

**EPA Region 9 NPDES Program and Permit Quality Review for the State of
California**

**State Water Resources Control Board and the
North Coast Regional Water Quality Control Board
Central Coast Regional Water Quality Control Board
Lahontan Regional Water Quality Control Board
Colorado River Regional Water Quality Control Board and
Santa Ana Regional Water Quality Control Board
(SB, RB1, RB3, RB6, RB7, and RB8)**

FINAL

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Executive Summary

EPA Region 9's National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) provides an overview of the California NPDES permitting program, recognizes the many challenges faced by California, and identifies specific areas where EPA and California can work together to continue to strengthen permit language and documentation.

The PQR examined 16 individual permits issued across five Regional Water Quality Control Boards (Regional Water Boards or RBs) – the North Coast (RB1), Central Coast (RB3), Lahontan (RB6), Colorado River (RB7), and Santa Ana (RB8) – along with four general permits issued by the State Water Resources Control Board (State Water Board or SB). In addition to core requirements, the PQR also focused on several national and regional priority areas including:

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

EPA found that permits issued in the State were generally of high quality and consistency given the diversity of water quality and organizational challenges. In particular, the State implements a robust permit template, which provides clear instruction for permit writers to develop permits that are consistent with each other and with Clean Water Act (CWA) requirements. The main findings of the PQR are identified in 17 Essential actions (Table 3) and 15 Recommended actions (Table 4). EPA recommends (see Table 5) that these Essential actions are addressed through the following:

- Update statewide permit templates
- Update permit application template letter
- Finalize the statewide toxicity provisions
- Incorporate Waste Load Allocations (WLAs) into permits
- Clarify in fact sheet how Reasonable Potential Analysis (RPA) is conducted for all pollutants using available data
- Update statewide small MS4 permit during next reissuance

California reviewed and provided comments on the draft PQR report on June 15, 2020. The State and Regional Water Boards agreed with many of the draft PQR's findings and recommendations and committed to take action to address many of the proposed action items.

I. PQR BACKGROUND

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

EPA conducted a PQR of the California NPDES permitting program in December 2014. The *2014 California PQR* is available at: https://www.epa.gov/sites/production/files/2015-09/documents/pqr_california_report.pdf and included the State Water Board as well as the San Francisco Bay, Los Angeles, Central Valley, and San Diego RBs (i.e., RB2, RB4, RB5, and RB9). This PQR, the *2019/2020 California PQR*, also includes the State Water Board and the North Coast, Central Coast, Lahontan, Colorado River, and Santa Ana Regional Water Boards (i.e., RB1, RB3, RB6, RB7, and RB8). Thus, all the State and Regional Water Boards have been reviewed in either the *2019/2020* or *2014 California PQRs*.

The *2014 California PQR* evaluation team proposed various action items to improve the NPDES permitting program in California. As part of the current PQR, EPA requested updates from the State Water Board on the progress on those action items. Of the 18 action items identified during the *2014 California PQR* as being Essential,¹ 12 have been resolved and the remainder represent actions that are either longer-term activities or lower-level actions on which California is still in progress. In addition, EPA identified Recommended action items to improve California's program. California has chosen to implement nine of the Recommended actions from the *2014 California PQR*. Sections VI and VII of this report contain a detailed review of the progress on action items identified during the last PQR.

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

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

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

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

The “Essential Actions” are used to augment the existing list of “follow-up actions” currently tracked by EPA Headquarters on an annual basis and reviewed during subsequent PQRs.

EPA's review team, consisting of EPA permit liaisons to the State Water Board and RB1, RB3, RB6, RB7, and RB8, conducted a review of the NPDES permitting program, which included a site visit to the State Water Board in Sacramento, CA on June 26, 2019.

The *2019/2020 California PQR* included EPA review of core permit components and national and regional topic areas. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and any correspondence, reports or documents that provide the basis for the development of the permit conditions and related administrative process. The *2019/2020 California PQR* also included conversations between the PQR review team and staff at the State and Regional Water Boards on program status, the permitting process, responsibilities, organization, staffing, and program challenges.

Twenty unique permits were reviewed as part of the *2019/2020 California PQR*. Of these, 18 permits were reviewed for the core review, eight permits were reviewed for national topic areas, and 18 permits were reviewed for the regional topic area of whole effluent toxicity (WET). Some permits were reviewed for both the core review and one or more topic area reviews. EPA selected permits based on issue date and the review categories fulfilled (indicated by the shaded cells in the table below). See summary table below.

RB/SB	Permit Facility/Name	NPDES Permit No.	Core Review	Nutrients	Food Processors	Small MS4	WET
RB1	2018 City of Cloverdale Wastewater Treatment Plant (WWTP)	CA0022977					
	2018 Ukiah WWTP	CA0022888					
	2018 Fairhaven Power Facility	CA0024571					
RB3	2018 Monterey One Water	CA0048551					
	2017 City of Morro Bay and Cayucos Sanitary District (SD)	CA0047881					
	2017 Carpinteria SD	CA0047364					
RB6	2019 Victor Valley Regional WWTP	CA0102822					
	2015 Fish Springs Fish Hatchery	CA0102806					
	2015 Wineagle Geothermal Power Plant	CA0103063					
RB7	2017 City of Westmorland WWTP	CA0105007					
	2017 Coachella Valley Mid-Valley Water Reclamation Plant No. 4	CA0104973					
	2016 Grass Carp Hatchery	CA7000004					
RB8	2015 Valley Sanitary District WWTP	CA0104477					
	2017 City of San Bernardino Water Reclamation Facility (WRF)	CA0105392					
	2015 Yucaipa Valley Water District Henry N. Wochholz Regional Water Recycling Facility (RWRF)	CA0105619					
	2019 DCOR Platform Esther	CA0106828					

SB	2017 Natural Gas Utility General Permit (GP)	CAG670001					
	2016 Vector Control Pesticides GP	CAG990004					
	2014 Utility Vaults and Underground Structures GP	CAG990006					
	2013 Small MS4 GP	CAS000004					

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. The core review focused on the *Central Tenets of the NPDES Permitting Program*² to evaluate the State and Regional Water Boards NPDES program. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states.

Topic Area Reviews

Topic area reviews include national and regional topic areas. The national topics reviewed were: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small MS4 Permit Requirements. EPA Region 9 also selected WET for a regional topic area review. Regional topic area reviews provide important information on specific program areas.

II. STATE PROGRAM BACKGROUND

A. Program Structure

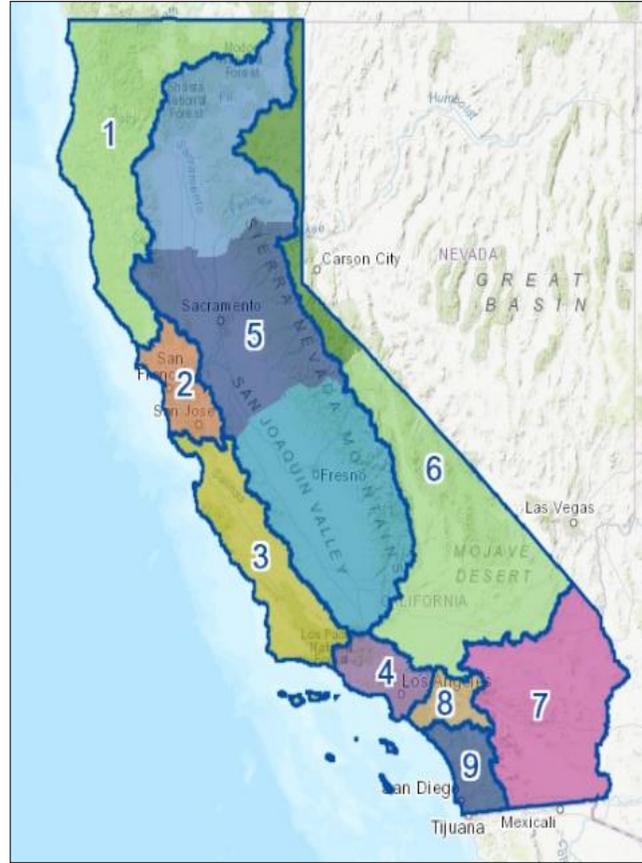
In 1969, the California State Legislature passed the Porter-Cologne Water Quality Control Act, which combined the State Water Rights Board and the State Water Resources Control Board and created nine Regional Water Boards. The nine Regional Water Boards include:

- **North Coast Region (RB1):** Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity counties.
- **San Francisco Bay Region (RB2):** Alameda, Contra Costa, San Francisco, Santa Clara (north of Morgan Hill), San Mateo, Marin, Sonoma, Napa, and Solano counties.
- **Central Coast Region (RB3):** Santa Clara (south of Morgan Hill), San Mateo (southern

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

portion), Santa Cruz, San Benito, Monterey, Kern (small portions), San Luis Obispo, Santa Barbara, and Ventura (northern portion) counties.

- **Los Angeles Region (RB4):** Kern (small portions), Los Angeles, Santa Barbara (small portions), and Ventura counties.
- **Central Valley Region (RB5):** Modoc, Shasta, Lassen, Plumas, Butte, Glen, Colusa, Lake, Sutter, Yuba, Sierra, Nevada, Placer, Yolo, Napa (north east portion), Solano (western portion), Sacramento, El Dorado, Amador, Calaveras, San Joaquin, Contra Costa (eastern portion), Stanislaus, Tuolumne, Merced, Mariposa, Madera, Kings, Fresno, Tulare, and Kern counties.³
- **Lahontan Region (RB6):** Modoc (eastern portion), Lassen (eastern portion), Sierra, Nevada, Placer, El Dorado, Alpine, Mono, Inyo, Kern (eastern portion), San Bernardino, and Los Angeles (small portion) counties.³



The nine Regional Water Boards created by the Porter-Cologne Water Quality Control Act (1970).

Source: https://www.waterboards.ca.gov/waterboards_map.html

- **Colorado River Region (RB7):** Imperial, San Bernardino, Riverside, and San Diego (small portion) counties.
- **Santa Ana Region (RB8):** Orange, Riverside, and San Bernardino (small portion) counties.
- **San Diego Region (RB9):** San Diego, Imperial, and Riverside (small portion) counties.

The State and Regional Water Boards are governed by Board members, who are appointed by the Governor and confirmed by the State Senate. The Board members are supported by staff who develop statewide permits, policy, and guidance and present these items to the Board for adoption. Permit issuance authority is also delegated from the State Water Board to the nine Regional Water Boards.

³ Due to their large geographic footprints, RB5 and RB6 are further broken down into sub-regional boards. RB5 consists of Redding (RB5R), Sacramento (RB5S), and Fresno (RB5F) offices, while RB6 has Tahoe (RB6T) and Victorville (RB6V) offices.

Each Regional Water Board has seven part-time members, who are also appointed by the Governor and confirmed by the State Senate. Like the State Water Board, these Board members are also supported by staff, who develop “basin plans” for regional hydrologic areas, issue waste discharge permits, take enforcement action against violators, and monitor water quality. The State and Regional Water Boards protect the water quality of nearly 1.6 million acres of lakes, 1.3 million acres of bays and estuaries, 211,000 miles of rivers and streams, and about 1,100 miles of California coastline.

California was authorized to implement the NPDES permitting program in 1973. NPDES requirements are fulfilled through the adoption of Waste Discharge Requirements (WDRs) by the Regional Water Boards. The complete WDR package, including the NPDES permit and fact sheet is referred to as a “Tentative Order.” Each Order is public-noticed and then brought to a regularly scheduled Board meeting. At the Board meeting, Board members hear comments from the applicant and members of the public and receive input from staff before adopting, modifying or deferring the Order. An “Adopted Order” comprises the final WDR and NPDES permit. Board Meetings are held six to 12 times per year, depending on the Regional Water Board.

While semi-autonomous, the Regional Water Boards usually rely on guidance or policies adopted by the State Water Board. For example, the State Water Board guides the development of Regional Water Board NPDES permits through coordinating roundtables, forming workgroups, developing the Administrative Procedures Manual, maintaining permit templates, and adopting statewide policies and orders. The State Water Board also manages two databases that track NPDES data: the Stormwater Multiple Application and Reports Tracking System (SMARTS) and the California Integrated Water Quality System (CIWQS). SMARTS is used for:

- The statewide construction stormwater permit,
- The statewide industrial stormwater permit,
- The statewide small MS4 permit,
- The statewide permit covering stormwater discharges from the facilities owned and operated by the state Department of Transportation, and
- Two other regional general stormwater permits.

CIWQS is used for managing all other NPDES-related information, including:

- Permit and facility information;
- Inspections, violations, and enforcement actions;
- Discharger submitted sanitary sewer overflow spill reports; and
- Discharger submitted self-monitoring and discharge monitoring reports.

B. Universe and Permit Issuance⁴

According to EPA’s Integrated Compliance Information System (ICIS) database, the State and Regional Water Boards administer 482 NPDES permits. For the last State Fiscal Year (July 1, 2018 to June 30, 2019), 78% of NPDES permits in California were current in ICIS. The State and Regional Water Boards evaluated for this PQR are responsible for issuance of 31% of the permits in California (i.e., 155 NPDES permits). See summary table below.

Board	Total Current	Universe	% Current (July 1, 2018 – June 30, 2019)
SB	5	11	45%
RB1	29	41	71%
RB2	75	81	93%
RB3	19	36	53%
RB4	86	101	85%
RB5	92	104	88%
RB6	9	14	64%
RB7	23	24	96%
RB8	18	37	49%
RB9	20	33	61%
Total	376	482	78%

C. State-Specific Challenges

As described in the *2014 California PQR*, the environmental and institutional complexity in the State continue to be a challenge. However, resource limitations and stormwater management are the main issues affecting permit issuance statewide.

- Resource limitations:** California has been experiencing significant resource challenges in the NPDES program since 2009. The development of new water programs or emphasis areas (i.e., cannabis, drought management, and drinking water) have resulted in redirection of NPDES permitting resources. This redirection is also compounded by increasing personnel costs with static funding amounts received through the CWA 106 grant, which funds permit coding for ICIS, reissuance of NPDES permits, and the pretreatment program. With increased personnel costs, California is concerned about having adequate resources to maintain ICIS, decrease permit backlog, and perform core pretreatment functions.
- Stormwater management:** California has a long history of writing strong stormwater permits. However, recent court cases made permit issuance more difficult. The California Constitution includes a prohibition against unfunded state mandates. Additionally, under California law, municipalities are limited in how they can raise money to implement various

⁴ This section does not contain a description of the permit issuance process in California. See the background in Section III of this report for this information.

programs. As a result, California municipalities have challenged their permits, not on the basis of state or federal environmental law, but on the basis of funding. This has led to complications and delay in permit issuance.

D. Current State Initiatives

The State Water Board is currently developing important new or revised provisions to address several challenges that affect the NPDES program. Specifically, the State Water Board is slated to adopt new toxicity provisions that will establish statewide toxicity standards and permit implementation procedures in 2020. Another plan developed since the *2014 California PQR* is the 2017 NPDES Quality Assurance Program Plan, which was developed to ensure data quality and assessment in the NPDES permitting program. The State Water Board is leading a workgroup that is developing the following to implement the 2017 NPDES Quality Assurance Program Plan:

- Permit application reminder letter, which includes links to the appropriate application forms, results of special studies, discussion of data quality and use of sufficiently sensitive methods, and updated tables comparing method minimum levels and water quality criteria;
- Self-monitoring report review checklist to ensure data quality and representativeness;
- Permit template language for incorporating quality assurance and quality control requirements into the monitoring, permit application, effluent limitations, and water quality criteria fact sheet discussions; and
- General considerations for evaluating data during permit development.

Lastly, in 2016, the State Water Board adopted a Stormwater Strategy (STORMS) to further develop innovative regulatory and management approaches to maximize opportunities to use stormwater as a resource. This 10-year plan includes objectives to increase stormwater capture, identify alternative compliance pathways in NPDES stormwater permits, fund stormwater projects, manage stormwater data efficiency (i.e., SMARTs database), and evaluate and implement trash controls.

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 (Title 40 of the *Code of Federal 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

The State Water Board updated their permit templates in response to the *2014 California PQR*, which implements all federal regulations except the standard provisions. See report section III.D Standard and Special Conditions. The Regional Water Boards' fact sheets generally are consistent with the State Water Board template for facility information. Critical facility information is collected in a single table and a detailed discussion of the facility information and treatment processes are included in the fact sheet templates. Discharge location information is split between the fact sheet (i.e., outfall and receiving water descriptions) and the permit cover page (i.e., discharge points, coordinates, and name of receiving water(s)). All reviewed permits used this format.

Areas for Improvement

EPA found that some of the permits reviewed contained inaccurate expiration dates and signatures and did not comport with the review timeframes in the 1989 Memorandum of Agreement (MOA) between EPA and California. Other minor issues are described below:

- **RB1:** One of three permits reviewed listed the expiration date as September 31, 2023 (Fairhaven CA0024571). However, the month of September has 30 days. EPA notes that the State Water Board permit templates include specific instructions and an example of permit effective and expiration dates. Therefore, EPA is recommending that the State Water Board conducts training on the permit template.
- **RB6:** One of three permits reviewed had a permit term of 5 years plus 1 day (Victor Valley CA0102822).
- **RB8:** Two of the three permits reviewed had a permit effective date less than 50 days after adoption despite changes being made to the version sent to EPA for review (San Bernardino CA0105392 and Yucaipa CA0105619). Per the 1989 MOA, individual permits shall become effective 50 days after adoption if there was significant public comment or if changes were made to the version that was sent to EPA for review.

Action Items: Facility Information

Recommended

- Conduct annual training on the State Water Board permit templates and Administrative Procedures Manual.

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 Regional Water Boards and used in permit development.

For NPDES permits issued in California, applicants submit federal NPDES permit application forms (i.e., EPA form 1, 2A, 2B, 2C, 2D, 2E, and/or 2F) and a state form (form 200). Applications are received and reviewed by each individual Regional Water Board. EPA found that the State and Regional Water Boards receive timely permit applications (i.e., 180 days before permit expiration).

Program Strengths

EPA found that the permit files generally contained current, appropriate, and complete permit applications, including both the applicable EPA forms and state form (i.e., form 200). For one of the general permits reviewed (Utility Vault General Permit CAG990002), the State Water Board included notices of intent (and applicable best management plans) on a dedicated permit website. Posting such information on a specific permit website increases public availability of records. EPA recommends that this practice is used for other general permits issued by the State Water Board.

Areas for Improvement

EPA noted several problems with applications in RB8 and with notices of intent submitted to the State Water Board. Those minor issues are identified below:

- **RB6:** One of three permits reviewed did not specify in the fact sheet whether the application was complete (Fish Springs Hatchery CA0102806). EPA recommends including the date the application was complete in the fact sheet, consistent with 40 CFR 122.21(e), which requires a complete application before a permit can be issued.
- **RB7:** One permit application included a map that did not clearly show the discharge location (Grass Carp Hatchery CA7000004). Consistent with 40 CFR 122.21(f)(7), maps submitted as part of a permit application must include all relevant details, such as facility location, discharge locations, and if applicable, water monitoring locations.
- **RB8:** Two of the three permits reviewed had inconsistencies with federal permit application requirements. One permit did not contain the appropriate signatory official (Yucaipa CA0105619). A responsible corporate officer for a corporation must sign the NPDES permit application or notice of intent,⁵ in accordance with 40 CFR 122.22. EPA notes that the appropriate signatory official on permit applications is addressed through permit template language and in the statewide Administrative Procedures Manual. The Administrative Procedures Manual instructs staff to “verify the authority of the signature” on permit applications. EPA recommends that the State Water Board conduct annual training on the permit templates and the Administrative Procedures Manual. One permit did not indicate whether the application was complete (Yucaipa CA0105619). Lastly, one permit did not

⁵ Per 40 CFR 122.22, a responsible corporate officer is defined as a president, secretary, treasurer, vice-president, or any other person who performs similar policy- or decision-making functions for the corporation or a manager of one or more manufacturing, production, or operating facilities, provided that the manager is authorized to make management decisions.

include WET testing results, as required by 40 CFR 122.21(j)(5)(ii) and (iv), with the permit application (San Bernardino CA0105392).

- **SB:** One of three general permits reviewed did not contain the appropriate signatory official on the notices of intent (Utility Vault General Permit CAG990002). For example, signatories included a utility system inspector, a water quality manager, a safety manager, and a real estate network project manager. As stated above, a responsible corporate officer for a corporation must sign the NPDES permit application or notice of intent, in accordance with 40 CFR 122.22.

Action Items: Permit Application Requirements

Essential	<ul style="list-style-type: none"> • Ensure that a complete application is submitted, including quarterly WET testing for a period of one year for major POTWs. §122(a)(1) and §122.21(j)(5). • Require updated maps as part of the NPDES permit application. §122.21(f)(7)
Recommended	<ul style="list-style-type: none"> • Consider including in the permit templates a sentence that documents when the permit application was deemed complete. • Conduct annual training on the State Water Board permit templates and Administrative Procedures Manual.

B. Developing Effluent Limitations

1. Technology-based Effluent Limitations

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

TBELs for POTWs

Background and Process

POTWs must meet secondary or equivalent to secondary standards (including limits for biochemical oxygen demand (BOD), total suspended solids (TSS), pH, and percent pollutant removal) and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133.

The State Water Board has adopted many policies, precedential orders, and permit templates to guide development of permits, including establishing appropriate effluent limitations. These policies provide detailed guidance and discretion to individual Regional Water Boards in the development of limitations. These effluent limitations include the federal secondary treatment standards as well as settleable solids and turbidity.

As shown in section I of this report, the eleven POTW permits reviewed in this PQR include:

- RB 1: two POTWs (City of Cloverdale CA0022977 and Ukiah CA002288 WWTPs)
- RB 3: three POTWs (Monterey One Water CA0048551, City of Morrow Bay/Cayucos SD CA0047881, and Carpinteria SD CA0047881).
- RB 6: one POTW (Victor Valley Regional WWTP CA0102822)
- RB 7: three POTWs (City of Westmorland CA0105007, Coachella Valley Mid-Valley WRP No. 4 CA0104973, Valley SD WWTP CA0104477)
- RB 8: two POTWs (City of San Bernardino CA0105392 and Yucaipa Valley Water District Henry N. Wochholz RWRP CA10105619)
- State Water Board: none

Program Strengths

The State Water Board templates include specific instructions for effluent limitations, including specific table formats for effluent limitations based on secondary treatment standards for POTWs. The reviewed permits generally contained the appropriate secondary treatment standards or more stringent tertiary treatment standards for TSS and BOD₅, which is required for treatment plants producing recycled water in California. Effluent limitations generally were established using the appropriate units and forms (i.e., concentration or mass; average weekly and average monthly; percent removal requirements). The reviewed permits and fact sheets also contained a good description of treatment processes and documented the basis for the TBELs (i.e., 40 CFR 133.102).

Areas for Improvement

Proposed action items to help the State strengthen TBELs for POTWs are identified in the next section and are based on the following:

- **RB3:** In the Monterey One NPDES permit (CA0048551), mass-based TBELs for oil and grease, carbonaceous BOD (CBOD), and TSS were established on a floating basis when flows exceeded the dry weather flow design capacity for production-based limits. EPA acknowledges that the Monterey One NPDES permit regulates multiple waste streams and includes discharge prohibitions related to design flows (i.e., both the dry weather average flow and peak weather flow) consistent with 40 CFR 122.45(b)(1). In general, regulations at § 122.45(b)(1) require the POTW design flow rate to be used to calculate limitations. EPA also discourages the use of floating limits because they are difficult to track and enforce.
- **RB7:** One permit did not contain the appropriate federal requirements for percent removal. The Coachella Valley NPDES permit (CA0104973) did not specify a 65% removal requirement for TSS despite being a lagoon system subject to equivalent to secondary

treatment requirements. The only percent removal TBEL specified is CBOD. For facilities eligible for equivalent to secondary treatment, the 30-day average percent removal shall not be less than 65% for both TSS and BOD, in accordance with 40 CFR 133.105. EPA notes that percent removal requirements are addressed in the State Water Board permit templates. The permit templates include specific instructions and example language for both TSS and BOD that are consistent with federal requirements.

Action Items: TBELs for POTWs

Recommended

- Conduct annual training on the State Water Board permit templates and Administrative Procedures Manual to ensure that NPDES permits do not exceed 5 years.
- Consider establishing mass-based limits for secondary treatment standards based on the POTW's design flow.

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 must be 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).

As shown in section I of this report, specific types of non-POTW facilities reviewed in the *2019/2020 California PQR* include:

- RB 1: a power facility (Fairhaven CA0024571)
- RB 6: a groundwater-source fish hatchery (Fish Springs Hatchery CA0102806) and a geothermal power facility (Wineagle CA0103063)
- RB 7: a fish hatchery (Grass Carp Hatchery CA7000004)
- RB 8: an offshore platform (DCOR Platform Esther CA0106828)
- State Water Board: natural gas utility (CAG67001), vector control pesticides (CAG990006), and utility vault (CAG990004) general permits.

Program Strengths

The State Water Board templates have a table format for non-POTW effluent limitations. Any limitation that doesn't conform to the table format is listed in numbered bullets below the

effluent table. The reviewed permits included TBELs using this format and the fact sheets included sufficient descriptions of the facility, including process, waste streams, pollutants, and treatment. The applicable treatment standards and ELGs were properly applied and expressed in the reviewed permits.

Areas for Improvement

Proposed action items to help the State strengthen TBELs for non-POTW dischargers are identified below and are based on the following:

- **RB6:** Two permits reviewed did not have adequate fact sheet documentation for flow limits (Fish Springs Hatchery CA0102806 and Wineagle CA0103063). Specifically, both fact sheets indicated that the level of flow through the system was not under the discharger’s control and did not document that best practicable control technology (BPT), BCT, and BAT requirements for setting case-by-case effluent limitations had been met, in accordance with 40 CFR 125.3(d). EPA notes that TBELs for non-POTW dischargers (i.e., ensuring that TBELs based on BPJ meet BAT and BCT criteria) are addressed in the State Water Board permit templates. Specifically, the permit template states that if limitations are established based on BPJ, the TBEL section of the fact sheet must discuss the factors specified in 40 CFR 125.3 for developing case-by-case limitations, and the discussion should be carried to subsequent permits.

Action Items: TBELs for Non-POTW Dischargers

Recommended

- Should ensure that fact sheets contain a robust discussion of the basis of effluent limitations developed using BPJ.
- Conduct annual training on the State Water Board permit templates and Administrative Procedures Manual.

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 “water quality-based effluent limitations” (WQBELs), the permitting authority must evaluate whether any pollutants or pollutant parameters could cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

The *2019/2020 California PQR* for the State and Regional Water Boards assessed the processes employed to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- Determined the appropriate water quality standards applicable to receiving waters,

- Evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- Determined critical conditions,
- Incorporated information on ambient pollutant concentrations,
- Assessed any dilution considerations,
- Determined whether limits were necessary for pollutants of concern and, where necessary, calculated such limits or other permit conditions.

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

Process for Assessing Reasonable Potential

The process for assessing reasonable potential, or RPA, is found within various plans and policies:⁶

- *Water Quality Control Plan for Ocean Waters of California (California Ocean Plan)*. The *California Ocean Plan* contains water quality standards for discharges to the ocean. Specifically, Appendix VI of the *California Ocean Plan* contains detailed RPA procedures but also provides flexibility if Regional Water Boards want to assess reasonable potential through alternative approaches, like a stochastic dilution model.
- *Regional Water Board Water Quality Control Plans (Basin Plans)*.⁷ *Basin Plans* contain water quality standards (including site-specific water quality standards), prohibitions, and other programs of implementation applicable to a particular discharge or category of discharge. For toxic pollutants, the RPA procedures are contained in the *State Implementation Policy (SIP)*, see below). For non-toxic parameters, RPA procedures are not defined and can be guided by the *Basin Plan* or tools developed by Regional Water Boards.
- *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. This Plan includes three parts: trash provisions, tribal subsistence beneficial uses and mercury provisions, and bacteria provisions. Each part has designated uses, water quality standards, and a program of implementation.

⁶ Pursuant to the Porter-Cologne Act, California's water quality standards must be accompanied by implementation programs to achieve and maintain compliance with the water quality standards.

⁷ Regional Water Board Water Quality Control Plans are often called *Basin Plans* because the plans apply to one or more hydrologic basins within California.

- *The California Toxics Rule (CTR) and the National Toxics Rule (NTR).*⁸ The *CTR* and the *NTR* contain the aquatic and human health water quality standards for all 126 priority pollutants for inland waters. The implementation procedures for the *CTR* and *NTR* are specified in the *SIP*. The *SIP* contains RPA procedures and accounts for dilution as well as background concentrations. The RPA procedures are a direct comparison to the criterion (i.e., not a statistical based RPA approach like in the *California Ocean Plan*).

Process for Developing WQBELs

In addition to assessing reasonable potential, the *California Ocean Plan*, *Basin Plans*, and/or *SIP*, contain a process for developing WQBELs. The Regional Water Boards may grant mixing zones and dilution credits in accordance with the *SIP* or the *California Ocean Plan*. Other statewide policies like the *Policy for Compliance Schedules in NPDES Permits* and *Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy)* also relate to development of WQBELs. These are described below:

- *California Ocean Plan.* If any detected effluent pollutant concentration or an upper confidence bound (UCB) is greater than the water quality standard after initial dilution, then a WQBEL must be developed (i.e., endpoint 1). The WQBELs are developed from using the equations in the *California Ocean Plan*. The *California Ocean Plan* also contains specific effluent limitations for oil and grease, TSS, settleable solids, turbidity, and pH limits for industrial discharges that do not have ELGs.
- *Basin Plans.*⁹ In some *Basin Plans*, NPDES permit requirements, including WQBELs, are specified. For example, in RB1's *Basin Plan*, bacteria and temperature effluent limitations are specified for some discharges. RB3's *Basin Plan* contains effluent limitations for discharges associated with TMDLs. RB6's *Basin Plan* contains effluent limitations for particular treatment plants, like the Tahoe-Truckee Sanitation Agency and stormwater discharges into Lake Tahoe or tributary to Lake Tahoe. RB8's *Basin Plan* contains effluent limitations for total ammonia based on site-specific ammonia objectives for the Santa Ana River.

⁸ In 1991, EPA promulgated the NTR to establish water quality criteria for toxic pollutants in fourteen states, including California. California was included because the statewide Inland Surface Water Plan and Enclosed Bays and Estuaries Plan (1991) did not contain criteria for all priority toxic pollutants and designated uses for all water bodies. Later, in 2000, EPA also promulgated the CTR after a state court decision in 1994 rescinded the 1991 Inland Surface Water Plan and Enclosed Bays and Estuaries Plan. The CTR does not change or supersede any criteria that was previously promulgated in the NTR. Therefore, both the NTR and the CTR are still applicable in California.

⁹ The Regional Water Board *Basin Plans* applicable to this PQR are:

RB1: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf

RB3: https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/2019_basin_plan_r3_complete.pdf

RB6: https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/print_version.pdf

RB7: https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/docs/bp032014/r7_bp2019fullbp.pdf

RB8: https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/docs/2019/New/Chapter_5_June_2019.pdf

- *SIP*.¹⁰ The *SIP* contains four methods for developing WQBELs in section 1.4, Calculation of Effluent Limitations. The first method is for a pollutant that is addressed by a TMDL. The second method is the statistical permit limit derivation method described in EPA's *Technical Support Document for Water Quality-Based Toxics Control* (1991). The third method is application of a Regional Water Board-approved dynamic model that can develop WQBELs based on sufficient effluent and receiving water data. The fourth method is establishing effluent limitations based on intake credits (i.e., the effluent limitation cannot exceed the pollutant mass and concentration present in the intake water).
- *Policy for Compliance Schedules in NPDES Permits*. This policy applies to priority toxic pollutants in the *CTR* and applicable *Basin Plans*. Six of the nine Regional Water Boards have adopted compliance schedule authorizations (i.e., RB1, RB2, RB4, RB5, RB8 and RB9). RB1 and RB8 are addressed by this PQR and contain either a reference to this policy or an explicit provision that authorizes compliance schedules. Compliance schedules must be as short as possible; establish interim numeric effluent limitations as well as interim requirements, as necessary, to control the pollutant; yearly interim milestone dates; and cannot be longer than the schedule established by a TMDL implementation plan.
- *Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy)*. California's antidegradation policy is found in State Water Board Order 68-16 and is referenced in *Basin Plans*. California's antidegradation implementation methods are described in the Administrative Procedures Update (90-004) *Antidegradation Policy Implementation for NPDES Permitting*. The methods require permit writers to consider both State Water Board Order 68-16 and the federal antidegradation requirements in 40 CFR 131.12.

Program Strengths

Reasonable Potential

Regional Water Boards use the reasonable potential calculator based on the *California Ocean Plan* to determine effluent limitations for ocean discharges. Regional Water Boards use their own spreadsheets or the reasonable potential tool within CIWQS to calculate reasonable potential for inland waters. In cases where it is applicable, a direct comparison with the *CTR* criteria or other applicable water quality standard is used to calculate reasonable potential.

¹⁰ In 2002, EPA commented on the RPA procedures in the *SIP* urging the State Water Board to clarify how the procedure accounts for effluent variability and whether it is fully consistent with the regulations at 40 CFR 122.44(d). In 2003, EPA again requested clarification regarding effluent variability when small effluent data sets are used to determine reasonable potential. Specifically, EPA was concerned with section 1.2 of the *SIP*, where Regional Water Boards have discretion to consider if any data are inappropriate or insufficient for use in implementing the policy. To date, the *SIP* has not been revised.

WQBEL Development

The State Water Board has two separate permit templates for ocean and inland waters. Both templates include a section called “determining the need for WQBELs” that is used to describe the methodology used to perform RPA as well as to describe discharge data.

Areas for Improvement

Reasonable Potential

EPA noted that many of the permits reviewed did not contain adequate documentation for the RPA. Further, the *SIP* only applies to priority pollutants. Therefore, California does not have an established procedure for non-priority pollutants, such as bacteria, which can lead to inconsistent reasonable potential determinations for non-priority pollutants. Proposed action items to help the State strengthen RPAs are identified below. These action items are related to findings in the fact sheet regarding insufficient data and inadequate documentation for the RPA:

- **RB1:** One of three permits retained acute toxicity narrative effluent limitations from the previous permit but did not document the RPA (City of Cloverdale CA0022977). One of three permits had inconsistencies for the RPA in the fact sheet discussion (i.e., Table F-10 shows endpoint 2 but the fact sheet discusses endpoint 3 in the Fairhaven CA0024571 permit). See Section V.A. for specific findings related to WET.
- **RB6:** Two of three permits reviewed did not conduct RPA for all pollutants. In one permit, the RB retained previous permit effluent limitations for total nitrogen and total nitrate but did not document the RPA (Fish Springs Hatchery CA0102806). In the other permit, the RB did not specify whether RPA was conducted for WET. See Section V.A. for specific findings related to WET.
- **RB7:** Two of three permits reviewed did not conduct RPA for bacteria and WET and contained inadequate fact sheet justification for why the RPA was not conducted (Westmorland CA0105007 and Coachella Valley CA0104973). In one permit, the RPA asserted that there was no reasonable potential for fecal coliform, despite the discharge being from a POTW (Coachella Valley CA0104973). The other permit did not conduct RPA for WET (Westmorland CA0105007). See Section V.A. for specific findings related to WET.
- **RB8:** Two of the three permits reviewed did not document RPA for all pollutants. The San Bernardino NPDES permit (CA0105392) did not document whether RPA was conducted for WET but included monitoring requirements based on a toxicity narrative standard. The fact sheet explained that the discharger had not previously conducted toxicity tests despite being a discharge from a POTW. See Section V.A. for specific findings related to WET. The other permit did not clearly describe whether RPA was performed for nutrients but included an effluent limitation based on protecting underlying groundwater management zones (Yucaipa CA0105619).

- **SB:** One of three permits reviewed did not assess reasonable potential despite having 12 to 964 data points for various pollutants (Utility Vault General Permit CAG990002). The fact sheet compared this dataset to “benchmark values” consistent with the water quality standards in the *SIP*. The fact sheet explained that RPA was not conducted because there was insufficient data and because the monitoring data did not represent all pollutants with applicable water quality standards. EPA notes that the *SIP* states that RPA can be evaluated based on a single data point.

WQBEL Development

The State and Regional Water Boards could improve consistency in developing WQBELs, especially for non-priority pollutants and could include examples of how to establish a numeric WQBEL in the State Water Board templates. Specifically, EPA found that the following permits had issues with WQBEL development:

- **RB3:** All three permits reviewed contained only average monthly effluent limitations for human health (carcinogen and non-carcinogen) pollutants (Monterey One CA0048551, Morro Bay/Cayucos CA0047881, and Carpinteria CA0047364). Effluent limitations must be expressed, unless impracticable, as both average monthly and maximum daily limits for non-POTW discharges and as average weekly and average monthly limits for POTW discharges, in accordance with 40 CFR 122.45(d). While EPA acknowledges that the *California Ocean Plan* only includes 30-day average concentration criteria for human health pollutants, the fact sheets should explain the basis for incorporating only a single long-term limit. One permit also did not include calculations for the WQBELs in the fact sheet (Monterey One CA0048551). EPA notes that expressing WQBELs as both average monthly and maximum daily effluent limitations for POTW discharges is addressed in the State Water Board permit templates. EPA also recommends that end-of-pipe effluent limitations are used instead of having the discharger calculate the effluent limitation and compliance using the provided formula and one of four dilution factors based on the ratio of the secondary effluent to other waste streams being discharged.
- **RB6:** One of three permits reviewed inappropriately established intake credits for WQBELs (Wineagle CA0103063). The fact sheet explained that the methodology for developing effluent limitations was modified due to variability between influent and effluent sampling data. The effluent limitations were established based on the 99th percentile of both influent and effluent data (as opposed to the maximum influent concentration). This resulted in some effluent limitations being more than the reported influent concentrations. Per 40 CFR 122.45, intake credits for should be granted only to the extent necessary to meet the applicable standard, up to the maximum value equal to the influent value.
- **RB7:** One of three permits reviewed did not discuss how the established effluent limitations complied with applicable TMDL WLAs for bacteria and TSS (Westmorland CA0105007). One of three permits also did not properly implement the TMDL WLA for sediment (Grass Carp Hatchery CA7000004). The TMDL allocates an annual sediment load of 182.8 tons per year to the facility, but the permit authorizes a discharge for up to 230.1 tons per year due to allowing a higher flow rate than that considered by the TMDL WLA.

- **RB8:** One of three permits reviewed did not discuss whether the receiving water was impaired (DCOR Platform Esther CA0106828). This was also an EPA recommendation in the *2014 California PQR*. At a minimum, all fact sheets should include a description of receiving water impairments (i.e., 303(d) list) and note whether there are any for the receiving water.
- **SB:** Two of three permits reviewed identified that water quality-based best management practices (BMPs) may not be protective of water quality. In one permit, the SB identified that petroleum hydrocarbons, oil and grease, pH, and TSS are pollutants of concern and that water-quality based BMPs “may not always be protective of water quality” (Utility Vault General Permit CAG990002). In the other permit, the SB determined that water quality-based BMPs may not be sufficient to protect all receiving waters (Pesticides General Permit CAG990004). 40 CFR 122.44(d)(1)(vii)(B). One of three permits reviewed also did not identify applicable TMDLs (Utility Vault General Permit CAG990002), although TMDLs exist for the receiving water. The fact sheet should discuss the discharges effect on any impairment and identify applicable TMDLs so that effluent limitations can be developed consistent with the assumptions of TMDL WLAs.

Action Items: Reasonable Potential and WQBEL Development

<p>Essential</p>	<p><u>Reasonable Potential</u></p> <ul style="list-style-type: none"> • Ensure that all pollutants are evaluated for reasonable potential and that documentation of the analysis is in the fact sheet or administrative record. §122.44(d)(1). <p><u>WQBEL Development</u></p> <ul style="list-style-type: none"> • Ensure that general permits include effluent limitations for pollutants that cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including narrative water quality criteria. §122.44(d)(1)(i) and §122.44(d)(1)(iii). • Ensure that WQBELs are developed consistent with the assumptions and requirements of WLAs that have been assigned to the discharge in a TMDL. §122.44(d)(1)(vii)(B). • Ensure that any intake credits are established consistent with §122.45(g).
<p>Recommended</p>	<p><u>Reasonable Potential</u></p> <ul style="list-style-type: none"> • Should conduct RPA for non-priority pollutants to promote consistency among Regional Water Boards and to ensure that WQBELs are developed where a pollutant has the reasonable potential to cause or contribute to a water quality exceedance. <p><u>WQBEL Development</u></p> <ul style="list-style-type: none"> • Consider discussing in the fact sheet how the WQBELs were developed from the TDML WLAs. • Should identify receiving water impairments in the fact sheet.

3. Final Effluent Limitations and Documentation

Background and Process

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

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

Program Strengths

The State and Regional Water Board templates include a section called WQBEL calculations. The instruction box states that information under this section should include a general description of the calculation, discussion of dilution and mixing zones, calculated WLAs, at least one sample calculation for each type of effluent limit, explanation of the numeric value used to implement a narrative water quality standard, and explanation of the basis for implementing only an annual average effluent limit, when applicable. For the sake of clarity, both TBELs and WQBELs are developed in the preceding sections of the fact sheet, regardless of which is more stringent. The permit templates explicitly address anti-backsliding requirements and antidegradation requirements. With few exceptions (largely in older permits), antidegradation analysis is conducted and described in the fact sheet.

Areas for Improvement

Proposed action items to help the State strengthen their final effluent limitations and documentation are identified below and are based on the following:

- **RB1:** One of three permits reviewed had inconsistent reasonable potential findings for nitrate in the fact sheet (Cloverdale CA0022977). Upon review of the response to comments

summary, the reasonable potential finding had been revised due to determining that one nitrate effluent sample was invalid. Therefore, the final permit did not include a nitrate effluent limit. EPA recommends the Board update fact sheets for consistency before issuing the permit.

- **RB3:** One of three permits reviewed did not include interim milestones not exceeding one year between the dates for a 4-year compliance schedule (Morro Bay/Cayucos CA004788). Any compliance schedule longer than a year must include milestones along with dates for their achievement, with not more than one year between dates, consistent with 40 CFR 122.47(a)(3)(i) and State Water Board Order 2008-0025.
- **RB7:** One of three permits reviewed included a compliance schedule in the permit for inappropriate activities, like planning (i.e., spill response plans, toxicity reduction evaluation workplan, antidegradation analysis if facility expands, and a pollutant minimization program). Per 40 CFR 122.47, compliance schedules are for achieving WQBELs and must include interim milestones as well as interim effluent limitations. See also 40 CFR 122.2 for the definition of compliance schedules.
- **SB:** One of three permits reviewed had inconsistencies between the permit requirements and the fact sheet discussion for toxicity (Pesticide Vector General Permit CAG990004). The fact sheet stated that a toxicity special study is needed to determine if residues and degradation byproducts cause toxicity. However, the permit did not contain such a special study requirement. See Section V.A. for specific findings on WET.

Action Items: Final Effluent Limitations and Documentation

Essential	<ul style="list-style-type: none"> • Ensure that compliance schedules include appropriate activities and that interim milestones are included in permits with compliances schedules exceeding one year. §122.47(a)(3)(i).
Recommended	<ul style="list-style-type: none"> • To improve transparency, fact sheets could be updated if changes to the permit are made after public notice.

C. Monitoring and Reporting Requirements

Background and Process

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

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

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

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

The State Water Board templates have a specific attachment dedicated to monitoring and reporting: “Attachment E- Monitoring and Reporting Program (MRP)” for individual permits. Generally, the template has ten components:

- I. General Monitoring and Reporting Provisions
- II. Monitoring Locations
- III. Influent Monitoring Requirements
- IV. Effluent Monitoring Requirements
- V. Whole Effluent Toxicity Testing Requirements
- VI. Land Discharge Monitoring Requirements
- VII. Recycling Monitoring Requirements
- VIII. Receiving Water Monitoring Requirements
- IX. Other Monitoring Requirements
- X. Reporting Requirements

As part of the general language, the permits mandate the use of 40 CFR Part 136 test methods and indicate that all analyses shall be conducted using the lowest practical quantitation limit using the specified methodology, unless otherwise specified.

Program Strengths

As stated above, use of a monitoring and reporting attachment provides clarity and structure to monitoring and reporting requirements. All monitoring frequencies and locations, including for effluent, influent, internal waste streams, and the receiving water, are clearly identified in table format. All permits reviewed in the *2019/2020 California PQR* used this format.

Areas for Improvement

Similar to the *2014 California PQR*, not all pollutants with effluent limitations contained annual monitoring requirements. EPA also noted that certain monitoring requirements were omitted. Specific findings by Regional Water Board include:

- **RB3:** One of three permits reviewed did not meet the minimum monitoring frequency for pollutants with effluent limitations. In the Morro Bay/Cayucos permit (CA0047881) monitoring for most priority pollutants with effluent limitations is only once per permit term. Per 40 CFR 122.44(i)(2), NPDES permits must establish monitoring for pollutants with effluent limitations and that the monitoring data is reported at least once per year.
- **RB6:** One of three permits reviewed did not contain any monitoring requirements for two pollutants with effluent limitations (i.e., iron and manganese) (Victor Valley CA0102822). See 40 CFR 122.44(i)(2).
- **RB8:** Two of three permits reviewed did not contain appropriate DMR requirements. In one of the permits, there was no requirement to submit DMRs (DCOR Platform Esther CA0106828). In the other permit, the RB did not specify DMR submittal frequency (Yucaipa CA0105619). 40 CFR 122.41(l)(4)(i). One of three permits reviewed also did not require use of sufficiently sensitive test methods and did not include electronic reporting or notification requirements (DCOR Platform Esther CA0106828). 40 CFR 122.44(i)(1) and 40 CFR 127.11.
- **SB:** One of three permits reviewed did not require WET monitoring because the permit contained a requirement that the discharge shall not cause toxicity in the receiving water. See Section V.A. for specific findings related to WET. Another permit reviewed did not include a frequency for a malathion monitoring requirement (Pesticide Vector General Permit CAG990004). The fact sheet explained that six samples were needed to characterize effects, but the monitoring provisions did not contain a monitoring frequency.

Action Items: Establishing Monitoring and Reporting Requirements

Essential

- Require a minimum of annual monitoring for all parameters with effluent limitations. §122.44(i)(2).

Recommended

- Should ensure consistent use of template language for reporting of monitoring data in accordance with §122.44(i)(1) and §127.11.
- Consider adjusting RPA procedures in the *California Ocean Plan* to eliminate effluent limitations for parameters that are not consistently detected to reduce potential annual monitoring and reporting burden.
- Consider making receiving water limitations more enforceable through receiving water monitoring requirements.

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; BMPs (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.

Program Strengths

Standard conditions established at 40 CFR 122.41 and relevant portions of 40 CFR 122.42 are included in the permits reviewed as Attachment D. There were only minor variations in the standard conditions across the Regional Water Boards. However, several of the standard provisions are routinely omitted, as described below.

Areas for Improvement

Many of the permits reviewed omitted standard provisions not applicable to the discharge. EPA also made this finding during the *2014 California PQR*. Proposed action items to help the State strengthen implementation of standard and special conditions are identified in the next section and are based on the following:

- **RB 1 and 8:** Permits did not contain all federal standard conditions, as listed below. Brief discussions were included in fact sheets explaining that the federal provision was not included because the California Water Code is more stringent. However, the following state requirements, or reference to the state requirements, were not always included in the standard provision attachment(s):
 - Duty to comply provisions under 40 CFR 122.41(a)(2),
 - Monitoring and records provisions under 40 CFR 122.41(j)(5),
 - Signatory requirement provisions under 40 CFR 122.41(k)(2), and
 - Twenty-four-hour reporting requirement provisions under 40 CFR 122.41(l)(6)(ii)(C).
- **SB:** In all permits reviewed, the standard conditions were not incorporated by reference and did not contain all federal requirements. Specifically, the permit template language notes that federal conditions related to enforcement authority and penalties were not included because the California Water Code is more stringent. The standard provisions also didn’t always include the term sludge where it appears in the federal regulations because the State is not authorized to implement the biosolids NPDES program. The operation and maintenance standard provision was missing the last sentence from the federal regulations (i.e., “This

provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.”). The Utility Vault General Permit (CAG990002) lacked the 24-hour noncompliance standard provision. The permit and standard provisions section of the Pesticides Vector General Permit (CAG990004) included the 24-hour reporting requirement but did not contain 40 CFR 122.41(k)(2) (i.e., signatory requirements).

Action Items: Standard and Special Conditions

Essential

- Incorporate all federal standard conditions in the State and Regional Water Board permit templates. §122.41.

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 reviewed materials from the administrative process as they related to the core permit review.

For all State and Regional Water Board issued permits, a public adoption hearing, held in accordance with State law, is required prior to permit adoption. The public adoption hearing is held after a public comment period. Members of the public are invited to testify at this hearing. Agendas for adoption hearings are circulated via email and mail, and are posted on the Regional Water Board’s website, typically several weeks before each meeting. Recordings of each meeting are kept on file and often posted on the Regional Water Board’s website.

When permits are prepared for adoption, an Executive Officer Report is completed and submitted to the Board. The report includes all comments received by the Regional Water Board and the staff’s responses to those comments.

State and Regional Water Boards each have their own internal review processes for NPDES permit development. However, all processes feature some level of internal management review through the senior staff and supervisor of the NPDES program prior to sharing with the permittee and with EPA. Similarly, when NPDES permit template language is developed, it goes through internal management review before being sent out to the statewide NPDES Roundtable or designated subcommittee for review.

EPA and the State Water Board developed a memorandum of agreement (MOA) concerning NPDES permitting procedures and communication protocols in 1973, which was revised in 1989. The MOA requires that State and Regional Water Boards provide draft individual NPDES permits to EPA for review at least 30 days prior to public notice.

Program Strengths

The State and Regional Water Boards administrative process is well-organized and effective, using electronic administrative records (i.e. on a network drive) and consistent use of the permit template language for public comment and public forums. As explained above, the State and Regional Water Boards hear all draft permits in a public forum prior to adoption (i.e. adoption hearing). The adoption hearing process provides another opportunity for public feedback and involvement in the permit development process. The State and Regional Water Boards also use a Lyris listserve management system to provide notices to interested stakeholders.

Areas for Improvement

EPA did not identify any inadequacies in the State's administrative process.

Action Items: Administrative Process

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

F. Administrative Record and Fact Sheet*Background and Process*

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis;¹¹ all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

Current regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limitations 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, communications related to the permit, and other documents supporting any permitting decisions.

¹¹ 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.

Program Strengths

Similar to the administrative process program strengths, the State and Regional Water Boards generally maintain complete and accessible administrative records supporting permit decisions. In addition to posting all final permits on their websites, some Regional Water Boards maintain draft and supporting permit documents (such as the public notice, response to comments, and recordings of permit adoption hearings) on their website as well. Use of permit templates also promote consistency in fact sheet formats.

Areas for Improvement

While EPA does not have specific areas for improvement related to fact sheet templates, see action items below that are included elsewhere in this PQR.

Action Items: Administrative Record and Fact Sheet

Essential

- Ensure that all pollutants are evaluated for reasonable potential and that documentation of the analysis is in the fact sheet or administrative record. §122.44(d)(1). See *Action Items: Reasonable Potential and WQBEL Development* in section III.B.2.

Recommended

- Include a robust discussion of the basis of effluent limitations, especially for flow limits. See *Action Items: TBELs for Non-POTW Dischargers* in section III.B.1.
- Should identify receiving water impairments in the fact sheet. See *Action Items: Reasonable Potential and WQBEL Development* in section III.B.2.
- To improve transparency, fact sheets could be updated if changes to the permit are made after public notice. See *Action Items: Final Effluent Limitations and Documentation* in section III.B.3.
- Should specify the pretreatment program approval or modification dates, including any modifications to local limits, and the basis for requiring program development and implementation. See *Action Items: Pretreatment Food Processing Sector* in section IV.B.
- Should identify and characterize contributing industrial dischargers. See *Action Items: Pretreatment Food Processing Sector* in section IV.B.
- Consider minimizing the use of non-mandatory language such as the permittee "should" implement a particular BMP in the small MS4 permit. Particular BMPs could be used as examples in the fact sheet to provide guidance to permittees.

IV. NATIONAL TOPIC AREA FINDINGS

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

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

Nutrient pollution is an ongoing environmental challenge. However, permits across the nation 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 WLAs in TMDLs, since state criteria are often challenging to interpret.

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

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

The 2014 California PQR also reviewed nutrients as a national topic area and many of the findings made in 2014 continue to apply. Specifically, the State Water Board has not developed statewide criteria or implementation policies for nutrients. However, Regional Water Boards can develop nutrient criteria in their *Basin Plans*. For example, *Basin Plans* can include general narrative nutrient criteria, waterbody-specific numeric causal nutrient criteria, and/or numeric response nutrient criteria.

EPA reviewed three permits, as indicated in Section I of this report for this national topic review area. The WQBELs implemented the following nutrient criteria as specified in the Regional Water Board's *Basin Plans*:

RB	Parameter	Criteria
RB1	Biostimulatory Substances (Phosphorus and Nitrogen)	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
	Nitrate as Nitrogen (NO ₃ -Nitrogen)	10 mg/L
	Dissolved Oxygen	9.0 mg/L as a daily minimum 11.0 mg/L as a 7-day minimum moving average

RB	Parameter	Criteria
RB6	Nitrate as Nitrogen (NO ₃ -Nitrogen)	0.6 mg/L as an annual average 1.1 mg/L as a 90 th percentile
	Total Nitrogen	0.9 mg/L as an annual average 1.5 mg/L as a 90 th percentile
	PO ₄ (Phosphate)	0.32 mg/L as an annual average 0.56 mg/L as a 90 th percentile
RB8	Nitrate as Nitrogen (NO ₃ -Nitrogen) ("maximum benefit" for groundwater)	5.0 mg/L ¹²
	Nitrate as Nitrogen (NO ₃ -Nitrogen) ("antidegradation" for groundwater)	2.7 mg/L ⁹

Program Strengths

Permit fact sheets clearly described receiving water impairments, identified which nutrient criteria applies, and provided the bases for each nutrient limit in the permit. Permits also contained effluent and receiving monitoring requirements for all causal and response nutrient parameters specified in applicable water quality standards for the receiving water. These comprehensive monitoring requirements are helpful for determining RPA for nutrients and appropriate WQBELs as well as informing future evaluations of the standards themselves.

Areas for Improvement

EPA notes that in the *2014 California PQR*, the Agency recommended that the State complete development of numeric endpoint methodology and incorporate implementation provisions for developing nutrient control requirements in NPDES permits. This action item is denoted in Table 2 as in progress.

Proposed action items to help strengthen the State and Regional Water Boards permit controls for nutrients in non-TMDL waters are included to improve the fact sheet documentation for the RPA for nutrients. One of three permits reviewed (Yucaipa CA0105619) did not clearly describe whether RPA was performed for nutrient discharges from the facility. While the permit did contain nutrient effluent limitations (for total inorganic nitrogen), the fact sheet only included a brief statement that limits were based on water quality standards for the affected underlying groundwater management zones. The fact sheet did not explicitly state whether the Regional Water Board had determined the facility had reasonable potential to exceed these standards. See Section III.B.2 for specific findings related to RPA.

Action Items

None. As explained above, the action item for documenting RPA is in Section III.B.2.

¹² The table depicts the current water quality standards in RB8, which were not effective during the timeframe of the reviewed RB8 permits. The nitrate as nitrogen (NO₃-Nitrogen) standard is expressed either as "maximum benefit" or "antidegradation" for underlying groundwater management zones.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

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

Background

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

The goal of the PQR was to identify successful and unique practices with respect to the control of food processor discharges by evaluating whether appropriate controls are included in the receiving POTW NPDES permit and documented in the associated fact sheet or statement of basis; as well as by compiling information to develop or improve permit writers' tools to be used to improve both POTW and industrial user compliance.

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

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

California is authorized to implement the pretreatment program. A total of 80 POTWs in California have approved POTW pretreatment programs that regulate 4,072 significant industrial users (SIUs). In addition, 80 SIUs discharge to POTWs without approved pretreatment programs. See the following table on the next page.

SIU Description	Number of SIU(s) in Approved Pretreatment Programs	Number of SIU(s) in Non-Approved Pretreatment Programs	Total
CIU	1,537	24	1,561
Non-CIU	2,535	56	2,591
Total SIU	4,072	80	4,152

Data source: Government Performance and Results Act (GPRA) data as presented at the April 2016 EPA National Meeting.

As explained in the 2014 California PQR, EPA contractors perform a majority of the pretreatment program reviews, audits, and inspections in California. The contractors prepare reports summarizing the findings from each activity they perform and submit the reports to the Regional Water Board, State Water Board, and EPA for review. Final reports are transmitted to the POTW by the Regional Water Boards.

On average, approved POTW pretreatment programs are audited once every five years and inspected twice in a five-year period, consistent with EPA’s NPDES Compliance Monitoring Strategy. EPA contractors also visit a number of non-approved programs to perform pretreatment program needs assessments. These assessments include searching for potential SIUs in the POTW’s service area. In addition to this contractor work, the Regional Water Boards review POTW NPDES permit applications to identify SIUs in POTWs without approved pretreatment programs.

The table below identifies the four NPDES permits selected by EPA for this national topic area. Three of these permits were selected because they were part of the core review. EPA selected the other permit based on historic pretreatment compliance inspection and audit activities, NPDES permit applications, and POTW annual pretreatment program reports.

RB	Permittee	Permit No.	Approved Pretreatment Program?	Average Design Flow (MGD)	No. of SIUs ¹	No. of Food Processors ¹
<i>POTWs with an Approved Pretreatment Program</i>						
RB3	Monterey One Water	CA0048551	Yes	29.6	4	2
RB8	City of San Bernardino	CA0105392	Yes	33	5	4
<i>POTWs without an Approved Pretreatment Program</i>						
RB1	City of Cloverdale WWTP	CA0022977	No	1.0	1	1
RB7	Valley Sanitary District	CA0104477	No	13.5	2	1

¹ Based on the information provided in the permit application. For the RB7 NPDES permit, Valley Sanitary District CA0104477, the food processor (a SIU) was identified through information gathered during a May 2019 pretreatment compliance inspection of the POTW.

Program Strengths

In the State and Regional Water Board templates, the pretreatment conditions at 40 CFR Part 403 are incorporated by reference. All NPDES permits reviewed for this topic area include the federal standard condition requirement for notification and impact assessment of significant changes in industrial flow or character at 40 CFR 122.42(b). All NPDES permits reviewed also included secondary treatment standards in accordance with 40 CFR 133.102.

In RB3 and RB8, permits reviewed for POTWs with approved pretreatment programs require the POTWs to submit an annual report that includes a list of SIUs, as well as a summary of the results from inspections and sampling at SIUs. Permits for POTWs without approved pretreatment programs in RB1 and RB7 require the POTWs to submit annual reports on pretreatment/source control activities.

Areas for Improvement

Proposed action items to help the State strengthen implementation of the pretreatment program are identified in the next section and are based on the following:

POTWs with an Approved Pretreatment Program (RB3 and RB8)

- **RB3:** The permit reviewed did not contain a requirement for the POTW to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance to ensure that the POTW has limits in place to protect itself from nondomestic discharges (Monterey One Water CA0048551). 40 CFR 122.44(j)(2)(ii).
- **RB8:** The permit reviewed did not contain monitoring for nitrogen, phosphorus, or ammonia (City of San Bernardino CA0105392). The permit could be strengthened by including monitoring for additional parameters expected to be contributed by industrial dischargers.
- Both the RB3 and the RB8 permits reviewed lacked key date information (Monterey One Water CA0048551 and City of San Bernardino CA0105392). The pretreatment program approval and modifications dates as well as the submission date for the POTWs' approved local limits were not included in the fact sheet. Providing the pretreatment program approval and modification dates will help ensure the current version of the POTW's pretreatment program is incorporated into the NPDES permit. The fact sheet should also contain a basis for requiring program development and implementation. The *2014 California PQR* also made a finding that program approval and modification dates as well as basis for requiring the program should be included in the fact sheet.

POTWs without an Approved Pretreatment Program (RB1 and RB7)

- **RB7:** While the permit reviewed contained monitoring requirements, it did not contain effluent limitations for nitrogen, phosphorus, or ammonia (Valley Sanitary District CA0104477). The permit also doesn't require the annual report to contain information on the industrial discharge flow volume or changes. Information on flow volume or changes from industrial discharges can provide important information related to whether a pretreatment program is needed.

*Action Items: Pretreatment Food Processing Sector***Essential**

- Include permit requirements for POTWs to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance to ensure that the POTW has limits in place to protect itself from nondomestic discharges. §122.44(j)(2)(ii).
- Require POTWs to provide information on changes in industrial user flow volume or other changes. §122.42(b)(2).
- Specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW. §122.42(b)(2).

Recommended

- Should specify the program approval or modification dates, including any modifications to local limits, and the basis for requiring program development and implementation in fact sheets.
- Should identify and characterize contributing industrial dischargers in the fact sheet.

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

EPA reviewed the small MS4 General Permit, CAS000004, for consistency with the Phase II stormwater permit regulations. The State Water Board issued this permit on February 5, 2013, with an effective date of July 1, 2013 and an expiration date of June 30, 2018. The permit provides coverage for small MS4s statewide and applies to traditional MS4s (such as cities and counties) as well as non-traditional MS4s such as universities, military bases and prisons. Currently, there are 281 enrollees under this permit. The State Water Board is currently in the process of revising the permit, with a target date for reissuance in early 2021.

EPA recently updated the small MS4 permitting regulations to clarify: (1) the procedures to be used when using general permits (see 40 CFR 122.28(d)); (2) the requirement that the permit establish the terms and conditions necessary to meet the MS4 permit standard (i.e., “to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act”), including conditions to address the minimum control measures (MCMs), reporting, and, as appropriate, water quality requirements (see 40 CFR 122.34(a) and (b)); and (3) the requirement that permit terms must be established in a “clear, specific, and measurable” manner (see 40 CFR 122.34(a)). The updated small MS4 permit regulations became effective on January 9, 2017 and are commonly referred to as the MS4 Remand Rule.

Although the small MS4 permit was issued in 2013 prior to the MS4 Remand Rule, the State and Regional Water Boards had already begun issuance of MS4 permits, including permit requirements consistent with the principles that would later be included in the MS4 Remand Rule. Accordingly, EPA reviewed the small MS4 permit for consistency with the updated regulations.

As explained in the MS4 Remand Rule, states can either issue a comprehensive general permit, which is like a traditional general permit, or issue a two-step permit which establishes some requirements in a general permit and others applicable to individual MS4s through a second proposal and public comment process. The California small MS4 general permit would be considered a comprehensive general permit (rather than a two-step permit) in which all the enforceable permit requirements are set forth in the permit itself. As discussed below, EPA found the permit to be of high quality and generally consistent with the MS4 Remand Rule and the MS4 permit standard.

Program Strengths

Among the more notable program strengths are the following:

- In December 2017, the permit was modified to incorporate the requirements of applicable TMDLs statewide. The State Water Board, with the assistance of the Regional Water Boards, conducted a comprehensive review of all applicable TMDLs (approximately 60 TMDLs) and did an exemplary job of appropriately incorporating them into the permit consistent with the MS4 Remand Rule requirement for clear, specific and measurable requirements. The permit includes detailed requirements for implementation of each TMDLs, including numeric effluent limitations in many cases based on a case-by-case review of the TMDL requirements.
- The small MS4 permit includes highly detailed and prescriptive permit requirements that will effectively implement the requirement of the MS4 Remand Rule for “clear, specific and measurable” permit requirements. Several of the permit requirements (such as section E.9.c pertaining to illicit discharges) were cited in EPA’s 2016 guides (EPA-810-U-16-001 and EPA-810-R-16-017) that provide model permit language for other states to consider in implementing the MS4 Remand Rule.

Areas for Improvement

Certain requirements to control construction site runoff in the small MS4 permit regulations were not found in the permit. In addition, a standard condition related to records retention in NPDES regulations was not found. These are described below as Essential action items for the State Water Board’s upcoming small MS4 permit. There are also certain Recommended action items based on EPA’s review of the permit and are based on the following areas for improvement:

- For some control measures (especially post-construction requirements in section E.12), certain permit requirements include a caveat that they must be implemented “if feasible.” The Remand Rule discourages the use of non-mandatory language of this nature, unless “infeasible” is clearly defined in the permit. Although “feasibility” as it relates to BMP implementation is discussed in the fact sheet, we recommend that the State Water Board’s upcoming small MS4 permit minimize the use of caveats such as “if feasible” or at least include a clear definition of “feasibility” in the permit.
- The Remand Rule also discourages the use of non-mandatory permit language such as the permittee “should” or “is encouraged to” implement certain BMPs. In several instances, the permit includes such language. Permit requirements expressed in such a manner do not

qualify as “clear, specific and measurable” requirements in assessing consistency with the MS4 permit standard. EPA recommends that such language be minimized in the upcoming small MS4 permit, or the State Water Board could provide such examples as guidance in the fact sheet.

Action Items: Small MS4s Permit Requirements

Essential

- Include a requirement that small MS4s provide for and consider information submitted from the public concerning proposed construction projects within the jurisdiction of the MS4. §122.34(b)(4)(i)(E) and §122.34(b)(5)(ii).
- Require retention of records for at least three years in the small MS4 permit. §122.41(j)(2).
- Include more detailed requirements concerning pollution prevention measures that construction site operators must implement for construction projects within the MS4 jurisdiction. §122.34(b)(4)(i)(C).

Recommended

- Should include clear definition of terms in the permit (i.e., caveats like “if feasible” when discussing BMP implementation should be defined in the permit).
- Consider minimizing the use of non-mandatory language such as the permittee “should” implement a particular BMP. Particular BMPs could be used as examples in the fact sheet to provide guidance to permittees.

V. REGIONAL TOPIC AREA FINDINGS

A. Whole Effluent Toxicity (WET)

In 1989, EPA promulgated regulations at 40 CFR 122.44(d)(1) implementing CWA section 301(b)(1)(C) to administer the development and implementation of WQBELs for both narrative and numeric water quality criteria. Per 40 CFR 122.44(d)(1)(i), WQBELs must control all pollutants, including WET, that will be discharged at a level that causes, has the reasonable potential to cause, or contributes to an excursion above any applicable water quality standard. CWA section 502(11) defines “effluent limitation” as “any restriction established by the State or Administrator on quantities, rates, and concentrations of chemical, physical, biological, or other constituents which are discharged from point sources into navigable waters.” Therefore, NPDES permits must contain effluent limitations for WET where reasonable potential has been demonstrated for excursion above a numeric or narrative criterion.

The focus of the WET regional topic area review is to verify that the administrative record and/or fact sheets document RPA determinations for WET, and, where reasonable potential has been demonstrated, permits contain WQBELs to achieve narrative and numeric water quality standards for WET. For this regional topic area, EPA reviewed the 18 permits that were also reviewed for the core review, as listed in Section I. EPA notes that previous PQRs also reviewed WET as a regional topic area. In the *2014 California PQR* and *2008 California PQR*, EPA concluded that permits should use numeric, rather than narrative, WQBELs for chronic toxicity. This finding was based on the fact that numeric limits were generally practicable. Similarly, in

2014 and 2015, EPA Region 9 issued initial permit objection letters to two Regional Water Boards (not reviewed by this report) where effluent data showed reasonable potential for chronic toxicity and “triggers,” not WQBELs, were included in the draft permits. Subsequently, the Regional Water Boards revised the draft permits to include numeric WQBELs for chronic toxicity.

As explained in Section III.B.2, Reasonable Potential and Water Quality-Based Effluent Limitations, of this report, the *California Ocean Plan* incorporates detailed RPA and WQBELs procedures for chronic and acute toxicity numeric objectives. However, *Basin Plans*, which address non-ocean waters, contain a patchwork of toxicity requirements ranging from narrative to numeric water quality standards and may or may not contain RPA and WQBEL procedures. For the permits reviewed in this PQR, the *Basin Plans* contained only narrative toxicity standards.¹³

Adding to the complexity, in response to a petition for permits that contained numeric chronic toxicity effluent limitations for discharges from POTWs to non-ocean waters, the State Water Board adopted Order 2003-0012, which among other things, committed the Board to address the “propriety of final numeric effluent limitations for chronic toxicity” in a statewide policy. In the interim, the Order replaced the numeric chronic toxicity effluent limitations with only a trigger to conduct accelerated monitoring if toxicity occurs. In absence of a statewide policy, use of triggers to conduct accelerated monitoring has also been used in permits for non-POTW discharges to non-ocean waters.

Program Strengths

Because of State Water Board Order 2003-0012, the State Water Board has been in the process of developing statewide toxicity provisions for non-ocean waters.¹⁴ The State Water Board public noticed a draft of the proposed toxicity provisions in October 2018 and are considering adoption in winter 2020. If adopted, the toxicity provisions would establish numeric acute and chronic toxicity water quality standards for non-ocean waters and establish a program of implementation for both acute and chronic WQBELs consistent with 40 CFR 122.44(d)(1)(iv).

Areas for Improvement

The Regional Water Boards implement toxicity requirements inconsistently. Some permits reviewed for this PQR did not clearly document an RPA for toxicity, and some permits included confusing compliance determination language, especially for the chronic toxicity effluent limitations. Confusing compliance determination language can result in an unenforceable effluent limit. Proposed action items to help the State strengthen WET implementation are identified in the next section and are based on the following:

¹³ The narrative standards were similar either “toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health or aquatic life” or “all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce determinantal responses in human, plant, or aquatic life.”

¹⁴ State Water Board Toxicity Provisions and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

- **RB1:** One of three permits reviewed did not conduct an RPA for acute toxicity and retained the narrative acute toxicity requirements from the previous permit (City of Cloverdale CA0022977). One of three permits reviewed had inconsistencies for the RPA in the fact sheet discussion (i.e., Table F-10 shows endpoint 2 but the fact sheet discusses endpoint 3) (Fairhaven CA0024571).¹⁵
- **RB7:** Two permits did not determine whether reasonable potential existed for WET, despite the permits authorizing discharges from POTWs (Westmorland CA0105007 and Coachella Valley CA0104973). One of these permits also authorized the discharge into a receiving water that was impaired for toxicity (Westmorland CA0105007).
- **RB8:** One of three permits reviewed did not conduct an RPA for WET, despite being a permit authorizing a discharge from a POTW (San Bernardino CA0105392). The application for this permit did not include WET test results, as required by 40 CFR 122.21(j)(5)(ii) and (iv). The fact sheet discussed only acute WET triggers and monitoring requirements because the discharge was intermittent, short-term, and received high dilution.
- **SB:** Two of three permits reviewed did not document RPA for WET in the fact sheet (Utility Vault General Permit CAG990006 and Pesticide Vector General Permit CAG990004). The Utility Vault General Permit, CAG990006, contained a discharge prohibition for toxicity, but did not include monitoring to determine compliance like the other permits reviewed in this PQR. Instead the permit relies on a planning requirement, called the PLAN in the permit, to include BMPs that will ensure the discharge will not cause toxicity in the receiving water. In the other permit, the Pesticide Vector General Permit, CAG990004, the fact sheet states that a toxicity special study is needed to determine if residues and degradation byproducts cause toxicity. However, the permit did not contain such a special study requirement.

Action Items: WET¹⁶

Essential

- Ensure that applications for POTWs with a design flow ≥ 1 MGD or with an approved pretreatment program include test results from quarterly WET testing for the period of one year. §122.21(j)(4)(vi)).
- Ensure that all pollutants, including WET, are evaluated for reasonable potential. §122.44(d)(1)(i).
- Ensure that when WET has reasonable potential, WQBELs are established in the permit, including addressing the implementation of the 2003 State Water Board Orders delaying chronic toxicity WQBELs in non-ocean waters. §122.44(d)(1)(i).

¹⁵ EPA notes that in RB1 permits, narratives for toxicity are implemented consistent with the Board’s *Basin Plan*. The two non-ocean water discharge permits implemented narrative acute toxicity requirements and required WET testing for chronic toxicity (City of Cloverdale CA0022977 and Ukiah CA0022888). The ocean discharge permit also conducted RPA for WET using the *California Ocean Plan* procedures (Fairhaven CA0024571).

¹⁶ EPA already made an essential finding for the first bullet in this section. See Section II.A.2 of this PQR (Permit Application Requirements). Therefore, the first bullet in for WET essential findings does not appear under the WET topic in Table 3. Essential Actions from FY 2018-2022 PQR Cycle.

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, finalized in December 2014. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that address deficiencies or noncompliance with respect to federal regulations as “Category 1”. EPA is now referring to these action items going forward, as Essential. In addition, previous PQR reports identified recommendations to strengthen the State’s program as either “Category 2” or “Category 3” action items. EPA is consolidating these two categories of action items into a single category: Recommended.

Table 1. Essential Actions Identified During Last PQR (2014 California PQR)

Program Area	Essential Action Item Title	Status Update (2014 California PQR)
Basic Facility Information, Permit Application, and Permit Provisions	Ensure permit terms do not exceed 5 years	(Resolved) <i>The latest version of the templates (2017) include an instruction box for dates that explains that permits shall be effective for a fixed term not to exceed 5 years and provides an example.</i>
	Include “authorization to discharge” language in its permit template upon receipt from EPA	(Resolved) <i>The latest version of the templates (2017) include “[The Order] shall serve as a NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.</i>
	Revise permit template to clarify the permit is not a shield for pollutants not specifically limited due to inclusion of narrative limits	(Resolved) <i>EPA and the State Water Board agreed that the permit template did not need to include specific language related to this finding.</i>
Water Quality-Based Effluent Limitations	Clarify that data points can be censored only with clear evidence of laboratory error, or by demonstrating that data points are unrepresentative based on empirical evidence showing how the data points are unrepresentative	(Resolved) <i>The State Water Board considered a variety of approaches to address “data quality” concerns and has developed a Quality Assurance NPDES Program Plan. The State Water Board established a workgroup to implement this plan. The State Water Board is also using funds from the CWA 106 grant to support implementation of the Quality Assurance NPDES Program Plan. The State Water Board has a milestone in the CWA 106 grant to ensure that this action item is addressed.</i>
	Update the minimum levels (MLs) listed in the SIP to include improved and more sensitive analytical methods in accordance with federal regulations (i.e., <i>Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting</i>)	(Resolved) <i>The State Water Board replied that it would not be revising the SIP. However, the State Water Board has a milestone in the CWA 106 grant to add language to the SIP requiring use of the most sensitive analytical methods under 40 CFR Part 136. The State Water Board also notes that some RBs do specify the specific analytical method in individual permits through footnotes, and the permit templates have been revised to include requirements that implement the federal regulations (i.e., <i>Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting</i>).</i>

Program Area	Essential Action Item Title	Status Update (2014 California PQR)
	Require use of the most sensitive analytical methods under 40 CFR 136, even if not listed in the SIP	(Resolved) <i>The State Water Board has implemented the requirements of the Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting rule (i.e., 40 CFR 122.21(e)(3), 122.44(i)(1)(iv), and 136.1(c)) in 2016 by adding a new section to the Administrative Procedures Manual called “Sufficiently Sensitive Methods subsection under Procedures for Drafting a Permit” as well as updated requirements in its permit templates.</i>
	Require treatment of “detected, but not quantified” (DNQ) data as “detected” for the purposes of RPA	(Resolved) <i>The State Water Board considered a variety of approaches to address “data quality” concerns and has developed a Quality Assurance NPDES Program Plan. The State Water Board established a Regional Water Board staff workgroup to implement this plan. The State Water Board is also using funds from the CWA 106 grant to support implementation of the Quality Assurance NPDES Program Plan. The State Water Board has a milestone in the CWA 106 grant to ensure that this action item is addressed.</i>
Water Quality-Based Effluent Limitations	Require evaluation of whether the receiving water exceeds WQs based on available receiving water data, even if impaired	(Resolved) <i>The latest version of the templates (2017) include an instruction box for “CWA section 303(d) listed water bodies and that the fact sheet should “describe if the facility discharges pollutants that have reasonable potential to cause or contribute to impairment of a Clean Water Act section 303(d) listed water body.”</i>
	Require inclusion of numeric limits (not narrative “limits” that function only as triggers for further monitoring and investigation) for toxicity in permits where reasonable potential is present and numeric limits are feasible	(Resolved) <i>The State Water Board is scheduled to adopt non-ocean numeric water quality objectives for both acute and chronic toxicity and a detailed program of implementation for non-ocean, non-stormwater discharges, including reasonable potential procedures and numeric toxicity WQBELs, in winter 2020. For ocean waters, numeric water quality objectives, statistical reasonable potential procedures, and numeric WQBELs already exist.</i>
	Require antidegradation review for permitting actions that may further degrade water quality	(In progress) <i>The State Water Board has a milestone in the CWA 106 grant to provide permit writers training on the antidegradation policy and implementation procedures that will include how to conduct an antidegradation analysis by June 30, 2020.</i>
	Consider antidegradation requirements in evaluating the need for WQBELs in tandem with the RPA	(In progress) <i>The State Water Board has a milestone in the CWA 106 grant to provide permit writers training on the antidegradation policy and implementation procedures that will include how to conduct an antidegradation analysis by June 30, 2020.</i>
	Assess whether changes in averaging periods for limits met antidegradation and antidegradation requirements	(In progress) <i>The State Water Board has a milestone in the CWA 106 grant to provide permit writers training on the antidegradation policy and implementation procedures that will include how to conduct an antidegradation analysis by June 30, 2020.</i>
	Provide training regarding compliance schedules, specifically clarifying the differences between TMDL implementation schedules and permit compliance schedules	(In progress) <i>The latest templates (2017 version) include an instruction box information for TMDL implementation schedules and compliance schedules: “a compliance schedule may need to be shorter than the TMDL implementation schedule if the facility can be in compliance sooner than the milestones listed in the TMDL implementation schedule.” The State Water Board also has a milestone in the CWA 106 grant to provide permit writers training on compliance schedules, including how TMDL implementation schedules should be considered when establishing compliance schedules in permits.</i>

Program Area	Essential Action Item Title	Status Update (2014 California PQR)
Monitoring	Ensure, at a minimum, annual monitoring for pollutants is required for pollutants with effluent limits	(In progress) <i>The permit template needs to be updated to include at least annual monitoring frequencies for pollutants with effluent limits. EPA notes that this finding was also made in this PQR cycle.</i>
Special and Standard Conditions	Incorporate all federal standard conditions in the permit template	(Not started) <i>While the latest templates (2017 version) include two types of standard provisions: one referencing the federal standard provisions in an attachment (i.e., attachment D) and the other referencing any other Regional Water Board specific standard provisions, which should not be duplicative of the federal provisions, the provisions still do not include all of the requirements in 40 CFR 122.41.</i>
RPA	Use all data submitted by a discharger and otherwise available in RPA unless those data are clearly demonstrated to be unreliable or unrepresentative	(Resolved) <i>The State Water Board considered a variety of approaches to address “data quality” concerns and has developed a Quality Assurance NPDES Program Plan. The State Water Board established a Regional Water Board staff workgroup to implement this plan. The State Water Board is also using funds from the Clean Water Act 106 grant to support implementation of the Quality Assurance NPDES Program Plan. The State Water Board has a milestone in the CWA 106 grant to ensure that this action item is addressed.</i>
	Consider data points marked as “Detected, Not Quantified” as evidence pollutants are present in discharge and/or receiving water for purposes of applying RPA methods and do not consider DNQ data to comprise evidence of compliance with objectives	(Resolved) <i>The State Water Board considered a variety of approaches to address “data quality” concerns and has developed a Quality Assurance NPDES Program Plan. The State Water Board established a Regional Water Board staff workgroup to implement this plan. The State Water Board is also using funds from the Clean Water Act 106 grant to support implementation of the Quality Assurance NPDES Program Plan. The State Water Board has a milestone in the CWA 106 grant to ensure that this action item is addressed.</i>
	Provide clearer fact sheet justification for inclusion or exclusion of data periods in RPA	(Resolved) <i>The State Water Board considered a variety of approaches to address “data quality” concerns and has developed a Quality Assurance NPDES Program Plan. The State Water Board established a Regional Water Board staff workgroup to implement this plan. The State Water Board is also using funds from the Clean Water Act 106 grant to support implementation of the Quality Assurance NPDES Program Plan. Once implemented, fact sheet language in the State Water Board templates will be revised.</i>

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the recommendations from the last PQR, completed in December 2014, and notes any State efforts to act on those recommendations. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that are recommendations to strengthen the State’s program as either “Category 2” or “Category 3” action items. EPA is consolidating these two categories of action items into a single category: Recommended.

Table 2. Recommended Actions Identified During Last PQR (2014 California PQR)

Program Area	Recommended Action Item Title (2014 California PQR)	Status
Basic Facility Information, Permit Application, and Permit Provisions	Revise its permit template and/or provide permit-writer training to help ensure that permit writers identify and address applicable TMDLs and impaired receiving water settings	(Resolved)
Technology-based Effluent Limitations	Remind permit writers, through revisions to the permit template or training, that the most stringent of the applicable TBELs or WQBELs is used and documented in fact sheets	(Resolved)
Water Quality-Based Effluent Limitations	Require use of all data in the administrative record collected since the last permit was issued when conducting RPA, unless specific data are demonstrated to be unreliable or unrepresentative	(In progress)
	Clarify that Water Quality Order No. 2003-0012 addressing only POTWs discharging to non-ocean waters does not apply to discharges that are not POTWs	(Not pursuing)
	Clarify the elements of an antidegradation review that need to be documented in permit fact sheets	(In progress)
Monitoring	Provide training and/or guidance to ensure permit writers design monitoring in accordance with duration/frequency components of limits and to ensure data and information necessary for future permit reissuance and compliance evaluations are collected during the permit term	(Not pursuing)
Administrative Process	Remind permit writers that the MOA requires them to provide EPA with copies of preliminary draft permits at least 30 days before public notice	(In progress)
Documentation	Ensure permit writers clearly document the basis for RPA, limits, and compliance schedules, and how antibacksliding and antidegradation requirements are met	(Resolved)
Nutrients	Complete development of the CA numeric nutrient endpoint methodology and associated policy and incorporate implementation provisions for developing nutrient control requirements in NPDES permits	(In progress)
Pretreatment	Provide training or written guidance to permit writers to ensure fact sheets clearly document the justification for a pretreatment program and indicate when the program was approved by the State/RB	(In progress)
Stormwater	Ensure stormwater permits include: <ul style="list-style-type: none"> • Numeric, enforceable limits in cases where TMDLs are applicable and numeric limits are feasible • Clear monitoring requirements that are linked to how limits are expressed and incorporate an appropriate mix of receiving water and end-of-pipe monitoring approaches • Provisions that clarify that watershed plans may provide a shield from enforcement action only after those plans are approved by the Regional Water Board or Executive Officer • Specific outreach requirements to commercial and industrial businesses • More specific tracking, reporting, and evaluation provisions for the illicit discharge program • Minimum inspection frequency for the industrial/commercial program • A summary table of reporting requirements and deadlines 	(In progress)

Program Area	Recommended Action Item Title (2014 California PQR)	Status
	<ul style="list-style-type: none"> • More specific requirements for storm sewer system mapping including requirements for identifying location of outfalls, names and locations of all WUS/WS associated with outfalls, system inlets and catch basins • Procedures for tracking construction sites, construction plan reviews, and associated compliance and enforcement actions • Provisions to identify and control non-stormwater discharges from landscape irrigation, irrigation water, lawn watering and street wash water 	
	Ensure through provision of guidance or training for permit writers that all MS4 permits incorporate clear numeric performance standards in all MS4 permits enumerating stormwater retention requirements, specifically indicating that offsite retention approaches may be used in lieu of onsite retention approaches only if the offsite retention approaches yield equivalent or greater water quality benefits and do not cause localized water quality problems	(In progress)
Reasonable Potential	Use an established RPA procedure (SIP or TSD) for non-priority pollutants until state provides specific procedures for determining reasonable potential for non-priority pollutants	(Not pursuing)
	Develop clearer and more concise fact sheet documentation of RPAs for all pollutants of concern, including those on the 303(d) list and those with applicable TBELs	(Not pursuing)
Enforceability of Permits	Include numeric limits where feasible and ensure clear, measurable expressions of nonnumeric requirements when used	(Not pursuing)

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

This section provides a summary of the main findings of the PQR and provides proposed action items to improve the State and Regional Water Boards NPDES permit program, 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.

- **Priority Actions** – Proposed “Priority” action items require State Water Board action to implement. Progress for resolving the priority action items may be tracked through grant work plan agreements.
- **Essential Actions** - Proposed “Essential” action items address noncompliance with respect to a federal regulation. The permitting authority is expected to address these action items in order to come into compliance with federal regulations. As discussed earlier in the report, prior PQR reports identified these action items as Category 1. Essential Actions are listed in Table 4 below.

- Recommended Actions** - Proposed “Recommended” action items are recommendations to increase the effectiveness of the State’s or Regional Water Board’s NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended Actions are listed in Table 5 below.

The following tables (Table 3 and Table 4) summarize only those action items that were identified in Sections III, IV, and V of the report.

Table 3. Essential Actions from FY 2018-2022 PQR Cycle

As explained in the Section III, IV, and V, EPA made several Essential action findings as a result of permits deviating from the standard template language. EPA expects the State Water Board to discuss these action items with the Regional Water Boards and incorporate appropriate reminders to ensure that permit template language is used (i.e., through Roundtable discussions, incorporation in quality assurance checklists or permit application reminder letter templates that currently are under development, and/or some other tool).

Topic	Essential Action(s) Item Titles from FY 2018-2022 PQR Cycle	40 CFR Citation
Permit Application Requirements	1. Ensure that a complete application is submitted, including quarterly WET testing for a period of one year for major POTWs.	§122.21(a)(1) and §122.21(j)(5)
	2. Require updated maps as part of the NPDES permit application.	§122.21(f)(7)
Reasonable Potential	3. Ensure that all pollutants are evaluated for reasonable potential and that documentation of the analysis is in fact sheet or in the administrative record.	§122.44(d)(1)
WQBELs Development	4. Ensure that general permits include effluent limitations for pollutants that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including narrative water quality criteria.	§122.44(d)(1)(i) and §122.44(d)(1)(iii)
	5. Ensure that WQBELs are developed consistent with the assumptions and requirements of wasteload allocations that have been assigned to the discharge in a TMDL.	§122.44(d)(1)(vii)(B)
	6. Ensure that any intake credits are established consistent with §122.45(g).	§122.45(g)
Final Effluent Limitations and Documentation	7. Ensure that compliance schedules include appropriate activities and that interim milestones are included in permits with compliances schedules exceeding a year.	§122.47(a)(3)(i)

Topic	Essential Action(s) Item Titles from FY 2018-2022 PQR Cycle	40 CFR Citation
Monitoring and Reporting Requirements	8. Require a minimum of annual monitoring for all parameters with effluent limitations.	§122.44(i)(2)
Standard and Special Conditions	9. Incorporate all federal standard conditions in the State and Regional Water Board permit templates.	§122.41
Pretreatment: Food Processing Sector	10. Include permit requirements for POTWs to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance.	§122.44(j)(2)(ii)
	11. Require POTWs to provide information on changes in industrial user flow volume or other changes.	122.42(b)(2)
	12. Specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW.	122.42(b)(2)
Municipal Separate Storm Sewer Systems (MS4s)	13. Include a requirement that small MS4s provide for and consider information submitted from the public concerning proposed construction projects within the jurisdiction of the MS4.	§122.34(b)(4)(i)(E) and §122.34(b)(5)(ii)
	14. Require retention of records for at least three years in the small MS4 permit.	§122.41(j)(2)
	15. Include more detailed requirements concerning pollution prevention measures that construction site operators must implement for construction projects within the MS4 jurisdiction.	§122.34(b)(4)(i)(C)
Whole Effluent Toxicity (WET)	16. Ensure that all pollutants, including WET, are evaluated for reasonable potential.	§122.44(d)(1)(i)
	17. Ensure that when WET has reasonable potential, WQBELs are established in the permit, including addressing the implementation of the 2003 State Water Board Orders delaying chronic toxicity WQBELs in non-ocean waters.	§122.44(d)(1)(i)

Table 4. Recommended Actions from FY 2018-2022 PQR Cycle

Topic	Recommended Action(s) Item Titles from FY 2018-2022 PQR Cycle
Facility Information	1. Conduct annual training on the State Water Board permit templates and Administrative Procedures Manual. ¹⁷
Permit Application Requirements	2. Consider including in the permit templates a sentence providing the date the application was complete.
TBELs for POTWs	3. Consider establishing mass-based limits for secondary treatment standards based on the POTW's design flow.
TBELs for Non-POTW Dischargers	4. Should ensure fact sheets contain a robust discussion of the basis of effluent limitations developed using BPJ.
Reasonable Potential	5. Should establish RPA for non-priority pollutants to promote consistency among Regional Water Boards and to ensure that WBQBELs are developed where a pollutant has the reasonable potential to cause or contribute to a water quality exceedance.
WQBELs Development	6. Consider discussing in the fact sheet how the WQBELs were developed from TDML wasteload allocations. 7. Should identify receiving water impairments in the fact sheet.
Final Effluent Limitations and Documentation	8. To improve transparency, fact sheets could be updated if changes to the permit are made after public notice.
Establishing Monitoring and Reporting Requirements	9. Should ensure consistent use of template language for reporting of monitoring data in accordance with §122.44(i)(1) and §127.11. 10. Consider adjusting RPA procedures in the <i>California Ocean Plan</i> to eliminate effluent limitations for parameters that are not consistently detected to reduce potential annual monitoring and reporting burden. 11. Consider making receiving water limitations more enforceable through receiving water monitoring requirements.
Pretreatment: Food Processing Sector	12. Should specify the program approval or modification dates, including any modifications to local limits, and the basis for requiring program development and implementation in fact sheets. 13. Should identify and characterize contributing industrial dischargers in the fact sheet.
Municipal Separate Storm Sewer Systems (MS4s)	14. Should include clear definition of terms in the permit (i.e., caveats like “if feasible” when discussing BMP implementation should be defined in the permit).

¹⁷ This recommendation also appears under the TBELs for POTWs and for Non-POTWs.

Topic	Recommended Action(s) Item Titles from FY 2018-2022 PQR Cycle
	15. Consider minimizing the use of non-mandatory language such as the permittee "should" implement a particular BMP. Particular BMPs could be used as examples in the fact sheet to provide guidance to permittees.

IX. EPA Recommendations

EPA has identified six tasks to address the 17 Essential actions. Progress for resolving these tasks will be tracked through the CWA 106 grant or another vehicle.

Table 5. EPA Recommendations to Address Essential Action Items from FY 2018-2022 PQR Cycle

EPA Recommendations to Address Essential Findings	
1. Update the statewide permit templates.	<p>The permit templates should be updated to include:</p> <ul style="list-style-type: none"> • All federal standard requirements consistent with §122.41. • An example table, instructions, and/or example in the fact sheet to summarize all applicable impairments, TMDLs/WLAs and resulting effluent limitations. • Example of how intake credits could be used to develop an effluent limit. • Instructions in the monitoring attachment that at least annual monitoring for effluent limitations is required. • Instructions that explain compliance schedules should clarify that annual milestones are needed for compliance schedules longer than one year. • Pretreatment language for POTWs to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance.
2. Update the permit application template letter.	<p>Include in the permit application template letter, currently being developed by the workgroup for the Quality Assurance NPDES Program Plan, a description that major POTWs must submit quarterly WET testing for a period of one year with their permit application.</p>

<p>3. Finalize the statewide toxicity provisions.</p>	<p>Finalize the statewide toxicity provisions, which would establish numeric acute and chronic toxicity water quality standards for non-ocean waters and establish a program of implementation for both acute and chronic WQBELs consistent with 40 CFR 122.44(d)(1)(iv).</p>
<p>4. Ensure that the assumptions and requirements of applicable WLAs are documented in the fact sheet for general permits.</p>	<p>Update the administrative procedures manual to explain that WQBELs must be consistent with assumptions and requirements of any applicable WLAs. When feasible, applicable WLAs should be incorporated into general permits as numeric effluent limits, since this is the surest way of ensuring consistency with the WLA. However, WLAs may also be expressed as best management practices in cases where numeric limitations are infeasible, provided a quantitative demonstration is provided in the fact sheet showing that BMPs will be sufficient to comply with the WLAs. <i>See</i> 40 CFR 122.44(d)(1)(vii)(B) and 122.44(k)(2).</p>
<p>5. Clarify how RPA is conducted for all pollutants using available data.</p>	<p>Continue effort from <i>2014 California PQR</i> to implement the Quality Assurance NPDES Program Plan to ensure permits are implementing reasonable potential consistently, including examples for non-priority pollutants.</p>
<p>6. Update small MS4 permit during next reissuance.</p>	<p>The statewide phase II small MS4 permit should be updated to:</p> <ul style="list-style-type: none"> • Include a requirement that small MS4s provide for and consider information submitted from the public concerning proposed construction projects within the jurisdiction of the MS4. • Require retention of records for at least three years in the small MS4 permit. • Include more detailed requirements concerning pollution prevention measures that construction site operators must implement for construction projects within the MS4 jurisdiction.