQCD developed the *Policy for Characterizing Ambient Water Quality for Use in Determining Water Quality Standards-Based Effluent Limits* (May 2002), to provide specific guidance for characterizing upstream ambient water quality for use in developing WQBELs.

Colorado's Regulation 61.8(2)(b)(v) states that the WQCD will use a mass-balance analysis to establish WQBELs, "...such that the combined concentrations of pollutants contributed by the discharger and the receiving waters upstream from the point of discharge do not exceed the water quality standards for the receiving waters, downstream of any mixing zone established by the Division for each pollutant." Further, Regulation 61.8(2)(b)(vi) states that for most

pollutants, the WQCD will assign the effluent limitations defined from the mass-balance analysis as the 30-day average value, and where the pollutant has a relatively acute toxic effect, the effluent limitation will be assigned as a shorter-term average value (e.g., 7-day average or daily maximum).

Colorado's mixing zone requirements are established in Regulation 31.10 and are accompanied by the WQCD's *Colorado Mixing Zone Implementation Guidance* (April 2002). The WQCD applies different mixing zone size restrictions according to whether a water body is a reviewable water or a use-protected water. The regulatory mixing zone for streams and rivers is directly scaled to channel width, whereas the mixing zone for lakes is based on an area measurement. The WQCD evaluates stream low-flow values and critical conditions, and generally assumes 100 percent dilution. Most discharges are to waterways with high flow and rapid mixing. For certain discharges (i.e., those that do not meet the extreme mixing ratio as defined by the mixing zone guidance), the WQCD requires the permittee to conduct a mixing zone study during the next permit term. It is uncommon that permittees need to conduct a new mixing zone study because conditions remain such that the original mixing zone analysis is usually appropriate. When determining whether a mixing zone study is required, the WQCD evaluates whether the watershed has changed due to installation of a dam or other diversion, or due to drought conditions, and allows hydrology and other site-specific conditions to dictate the frequency of mixing zone study updates. Permits staff review the mixing zone study upon permit renewal to verify that a mixing zone reduction is not necessary.

The amount of available assimilative capacity (i.e., dilution) applied in WQBEL development may be limited based on a mixing zone analysis or other factors. Other factors that reduce available assimilative capacity may include the presence of a water diversion downstream of the discharge; the likelihood of bioaccumulation of toxins in fish or wildlife; and the presence of threatened and endangered species. The WQCD assumes that the full assimilative capacity can be allocated unless a decision has been made regarding the amount of assimilative capacity that can be used by the facility. Permit writers use PBT and AMMTOX to develop WQBELs. The WQCD's standard WQBEL development process consists of the use of steady-state, mass-balance equations for most pollutants; the mass-balance equation accounts for upstream concentrations, critical low-flow values, effluent flow, and the applicable WQS. The WQA describes the WQBEL development process in detail. The WQA presents parameter-specific discussions of applicable WQS, a characterization of ambient water quality, projected effluent limitations, a summary of data used in the RP analysis, results of the RP analysis, discussion of AMMTOX modeling, mass-balance modeling, technology-based limitations, WQBEL calculations, comparison of applicable effluent limitations, and an evaluation of antidegradation requirements. Fact sheets also discuss whether specific comments were made during the comment period, relative to WQBELs.

Permit writers evaluate the receiving water body's impairment status and establish permit requirements accordingly: for impaired water bodies that do not yet have an approved TMDL, permit writers establish monitoring requirements for the impairing pollutants and subsequently evaluate RP during the permit renewal application phase. For impaired water bodies where



there is an approved TMDL, permit writers review the TMDL to determine whether the facility is listed as a contributing source of the impairing pollutant. Permit writers implement the TMDL in the permit by incorporating the wasteload allocations and other associated requirements. Permit writers collaborate closely with TMDL staff during permit development to ensure consistent and appropriate TMDL implementation in permits.

CDPHE moved toward a watershed-based permitting approach circa 2007, believing it would provide better data for developing WQBELs and protecting water quality. As part of watershed-based permitting, CDPHE develops the WQA and models all dischargers together, providing a more realistic representation of the receiving water body's water quality and assimilative capacity. Permit writers document the process of assessing the need for and subsequently developing WQBELs in the WQA as an attachment to the fact sheet. The WQA is developed using a template and is organized according to the steps the permit writer follows to evaluate RP and develop necessary WQBELs.

### *Program Strengths*

#### *Reasonable Potential*

The WQCD's approach for watershed-based modeling, in conjunction with permit issuance on a basin schedule, where there are multiple facilities in close proximity, provides a realistic assessment of collective impacts to the receiving waterbody. The WQA document provides a logical flow to the RPA and WQBEL development process and presents all the data that were considered in the evaluation in a clear format. CDPS fact sheets identify pollutants of concern, describe receiving stream information thoroughly (including impairment status and TMDL applicability), and discuss the assessment conducted for each pollutant of concern in the fact sheet or WQA.

#### *WQBEL Development*

WQBEL development is documented thoroughly in the WQA document.

### *Areas for Improvement*

#### *Reasonable Potential*

CDPS fact sheets indicated that where an appropriate number of data points are not available for use in conducting an RPA, monitoring would be required to obtain additional data for an RPA and subsequent decisions for a numeric limit. Further, fact sheets state that a compliance schedule would be added to the permit to require the request of an RPA once the appropriate data have been collected. These statements suggest that the WQCD does not evaluate RP when data sets contain fewer than 10 data points. A data threshold before conducting RPA is not consistent with 40 CFR 122.44(d)(1), and RPA shall be considered for all pollutants of concern at the time of draft permit development. EPA's TSD, Permit Writers' Manual, and WET Permit Writers' Manual provide guidance on conducting statistical analyses, including determining a coefficient of variation and multiplication factors, to account for effluent variability in small data sets. Further, the use of a



compliance schedule is inappropriate for the requirement of additional monitoring in this context. RPA is not a permit condition but a requirement of the permitting authority in the development of the permit conditions. The permit may utilize a reopener clause to allow the incorporation of a WQBEL if additional monitoring data indicate that a WQBEL is required.

CDPS fact sheets and WQA documents lack detailed discussions of the qualitative RPA and would be strengthened with details about what was evaluated during a qualitative RPA. Certain fact sheets and WQA documents lack details about the WQCD's basis for including WET monitoring and effluent limitations; fact sheets would be strengthened with a clear discussion of the WQCD's evaluation for WET. While most permits reviewed contained either chronic or acute monitoring and limits, one permit did not. The WQA for the permit indicated that acute WET testing was applicable for the facility and would be included in the permit, whereas the fact sheet indicated that there was no RP for WET so the permit would not establish monitoring or limitations. A demonstration of the RP determination was not provided, nor an explanation of why the fact sheet contradicted the WQA.

#### WQBEL Development

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

#### Action Items

Essential	<ul style="list-style-type: none"> <li>• <u>Reasonable Potential</u></li> <li>• Reasonable Potential Analyses for determining whether limits are needed must be based on any data that are available at the time of permit development, in accordance with 40 CFR 122.44(d). EPA's <i>Technical Support Document for Water Quality-based Toxics Control (TSD)</i>, <i>Permit Writers' Manual</i>, and <i>WET Permit Writers' Manual</i> provide guidance on conducting statistical analyses, including determining a coefficient of variation and multiplication factors, to account for effluent variability in small data sets.</li> <li>• <u>WQBEL Development</u></li> <li>• The PQR did not identify any essential action items for this section.</li> </ul>
Recommended	<ul style="list-style-type: none"> <li>• <u>Reasonable Potential</u></li> <li>• The WQCD should consider providing more detail in the fact sheet or WQA about the qualitative RPA and a discussion specific to the discharge.</li> <li>• The WQCD should consider providing more detail in the fact sheet or WQA about the evaluation for WET monitoring and effluent limitations.</li> <li>• <u>WQBEL Development</u></li> <li>• The PQR did not identify any recommended action items for this section.</li> </ul>

### ***3. Final Effluent Limitations and Documentation***

#### ***Background and Process***

Permits must reflect all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations consistent with all applicable CWA standards. The permitting authority must identify the most stringent applicable 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 water quality standards regulations at 40 CFR 131.12 outline the common elements of the antidegradation review process.

In addition, permit records for POTWs and industrial facilities must contain adequate documentation of the development of all effluent limitations. Documentation for technology-based effluent limits includes assessment of applicable water quality standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures to determine the need for WQBELs and the basis for establishing, or for not establishing, WQBELs should be clear and straightforward. The permit writer must 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 must sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

Antidegradation provisions for Colorado are established in Regulation 31.8 and establish three levels of protection for Colorado's waters: Outstanding Waters, Reviewable Waters, and Use Protected Waters. Reviewable waters *"are to be maintained and protected at their existing quality unless it is determined that allowing poorer water quality is necessary to accommodate important economic or social development in the area in which the waters are located."* New or increased water quality impacts to reviewable waters must undergo an antidegradation review. The WQCD's *Antidegradation Significance Determination for New or Increased Water Quality Impacts* (December 2001) provides a methodology to ensure that antidegradation reviews are conducted in a consistent manner. For a reviewable water, the first consideration is to determine if new or increased impacts are expected. If they are expected, the next step is to go through the significance determination tests and calculate antidegradation-based effluent limitations (ADBELs). If a new or increased water quality impact is determined to result in significant degradation, then an ADBEL is needed. If a new or increased water quality impact is determined to result in a finding of no significant degradation, then the new limitations would be the WQBELs. If the new or increased water quality impact is determined to result in significant degradation, and the permittee chooses to accept the levels that would keep them insignificant, such as the antidegradation-based average concentration (ADBAC) or the

Threshold Load (TL), then potential limitations would be the new WQBEL and the ADBEL set at the ADBAC or TL concentration. The ADBAC and potential new WQBEL are compared and if the ADBAC is less than the WQBEL, then the WQBEL is found to result in significant degradation and the permittee could elect to accept the ADBAC along with the WQBEL or could pursue an alternatives analysis for an effluent limitation set as some limit resulting from the alternatives analysis. If the ADBAC is not less than the WQBEL, then the WQBEL is found to have no significant impact and becomes the effluent limitation. ADBELs will only be applied in addition to WQBELs if a determination of significant degradation has been made.

Colorado's Regulation 61.10 sections (e), (f), and (g) address anti-backsliding. The anti-backsliding provisions appear to be interconnected with the antidegradation provisions and CDPS fact sheet language similarly discusses the two provisions jointly, and in general terms.

Colorado's Regulation 61.8(2)(g), consistent with 40 CFR 122.45(d)(1), indicates that for continuous discharges, all permit effluent limitations, including those necessary to achieve WQS, will, unless impracticable, be stated as maximum daily and average monthly discharge limitations for all dischargers other than POTWs, and as average weekly and average monthly discharge limitations for POTWs. EPA's TSD and Permit Writers' Manual offer guidance and procedures for calculating both short-term and long-term effluent limitations consistent with the NPDES regulations.

### *Program Strengths*

Fact sheets documented the permit writers' evaluation of effluent limitations, and final permit limits were protective of both technology and water quality standards, where applicable.

### *Areas for Improvement*

Some permits reviewed lacked both short-term and long-term limits for certain nonconventional and priority pollutants, and fact sheets lacked justification that the WQCD determined that establishing both short- and long-term effluent limitations is impracticable, per 40 CFR 122.45(d).

Certain permits reviewed included less stringent effluent limitations than the previous permit, and their records lack demonstration of an anti-backsliding analysis and sufficient justification for the less stringent effluent limitations. In general, fact sheets did not discuss anti-backsliding specific to the discharge, so it was unclear to reviewers if the permit writer considered anti-backsliding during permit renewal. Fact sheets contained a generic statement indicating that because the receiving water is designated as use-protected, the anti-backsliding requirements have been met. EPA recommends that WQCD fact sheet templates include standard language and prompts for permit writers regarding anti-backsliding discussions to ensure that permit writers address permitting considerations consistently.

*Action Items***Essential**

- The WQCD must ensure both short- and long-term effluent limitations are established consistent with 40 CFR 122.45(d).
- The WQCD must conduct and document anti-backsliding evaluations when reissued permits contain effluent limitations less stringent than those in the previous permit, per 40 CFR 122.44(l).
- If it is impracticable to establish both short-term and long-term limitations for a specific parameter per 122.45(d), the explanation of the basis of any alternate expression of permit limits must be included in the fact sheet (40 CFR 124.56(a)).

**Recommended**

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

## C. Monitoring and Reporting Requirements

*Background and Process*

NPDES regulations at 40 CFR 122.41(j) require permittees to 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 ensure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48(b) requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

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

must also specify the sample collection method for all parameters required to be monitored in the permit. The fact sheet should present the rationale for requiring grab or composite samples and discuss the basis of a permit requirement mandating use of a sufficiently sensitive Part 136 analytical method.

The WQCD permit writers establish monitoring frequencies based on the WQCD document, WQP-20, *Baseline Monitoring Frequency, Sample Type and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities* (effective May 1, 2007). Appendices A through D of the monitoring guidance document provide the starting point/template for establishing monitoring frequencies and other monitoring requirements. Reporting requirements are established based on discharge categories, facility size, and industrial sectors, in conjunction with the monitoring frequency policy. In addition, other reporting requirements are developed for special studies, additional monitoring studies, mixing zone analyses, and compliance schedules based on interim benchmarks to report status of progress toward achieving compliance with final effluent limitations. Permits contain requirements for permittees to report monitoring data electronically and use sufficiently sensitive analytical test methods, capable of detecting and measuring pollutants at, or below, applicable water quality criteria or permit limitations. Permit writers review application data with attention to whether sufficiently sensitive methods were employed for the analysis and ensure that the permits include the requirements to use appropriate analytical methods.

### *Program Strengths*

Permits clearly identified and described influent and effluent monitoring locations and established monitoring frequencies and sampling types appropriate for the discharge. Permits required electronic submittal of monitoring results and use of sufficiently sensitive analytical methods.

### *Areas for Improvement*

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

### *Action Items*

#### Essential

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

#### Recommended

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

## D. Standard and Special Conditions

### *Background and Process*

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

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

The WQCD uses boilerplate language for standard NPDES conditions and includes the standard conditions in Part II of all permits. The WQCD updates standard conditions as federal requirements change. In addition, the WQCD establishes special conditions for inspections, corrective actions, surface water management plans, best management practices, and annual report requirements.

The state of Colorado is not authorized to administer the Pretreatment program; however, Region 8 has collaborated with the WQCD to ensure that permits for municipalities with approved Pretreatment programs contain narrative conditions to implement Pretreatment program requirements. In addition, permits for municipalities without approved Pretreatment programs contain Industrial Waste Management narrative conditions to implement the federal monitoring and recordkeeping requirements at 40 CFR 122.44(j).

### *Program Strengths*

Standard conditions have improved since the last PQR. Standard conditions that are included in the permit are clearly identified and well organized.

### *Areas for Improvement*

Standard conditions are generally complete, except for the following omissions:

- Penalty language at 40 CFR 122.41(j)(5) for falsification, tampering with, or knowingly rendering inaccurate any monitoring device or method required to be maintained under the permit; This was observed in the following permits:
  - Town of Fowler – CO0021571
  - Public Service of Colorado – CO0000612
  - Metro Water Recovery Hite – CO0026638, and

- The additional reporting requirement for non-POTWs at 40 CFR 122.42(a).

The WQCD allows compliance schedules without a demonstration that the discharger cannot immediately comply with effluent limitations. Allowing a compliance schedule because it is uncertain or unknown whether the discharger can comply with an effluent limitation is not consistent with NPDES regulations at 40 CFR 122.47. As stipulated in EPA’s memo, *Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits* (May 10, 2007), “In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the discharger cannot immediately comply with the WQBEL upon the effective date of the permit.”

#### Action Items

##### Essential

- The WQCD must ensure all federal standard conditions contained in 40 CFR 122.41 and 122.42 are included in all NPDES permits.
- The WQCD must ensure that compliance schedules are granted in accordance with NPDES regulations at 40 CFR 122.47 and are appropriate based on a discharger's demonstration of an inability to immediately comply with effluent limitations.

##### Recommended

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

## E. Administrative Process

### Background and Process

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

Draft permits are posted on CDPHE’s website during the public notice period. In addition, the public notice is sent to the *Denver Post* with a link to CDPHE’s website where the public notice and all relevant documents are posted. Further, CDPHE posts public notices in the *Water Quality Information Bulletin*, a monthly publication to inform stakeholders of issues that are in public notice. The WQCD distributes a public notice summary list to all permittees included in the public notice, the counties involved, a WQCD email distribution list, and any other



interested parties. As public comments are received, WQCD permit writers or administrative support staff upload comment documents to OnBase.

The WQCD has received frequent permit appeals, mostly regarding permittee challenges to the permit. The WQCD encourages staff and permittees to exhaust the administrative procedures before issuing a permit appeal. Permit appeals are addressed through the Office of Administrative Courts.

### *Program Strengths*

The WQCD has taken the initiative to provide longer public notice periods to facilitate stakeholder engagement in the permitting process; some public notice periods have extended to 120 days. The WQCD clearly provides comments and responses to comments in the fact sheet, which provides greater transparency in the permit development process.

### *Areas for Improvement*

Records included the public notice for the original permit issuance but lacked public notices for subsequent permit modifications. Public notices lacked the address of the applicant and a brief description of the business, or activities conducted at the permitted location. The WQCD relies on the website to point the public to additional information, but the public notice document itself should clearly identify the necessary information.

### *Action Items*

#### Essential

- The WQCD must ensure that public notices include contents required at 40 CFR 124.10(d), including the address of the applicant (40 CFR 124.10(d)(1)(ii)) and a brief description of the business or activities conducted at the permitted location (40 CFR 124.10(d)(1)(iii)).

#### Recommended

- The WQCD should ensure that all public notices are retained in the permit administrative record.

## **F. Administrative Record and Fact Sheet**

### *Background and Process*

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or

statement of basis;<sup>7</sup> 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 at 40 CFR 124.8 and 124.56 require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

The WQCD develops fact sheets for all permits and includes, as an attachment, the WQA component outlining the RPA and WQBEL development. Fact sheets and the WQA document provided appropriate regulatory citations but sometimes lacked detail on the applicability of regulations to the specific permit conditions. Fact sheets provided informative summaries of effluent monitoring data, to illustrate compliance with existing effluent limitations and the WQCD's evaluation of data in the RPA. Fact sheets also described TBEL development, including discussion of applicable ELGs and illustration of TBEL calculations. Fact sheets included the required information and summarized the public comments received and the WQCD's responses.

CDPS permit records are maintained in an online database that provides direct public access to an extensive repository of permit records. The administrative record is retained in full on CDPHE's OnBase database.

### *Program Strengths*

The WQCD's transition to all-electronic recordkeeping and maintaining permit records in a publicly accessible portal is a program strength. CDPS fact sheets are consistently organized across all those reviewed and include the required elements.

### *Areas for Improvement*

The WQCD's records appears to lack documentation of application completeness reviews and administrative extensions of permits. The WQCD should expand the justification for permit conditions by discussing the relevance and applicability of Colorado's regulations instead of relying solely on providing the regulatory citation.

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

EPA recommends that the WQCD review and evaluate reorganizing the flow of information for the WQA and fact sheet, and possibly integrating information from the WQA into the fact sheets. The previous PQR included a similar finding. During this PQR, reviewers found it challenging to refer back-and-forth between the two documents to understand decisions. Further, EPA reviewers noted that in some fact sheets reviewed, there appeared to be a disconnect, and in some cases contradictory language, with how final effluent imitations were determined to be necessary and subsequently calculated. The transfer of information from the WQA to the fact sheet would greatly strengthen CDPS fact sheets and provide a more succinct and cohesive understanding of the RPA and resulting WQBELs. As a related matter, during QA/QC, the WQCD should ensure consistency with language detailing requirements between the permit and fact sheets; some permits and accompanying fact sheet rationale contained language that appeared contradictory.

EPA recommends, as a best practice, that the response-to-comments section of the fact sheet state whether a hearing was requested or held. EPA also recommends that the WQCD consider adding a more detailed record identifier to files in OnBase, to facilitate record searches.

#### *Action Items*

##### Essential

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

##### Recommended

- The WQCD should consider revising CDPS fact sheets to include more information from the WQA, as opposed to having parallel discussions in two documents.
- The WQCD should ensure that QA/QC reviews ensure language is consistent between the permit, fact sheet, and WQA.
- The WQCD should provide greater detail in CDPS fact sheets for the justification for permit conditions, in addition to the regulatory citations.
- The WQCD should include a statement in the fact sheet indicating whether a public hearing was requested and held.
- The WQCD should ensure that records include documentation of application completeness reviews and permit administrative extensions.
- The WQCD should consider adding a more detailed record identifier to files in OnBase to facilitate record searches.

## **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 PQRs.

The national topic 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 nutrient limits, many are derived from wasteload allocations in TMDLs, since state criteria are often challenging to interpret. This section considers waters that do not have a nutrient TMDL. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions. For the purposes of this program area, ammonia is considered as a toxic pollutant, not a nutrient.

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

To assess how nutrients are addressed in the CDPS program, EPA Region 8 reviewed three CDPS permits as well as Colorado's Regulations 31.17 and 85<sup>8</sup>. In 2017, CDPHE established a water quality roadmap<sup>9</sup> that outlines the strategy for developing nutrient water quality criteria over 10 years from 2017 to 2027. The WQCD developed Policy CW-8, *Colorado Nutrient Management Plan and 10-Year Water Quality Roadmap* (Effective October 30, 2020), which describes the plan and roadmap. CDPHE's *Clean Water Nutrients* website<sup>10</sup> lists some of the work the WQCD is doing to limit nutrient discharges to surface waters, including:

- Issuing CDPS permits with effluent limitations on total phosphorus (TP) and total nitrogen (TN) from large POTWs and certain industrial facilities, implementing Regulations 85 and 31.
- Issuing CDPS permits that implement TP control regulations specific to watersheds or basins (e.g., Cherry Creek Regulation 72) and nutrient related TMDLs.
- Providing financial assistance to permittees for nutrient treatment and plant upgrades.
- Working with stakeholders on the development of WQS for TN and TP for lakes and reservoirs.

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<sup>8</sup> Regulation 85 is a state control regulation issued under authority of Colorado Revised Statutes (C.R.S.) section 25-8-205 and is not a state water quality standard under the Clean Water Act which would have to be issued under section 25-8-203 and 204 C.R.S.

<sup>9</sup> <https://cdphe.colorado.gov/water-quality-10-year-roadmap>

<sup>10</sup> <https://cdphe.colorado.gov/clean-water-nutrients>

- Working with stakeholders to engage in nonpoint source reductions of nutrients through implementation of BMPs, outreach, and monitoring and evaluating trading opportunities.
- Collecting nutrient monitoring information from CDPS permittees.
- Collaborating with CDPS permittees on an incentives program to implement nutrient controls ahead of regulatory deadlines.

In 2012, the WQCC adopted a new section 31.17 in Regulation 31, the *Basic Standards and Methodologies for Surface Water*, to address nutrients. At the time the PQR was conducted, the most recent revisions to Section 31.17 had become effective on December 31, 2021. The regulation established interim numeric values for TP, TN (effective December 31, 2027), and chlorophyll-*a* for the protection of designated uses of Colorado surface waters. These interim values are applicable to waters located upstream of all permitted domestic wastewater treatment facilities, cooling tower discharges, and non-domestic facilities subject to Regulation 85 effluent limits. Chlorophyll-*a* values would be considered after December 31, 2022 when applying numeric standards to individual waterbody segments. Further, the TP and TN values will be considered after December 31, 2022, as discussed in the statement of basis and purpose in Regulation 31 at section 31.50(IV) “Use of Interim Nutrient Values”, when applying numeric standards to Direct Use Water Supply reservoirs and lakes or lakes and reservoirs with public swim beaches.

After December 31, 2027, WQCC will consider the TP and TN values when applying numeric standards to individual waterbody segments where TP and TN standards have not yet been adopted. As stated in Policy CW-8, starting in 2027, the WQCC plans to consider adopting numeric WQS for phosphorus and nitrogen for all Colorado surface waters. Regulation 31.55 states, “*After adoption of revised numeric nutrient standards in 2027 in rivers and streams, the commission intends that water quality based effluent limits will be implemented into permits after December 31, 2027.*”

In the interim, in lieu of establishing WQS in specific watershed basins, Colorado adopted Regulation 85, *Nutrients Management Control Regulation*, in June 2012. Regulation 85 is a technology-based approach which establishes numeric effluent limitations for domestic wastewater treatment plants and industrial wastewater dischargers that are likely to have significant levels of nutrients in their discharges. Regulation 85 identifies these limits as state-only, differentiating them from federal TBELs, and allows for trading and compliance schedule provisions for these limits. It also describes requirements for other point source dischargers and voluntary steps for nonpoint sources to address nutrients. Regulation 85 establishes monitoring requirements for point source dischargers and a program to monitor surface waters for nutrients and related parameters to characterize nutrient sources and current nutrient conditions in the receiving waters.

The interim numerical values adopted in section 31.17 are not intended to implement Colorado’s narrative water quality standards in discharge permits. WQCC indicates that

Regulation 85 constitutes a reasonable and appropriate first step in the implementation of Colorado’s narrative standards as they relate to nutrients. Therefore, compliance with Regulation 85 will be deemed to be compliance with the narrative standards unless and until the WQCC adopts subsequent revisions to Regulation 85 and/or Regulation 31.17. Colorado determined that this two-part strategy (Regulations 31.17 and 85) for addressing nutrients was the best policy option to make effective progress in nutrient management. Colorado believed that to rely on the usual WQS-based approach alone (table value criteria, followed by segment-specific WQS, along with possible temporary modifications and discharger-specific variances, then assessment and listing decisions, TMDL development, and then incorporation into discharge permits with compliance schedules) would result in substantially less progress in controlling nutrients in the next decade than the technology-based approach set forth in Regulation 85.

Regulation 85 establishes mandatory requirements for select<sup>11</sup> existing and new POTWs and non-POTWs (e.g., industrial facilities). Effluent limits were set for TP and total inorganic nitrogen (TIN). Exclusions are provided for POTWs below 1 MGD and POTWs in disadvantaged communities, and a delayed implementation deadline of December 31, 2027 for the effluent limits that were established for POTWs currently permitted, POTWs with a design capacity less than 2 MGD, and POTWs in certain watersheds. Regulation 85 also requires all POTWs discharging to surface waters to monitor effluent nutrient concentrations. The frequency of monitoring is determined by design capacity—major facilities are required to monitor monthly and non-major facilities are required to monitor every two months. Any POTW that is not owned by a disadvantaged community and has a design capacity in excess of 1 MGD also must monitor nutrient concentrations in the receiving stream.

In 2017, Colorado developed a voluntary incentives program, Policy 17-1, to encourage early reductions of nutrients by domestic and non-domestic wastewater treatment works, despite delaying the adoption of numeric nutrient values to 2027. A facility that reduces nutrient levels to below the Regulation 85 technology-based limits will be offered an incentive in the form of an extended CDPS permit compliance schedule, which increases the number of years that the wastewater facility has to meet the WQBELs after 2027. The longest compliance schedules will be available to those facilities that reduce both total phosphorus and total inorganic nitrogen to the lowest levels. Policy 17-1 outlines how this approach is consistent with compliance schedule regulations, indicating that facilities which expend funds to achieve early reductions under the Incentive Program will need time to raise funds for any additional facility modifications necessary to achieve WQBELs after 2027.

The PQR team reviewed permits for a major POTW, a non-major POTW, and a coal-fired steam electric power plant. Records for all three included fact sheets and WQA documents that described the basis for permit requirements for nutrient parameters. In the discussion of impaired waters and TMDLs, none of the fact sheets or WQA documents indicated the receiving

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<sup>11</sup> In general, Regulation 85 applies to all POTWs with CDPS permits, private entities with CDPS permits for sewage system discharges, and industries with CDPS process water permits in SIC Major Group 20.



waterbody was impaired for nutrient parameters; other parameters were named that did not include nutrient parameters. A summary of observations for the three permits reviewed is presented below.

**CO0000612 Public Service Co. of Colorado (non-POTW, a coal-fired steam electric power plant):**

The fact sheet and WQA for the coal-fired steam electric power plant indicated sufficient data for total inorganic nitrogen (TIN) were available to conduct a quantitative RPA and the analysis resulted in a finding of no RP for TIN (i.e., the maximum estimated pollutant concentration was less than half of the maximum allowable pollutant concentration). However, the WQCD established a semiannual monitoring requirement for TIN to collect data to conduct a quantitative RPA during the next permit renewal.

Initially, the draft permit fact sheet identified that there was TP in the discharge and the permit required TP monitoring. During the public comment period, the permittee noted that there is no water quality standard for phosphorus for the receiving water, cooling water discharges are exempt from phosphorus effluent limitations (Regulation 85.5(3)(b)(ii)), and the 24-month nutrient monitoring requirement for cooling towers (Regulation 85.6(2)(a)) had been satisfied between 2012 and 2014. The state removed TP monitoring from the permit on the basis that there were no stream standards for phosphorus and the facility was not subject to Regulation 85 requirements.

**CO0024171 City of Westminster, Big Dry Creek Wastewater Treatment Facility (POTW, design capacity of 11.9 MGD):**

The permit reviewed for the major POTW established effluent limitations for TIN and TP based on Regulation 85.5(1)(a)(iii) and established monthly monitoring for TIN and TP that is consistent with Regulation 85.6(2)(b). The permit allowed a compliance schedule for TIN and TP. The fact sheet indicated there was reasonable potential for the facility to cause excursions of the interim nutrient water quality standards (Regulation 31.17). However, there was no assimilative capacity available for the potential interim standards, so Regulation 85 TBELs will apply until appropriate alternative effluent limits are developed (i.e., based on WQS). The permit did not require ambient monitoring as described in Regulation 85.6(2)(b)(ii). However, the fact sheet states, “*This nutrient monitoring is not currently required by a permitting action but is still required to be done by the Reg. 85 nutrient control regulation. Nutrient monitoring for the Reg. 85 control regulation is currently required to be reported to the WQCD Environmental Data Unit.*” The fact sheet for the major POTW indicates the facility is participating in the Policy 17-1 Voluntary Incentive Program for Early Nutrient Reductions.

**CO0020150 Town of La Jara (POTW, design capacity of 0.17 MGD):**

The permit reviewed for the non-major POTW established a WQBEL with a compliance schedule and interim effluent limitations for TIN, where TIN is used to address the numeric nitrate standard for drinking water applicable downstream of the discharge. The WQCD evaluated



effluent monitoring data for TIN collected in accordance with Regulation 85 for the period from January 2017 through November 2017, and set the maximum reported TIN as the interim limit in the compliance schedule. The permit also established monthly effluent monitoring for TIN. The TBELs in Regulation 85 do not currently apply to the facility because the wastewater treatment plant is below the 1.0 million gallons per day threshold identified in Regulation 85.5(1)(a)(i). The permit does not identify TP as a pollutant of concern and the fact sheet and WQA refer to TP in terms of the general requirements established in Regulation 85. The fact sheet for this non-major POTW includes the same language as noted above for the major POTW, related to ambient monitoring requirements from Regulation 85.

### *Program Strengths*

CDPHE has indicated that it is committed to continuing to make progress to develop and refine appropriate and protective nutrient criteria for Colorado and achieve additional nutrient reductions. In addition, CDPHE has indicated that it is dedicated to implementing an extensive and transparent stakeholder process. CDPHE has developed a roadmap, invited stakeholders to participate in the nutrient WQS development process, and provided an array of information for the public and permittees on their website. CDPS permits established effluent limitations and monitoring requirements consistent with CDPHE's Regulation 85. Fact sheets and WQA documents identified applicable WQS, presented data available for consideration, discussed the outcome of the RPA, and clearly identified the regulatory basis for effluent limitations, as appropriate. The WQCD's decisions during the development of the three permits reviewed appeared logical given the information available and regulations applicable at the time.

EPA recognizes the incremental progress that has been made with Regulation 85 and Policy CW-8, and encourages the continued development of water quality standards for TN and TP and implementation of nutrient controls in NPDES permits.

### *Areas for Improvement*

Permits should specifically include all monitoring conditions required by Regulation 85.6, as these are enforceable requirements for the NPDES permittee.

One of the three permit files reviewed (CO0000612, Public Service Co. of Colorado) contained some language in the WQA and fact sheet that was not consistent with permit conditions (e.g., fact sheet suggested an effluent limitation was established for TIN; however, the permit did not establish an effluent limitation) and the inconsistency appeared to have been an oversight during QA/QC of the permit package. As discussed in section III.A.2, permit applications lack data; therefore, none of the applications reviewed for this topic area included data for nutrient parameters. Section III.A.2 includes an action item to address this observation.

*Action Items***Essential**

- Ensure that permits explicitly contain monitoring conditions as required by Regulation 85.6 (40 CFR 122.48(b)).

**Recommended**

- Ensure that language in the fact sheet and WQA are consistent with what the permit requires (can be addressed during QA/QC).

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

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

*Background*

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

The food processing sector manufactures edible foodstuffs such as dairy, meat, vegetables, baked goods, and grains from raw animal, vegetable, and marine material. The main constituents of food processing wastewaters are 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 are 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) require POTWs with approved pretreatment programs to continue to develop and apply local limits (LLs) as necessary to control any pollutant that can reasonably be discharged into the POTW by an IU in sufficient amounts to pass through or interfere with the treatment works, contaminate its sludge, cause problems in the collection system, or jeopardize workers. POTWs that do not have approved

pretreatment programs may also be required to develop specific LLs as circumstances warrant (see 40 CFR 403.5(c)(2)). LLs and other site-specific requirements are enforced by the POTW through IU control mechanisms.

The General Pretreatment Regulations require an Approval Authority to ensure that all substantive parts of the POTW's pretreatment program are fully established and implemented, including control mechanisms a POTW issues to its IUs to reduce pollutants in the indirect discharge (see 40 CFR 403.11). Colorado Department of Public Health and the Environmental (CDPHE) issues NPDES permits to POTWs in Colorado but does not have the authority to implement the pretreatment program; therefore, EPA Region 8 is the Approval Authority for Colorado POTWs and is responsible for administering the pretreatment program consistent with provisions of the Clean Water Act. This includes identifying appropriate conditions to be incorporated into POTW NPDES permits concerning pretreatment requirements, approving pretreatment programs established by local Control Authorities, and reviewing and approving modifications of existing approved program elements, such as sewer use ordinances (SUOs), LLs, and enforcement response plans (ERPs). EPA Region 8 also reviews POTW annual pretreatment program reports and takes enforcement actions when necessary. POTWs with approved pretreatment programs have the authority to issue permits to industrial users discharging to the POTW.

For purposes of this PQR, the EPA HQ team evaluated both inclusion of Pretreatment language in CDPS permits by the CDPHE and the implementation of the Pretreatment program by EPA Region 8.

Table 1 identifies the pretreatment and NPDES requirements considered during this PQR. In this table, the terms Director and Permitting Authority refer to EPA Region 8. The term Control Authority refers to the two POTWs with approved pretreatment programs (Metro Wastewater Reclamation District and South Platte Renew), or to EPA Region 8 for the two POTWs without an approved pretreatment program (City of Delta and Town of Fowler).

*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

### *Findings*

As shown in Table 2, 26 POTWs in Colorado, or approximately 15% of all NPDES-permitted POTWs, have an approved pretreatment program. Those POTWs are the control authorities for a total of 76 non-categorical significant industrial users (NCSIUs) and 175 categorical industrial users (CIUs). EPA Region 8 is the approval authority, providing oversight, to CIUs that discharge to POTWs without an approved pretreatment program; where EPA Region 8 has determined that an industrial user meets the definition of a non-categorical SIU, the current practice is for EPA Region 8 to require the POTW to develop a pretreatment program and apply local limits to the SIU.

*Table 2. Colorado SIUs by Pretreatment Program Status*

SIU Description	Number of SIU(s) Where POTW is Control Authority (26 POTWs) <sup>1</sup>	Number of SIU(s) Where EPA is Control Authority (174 POTWs without approved Pretreatment Programs) <sup>2</sup>	Total
Categorical Industrial User (CIU)	175	8	183
Non-CIU	76	0	76
<b>Total SIU</b>	<b>251</b>	<b>8</b>	<b>259</b>

<sup>1</sup> Data source: EPA Region 8 Pretreatment Coordinator, June 2024

<sup>2</sup> Data source: EPA's Integrated Compliance Information System (ICIS) query in May 2020

In EPA Region 8, the EPA Pretreatment Coordinator coordinates with both CDPHE and other EPA Region 8 staff to implement the pretreatment program. CDPHE has NPDES permitting authority in Colorado but is not authorized to administer the pretreatment program. As a result, CDPHE coordinates with EPA Region 8 in developing POTW permits, both for municipalities with approved pretreatment programs and without approved pretreatment programs. EPA Region 8 staff hold regular calls with CDPHE to stay informed about permit development. EPA Region 8 provides template language for the pretreatment portion of the permit for POTWs with approved or without approved pretreatment programs, and during the public comment period Region 8 reviews all permits and fact sheets for POTWs with approved pretreatment programs.<sup>12</sup>

<sup>12</sup> EPA Region 8 staff typically do not review POTW permit applications.

The EPA pretreatment coordinator provides general program oversight, such as reviewing annual reports, LLs, ERPs, and program modifications from approved programs. Staff use business databases to identify SIUs and CIUs in both approved and non-approved programs.

For non-approved programs, the EPA pretreatment coordinator reviews historical POTW data to verify whether a program is needed. This review is largely based on an examination of ICIS for recurring compliance issues. If issues are found, staff determine whether the pollutant source causing the problem is domestic or non-domestic, and if it is non-domestic whether the POTW needs to develop a pretreatment program.

The EPA pretreatment coordinator also conducts Pretreatment Compliance Audits (PCAs) and CIU inspections. Region 8 enforcement staff conduct Pretreatment Compliance Inspections (PCIs) and also helps with CIU inspections in non-approved POTWs.

Four POTW NPDES permits were reviewed as part of the PQR, as well as two control mechanisms for food processors discharging into the POTWs. Two of the POTWs whose permits were reviewed have approved pretreatment programs and the other two POTWs do not. Materials considered in the review included the NPDES permit application, the current NPDES permit and fact sheet, the response to comments for the current permit, the current SUO, the most recent pretreatment program annual report, any previous audit or inspection results, and permits and fact sheets for two IUs that discharge to approved programs. SUOs were identified for three of the POTWs, with the fourth POTW being required to develop local limits as part of a new pretreatment program.

Table 3 shows that 14 of the 68 SIUs in the programs reviewed are food processor IUs. There are currently no federal categorical pretreatment standards for food processors. EPA Region 8 helped select the permits for four POTWs that receive process wastewater from food processing facilities: two with approved pretreatment programs and two without. These POTWs were selected based on a review of data retrieved from the ECHO and ICIS-NPDES databases, pretreatment annual reports, and discussions with state and local officials.

Table 3 provides summary information about these four POTWs..

*Table 3. Colorado Permits Selected for Pretreatment Topic Area*

Permittee (SUO is linked, if available)	Permit No.	Approved Program?	Design Average Flow (MGD)	No. of SIUs <sup>1</sup>	No. of Food Processor IUs <sup>1</sup>	Example of SUO Controls
<a href="#">Metro Wastewater Reclamation District</a>	CO0026638	Yes	220	49	11	As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Ag, Zn, Tetrachloroethylene
South Platte Renew	CO0032999	Yes	50	18	2	As, Cd, Cr, Cu, CN, Pb, Hg, Mo, Ni, Se, Ag, Zn, Benzene, BTEX

Permittee (SUO is linked, if available)	Permit No.	Approved Program?	Design Average Flow (MGD)	No. of SIUs <sup>1</sup>	No. of Food Processor IUs <sup>1</sup>	Example of SUO Controls
City of Delta	CO0039641	No	2.45	0	0	Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Ag, Zn, Benzene, BTEX
<a href="#">Town of Fowler</a>	CO0021571	No	0.17	1 <sup>2</sup>	1 <sup>2</sup>	Not applicable <sup>3</sup>

<sup>1</sup> Based on the information provided in the permit application or pretreatment annual report. Includes SIUs and CIUs, but not non-significant CIUs or zero discharge SIUs.

<sup>2</sup> Fowler is developing a pretreatment program, under which Jensen's Blue Ribbon (a meat processor) will be newly designated as an SIU. This table reflects the eventual count of SIUs.

<sup>3</sup> Fowler's SUO does not establish any numeric limits on pollutants.

EPA reviewed two IU discharge permits issued by the POTWs with approved pretreatment programs to identify how and if any IU controls on conventional pollutants are being implemented in permits issued to food processors. Table 4 lists these IU permits.

*Table 4. Summary of Colorado Discharge Permit Conditions*

Facility Name	Permit Number	Receiving POTW <sup>1</sup>	Type of Food Processor	Classification by POTW	Average Process Wastewater Discharge (gallons per day [gpd]) <sup>2</sup>	Monitored Pollutants <sup>3</sup>
Coca-Cola	3830-4	Metro	Beverage	SIU	175,000	As, Cr, Cu, Pb, Mo, Ni, pH, Se, Ag, Zn
Meadow Gold Dairies	88-04	South Platte Renew	Dairy	SIU	55,000	pH, flow, BOD, COD, TSS <sup>4</sup>

<sup>1</sup> No permitted food processing IUs were identified for Delta or Fowler.

<sup>2</sup> Based on information included in the POTW's NPDES permit application or the IU permit.

<sup>3</sup> Includes parameters identified in the permit with numerical discharge limits or monitoring only requirements.

<sup>4</sup> BOD, COD, and TSS do not have numeric effluent limits, but are subject to surcharge fees based on specified thresholds.

Insufficient monitoring of a potentially inconsistent-quality IU discharge may prevent a POTW from detecting and expeditiously reacting to influent quality changes. EPA compared IU effluent limitations and discharge monitoring frequencies for food processors with those for the receiving POTWs to evaluate the adequacy of IU discharge monitoring frequencies to support timely detection of discharges with the potential to cause problems with the POTW collection or treatment systems. Table 5 shows discharge permit conditions for the IU permits reviewed for this PQR compared to the NPDES permits conditions for the receiving POTWs.

Table 5. Colorado Discharge Permit Conditions

IU and Receiving POTW	Pollutant Monitoring Frequency and Limit <sup>1</sup>									
	Total P		Ammonia		BOD		TSS		O&G	
	frequency	limit	frequency	limit	frequency	limit	frequency	limit	frequency	limit
<b>Metro Reclamation</b>										
Metro Wastewater Reclamation District	Monthly	1.0 mg/L RAM, 2.5 mg/L 95 <sup>th</sup> % <sup>2</sup>	2x/Week	7.3-13.0 mg/L WA, 3.2-6.1 mg/L MA <sup>3</sup>	2x/Week	[CBOD] 25 mg/L WA, 17 mg/L MA, 85% removal MA	3x/Week	45 mg/L WA, 30 mg/L MA, 85% removal MA	Contingent <sup>4</sup>	10 mg/L DM
Coca-Cola	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>South Platte Renew</b>										
South Platte Renewal WWTP	Monthly	1.0 mg/L RAM, 2.5 mg/L 95 <sup>th</sup> % <sup>2</sup>	2x/Week	16-32 mg/L WA, 4.1-8.7 mg/L MA <sup>3,5</sup>	2x/Week	[CBOD] 40 mg/L WA, 25 mg/L MA, 85% removal MA	2x/Week	45 mg/L WA, 30 mg/L MA, 85% removal MA	Contingent <sup>4</sup>	10 mg/L DM
Meadow Gold Dairy	N/A	N/A	N/A	N/A	Monthly	200 mg/L (CBOD 500 mg/L) <sup>6</sup>	Monthly	300 mg/L <sup>6</sup>	N/A	200 mg/L <sup>7</sup>

<sup>1</sup> For this table, not applicable is abbreviated N/A, daily maximum is abbreviated DM, weekly average is abbreviated WA, and monthly average is abbreviated MA.

<sup>2</sup> Total phosphorus is report only at the beginning of the permit: on January 1, 2023, the limit shifts to a running annual median (RAM) and a 95<sup>th</sup> percentile as the effluent limits.

<sup>3</sup> The ammonia limit varies by month; these values represent the range.

<sup>4</sup> Visual monitoring for oil and grease is required twice per week; if a visible sheen is observed, a grab sample is taken and evaluated against the effluent limit.

<sup>5</sup> Ammonia limit becomes more stringent as of July 1, 2023. Values shown are for the initial limits.

<sup>6</sup> The IU permit does not contain specific discharge limits, but the values shown are the threshold for assessing a surcharge.

<sup>7</sup> The IU permit contains a prohibition on FOG in wastewater that exceeds 200 mg/L, but there are no specific monitoring requirements for FOG.

## Program Strengths

### Approved Programs

The NPDES permits for Metro and South Platte contain effluent limitations for CBOD, TSS, and pH based on secondary treatment standards in accordance with 40 CFR 133.102. South Platte also has a more stringent lower limit for pH (6.5 instead of 6.0 from the secondary treatment standards). Both permits also include requirements to monitor and report on nutrients (total phosphorus, ammonia, and total inorganic nitrogen).

The permits for Metro and South Platte state that permittees must operate a POTW pretreatment program in accordance with the federal General Pretreatment Regulations at 40



CFR Part 403, state, and local laws and regulations, and the approved pretreatment program and any approved modifications. Additionally, the permits include requirements for the identification of SIUs discharging to the POTW, sampling at SIUs, permit renewal timelines, noncompliance remedies, and maintaining adequate resources for implementing the pretreatment program.

Overall, Metro and South Platte appear to have adequate conditions in place for the POTW to identify SIUs. Neither Metro and South Platte appeared to have reported compliance issues with POTW performance related to waste from food processors, nor did any food processors appear to have a history of significant compliance issues.

Both POTWs correctly identified industrial users as food processing SIUs in their annual reports.

Both POTWs issued fact sheets along with IU permits. The fact sheets provided details on the derivation of effluent limits, a summary of limits and monitoring requirements, and a review of the compliance history of the IU. Both sets of IU fact sheets were commendable for the level of detail and clarity.

Both permits also contain appropriate language for the POTW to notify EPA about the introduction of new pollutants from an indirect discharger or changes in the volume or nature of influent from indirect dischargers (40 CFR 122.42(b)). Additionally, South Platte specifies the timeframe for “adequate notice” as 60 days. This helps to ensure that the POTWs are able to adjust, as needed, to potential changes in discharges from food processors to prevent disruption to the POTW operations.

The annual reports for both POTWs use the same Excel template, making them easy to follow.

#### Non-approved POTWs

At the time of PQR development, Fowler was in the process of developing a pretreatment program, as required by EPA Region 8. This is consistent with Region 8’s approach to require a program when an SIU is identified within a POTW’s service area. This will also be useful in working toward improved compliance for the Fowler POTW, which has at times struggled to treat the pollutant loads from Jensen’s Blue Ribbon, a meat processor; the NPDES fact sheet noted violations for BOD, TSS, and flow, and stated that the effluent from Jensen’s appears to be causing passthrough or interference.

The NPDES permits for Delta and Fowler contain effluent limitations for BOD, TSS, and pH based on secondary treatment standards in accordance with 40 CFR 133.102. Both permits have a more stringent lower limit for pH (6.5 instead of 6.0 from the secondary treatment standards). Both permits include effluent limits and monitoring requirements for inorganic nitrogen and ammonia.

Both permits contain appropriate language for the POTW to notify EPA about the introduction of new pollutants from an indirect discharger or changes in the volume or nature of influent

from indirect dischargers (40 CFR 122.42(b)). Additionally, both permits specify the timeframe for “adequate notice” as 60 days. This helps to ensure that the POTWs are able to adjust as needed to potential changes in discharges from food processors to prevent disruption to the POTW operations.

### *Areas for Improvement*

#### Approved Programs

In general, the fact sheets for Metro and South Platte contain minimal information about the pretreatment program. The fact sheets acknowledge that a pretreatment program is required but give no further information. The fact sheets lack the following:

- The fact sheets for Metro and South Platte do not provide the approval date for the pretreatment program, or the dates of any program modifications. While the permits include the initial program approval date, they also state that there have been multiple program revisions; neither the dates for these revisions or the nature of the modifications are provided in the permit or fact sheet. This information can be important to ensure that the program has been updated to conform with current federal regulations.
- The fact sheets for Metro and South Platte do not specify the basis for requiring the POTW to implement a pretreatment program. Including this information in the POTW NPDES permit fact sheets is important for documenting the rationale for the POTW’s monitoring and sampling requirements. The criteria for requiring a program are found at 40 CFR 403.8(a).
- The fact sheets for Metro and South Platte do not state when LLs were last evaluated and the date that the current limits were adopted. While the permits do appropriately require a review of the LLs during each permit renewal, permit writers should specify the POTW’s most recent LLs submission date in the permit or fact sheet to ensure that the program is adequately evaluating its LLs, in compliance with the federal regulations.
- The annual reports for both POTWs indicate permitted waste haulers, but the fact sheets for Metro and South Platte do not identify hauled waste received (volume nor character). The POTW permit fact sheets should include information on any hauled wastes being contributed to the POTW to inform permit writers of the current pollutant loadings from hauled waste to the POTW and identification of changes in pollutant loadings from hauled waste sources for future permit revisions.
- The fact sheets for Metro and South Platte do not identify and characterize any contributing industrial dischargers (including food processors), nor do they identify the POTW’s organic (conventional) and nutrient pollutant capacity.

The NPDES permit application for Metro, dated 2012, may not have reflected the most current operating status of the POTW. Metro’s current permit became effective July 1, 2018, but in the

records provided, the most recent complete NPDES permit application was submitted August 24, 2012, and then updated multiple times (with none of the updates consisting of a full copy/new application). NPDES regulations require that a complete application be submitted prior to permit expiration. According to the fact sheet, the 2012 application was timely and complete, meaning that Metro was not required to submit a new application during the period when the permit was administratively extended.

As noted in Section III.A.2 above, the NPDES permit application used by CDPHE does not request all of the information required in application [Form 2A](#); this is also true for the pretreatment sections of the application. For example, the CDPHE application does not request information about the status of a POTW's approved program, nor does it request sufficiently detailed information about discharges from IUs (including applicable effluent limits and recent monitoring data). This information is needed in the application so that the permit writer and pretreatment staff can properly evaluate whether the permit requirements (including a pretreatment program) are sufficiently protective.

#### Non-approved Programs

Fowler's permit does not require LLs, though the POTW is developing LLs as part of developing a pretreatment program. Delta has already established a surcharge program for BOD, which can also serve to manage high strength untreated wastes from being discharged.

Fowler's permit includes a limit for TSS under a state alternative standard for lagoons (75 mg/l MA, 110 mg/l WA), instead of the typical secondary treatment standard. The fact sheet does not describe whether these state-level standards have been approved by EPA or how they were developed. Findings regarding alternative limits to secondary treatment standards are addressed in more detail under Section III.B.1 of this PQR.

The records for both Delta and Fowler do not sufficiently discuss hauled waste. The POTW permit fact sheets should include information on any hauled wastes being contributed to the POTW.

*Action Items***Essential**

- The WQCD must ensure that fact sheets comprehensively characterize the industrial loadings to the POTW; list all IUs and the nature and volume of their wastestreams (per 40 CFR 122.44(j)(1)); characterize hauled wastes; and evaluate the POTW's treatment capacity and the relative contribution by the IUs.
- The WQCD must ensure permit application forms for POTWs require data and information consistent with 40 CFR 122.21(j).

**Recommended**

- The WQCD should ensure that fact sheets specify the basis for requiring a pretreatment program (see 40 CFR 403.8).
- The WQCD should ensure that fact sheets include the dates of program approval and any program modifications (see 40 CFR 403.8).
- The WQCD should ensure that documentation of the local limits review under 40 CFR 122.44(j)(2)(ii) is included in the permit file, including the most recent local limits submission date.
- The WQCD should ensure that permits are developed using accurate and up-to-date information; when possible, permit application data that is older should be reviewed, supplemented, or revised.

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

*Background*

As part of this PQR, EPA reviewed the state's small MS4 general permit for consistency with the Phase II stormwater permit regulations. In 2017, EPA's updates to the small MS4 permitting regulations (referred to as the "Remand Rule") took effect to clarify: (1) the procedures to be used when using general permits (see 40 CFR 122.28(d)); (2) the requirement that the permit establish the terms and conditions necessary to meet the MS4 permit standard (i.e., "to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act"), including conditions to address the minimum control measures, reporting, and, as appropriate, water quality requirements (see 40 CFR 122.34(a) and (b)); and (3) the requirement that permit terms must be established in a "clear, specific, and measurable" manner (see 40 CFR 122.34(a)). However, this review did not assess implementation of the

Remand Rule since the state permit was issued prior to the effective date of the rule, therefore the updated regulations were not applicable.

EPA Region 8 reviewed the Statewide MS4 GP (COR090000), which was issued on April 15, 2016, became effective July 1, 2016, was modified several times since issuance, and expired on June 30, 2021. The permit has been administratively continued since the date of expiration.

The Statewide MS4 GP follows the standard format of general permits, containing all of the required eligibility, authorization and application information in Part 1 of the permit. Part 1 of the MS4 GP also contains the coverage area of the permit, which includes traditional MS4s (e.g. cities, counties). Non-traditional MS4s (e.g. military bases, universities) are permitted under a separate permit Non-Standard MS4 GP (COR070000). As with all of Colorado's general permits, the permit itself is posted on the WQCD's website. However, permit applications/Notices of Intent (NOIs) are not available online through the Colorado Environmental Records database. Other reporting information including permit certification letters, annual reports, and general correspondence is available through the database.

Since the MS4 GP was issued prior to the effective date of the Remand Rule, the permit was not able to fully incorporate all aspects of the Remand Rule requirements. For instance, it appears that the MS4 GP's general approach shares some of the same attributes of the Remand Rule's two-step general permit approach. The state certifies that the permittee is covered under the permit and specifies any additional requirements not contained in the GP. The permittee is then required to develop and provide an opportunity for public comment of the Program Description Document (PDD). The PDD (or stormwater management plan) describes how the permittee intends to comply with the requirements set forth in the GP and certification. The GP requires the "permittee follow state and local public notice requirements" but does not outline or otherwise identify specific state requirements. The permittee is required to have the ability to accept and respond to public comments received regarding the PDD. The state does not review or respond to the comments received during the public comment period. Modifications as a result of public comment are included in the PDD without further action from the state.

The primary requirements of the MS4 GP are in Part I of the permit including required control measures (typically best management practices), the 6 minimum control measures (MCMs), and the PDD of the permit. The 6 MCMs are broken into the following components: a) Permittee's requirements for that specific MCM, b) recordkeeping requirements for that MCM and c) PDD requirements for that MCM. Each of the six MCMs of the permit are outlined as described.

Compliance schedules are allowed for renewal and new permittees in Part 1 of the permit. The compliance schedules, which are in table format, provide the Permit Condition, Action, Deliverable and Deadline for several of the conditions in the 6 MCMs as well as the PDD.

Discharges to impaired waters with a TMDL are assigned a WLA and the permittees plan for meeting the WQA is reviewed by the state and approved. For discharges to impaired water

bodies without a developed TMDL, the certification from the state will include additional requirements that will be necessary to reduce the target pollutant in stormwater discharges.

The remainder of the MS4 GP meets the regulatory requirements applicable at the time the permit was issued, including the PDD, monitoring, record-keeping, and reporting.

#### *Program Strengths*

The 2016 MS4 GP was a well written, clear, and enforceable permit.

#### *Areas for Improvement*

As stated, the MS4 GP was issued prior to the MS4 Remand Rule becoming effective. As such, EPA did not review the permit for conformance with the updated regulations. The WQCD will be required to ensure that the reissued MS4 GP meets the requirements of the Remand Rule.

#### *Action Items*

##### Essential

- When the WQCD reissues its small MS4 GP, the permit will need to comply with Remand Rule (see 40 CFR 122.28(d)), 40 CFR 122.34(a) and (b), and 40 CFR 122.34(a)).

##### Recommended

- The permit should specify minimum public notice requirements for the public comment period of Program Description Document.
- The certification letter should be included in the Program Description Document for availability to the public.

## **V. REGIONAL TOPIC AREA FINDINGS**

Region 8 has selected to evaluate the Per- and Polyfluoroalkyl Substances (PFAS) Initiatives in Colorado, from the establishment of a PFAS policy to implementation of the policy requirements in NPDES Permits.

The purpose of the PFAS Initiatives review is to verify that permits and facts sheets implement the requirements of PFAS Policy 20-1. To implement the PFAS Policy 20-1, WQCD sent out initial PFAS Discharger surveys to its POTWs in 2020. For this PQR, four municipal POTW permits were reviewed, all with a design capacity above 1.0 MGD and therefore classified as major POTWs. Records for all four POTW permits included fact sheets and WQA documents that described the

basis for modifying permit conditions to include PFAS requirements, in accordance with PFAS Policy 20-1. A summary of observations for the three permits reviewed is presented below.

## **A. Per- and Polyfluoroalkyl Substances (PFAS) Initiatives**

The Colorado Water Quality Control Commission (WQCC) approved PFAS Policy 20-1 on July 14, 2020, to implement and interpret the narrative standard provisions in the commission's Regulations No. 31.11(1)(a)(iv) and No. 41.5(A)(1) for PFAS. Section 31.11(1)(a)(iv) of the commission's regulations states, in relevant part, that "state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life." Section 41.5(A)(1) states that "Groundwater shall be free from pollutants not listed in the tables referred to in section 41.5(B), which alone or in combination with other substances, are in concentrations shown to be...Carcinogenic, mutagenic, teratogenic, or toxic to human beings, and/or...A danger to the public health, safety, or welfare."

The WQCC determined that adopting Policy 20-1 was an appropriate step to address the complicated public health PFAS issue and will result in consistent monitoring results around the state, help the WQCC and CDPHE better understand the prevalence of and potential exposure to PFAS throughout the state, and reduce exposure to PFAS. PFAS Policy 20-1 directs the CDPHE to apply policy requirements for all existing and future, domestic and non-domestic, surface water and groundwater discharge permits issued by WQCD. The policy's approach for interpreting the PFAS narrative standards considers laboratory method and sampling, translating the narrative standards for PFAS, cleanup of contaminated groundwater, implementation in CDPS permits, and inclusion on Colorado's impaired waters list.

PFAS Policy 20-1 translates the narrative standards for a subset of the PFAS included on the Policy's Table 1 monitoring list: PFOA, PFOS, PFNA, PFHxS, and PFBS. These translation levels are chemical specific values that are based on available toxicity data at the federal level. The translation levels were developed using results from federally derived consensus findings regarding the toxicity of these constituents. PFAS outlined in the Table 1 monitoring list that could degrade or transform into PFOA, PFOS, PFNA, PFHxS, or PFBS were also identified. These "parent constituents" are listed in Policy 20-1, Table 2. The Policy interprets the narrative standard by ensuring the concentrations of measured parent constituents are first multiplied by the ratio of the degradate's (i.e., PFOA, PFOS, PFNA, PFHxS, or PFBS) molecular weight over the parent's molecular weight, and then added to the concentration of the degradate measured, before comparing to the translation level.

The PFAS translation levels are established in Table 3 of the PFAS Policy 20-1 and are presented below:



*Table 6. Translation Levels for PFOA, PFOS, PFNA, PFHxS, and PFBS (Source: Colorado PFAS Policy 20-1, Table 3).*

PFAS	Translation Level (ng/L)
PFOA	70*
PFOA parent constituents: 8:2 FTS (adjusted)**	70*
PFOS	70*
PFOS parent constituents: NEtFOSAA, NMeFOSAA, and PFOSA/FOSA (adjusted)**	70*
PFNA	70*
PFHxS	700
PFBS	400,000

\*Individually or combined

\*\*See Policy 20-1, Table 2, fifth column for adjustment.

In addition to establishing PFAS translation levels, PFAS Policy 20-1 establishes the following requirements for applicable NPDES permits.

- Permit condition for monitoring in permits and permit applications through the permittee’s duty to provide information. The Duty to Provide Information permit condition states the following: *“This standard permit provision states that a permittee shall furnish to the division any information which the division may request to determine whether cause exists for modifying or revoking and reissuing the permit, or to determine compliance with the permit.”* WQCD accounts for the type of activity producing the discharge, the size of the discharge, and the variability of the discharge when determining monitoring frequency, consistent with the division’s existing baseline monitoring frequency policy, Water Quality Permit-20.
- Continued Monitoring and Source Investigation. WQCD evaluates the initial PFAS monitoring dataset and determines if source investigation is necessary. Source investigations are likely to be required at municipal wastewater facilities with EPA-approved Pretreatment programs and at large industrial facilities.
- Effluent Limits. The Policy states the following: *“The division should establish numeric effluent limits based on the commission’s translation of the narrative standards in Table 3 of this policy. Effluent limits should be further based on analyses of reasonable potential consistent with Clean Water-1 (the division’s existing Reasonable Potential policy) or the specific reasonable potential procedures identified in the relevant general permit. However, the division also has, under this policy, the discretion to apply report-only monitoring or practice-based controls requirements, rather than numeric effluent limits, when there is a lack of data or there is significant uncertainty associated with a discharge, like short-term discharges of uncertain quantity. The division also has the discretion to postpone effluent limits for domestic wastewater facilities for the first permit term in order to give those facilities the opportunity to monitor and, if needed, to develop robust source control programs.”*

The CDPHE began implementing PFAS Policy 20-1 in 2021 with a PFAS survey to gather preliminary POTW information on PFAS sources in its service area, and based on the survey information, conducted permit modifications to require monitoring for PFAS and preliminary PFAS source identification.

**CO0026409— Broomfield Wastewater Treatment Facility (WWTF):**

The City of Broomfield’s response to the CDPHE survey identified the following:

- An airport in its service area is identified as a PFAS sources.
- Another industrial user in its service area stores 600 gallons of PFAS-containing foam.

As a result of the survey response, the CDPHE modified the City of Broomfield’s permit on November 30, 2021, to require preliminary PFAS monitoring and source investigation because it meets the criteria of a: capacity over 5 MGD, an EPA-approved Pretreatment program and industrial users, and its receiving waters are protected for water supply.

The CDPHE modified the Broomfield NPDES permit to require PFAS monitoring at the POTW’s outfall to Dry Creek and to require preliminary PFAS source investigation in the service area and, if needed, to begin source investigations and source control work to eventually limit the concentrations of PFAS discharged to its POTW. Broomfield is required in the permit modification to identify its most significant PFAS contributors that cumulatively comprise the majority of the PFAS contribution to its POTW and submit these findings to the CDPHE at the end of the two-year data collection period.

Based on EPA’s review of the 2021 permit modifications for the City of Broomfield, the CDPHE adequately implemented the monitoring and source investigation requirements of PFAS Policy 20-1. PFAS effluent limits established in the PFAS Policy 20-1 may be established in future modifications or renewals based on the results of the monitoring data and source investigation information.

**CO0026638— Metro Water Recovery, Robert W. Hite Wastewater Treatment Facility:**

The Metro Water Recovery’s (MWR) response to the CDPHE survey identified the following:

- MWR accepts discharges from the Denver International Airport (DIA) that may have historically stored, used, and/or released Class B firefighting foam.
- MWR receives non-domestic wastewater from the following categories: Airports, Aerospace, Automotive and automotive part manufacturing, including aftermarket, Chrome plating facilities, Centralized waste treaters: a facility that treats or recovers hazardous or non-hazardous industrial metal-bearing waste, oily waste, and organic-bearing waste from off-site, Landfills, Tanneries and Leather/Fabric/Carpet Treaters, Pharmaceutical manufacturing, Drinking water treatment plant, Electric generating, Rubber manufacturing, Semiconductor manufacturing, Medical devices manufacturing,

Electrical wire manufacturing, Electronics manufacturing, Paper and/or package manufacturing.

- MWR receives influent/effluent that contains detectable levels of PFAS, but that Metro has not conducted a source investigation. The MWR-Hite POTW has completed a limited identification of PFAS contributions from industrial users, commercial facilities, and residential populations within its service area.
- MWR submitted 2019-2020 discharge data from DIA that indicates the presence of some PFAS compounds at concentrations above the established translation level of 70 ng/l for the following PFAS pollutants:
  - 8:2 fluorotelomersulfonate
  - PFNA
  - PFOA
  - 6:2 fluorotelomersulfonate
  - PFBA
  - PFDA
  - PFDoA
  - PFHpA
  - PFHxA
  - PFPeA
  - PFTeDA
  - PFTrDA
  - PFUnA
- MWR submitted 2019 effluent data from the MWR-Hite POTW that indicated presence of PFAS compounds, including 24 of the 25 analytes listed in PFAS Policy 20-1.

As a result of the survey response, the CDPHE modified the MWR's permit on November 30, 2021, to require preliminary PFAS monitoring and source investigation because it meets the criteria of a: capacity over 5 MGD, an EPA-approved Pretreatment program and industrial users, and its receiving waters are protected for water supply.

The CDPHE modified the MWR permit to require PFAS monitoring at the POTW's outfall to the South Platte River and to require preliminary PFAS source investigation in the service area and, if needed, to begin source investigations and source control work to eventually limit the concentrations of PFAS discharged to its POTW. MWR is required in the permit modification to identify its most significant PFAS contributors that cumulatively comprise the majority of the PFAS contribution to its POTW and submit these findings to the CDPHE at the end of the two-year data collection period.

Based on EPA's review of the 2021 permit modifications for MWR, the CDPHE adequately implemented the monitoring and source investigation requirements of PFAS Policy 20-1. PFAS effluent limits established in the PFAS Policy 20-1 may be established in future modifications or renewals based on the results of the monitoring data and source investigation information.

**CO0032999— South Platte Renew Wastewater Treatment Facility:**

The South Platte Renew's (SPR) response to the CDPHE survey identified the following:

- SPR receives non-domestic wastewater from the following categories: "Aerospace; Automotive and automotive part manufacturing, including aftermarket; Recreational snow sports that uses ski wax; Chrome plating facilities; Centralized waste treaters: a facility that treats or recovers hazardous or non-hazardous industrial metal-bearing waste, oily waste, and organic- bearing waste from off-site; Landfills; Tanneries and Leather/Fabric/Carpet Treaters; Medical devices manufacturing; Electronics manufacturing."
- SPR reported that its POTW influent/effluent contains detectable levels of PFAS, but that the source of the PFAS is unknown.
- SPR PFAS data (influent, effluent, and ambient water quality samples) were collected in a single event on May 27, 2020. Data from effluent samples indicate the presence of PFAS in the discharge.

As a result of the survey response, the CDPHE modified the SPR's permit on November 30, 2021, to require preliminary PFAS monitoring and source investigation because it meets the criteria of a: capacity over 5 MGD, an EPA-approved Pretreatment program and industrial users, and its receiving waters are protected for water supply.

The CDPHE modified the SPR NPDES permit to require PFAS monitoring at the POTW's outfall to the South Platte River and to require preliminary PFAS source investigation in its service area and, if needed, to begin source investigations and source control work to eventually limit the concentrations of PFAS discharged to its POTW. SPR is required in the permit modification to identify its most significant PFAS contributors that cumulatively comprise the majority of the PFAS contribution to its POTW and submit these findings to the CDPHE at the end of the two-year data collection period.

Based on EPA's review of the 2021 permit modifications for SPR, the CDPHE adequately implemented the monitoring and source investigation requirements of PFAS Policy 20-1. PFAS effluent limits established in the PFAS Policy 20-1 may be established in future modifications or renewals based on the results of the monitoring data and source investigation information.

**CO0024171— City of Westminster, Big Dry Creek Wastewater Treatment Facility:**

The City of Westminster's response to the CDPHE survey identified the following:

- The City of Westminster receives non-domestic wastewater from the following categories: "Aerospace, Drinking water treatment plant.
- The City of Westminster stated that is it not aware of any discharger within the facilities collection system who has stored, used, released from its container, and/or discharged Class B firefighting foam (which may be labeled with a "B" or as "AFFF" foam and used to put out fires in flammable liquids such as gasoline, petroleum greases, tars, oils, oil-

based paints, solvents, alcohols and some flammable gases including propane and butane) containing per- and polyfluoroalkyl substances (PFAS).

As a result of the survey response, the CDPHE modified the City of Westminster's permit on June 30, 2022, to require preliminary PFAS monitoring and source investigation because it meets the criteria of a: capacity over 5 MGD, an EPA-approved Pretreatment program and industrial users, and its receiving waters are protected for water supply.

The CDPHE modified the City of Westminster NPDES permit to require PFAS monitoring at the POTW's outfalls to Big Dry Creek and to require preliminary PFAS source investigation in its service area and, if needed, to begin source investigations and source control work to eventually limit the concentrations of PFAS discharged to its POTW. The City of Westminster is required in the permit modification to identify its most significant PFAS contributors that cumulatively comprise the majority of the PFAS contribution to its POTW and submit these findings to the CDPHE at the end of the two-year data collection period.

Based on EPA's review of the 2022 permit modifications for the City of Westminster, the CDPHE adequately implemented the monitoring and source investigation requirements of PFAS Policy 20-1. PFAS effluent limits established in the PFAS Policy 20-1 may be established in future modifications or renewals based on the results of the monitoring data and source investigation information.

#### *Program Strengths*

Based on EPA's evaluation of the NPDES permit records, it appears that Colorado is adequately implementing the monitoring and source investigation requirements of PFAS Policy 20-1. The WQCD sent out a PFAS Discharger survey to gather initial PFAS IU sources and data to prioritize permit modifications for PFAS requirements. PFAS effluent limits established in the PFAS Policy 20-1 may be established in future modifications or renewals based on the results of the monitoring data and source investigation information.

#### *Areas for Improvement*

None identified.

#### *Action Items*

Essential

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

Recommended

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

## 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 21, 2017 through August 24, 2017. 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 as Essential.

**Table 1. Essential Action Items Identified During 2017 PQR**

Program Area	Action Item Title	Status Update
Permit Application	<i>The CDPHE's application form needs to include equivalent submittal requirements on the specific data that the applicants are required to submit in accordance with 40 CFR § 122.21. (Category One)</i>	<b>( In progress )</b> CDPHE addressed the comments in the 2017 PQR.  However, the 2022 PQR contains additional essential action items to be addressed.
	<i>CDPHE must ensure receipt of application information that is consistent with the application requirements established by 40 CFR § 122.21. (Category One)</i>	<b>( In progress )</b> CDPHE has developed internal procedures and training to meet this requirement.
Technology-based Effluent Limitations	<i>CDPHE should ensure that federal ELGs are applied appropriately and well-documented in the fact sheet. (Category One)</i>	<b>( In progress )</b> CDPHE has developed internal guidance and permit writer training on ELGs. Permit writers consult with EPA Region 8 on certain ELG permits to ensure consistency.
Water Quality-Based Effluent Limitations	<i>CDPHE should ensure that WQBELs are established as both short-term and long-term limit bases, as appropriate. (Category One)</i>	<b>( In progress )</b> CDPHE has developed internal procedures for permit writing to ensure



Program Area	Action Item Title	Status Update
		<i>establishment of appropriate limits.</i>
Monitoring and Reporting	<i>CDPHE should ensure that permits include EPA-approved analytical methods that capable of detecting and measuring pollutants at, or below, the applicable water quality criteria or effluent limitations. (Category One)</i>	<b>( In progress )</b>
Standard and Special Conditions	<i>CDPHE should ensure that CDPHE permits include all federal standard conditions and contain requirements that are consistent with those established in 40 CFR 122.41. (Category One)</i>	<b>In progress</b> CDPHE developed a NPDES Permit Part II Standard Conditions stakeholder workgroup to update the standard conditions and inform the Stakeholders.  <i>However, the 2022 PQR contains additional essential action items to address.</i>
Administrative Process (including public notice)	<i>CDPHE should ensure that public notices are published in a newspaper of general circulation, per federal regulations at 40 CFR § 124.10(c). (Category One)</i>	<b>Resolved</b>
	<i>CDPHE should ensure that the administrative record is complete between hard and electronic copy files. (Category One)</i>	<b>In progress</b> CDPHE has developed internal procedures and training to meet this requirement.
Documentation (including fact sheet)	<i>CDPHE should ensure that fact sheets include complete contact information for permit writers consistent with 40 CFR 124.8(b)(7). (Category One)</i>	<b>In progress</b> CDPHE has developed internal procedures and training to meet this requirement.
	<i>CDPHE must include a copy of the draft permit in all administrative records consistent with 40 CFR 124.9. (Category One)</i>	<b>Resolved</b>

Program Area	Action Item Title	Status Update
Stormwater	<i>CDPHE needs to ensure that all standard conditions are included in stormwater permits. Additionally, CDPHE needs to ensure that it is meeting the federal requirements in 40 CFR 122.34 and the technology-based effluent limitation guidelines in 40 CFR 450. (Category One)</i>	<b>In progress</b> <i>CDPHE has developed internal procedures and training to meet this requirement.</i>

## VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the recommendations from the 2017 PQR, conducted August 21, 2017 through August 24, 2017, and notes any State efforts to act on those recommendations. As discussed, previously, during the 2012-2017 PQR cycle, the EPA referred to action items that are recommendations to strengthen the state's program as either "Category 2" or "Category 3" action items. The EPA is consolidating these two categories of action items into a single category, listed as Recommended and requests the CDPHE provide updates on efforts to address the recommended action items as a follow up to the 2024 PQR report.

Program Area	Action Item Title	Status
<i>Basic Facility Information and Permit Application</i>	<i>CDPHE should ensure that the permit records contain documentation regarding the technical completeness of the permit applications.</i>	( Choose an item. )
	<i>CDPHE should ensure the fact sheets contain detailed information about the receiving water and designated uses, similar to what is included in the WQA. The POTW fact sheets should contain evaluations of wastewater contributions from non-domestic or industrial users in the s the POTW.</i>	( Choose an item. )
Technology-based Effluent Limitations	WQCD staff should provide more detailed discussion of facility operations, associated waste streams, and facility categorization as it relates to federal ELG applicability.	( Choose an item. )
	CDPHE should perform a thorough review of permits and accompanying fact sheets, to ensure that effluent limitations are correctly applied and consistent with supporting documentation.	( Choose an item. )

Program Area	Action Item Title	Status
Water Quality-Based Effluent Limitations	CDPHE should ensure that compliance schedules include clear interim compliance dates and milestones.	( Choose an item. )
	CDPHE should ensure that CDPHE fact sheets create a strong link to WQBELs that are established based on reasonable potential.	( Choose an item. )
	CDPHE should describe the agency’s policy for allowing temporary modifications, how they apply, and how they are determined to be appropriate.	Choose an item.
Monitoring and Reporting	CDPHE should ensure that permits include EPA-approved analytical methods that capable of detecting and measuring pollutants at, or below, the applicable water quality criteria or effluent limitations.	Choose an item.
Administrative Process	It would be a best practice for CDPHE to note whether a hearing was requested, or whether no hearing was requested or held.	Choose an item.
Compliance Schedules	CDPHE should provide justification for compliance schedules in its fact sheets, including justification on the appropriateness of the compliance schedule and whether it leads to compliance with an enforceable final effluent limitation as soon as possible, consistent with guidance.	Choose an item.

## 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 Colorado’s NPDES permit programs, as discussed throughout sections III, IV, and V of this report.

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

- **Essential Actions** - Proposed “Essential” action items address noncompliance with respect to a federal regulation. The permitting authority is expected to address these action items 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 3 below.

- **Recommended Actions** - Proposed “Recommended” action items are recommendations to increase the effectiveness of the State’s or Region’s NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended Actions are listed in Table 4 below.

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

**Table 2. Essential Action Items from FY 2018-2022 PQR Cycle**

Topic	Action(s)
Permit Application Requirements	<ul style="list-style-type: none"> <li>• The WQCD must ensure application forms for POTWs require data and information consistent with 40 CFR 122.21(j)(4) through (7).</li> <li>• The WQCD must review non-POTW application forms submitted and ensure that the applicant submitted the data and information consistent with 40 CFR 122.21(g)(7).</li> <li>• The WQCD must ensure that a complete application, as described by 40 CFR 122.21(a)(2), is submitted 180 days prior to permit expiration (for existing facilities) or discharge (new facilities) (40 CFR 122.21(d) and 122.21(e)).</li> <li>• The WQCD must ensure that permit applications are timely and complete before administratively continuing an existing permit (40 CFR 122.6).</li> </ul>
TBELs for POTWs	<ul style="list-style-type: none"> <li>• The WQCD must ensure that permits address applicable percent removal requirements for POTWs consistent with federal secondary treatment standards established at 40 C.F.R. 133.102 and 133.105.</li> <li>• Permit writers must ensure that fact sheets demonstrate 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).</li> </ul>
Reasonable Potential	Reasonable Potential Analyses for determining whether limits are needed must be based on any data that are available at the time of permit development, in accordance with 40 CFR 122.44(d). EPA's <i>Technical Support Document for Water Quality-based Toxics Control (TSD)</i> , <i>Permit Writers' Manual</i> , and <i>WET Permit Writers'</i>

	<i>Manual</i> provide guidance on conducting statistical analyses, including determining a coefficient of variation and multiplication factors, to account for effluent variability in small data sets.
Final Effluent Limitations and Documentation	<ul style="list-style-type: none"> <li>• The WQCD must ensure effluent limitations are established consistent with 40 CFR 122.45(d).</li> <li>• The WQCD must conduct and document anti-backsliding evaluations when reissued permits contain effluent limitations less stringent than those in the previous permit, per 40 CFR 122.44(l).</li> <li>• If it is impracticable to establish both short-term and long-term limitations for a specific parameter per 122.45(d), the explanation of the basis of any alternate expression of permit limits must be included in the fact sheet (40 CFR 124.56(a)).</li> </ul>
Standard and Special Conditions	<ul style="list-style-type: none"> <li>• The WQCD must ensure all federal standard conditions contained in 40 CFR 122.41 and 122.42 are included in all NPDES permits.</li> <li>• The WQCD must ensure that compliance schedules are granted in accordance with NPDES regulations at 40 CFR 122.47 and are appropriate based on a discharger's demonstration of an inability to immediately comply with effluent limitations.</li> </ul>
Administrative Process	The WQCD must ensure that public notices include contents required at 40 CFR 124.10(d), including the address of the applicant (40 CFR 124.10(d)(1)(ii)) and a brief description of the business or activities conducted at the permitted location (40 CFR 124.10(d)(1)(iii)).
Nutrients	Ensure that permits contain monitoring conditions as required by Regulation 85.6 (40 CFR 122.48(b)).
Pretreatment: Food Processing Sector	<ul style="list-style-type: none"> <li>• The WQCD must ensure that fact sheets comprehensively characterize the industrial loadings to the POTW; list all IUs and the nature and volume of their wastestreams (per 40 CFR 122.44(j)(1)); characterize hauled wastes; and evaluate the POTW's treatment capacity and the relative contribution by the IUs.</li> <li>• The WQCD must ensure permit application forms for POTWs require data and information consistent with 40 CFR 122.21(j).</li> </ul>

Municipal Separate Storm Sewer Systems (MS4s)	When CDPHE reissues its small MS4 GP, the permit will need to comply with MS4 Remand Rule (see 40 CFR 122.28(d)), 40 CFR 122.34(a) and (b), and 40 CFR 122.34(a)).
Per- and Polyfluoroalkyl Substances (PFAS) Initiatives	No essential actions identified

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

Topic	Action(s)
Permit Application Requirements	<ul style="list-style-type: none"> <li>The WQCD should ensure that the permit records contain documentation regarding the technical completeness of the permit applications.</li> <li>The WQCD should consider modeling revised individual permit applications after the EPA's format and organization, to ensure applications present requirements clearly and facilitate a technical completeness review.</li> </ul>
Reasonable Potential	<ul style="list-style-type: none"> <li>The WQCD should consider providing more detail in the fact sheet or WQA about the qualitative RPA and a discussion specific to the discharge.</li> <li>The WQCD should consider providing more detail in the fact sheet or WQA about the evaluation for WET monitoring and effluent limitations.</li> </ul>
Administrative Process	The WQCD should ensure that all public notices are retained in the permit administrative record.
Administrative Record and Fact Sheet	<ul style="list-style-type: none"> <li>The WQCD should consider revising CDPS fact sheets to include more information from the WQA, as opposed to having parallel discussions in two documents.</li> <li>The WQCD should ensure that QA/QC reviews ensure language is consistent between the permit, fact sheet, and WQA.</li> <li>The WQCD should provide greater detail in CDPS fact sheets for the justification for permit conditions, in addition to the regulatory citations.</li> <li>The WQCD should include a statement in the fact sheet indicating whether a public hearing was requested and held.</li> </ul>

	<ul style="list-style-type: none"> <li>• The WQCD should ensure that records include documentation of application completeness reviews and permit administrative extensions.</li> <li>• The WQCD should consider adding a more detailed record identifier to files in OnBase to facilitate record searches.</li> </ul>
Nutrients	Ensure that language in the fact sheet and WQA are consistent with what the permit requires (can be addressed during QA/QC).
Pretreatment: Food Processing Sector	<ul style="list-style-type: none"> <li>• The WQCD should ensure that fact sheets specify the basis for requiring a pretreatment program (see 40 CFR 403.8).</li> <li>• The WQCD should ensure that fact sheets include the dates of program approval and any program modifications (see 40 CFR 403.8).</li> <li>• The WQCD should ensure that documentation of the local limits review under 40 CFR 122.44(j)(2)(ii) is included in the permit file, including the most recent local limits submission date.</li> <li>• The WQCD should ensure that permits are developed using accurate and up-to-date information; when possible, permit application data that is older should be reviewed, supplemented, or revised.</li> </ul>
Municipal Separate Storm Sewer Systems (MS4s)	<ul style="list-style-type: none"> <li>• The permit should specify minimum public notice requirements for the public comment period of the Program Description Document.</li> <li>• The certification letter should be included in the Program Description Document for availability to the public.</li> </ul>
Per- and Polyfluoroalkyl Substances (PFAS) Initiatives	No recommended actions identified