

**FINAL STATEMENT OF REASONS
Direct Potable Reuse Regulations
Title 22, California Code of Regulations**

UPDATE OF INFORMATION CONTAINED IN THE INITIAL STATEMENT OF REASONS

As a result of the public comments received during the initial comment period (“45-day comment period¹”), the State Water Resources Control Board (State Board) revised the regulatory text provided for public comment for the 45-day comment period, resulting in an additional comment period (“15-day comment period¹”). The reasons for the revisions are provided on page 7, under the section titled “Revisions Following the 45-day Comment Period” of this Final Statement of Reasons (FSOR).

As noted in the Initial Statement of Reasons (ISOR), existing law (Water Code section 13561.2) requires the State Board to adopt uniform water recycling criteria (regulations) for Direct Potable Reuse (DPR) through raw water augmentation by December 31, 2023, subject to the condition that a statutorily mandated expert review panel finds that such criteria would adequately protect public health. The 2022 Panel made a preliminary finding in June 2022 that the State Board’s early draft of the anticipated criteria dated August 17, 2021, adequately protects public health, based on the assumption that the State Board would fully consider and address the 2022 Panel’s recommendations and comments in developing a revised draft of the DPR criteria. Therefore, the 2022 Panel’s finding that the early draft of the anticipated criteria would adequately protect public health was provided as a document relied upon in the ISOR.

As a result of comments received during the 45-day comment period, the State Board revised the proposed regulations, and elicited public comments during a subsequent 15-day comment period. To ensure continued conformance with existing law, prior to initiating the additional comment period (“15-day comment period”) for proposing the revisions, the State Board requested the 2022 Panel make a finding regarding the revisions. The 2022 Panel reviewed the proposed revisions and, by way of a National Water Research Institute (NWRI) memorandum dated October 12, 2023, made a finding that the DPR regulations, as revised, would adequately protect public health. The 2022 Panel’s October 2023 memorandum was included with the documents provided for the additional 15-day comment period and has been included in the rulemaking file.

¹ Although the comment periods exceeded the statutorily mandated minimum timeframes of 45 days and 15 days, those periods are commonly referred to as “the 45-day comment period” and “the 15-day comment period”.

ACRONYMS AND TERMS

The following is a list of acronyms or abbreviated phrases, used in this document, and their meanings:

2016 Panel	2016 Expert Panel on the feasibility of developing uniform water recycling criteria for direct potable reuse that would be protective of public health (SB 918)
2016 Advisory Group	2016 Advisory Group on the feasibility of developing uniform water recycling criteria for direct potable reuse (SB 918)
2022 Panel	2022 Expert Panel to review the proposed uniform water recycling criteria for direct potable reuse and make a finding whether the proposed criteria would be protective of public health (AB 574)
CEC Panel	Science Advisory Panel on Monitoring Strategies for Constituents of Emerging Concern (CECs) in Recycled Water
AB	Assembly Bill
AOP	Advanced Oxidation Process
ASTM	American Society for Testing Materials
AWWA	American Water Works Association
AWTO™	Advanced Water Treatment Operator certification program of the California-Nevada Section of the American Water Works Association and the California Water Environment Association.
CCR	California Code of Regulations
CEC	Constituents or Chemicals of Emerging Concern
CEQA	California Environmental Quality Act
DDW	Division of Drinking Water
DiPRRA	Direct Potable Reuse Responsible Agency
DPR	Direct Potable Reuse
GC	General Comment
IPR	Indirect Potable Reuse
ISOR	Initial Statement of Reasons
LRV	Log Reduction Value
MCL	Maximum Contaminant Level
M/DBP Rule	Microbial Disinfection By-Product Rule
NPDES	National Pollutant Discharge Elimination System
Ozone/BAC	Ozone Biological Activated Carbon
PFAS	Per- and Polyfluoroalkyl Substances
RO	Reverse Osmosis
Regional Board	Regional Water Quality Control Board
SDWA	Safe Drinking Water Act
State Board	State Water Resources Control Board (also referred to as “State Water Board” by some commenters)
SWTR	Surface Water Treatment Rules
U.S. EPA	United States Environmental Protection Agency
UV	Ultraviolet

SUMMARY OF AND RESPONSE TO ORAL AND WRITTEN PUBLIC COMMENTS RECEIVED DURING THE 45-DAY COMMENT PERIOD

This regulatory action (SBDDW-23-001) was made available to the public on July 21, 2023, and public comments were accepted until 12:00 p.m. (noon) on September 8, 2023. The State Board held a public hearing in Sacramento on September 7, 2023. The table below presents a record of those having provided written and oral comments on the proposed regulations during the 45-day comment period.

Unless otherwise noted, the number associated with a specific commenter(s) in the comment summaries and responses sections that follow correspond to the numbers assigned to the commenter(s) in the tables below.

Commenters Providing Written Comments

No.	Name	Affiliation
01	Alcontin, Kaitlin	General Public
02	Chan, Clifford	East Bay MUD
03	Chaudhuri, Mickey Malik, Ajay	Metropolitan Water District of Southern California Los Angeles County Sanitation Districts
04	Danielson, Richard	Danielson Applied Consulting, LLC
05	Deitch, Douglas	General Public
06	Ferons, Daniel	Santa Margarita Water District
07	Frymire, Jody	IDEXX
08	Guerreiro, Juan	City of San Diego Public Utilities
09	Hamlin, Sheryl ^(a)	General Public
10	Lopez, Joone	Moulton Niguel Water District
11	Mackey, Debbie	Central Valley Clean Water Association
12	Miller, Craig D.	Western Municipal Water District
13	Mosburg, Sue Pang, Stephen Voskuhl, Jared	American Water Works Association (AWWA) Association of California Water Agencies (ACWA) California Association of Sanitation Agencies (CASA)
14	Mouawad, Joe	Eastern Municipal Water District
15	Newquist, Scott	Aquaback Technologies, Inc.
16	Nguyen, John	General Public
17	Romero, Barbara	City of Los Angeles, DWP

No.	Name	Affiliation
	Collins, Anselmo	City of Los Angeles, LASAN
18	Sarathy, Siva	Trojan Technologies
19	Schanfald, Darlene	General Public
20	Sharkey, Suzanne	National Water Research Institute on behalf of 2022 Panel
21	Stephenson, Jeff	San Diego County Water Authority (SDCWA)
22	Wang, Sunny	City of Santa Monica
23	West, Jennifer	WateReuse California
24	Wetterau, Greg	CDM Smith
25	Woolley, Erin & Evelyn, Charming Everts, Conner Eidt, Jack Camacho Rodriguez, Martha Wendel, Evelyn Vielma, Esperanza	Sierra Club California Southern California Watershed Alliance & Desal Response Group SoCal 350 Climate Action Social Eco Education (SEE) WeTap.org The Environmental Justice Coalition for Water
26 (b)	Gold, Mark Bothwell, Sean Breck, Justin Moe, Annelisa Ehret Ventura, Andria Jordan, Susan Overhouse, Ashley Brown, Garry	Natural Resources Defense Council (NRDC) California Coastkeeper Alliance Los Angeles Waterkeeper Heal the Bay Clean Water Action California Protection Network Defenders of Wildlife Orange County Coastkeeper, Inland Empire Waterkeeper, Coachella Valley Waterkeeper

(a) Commenter submitted two comment letters.

(b) Although the written letter was submitted before the deadline, the letter was discovered after the close of the public comment period. The written comments were fully considered and were included in the response to comments. The letter is consistent with comments expressed by both Mark Gold and Sean Bothwell during the September 7, 2023 public hearing.

Commenters Providing Oral Comment at the September 7, 2023 Public Hearing

No.	Name	Affiliation
28	Pedersen, Dave ^(a) (WateReuse CA Panel)	Las Virgenes Municipal Water District
29	Callender, Rick ^(a) (WateReuse CA Panel)	Santa Clara Valley Water District
17	Pettijohn, David ^{(a) (b)} (WateReuse CA Panel)	City of Los Angeles, DWP (LADWP)
03	Upadhyay, Deven ^{(a), (c)} (WateReuse CA Panel)	Metropolitan Water District of Southern California & LA County Sanitation Districts
30	Trussell, Shane ^(a) (WateReuse CA Panel)	Trussell Technologies Inc.
26	Gold, Mark ^(d)	Natural Resources Defense Council (NRDC)
26	Bothwell, Sean ^(e)	California Coastkeeper Alliance
22	Wang, Sunny ^(f)	City of Santa Monica
19	Schanfald, Darlene ^(g)	General Public
31	Stahl, Jim	Environmental Engineer
21	Cleaver, Jesica ^(h)	San Diego County Water Authority (SDCWA)
10	Larsen, David ⁽ⁱ⁾	Moulton Niguel Water District
03	Green, Sharon ^(j)	Los Angeles County Sanitation Districts (LACSD)
03	Collins, Heather ^(k)	Metropolitan Water District of Southern California (MWDSC)
13	Pang, Stephen ^(l)	Association of California Water Agencies (ACWA)

(a) The WateReuse California panel provided a presentation to the State Board during the September 7, 2023 public hearing.

(b) David Pettijohn serves as a representative of LADWP and was also included in correspondence that transmitted the City of Los Angeles' LADWP and LASAN joint written comments to the State Board. Therefore, David Pettijohn was assigned the same identifying number as Barbara Romero and Anselmo Collins.

(c) Deven Upadhyay serves as a representative of MWDSC and represented MWDSC and LA County Sanitation Districts on the WateReuse panel which provided oral comments during the public hearing. Therefore, Deven Upadhyay was assigned the same identifying number as Mickey Chaudhuri and Ajay Malik.

(d) Mark Gold serves as a representative of NRDC, which also provided written comments to the State Board in a joint letter with Sean Bothwell and other commenters. Therefore, Mark Gold was assigned the same identifying number as the joint letter.

- (e) Sean Bothwell serves as a representative of California Coastkeeper Alliance, which also provided written comments to the State Board in a joint letter with Mark Gold and other commenters. Therefore, Sean Bothwell was assigned the same identifying number as the joint letter.
- (f) Sunny Wang also provided written comments to the State Board.
- (g) Darlene Schanfald also provided written comments to the State Board.
- (h) Jesica Cleaver serves as a representative of SDCWA, and she was also included Jeff Stephenson's letter that provided SDCWA's written comments to the State Board. Therefore, Jesica Cleaver was assigned the same identifying number as Jeff Stephenson.
- (i) David Larsen serves as a representative of Moulton Niguel Water District, and he was also included in correspondence that transmitted Joone Lopez's written comments from Moulton Niguel Water District to the State Board. Therefore, David Larsen was assigned the same identifying number as Joone Lopez.
- (j) Sharon Green serves as a representative of LACSD, and she provided oral comments in the place of Erika Bensch, who was included in correspondence that transmitted the MWDSC/LACSD joint written comments to the State Board. Therefore, Sharon Green was assigned the same identifying number as Mickey Chaudhuri and Ajay Malik.
- (k) Heather Collins serves as a representative of MWDSC, and she was also included in correspondence that transmitted the MWDSC/LACSD joint written comments to the State Board. Therefore, Heather Collins was assigned the same identifying number as Mickey Chaudhuri and Ajay Malik.
- (l) Stephen Pang was signatory to Sue Mosburg's letter that provided joint comments from AWWA, ACWA, and CASA. Therefore, Stephen Pang was assigned the same identifying number as Sue Mosburg.

Where those providing oral comments were representatives of organizations that provided written comments and were either the same individual or the context of their comments were substantially similar to the organization's written comments, the identifying numbers for the oral commenters are shared with those in the written commenters table.

The oral comments provided during the public hearing in Sacramento on September 7, 2023, were for the most part a summary, subset, and/or were substantially similar to those provided by the same organization in writing during the 45-day comment period. Four of the 15 oral commenters did not provide a separate written letter. Three of these four commenters made remarks as part of an "agency panel" presentation on behalf of WateReuse California, which did submit a written letter. The comments made by these "agency panel" commenters were substantially similar to those provided in the WateReuse letter, with one commenter elaborating in more detail. The State Board summarized all oral and written comments received and addresses both oral comments and written comments together in the following sections, organized under headings "General Comments and Responses" and "Specific Comments and Responses". Transcripts from the public hearing and the WateReuse California "agency panel" presentation slides are included in the rulemaking file.

GENERAL COMMENTS AND RESPONSES

This section addresses comments received that were not directed at a specific section of the proposed DPR regulations. Comments directed at a specific section of the proposed DPR regulations are addressed in the subsequent section.

GC 1:

Commenters 22 and 28 expressed appreciation to the State Board for addressing some of their concerns during the pre-rulemaking period and for already incorporating their previous comments on the proposed regulation. Commenter 31 noted that State Board staff has been working diligently to respond to stakeholder input during development of the draft regulations and urged the State Board to finalize the draft regulations.

Response:

The support and appreciation are noted. The State Board thanks the commenters.

GC 2:

Commenter 15 opined that the regulations are too restrictive, that it will squash innovation and raise the cost of DPR. The commenter suggested that the regulations should use water quality objectives rather than multiple, diverse specified barriers (or barrier mechanisms) to control chemical contaminants and pathogens. The commenter then speculated that the water quality objectives could be met by a single foolproof treatment technology or enhanced monitoring instead of multiple treatment processes and mechanisms.

Response:

It is not feasible to simply require compliance with safe pathogen levels because the current level of detection of infectious organisms is far above the safe levels. For chemical control it is not feasible to rely on a list of specific chemical safe concentrations because the set of known chemicals having health protective limits is expansive, and not comprehensive. The 2016 Panel recommended multiple, diverse barriers to manage the risks. The 2022 Panel accepted the way the pathogen and chemical risks are managed in the DPR regulation.

No revisions were made to the proposed regulations as a result of these comments.

GC 3:

Commenters 03, 06, 12, 13, 14, 21, 22, 23, 24, 25 and 30 emphasized the need for greater flexibility to consider new advancements in technology that increase public health protections. In addition to incorporating the latest technology, commenter 25 suggested that including a mechanism for the robust consideration of treatment alternatives as DPR facilities come online would also help to ensure unique circumstances are considered, including ensuring appropriate consideration of financial feasibility of compliance for facilities serving under-resourced communities. Additionally,

commenters 02, 10, and 11 expressed support for comments submitted by commenter 23.

Response:

The proposed regulations do contemplate the possibility of new advances in technologies. The proposed regulations specifically allow for the use of alternative treatment technologies to meet the chemical control requirements in Section 64669.50, provided that the alternative technology can achieve an equivalent level of public health protection as that provided by the required technology (see 64669.50(r)). The proposed regulations are consistent with the recommendation of the 2016 Panel, that a multi-barrier approach using a combination of different treatment processes and mechanisms is necessary to ensure that a microbiologically safe drinking water is reliably produced. In addition, the proposed regulations also do not preclude the use of other treatment processes beyond those processes required in the proposed regulations to achieve the necessary reduction in pathogens. See also responses to comment GC 4 for other regulatory text changes to allow for additional flexibility.

No revisions were made to the proposed regulations as a result of these comments.

GC 4:

Commenters 03, 06, 12, 13, 14, 17, 21, 22, 23, 25, 30 and 31 expressed a need for a “broad alternatives clause”. Additionally, commenters 02, 10, and 11 expressed support for comments submitted by commenter 23. These commenters expressed a need for a “broad alternatives clause” for the reasons below:

- a) Advances in treatment technology development;
- b) Future monitoring technologies;
- c) Future new knowledge on how to protect public health; and
- d) Future unknowable flexibility needed.
- e) Because IPR regs allow it.
- f) Climate change.
- g) Addressing systems with lower risk.

Response:

As noted in the responses to comment GC 3, the proposed regulations do accommodate the possibility of advances in treatment technologies. The proposed regulations also allow projects the flexibility to use what technology works best to monitor the critical control points and treatment process operation and performance. What works best would change as monitoring technologies improve.

There will likely be future modifications to state drinking water regulations that will be applicable to DPR, such as changes in chemical monitoring requirements/technologies or pathogen monitoring requirements/technologies. Regulations currently allow the use of treatment techniques in lieu of maximum contaminant levels (MCLs) in some cases, due in part to lack of analytical technologies capable of detecting at the low levels needed for the protection of public health.

Revisions to regulations can be anticipated since they will need to accommodate changes in federal regulations to address newly regulated contaminants and monitoring requirements to improve public health protection. Such revisions occur regularly and include the enhanced surface water treatment rules in 1998, 2001, 2002, and 2006; the disinfectants/disinfection by-products rule in 1998 and 2006; and the lead and copper rule revisions in 2004, 2007, and 2021. The State Board has adopted three potable reuse regulations in the last nine years. The State Board Division of Drinking Water (DDW) has an active regulation development program and updates the State Board annually on the proposed drinking water regulation development prioritization.

Please see responses to comments GC 37 and C.35-3 regarding the differences between IPR and DPR permitting, and the federal SDWA primacy requirements that were considered in determining that a broad alternatives clause would not be appropriate.

The proposed regulations specify the minimum requirements for a DPR project, as described in the ISOR. The proposed regulations also require a water safety plan to be developed to assess project-specific risks, and an engineering report to be developed that addresses the impacts of climate change to a DPR project. A DPR project would update these plans and analyses every five years.

No revisions were made to the proposed regulations as a result of these comments.

GC 5:

Commenter 16 urged the State Board to implement stringent DPR requirements and enforcement to protect public health and trust. The commenter asserted that there is no existing technology that would instantaneously and continuously monitor for the 20/14/15 pathogen log reductions.

Response:

Thank you for the comment. The proposed regulations provide stringent DPR requirements for the protection of public health as confirmed by the 2022 Panel. Because of the difficulty in monitoring for the presence of individual pathogens, the use of LRVs is appropriate and ensures a reduction of the maximum anticipated pathogen concentrations through the various required treatment processes.

No revisions were made to the proposed regulations as a result of these comments.

GC 6:

Commenter 26 expressed doubt that the required treatment monitoring is sufficiently robust, including the monitoring methods used, the monitoring frequency specified, and the contaminants monitored. Specifically, the commenter cited a lack of various direct pathogen monitoring methods being required in the proposed regulations (fluorometry to detect virus, flow cytometry for bacteria and protozoa, and sampling for Legionella

bacteria), and was doubtful about the use of chemical indicators and a lack of direct chemical monitoring methods being required for CECs.

Response:

The proposed regulations allow DPR projects the flexibility to use what works best to monitor the critical control points and treatment process operation and performance, subject to State Board approval. Project proponents are able to propose the types of monitoring suggested by the commenter as suits the needs of the project.

The proposed regulations specify the level of treatment necessary to reduce pathogens to concentrations that are protective of public health, and practically speaking, this means that the pathogen concentrations are below the level of detection. Current drinking water regulations such as the Surface Water Treatment Rules recognize the lack of available monitoring methods that can address the pathogen risk and therefore rely on treatment techniques in lieu of a maximum contaminant limit for pathogens.

Legionella bacteria is an opportunistic pathogen that is likely introduced to water distribution systems from sources other than the robust treatment trains required in the proposed regulations. Furthermore, Legionella bacteria can grow within water distribution systems once introduced by sources or potential contaminating activities, so simply adding a requirement for DPR only would not address the risk. Any monitoring requirement for Legionella bacteria would appropriately be implemented in broad regulations applicable to all public water systems, and not just those that choose to implement a DPR project.

The proposed regulations specify the level of treatment necessary to reduce unknown chemicals of concern using the treatment technologies known to be effective, robust and diverse. Similar to pathogen treatment techniques, the monitoring of treatment designed for chemical removal must necessarily rely on indicators, because of the lack of monitoring methods and therefore the lack of knowledge of what chemicals are present in wastewater. The proposed regulations contain a balanced approach to identifying and monitoring for CECs in Section 64669.65 that is protective of public health.

No revisions were made to the proposed regulations as a result of these comments.

GC 7:

Commenter 04 asserted that SCADA systems are not designed to fulfill some of the tasks described in the proposed regulations, such as tracking, compiling, and analyzing laboratory results and imported critical public health data, and suggested that the terminology “information management systems” be added.

Response:

The proposed regulations use the term SCADA appropriately and the SCADA criteria are consistent with the capabilities of a SCADA system. There is no SCADA

requirement that is applicable to laboratory analyses or handling of critical public health data. While information management systems may be useful to a DPR project for other purposes, it is not necessary to specify the term in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 8:

Commenter 02 expressed support for DPR but expressed concerns about the cost of a DPR project. The commenter expressed that it is important to ensure that DPR projects are affordable and equitable to ratepayers.

Response:

While the issue of cost-effectiveness, affordability and equity is important to a utility when deciding if a DPR project is feasible, the focus of the proposed regulations is protection of public health, which addresses public health concerns related to the use of municipal wastewater for treatment to produce safe drinking water. The proposed regulations would ensure that water delivered by a public water system that chooses to engage in DPR are at all times pure, wholesome, and potable.

The proposed regulations are designed to achieve public health-protective limits on risk (to ensure safety) no less than those expected of other drinking water supplies.

The proposed regulations contain provisions that allow for alternative approaches to the prescribed treatment requirements to achieve the same level of public health protection. This will allow DPR projects to take advantage of innovative technologies that may reduce the project cost and make the project more affordable to ratepayers.

No revisions were made to the proposed regulations as a result of these comments.

GC 9:

Commenter 01 encouraged the state government to work with DiPRRAs “towards educating the public about DPR’s safety and reduced environmental impact” and asserted that “Opposition to DPR frequently rests on evoking fear for children and families, and I also think that it is important to counter messaging insinuating that recipients of recycled water are valued any less. Uniformity across regions will reduce the chances of disinformation being spread.”

Response:

The comment is beyond the scope of the proposed regulatory action. The purpose of the proposed regulatory action is to establish minimum requirements for assuring the public’s health is adequately protected. The proposed regulations do not contain any requirements for public education related to the implementation of DPR projects. The process and methods a project proponent chooses to use to engage and educate its customers (beyond those required in the regulation) or, for example, city council

members, to make the decision whether or not to engage in a DPR project is the responsibility of the project proponent.

No revisions were made to the proposed regulations as a result of these comments.

GC 10:

Commenter 30 reminded the State Board that AB 574 legislation mandated that regulation be developed for the raw water augmentation form of DPR and asserted that the proposed “regulations are focused on treated water augmentation that are attempting to allow the raw water augmentation.”

Response:

The commenter presented an observation that there are fundamental attributes of raw water augmentation that suggest an alternative regulatory approach would be appropriate. The legislative mandate and the State Board’s approach for developing the proposed regulations are discussed in the ISOR (pages 8-9). The State Board has considered the features of a raw water augmentation project that provide some risk management benefits and has addressed these features in the proposed regulations. The State Board has also attempted to quantify the public health benefits of all raw water augmentation features during the regulation development process and have challenged stakeholders during the development of the proposed regulations to provide workable suggestions. As a result of this process, the State Board has determined that the proposed regulations provide the best approach for regulating all DPR projects.

The State Board has fairly considered the raw water augmentation form of DPR, given the specific language in the statute. The regulations do address the opportunities for raw water augmentation and provides appropriate health protective criteria for different raw water augmentation scenarios.

No revisions were made to the proposed regulations as a result of these comments.

GC 11:

Commenter 03 urged the State Board to conduct a needs assessment on the available technologies for online monitoring and to ensure the development of technology in a timely manner. The commenter implied that the proposed regulations require online monitoring technology that is not available yet. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

Monitoring technologies sufficient for online monitoring of the required treatment are currently available. The proposed regulations do not require specific on-line monitoring technologies to monitor the critical control points and operations of the treatment processes. The proposed regulations do require that the online monitoring demonstrates the chemical control treatment is operating as designed and for those used for pathogen control, correlates with the reduction of pathogens or surrogates for

pathogens. Additionally, the proposed regulations include requirements specifically for total organic carbon, and hence total organic carbon monitoring is specified.

The State Board appreciates the commenter providing examples of requirements for on-line monitoring; however, while important to consider, those requirements are not part of the proposed regulations. For example, the proposed regulations do not specify that TOC and turbidity be used to demonstrate log reduction of carbamazepine, as the commenter suggested.

The State Board agrees with the commenter's suggestion to collaborate with the regulated community on appropriate available monitoring technologies that are suitable to meeting the requirements of the regulations. However, a needs assessment is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

GC 12:

Commenter 09 asserted that the requirement for a validation study appears to be for pathogen control treatment processes only and suggested that the treatment processes for the entire treatment train should be validated step by step, not just for the pathogen treatment processes.

Response:

The State Board agrees with the commenter and wishes to point out that the proposed regulations do require validation of the entire treatment train for both pathogen log reduction (see subsection 64669.45(a)(4)) and for control of chemical contaminants (see subsections 64669.50(e) and (k)).

No revisions were made to the proposed regulations as a result of these comments.

GC 13:

Commenter 09 suggested that projects chosen to be the first to deliver DPR water must be required to operate pilot plants.

Response:

Although some utilities contemplating DPR have (or plan to) construct demonstration plants and have (or plan to) conducted studies at the pilot scale and some utilities have found pilot studies to be useful in helping the utility assess different treatment trains, treatment processes, or treatment operations, the State Board does not agree that the commenter's suggestion is necessary for a DPR project to be protective of public health. DPR projects will be undertaken only by public water systems that have demonstrated the necessary technical, managerial and financial capacity. In addition, the regulations include design requirements and validation testing requirements which demonstrate that all requirements can be met before the DPR project is permitted to begin operation.

Pilot studies may be conducted by projects on a voluntary basis based on the needs of the DiPRRA.

No revisions were made to the proposed regulations as a result of these comments.

GC 14:

Commenter 09 provided a link to an article where the author asserted that “DPR changes 100 years of public health policy.”

NOTE: The commenter is author of cited article: <https://www.citizensjournal.us/toilet-to-tap-dpr-changes-100-years-of-public-health-policy/>.

Response:

Through various laws, the California legislature and Governor have directed the development of regulations for indirect potable reuse and direct potable reuse for the production of drinking water. Expert panels have found DPR to be feasible and protective of public health. Thus, the proposed regulations that have been developed provide a uniform means for communities to consider and elect to use DPR that would protect public health. The State Board notes that many aspects of public health have changed over the past 100 years.

No revisions were made to the proposed regulations as a result of these comments.

GC 15:

Commenter 09 suggested that antibiotic resistance be classified as a chemical of emerging concern and therefore should be included in the CEC list.

Response:

With regard to antibiotic resistance, the commenter is directed to the 2018 report of the CEC Panel (Drewes, et al., 2018), specifically to Chapter 8, Importance of Antibiotic Resistance in Water Recycling, pages 83 - 97. The report is included in the ISOR references. The proposed regulations do not contain a specific CEC list, but the State Board and DPR projects will continue to track antibiotic resistance research.

No revisions were made to the proposed regulations as a result of these comments.

GC 16:

Commenter 09 opined that outreach to colleges is needed to raise awareness of the opportunities for operators in the water industry.

Response:

The State Board thanks the commenter for the suggestion. However, outreach to colleges about job opportunities in water treatment is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

GC 17:

Commenter 09 asked that “If effluent from WWTF is influent to the AWTF, then where is the validation for the influent to the AWTF (effluent from WWTF)?” The commenter stated that the best possible water should be sent from the wastewater treatment plant to the drinking water treatment plant and mentioned concerns about COVID-19 detections in wastewater surveillance and the possibility of its presence in wastewater plant effluent.

Response:

Validation is defined in the proposed regulations in section 64669.05 (Definitions) as meaning “a demonstration of the pathogen or chemical contaminant reduction capacity of a treatment process.” The validation requirements in the proposed regulations apply to validation of treatment processes that provide pathogen or chemical contaminant reduction (sections 64669.45 and 64669.50). Validation of the wastewater treatment processes used in wastewater treatment plants is beyond the scope of these regulations.

It is possible that the commenter is referring to the characterization of the quality of the wastewater that will be used in the DPR project to produce drinking water. As discussed in the ISOR (page 82), characterization of the quality of the wastewater is necessary to assess the adequacy of treatment proposed, the initial monitoring requirements, identify focus areas appropriate for industrial source control, and provide information necessary for the evaluation of the health risks associated exposure to contaminants in wastewater. The characterization of the quality of the wastewater that feeds the DPR project is addressed in the proposed regulations, in section 64469.75 (Engineering Report).

Addressing the quality of the influent to the wastewater treatment plant is addressed in the proposed regulations, in section 64469.40 (Wastewater Source Control).

No revisions were made to the proposed regulations as a result of these comments.

GC 18:

Commenter 10 requested State Board assistance in procuring future grants to support the financing of DPR project construction.

Response:

The commenter's request for funding assistance from the State Board for future grants to be used in financing construction projects for DPR is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

GC 19:

Commenter 11 recommended that the definition of “Direct potable reuse project” or “DPR project” include a reference to “recycled water” as defined in Water Code section 13050, subdivision (n) to provide clarity to the regulatory language.

Response:

As the commenter indicated, the term “recycled water” has a specific meaning in statute. As such, all recycled water uses as defined in regulations are subject to the same statutory definition. Thus, including the term and citing the Water Code section in the definition of “Direct potable reuse project” or “DPR” is not necessary to provide clarity to the term.

No revisions were made to the proposed regulations as a result of these comments.

GC 20:

Commenter 11 recommended “that the State Water Board develop guidance for public review and comment to clarify the scope of ‘immediately upstream’. Any included definitions or guidance should be consistent with existing law and not an expansion of the proposed scope of the DPR regulations.”

Response:

The term “immediately upstream” has the same meaning as used in Water Code section 13561(b), which defines direct potable reuse. The Water Code also provides examples of what direct potable reuse could include and the definitions of two forms of direct potable reuse. It is clear that the legislature intended for many options involving placement of recycled water upstream of a water treatment plant, including a system of pipelines and aqueducts. The regulation is sufficiently flexible to allow different projects for the planned introduction of recycled water into a raw water supply that is immediately upstream of a water treatment plant. Each project will be addressed on a case-by-case basis.

No revisions were made to the proposed regulations as a result of these comments.

GC 21:

Commenter 19 asserted that an epidemiological study of communities that drink recycled sewage water is an important step that must be included due to the unknowns in the recycled water and suggested that the study must be conducted prior to a plan to introduce reclaimed water into a community and followed for a number of years after the introduction.

Response:

An independent expert panel (the 2016 Panel) opined that DPR is feasible, and another independent expert panel (the 2022 Panel) found the proposed regulations to be protective of public health. Because the proposed regulations contain stringent requirements with regard to pathogen and chemical control, and because water

systems using DPR must additionally comply with all other regulations for public water systems, consumers will receive water that is safe, wholesome and potable.

No revisions were made to the proposed regulations as a result of these comments.

GC 22:

Commenter 25 expressed appreciation for the State Board’s “cautious approach to ensure that DPR facilities are operated with sufficient processes and redundancy to ensure that water provided to communities meets some of the highest standards, is carefully monitored for contaminants, and the facilities are operated by highly qualified technicians.”

Response:

The State Board thanks the commenter for the support.

GC 23:

Commenter 25 urged the State Board to include additional guidance on monitoring CECs, and asserted that the State Board is in the best position to create an independent scientific advisory committee to develop a comprehensive list of CECs and uniform guidance for CEC monitoring utilizing the best available science, with regular updates to ensure new CECs are incorporated into the framework.

Response:

The proposed regulations enable appropriate investigations related to individual DPR projects and the project-specific sewage/wastewater supplying the DPR project. As the regulator, State Board would be involved in the review of CEC lists submitted by DPR projects. As stated elsewhere, statewide uniformity, in terms of the chemicals to be monitored among different projects, may not be adequate to provide a comprehensive chemical characterization of the sewage/wastewater for a project. For additional related responses, please see responses to comments C.65-1 and C.75-3. Addressing the function of a new independent panel on CEC monitoring is beyond the scope of these regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 24:

Commenters 25 and 26 expressed a need to fully evaluate environmental impacts of DPR project waste streams and coordinated permitting activities with National Pollutant Discharge Elimination System (NPDES) program.

Response:

The comments relate to activities for a particular DPR project, including review of a project under the California Environmental Quality Act (CEQA), and review of a project by various permitting authorities. While a particular DPR project would be subject to CEQA, it is too speculative for this analysis to be conducted as part of the adoption of

these regulations. The proposed regulations do not require or approve the development and/or implementation of any specific DPR project.

No revisions were made to the proposed regulations as a result of these comments.

GC 25a:

Commenter 07 recommended testing requirements for each DPR project as part of the independent risk assessment for waterborne pathogen disease. The commenter indicated that routine testing for waterborne pathogens such as *Legionella pneumophila* (*L. pneumophila*) would be used to evaluate the effectiveness of the treatment plant design and ensure that the reuse facility is able to demonstrate the capability of producing DPR water that is pathogen free. The commenter indicated that the testing should be completed by each DiPRRA.

Response:

*Given the myriad of potential pathogens in municipal wastewater and the lack of standard analytical methods for some potential waterborne pathogens such as hepatitis virus and *Legionella pneumophila*, routine testing for waterborne pathogens is not practical. As indicated in the ISOR (pages 31-32), rather than require routine monitoring of a variety of waterborne pathogens, the proposed regulations focus on those waterborne pathogens found in municipal wastewater that represent the highest risk of waterborne disease transmission, specifically *Giardia*, *Cryptosporidia* and *Norovirus*.*

Monitoring data from studies in the scientific literature for those waterborne pathogens were used to establish the maximum concentration expected in municipal wastewater for each pathogen. Those maximum concentrations are used to establish the necessary reduction of each pathogen to achieve an acceptable risk level for each pathogen in the drinking water produced by a DPR project. By focusing on the pathogens that pose the highest risk and maximum concentrations, the proposed regulations will ensure that other waterborne pathogens of lesser risk will not pose a risk to the health of the public consuming DPR project water. In addition, each DPR project must demonstrate that the treatment plant is consistently meeting the requirements for pathogen reduction established in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 25b:

Commenter 07 stated that current research has shown that *L. pneumophila* can survive domestic distribution system processes, despite disinfection efforts and that these same system treatment processes are being proposed for the DPR facilities.

Response:

*Although the commenter is correct that *L. pneumophila* can survive domestic distribution systems processes, despite disinfection, contrary to the commenter's assertion, the treatment processes required in the proposed regulations for DPR*

projects are far more robust. The regulations require more diverse treatment mechanisms and processes than those used in existing surface water treatment plants and will achieve far greater removal of L. pneumophila than surface water treatment plants presently used to meet the Surface Water Treatment Rule.

No revisions were made to the proposed regulations as a result of these comments.

GC 25c:

Commenter 07 recommended including monitoring and assessing Legionnaires' disease risk as part of an ongoing water management process within reuse systems.

Response:

It is assumed that the commenter is recommending testing for L. pneumophila in the DPR project water. The U.S. EPA indicates that there is currently no standard method to assess the occurrence of Legionella bacteria or its control within engineered water systems (<https://www.epa.gov/water-research/understanding-significance-and-potential-growth-pathogens-piped-water-systems>). Thus, monitoring would not be useful in assessing the Legionnaires' disease risk in DPR project water. L. pneumophila can be a concern in the plumbing associated with buildings, but that is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

GC 25d:

Commenter 07 provided information about how other states are evaluating the effectiveness of treatment processes for specific waterborne pathogens at proposed potable reuse water facilities.

Response:

The State Board appreciates the commenter sharing that information. No further response is needed.

GC 25e:

Commenter 07 indicated that at this time, the U.S. EPA is considering changes to the Microbial Disinfection By-Product Rule (M/DBP) and the potential, and well supported, inclusion of L. pneumophila risk reduction and monitoring within drinking water systems. Adding such monitoring now will be an additional way to clearly and effectively reduce disease burden.

Response:

The State Board understands that the U.S. EPA is evaluating potential changes to the M/DBP Rule and has asked the National Drinking Water Advisory Council to form a Working Group that would provide recommendations to U.S. EPA on revisions to the M/DBP Rule. The Working Group is still in the process of finalizing its recommendations. As a result, it appears that U.S. EPA will not be considering any

specific changes for some time and final revisions to the M/DBP Rule are well into the future. Thus, until U.S. EPA adopts changes to the M/DBP Rule, it would be premature to include a monitoring provision for L. pneumophila monitoring in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 26:

Commenter 26 expressed concern about the need to build and maintain confidence in DPR, stating that one disease outbreak will erode consumer confidence and set back the development of DPR for years. The commenter pointed out examples of plant failures, and inadequacies of investments in operations and maintenance, labor and equipment replacement that have resulted in poor water quality and poor recycled water. The commenter concluded that DPR projects must be free of these problems because of the risks to human health and the risk of losing public confidence.

Response:

The State Board agrees with the concerns expressed by the commenter. Compliance with the technical, managerial, and financial (TMF) requirements contained in the proposed regulations ensures that a DPR project can be responsibly operated. The compliance with the requirements for the water safety plan, the engineering report, operations plan, among other requirements, ensure a DPR project consistently produces safe drinking water and protects public health. Additionally, the proposed regulations have been approved by an expert review panel as being protective of public health.

No revisions were made to the proposed regulations as a result of these comments.

GC 27:

Commenter 26 is pleased that the regulations include treatment redundancy, highly trained operators on site continuously, assessment plans and other requirements.

Response:

The State Board thanks the commenter for the support.

GC 28:

Commenter 26 expressed support for recycling all wastewater destined for the ocean, and wanted to make sure other beneficial uses are not impaired at the same time. The commenter recommended the NPDES permit of the DPR facility needs to address discharges associated with the DPR project and the more concentrated brine that will be produced. The commenter suggested that “the State Water Board should include a robust analysis on brine and effluent disposal to provide a comprehensive ‘one water’ approach to recycled water management.”

Response:

Although NPDES permitting is beyond the scope of these regulations, other laws and regulations require any proposed project to address potential environmental impacts associated with a particular project, such as increased brine concentrations in discharges to the environment. The State Board anticipates that project level analysis and permitting will require coordination among the permitting agencies, such as between the State Board and Regional Boards.

No revisions were made to the proposed regulations as a result of these comments.

GC 29:

Commenter 19 asserted that there are thousands of contaminants and many pathogens in wastewater treatment plant influents, and that most are unregulated and unknown. Similarly, there are many toxic chemicals and pathogens in wastewater treatment plant effluents, which have been found in waterbodies and which have been absorbed by food crops. The commenter is concerned about the lack of full knowledge of what is present in recycled water, whether in IPR or DPR projects, and that technologies are inadequate to fully eliminate the contaminants' presence.

Response:

The stringent requirements for pathogen and chemical treatment in the proposed regulations address unknown constituents. The ISOR (pages 30-58) describes how pathogens and chemicals in wastewater are controlled in drinking water produced by DPR projects for protection of public health.

An independent expert panel opined that DPR is feasible, and another independent expert panel found the proposed regulations to be protective of public health. Because of the stringent requirements with regard to pathogens and chemicals that are in the proposed regulations, and because water systems using DPR must comply with all other regulations for public water systems, consumers will receive water that is safe, wholesome and potable.

No revisions were made to the proposed regulations as a result of these comments.

GC 30:

Commenter 19 asserted that “further research is needed to elucidate whether an adequate waste management strategies [including for stormwater runoff] are coming back to haunt us in our seafood.”

Response:

The need for research on waste management strategies, including stormwater runoff and the impact on seafood, is beyond the scope of these regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 31:

Commenter 19 expressed concern that the use of LRVs rather than actual monitoring means that consumers will not know what is present in the water at the end of the treatment processes. Commenter 09 agreed with the commenter's concern regarding pathogens.

Response:

No analytical methods sensitive enough to detect safe levels of pathogens are available. The requirement for high LRVs means the treatment has the capacity to reduce pathogen levels to deal with the highest anticipated pathogen levels that may occur in the wastewater. The ISOR (pages 30-35) explains the reasons for the need to use LRVs. Please also see the responses to comments GC 6 and C.50-8.

No revisions were made to the proposed regulations as a result of these comments.

GC 32:

Commenter 19 expressed concern that there is no requirement for conservation and requested a mandate for conservation and decarbonization of soils.

Response:

Conservation is an important component of water management. However, mandating conservation is beyond the scope of these regulations. Decarbonization of soils is also beyond the scope of these regulations.

No revisions were made to the proposed regulations as a result of these comments.

GC 33:

Commenter 31 pointed out that DPR is an important component of meeting goals of improving the State's water supply.

Response:

Thank you for the comment.

GC 34:

Commenter 19 questioned how the State will ensure that using sewage effluent for potable water is safe.

Response:

An independent expert panel opined that DPR is feasible, and another independent expert panel found the proposed regulations to be protective of public health. Because of the stringent requirements with regard to pathogens and chemicals that are in the proposed regulations, and because water systems using DPR must comply with all other regulations for public water systems, consumers will receive water that is safe, wholesome and potable.

No revisions were made to the proposed regulations as a result of these comments.

GC 35:

Commenter 19 provided links to several articles on PFAS and asserted that the research brings into question the beneficial use of treated wastewater.

Response:

There are a number of actions taking place at the federal and State levels to address PFAS in drinking water. State Board activities can be viewed at its PFAS website <https://www.waterboards.ca.gov/pfas/>. The U.S. EPA recently adopted federal MCLs for PFAS and regulations that apply to all public water systems, whether they are associated with DPR projects or not. The final PFAS national primary drinking water regulations can be viewed at the U.S. EPA website <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.

No revisions were made to the proposed regulations as a result of these comments.

GC 36:

Commenter 19 suggested that recycled water should be used for other purposes, and that it isn't safe to be used as potable water. The commenter appeared to suggest that the use of recycled water will result in disease or illness that will need to be addressed by the public health and medical community.

Response:

An independent expert panel opined that DPR is feasible, and another independent expert panel found the proposed regulations to be protective of public health. Because of the stringent requirements with regard to pathogens and chemicals that are in the proposed regulations, and because water systems using DPR must comply with all other regulations for public water systems, consumers will receive water that is safe, wholesome and potable.

No revisions were made to the proposed regulations as a result of these comments.

GC 37:

Commenter 26 noted that they would be open to discussing further alternatives language to encourage innovation, after hearing the comments by others at the September 7, 2023 public hearing. However, the commenter cautioned that if a “broad alternatives clause” is included in the final DPR regulations, the State Board should include rigorous requirements to demonstrate that the chemical concentrations and pathogen densities meet the regulatory requirements at all times. Continuous monitoring, including flow cytometry, in addition to modeling is necessary to demonstrate regulatory compliance.

Response:

Statutory requirements and federal SDWA primacy requirements were considered in determining that a broad alternatives clause would not be appropriate, and thus a broad alternatives clause was not included in the proposed regulations. As the commenter noted, certain aspects of the DPR criteria are fundamental to making the proposed regulations a path to safe drinking water, and therefore the regulations do not allow for projects to propose alternatives to some criteria.

No revisions were made to the proposed regulations as a result of these comments.

GC 38:

Commenter 03 stated that “while stringent monitoring is non-negotiable, the rules should be practical, implementable and achievable” and concluded that with the amendments proposed by the commenter, “we feel that the DPR regulations can be a solid step forward for California’s water future and we’re grateful for the opportunity to share our insights and look forward to a collaborative approach.”

Response:

The proposed regulations are practical, implementable and achievable, particularly with the changes made in response to comments. No revisions were made to the proposed regulations as a result of these comments.

GC 39:

Commenters 26 stated that “Overall, we are supportive of the DPR regulations and applaud the State Water Board for completing the regulations in a timely manner and in accordance with Assembly Bill 574. With the adoption of the DPR regulations, California’s comprehensive collection of potable reuse regulations will provide communities with the tools necessary to build local, climate-resilient water supplies as the state faces increasing drought. However, if the State Water Board does not ensure the DPR regulations are protective of public health, thus eroding public confidence in potable reuse, the state will be forced to return to its historic reliance on imported water from heavily degraded watersheds, use that water only once, and dispose of it as a waste to the ocean, further degrading our ocean and coast. The approval of these draft DPR regulations with our recommended changes will greatly increase opportunities for, and the effectiveness of, water recycling while safeguarding public health, improve climate resiliency, and better protect aquatic life in inland waters, bays and estuaries, and coastal waters.”

Response:

The commenter’s view regarding the importance of protecting public health is well taken. The proposed regulations are protective of public health. An independent expert panel opined that it is feasible to develop regulations for DPR that would be protective of public health, and another independent expert panel found the proposed regulations to be protective of public health. Because of the stringent requirements with regard to pathogens and chemicals that are in the proposed regulations, and because water

systems using DPR must comply with all other regulations for public water systems, consumers will receive water that is safe, wholesome and potable. Please also see the responses to comments GC 14, GC 21, and GC 29.

No revisions were made to the proposed regulations as a result of these comments.

GC 40:

Commenters 02, 03, 10, 11, 14, 21, and 31 expressed support for the comments provided by commenter 23. Additionally, commenters 11 and 14 expressed support for the comments provided by commenter 13. Commenter 14 also expressed support for the comments provided by commenter 03.

Response:

Noted, thanks.

GC 41:

Commenter 05 submitted 34 screenshots, none of which appear to be relevant to the proposed regulations.

Response:

No revisions were made to the proposed regulations as a result of these comments.

SPECIFIC COMMENTS AND RESPONSES

This section addresses comments received that were directed at a specific section of the proposed DPR regulations.

Section 64669.00:

No comments received.

Section 64669.05:

C.05-1:

Commenter 25 highlighted the subsections (a)(1), (a)(7), (a)(8) and (a)(25) in the Definitions section that use the term “threat” but did not elaborate on the issue.

Response:

The commenter may have inadvertently omitted the comment. The word “threat” is used in several definitions in the proposed regulations and is used as part of terminology such as “acute exposure threat” and “chronic exposure threat” defined in the proposed regulations. Also see responses to comment C.05-3.

No revisions were made to the proposed regulations as a result of these comments.

C.05-2:

Commenter 03 asserted that the term BAC is defined in section 64669.05(a)(5) and that the definition is insufficient and suggested a definition for BAC.

Response:

Section 64669.05(a)(5) does not define BAC but provides an explanation of the acronym BAC as “biologically activated carbon”. “Biologically activated carbon” is a common term that is used extensively in water treatment and a definition is not necessary to further clarify the term. Section 64669.05 also provides explanation of other acronyms used in the proposed regulations (SCADA, UV, etc.).

No revisions were made to the proposed regulations as a result of these comments.

C.05-3:

Referring to subsection (a)(7) which defines “chemical control point”, Commenter 25 suggested that “descriptions or references for such ‘points’ in existing WTPs or in STPs” be provided. The commenter further suggested that definitions be provided to distinguish between a “chemical threat” and a “health threat”.

Response:

The commenter used the term “WTP” but did not define the term. The State Board interpreted the term to mean “water treatment plant”. The commenter additionally used “STP” but did not define the term. The State Board interpreted the term to mean “sewage treatment plant”.

The proposed regulations apply to DPR projects and so the terms defined in the proposed regulations apply would apply to DPR projects. Providing descriptions or references of these terms for non-DPR facilities is beyond the scope of the proposed regulatory action.

The term “health threat” is not used in the proposed regulations, and hence no definition is needed to help clarify the regulations. The term “chemical threat” in subsection (a)(7) has been changed to “chemical hazard” to help clarify the regulations since the term “hazard” is used elsewhere in the proposed regulations and is commonly defined as a danger or risk. Although not directly related to the comment, likewise the term “pathogen threat” in subsection (a)(25) has been changed to “pathogen hazard” for the same reasons.

C.05-4:

Referring to subsection (a)(9) which defines “critical limit”, Commenter 25 requested that the regulation “provide listing of identical requirements for WTP not using DPR waters.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”.

The critical limit requirements in the proposed regulations are not identical to requirements for non-DPR projects, and therefore, including information requested by the commenter is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.05-5:

Referring to subsection (a)(10) which defines “direct potable reuse project”, Commenter 25 stated that the definition of a DPR project should be revised to include a specific DPR project scenario involving the injection of water to a groundwater basin for storage before entry to a water treatment plant or a water distribution system.

Response:

Such an expansion of the definition is not needed as the definition is consistent with the statutory definition of Direct Potable Reuse. The definition of a DPR project is sufficiently broad to include the use of groundwater to either store DPR project water that meets all quality requirements before placing the water into the distribution system; or to store water in a groundwater basin where the water is subsequently pumped into a water treatment plant.

No revisions were made to the proposed regulations as a result of these comments.

C.05-6:

Referring to subsection (a)(17) which defines “log reduction value”, Commenter 25 noted that the term “validated” used in the definition is undefined and suggested that a definition be provided for validated/validation related to microorganisms in water treatment plant processes or trains.

Response:

The term “validation” is defined in subsection (a)(34). No revision to the proposed regulations is necessary to address this comment.

C.05-7:

Referring to subsection (a)(19) which defines “municipal wastewater”, Commenter 03 asserted that the statement in the definition of municipal wastewater – “municipal wastewater is considered a surface water” is overly broad and that the definition should be tailored to specify the portions of the surface water treatment rule that are applicable to municipal wastewater. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

That the direct potable reuse water is considered in the proposed regulations as a type of surface water and that a DPR project is subject to the Surface Water Treatment Rules (SWTR) is discussed in the ISOR. The proposed regulations for DPR will notably be an article within Chapter 17, Surface Water Treatment. The articles related to the SWTR within the Chapter apply in their entirety, and compliance with the proposed regulations would ensure compliance with the SWTR. The state must maintain primacy pursuant to the federal SDWA, so the regulations cannot be less restrictive than the federal regulations, specifically the surface water treatment regulations. Including details in the definition as suggested by the commenter is not necessary.

No revisions were made to the proposed regulations as a result of these comments.

Section 64669.10:

No comments received.

Section 64669.15:

C.15-1:

Commenter 09 suggested that “facilities need to apply to DWR for permit to operate”, and that “DWR should specify a rollout schedule and checklist.”

Response:

The State Board’s charge was to establish uniform criteria for direct potable reuse, the use of municipal wastewater for treatment to produce drinking water, that would adequately protect public health. Permit requirements for DPR projects are addressed in Section 64669.15. Other aspects of permitting are addressed in existing regulations for public water systems. The permitting of DPR projects pursuant to the proposed regulations is under the purview of the State Board’s Division of Drinking Water (DDW), not DWR, the Department of Water Resources, as mentioned by the commenter. While a DPR project may be subject to permitting requirements from other regulatory agencies, those requirements are beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.15-2:

Commenter 17 endorsed the concept of a single DiPRRA for a DPR project and recognized the reason for the necessity of a DiPRRA but expressed concern about its practical implementation for large and complex projects. Commenter 03 opined that “having only a single DiPRRA in this potential project scenario would not be feasible for compliance purposes.” The commenters provided an example project scenario: Metropolitan Water District’s Pure Water Southern California (PWSC) project, and the City of Los Angeles’ Operation Next (OpNEXT) project, whereby the OpNEXT project would transport finished water through the PWSC transmission pipelines. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The proposed regulations require a single DiPRRA per project and that DiPRRA must be a public water system. The proposed regulations provide flexibility for a DPR project's DiPRRA to propose an organizational structure, with the requirement in the proposed regulations being that the DiPRRA must provide information about the project's organizational structure in the joint plan, among other information specified in the proposed regulations.

DDW staff has reviewed the example provided by commenters and finds the complexity described by the commenters can be simplified by clearly defining the DPR project and accounting for water transfer from one project to the other. DDW staff can help address questions regarding permitting during project discussions that are typically held between proponents of a proposed project and DDW staff during project development. The PWSC project and the OpNEXT project are two separate projects, not one, as suggested by Commenter 03. In the scenario provided by the commenters, Metropolitan Water District receives water from both the City of Los Angeles (City) and Los Angeles County Sanitation Districts (LACSD) and would be able to designate itself the DiPRRA for PWSC, while the entities providing the water (City and LACSD) would be designated as partner agencies. Other organizational structures may be proposed by a DiPRRA, including formation of other entities such as a Joint Power Authority.

The State Board has evaluated the example provided by the commenter and finds that no revision to the proposed regulations is necessary to provide more flexibility for a project to organize or select a DiPRRA, because the proposed regulations provide no restrictions on how a project may be organized.

No revisions were made to the proposed regulations as a result of these comments.

C.15-3:

Commenter 17 suggested that the regulations include a requirement for the State Board to establish a work group to provide regulatory guidance and to collaborate directly with a DiPRRA to support their large, integrated, complex, and multi-agency DPR projects.

Response:

The suggestion to establish a work group is beyond the scope of the proposed regulatory action. The purpose of the proposed regulatory action is to establish minimum requirements for assuring the public's health is adequately protected.

No revisions were made to the proposed regulations as a result of these comments.

Section 64669.20:

C.20-1: Subsection (b)

Commenter 03 asserted that to include all upstream entities that collect the wastewater in the joint plan, when a single entity that is the designated authority over wastewater connections and wastewater source control for those upstream entities, will create an unwieldy and unworkable organizational structure for the DiPRRA and would unnecessarily complicate the DPR project, and submitted some proposed regulatory language. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

After due consideration, the State Board agrees that if an entity (who is required to be a partner agency in the joint plan) is the designated authority over wastewater connections and the industrial pretreatment and pollutant source control program for associated upstream entities that collect the municipal wastewater, then the associated upstream entities that collect the municipal wastewater should not be required to participate in the joint plan as partner agencies.

The proposed regulation text has been revised to address the comment. The State Board proposed revisions under a 15-day comment period to add the phrase to section 64669.20(b):

“...notwithstanding that, if an entity pursuant to section 64669.40(a) is the designated authority over wastewater connections and the industrial pretreatment and pollutant source control program for associated upstream entities that collect the municipal wastewater, then the associated upstream entities that collect the municipal wastewater are not required to participate in the joint plan as partner agencies.”

C.20-2:

Commenter 03 suggested that “the State Water Board should consider scenarios where multiple DPR projects utilize common regional conveyance systems to transport recycled water from wastewater treatment plants operated by different agencies” and recommended that “the State Water Board consider incorporating additional flexibility in the joint plan to address the optimal organizational structure on a project-by-project basis for more intricate or unanticipated DPR implementation scenarios.”

Commenter 03 opined on the kind of flexibility that is being sought in terms of alternatives to the DiPRRA, in response to Board Member Firestone's question to provide an example of how a project can provide clear regulatory accountability given the project complexity in operations and management. Commenter 03 stated they simply want the proposed regulations to allow a project to develop a structure they're comfortable with and then allow the project to present the structure to regulators to make a determination whether the proposal is acceptable. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The proposed regulations provide flexibility for a project to propose an organizational structure and requires the DiPRRA to provide information about the organizational structure and other specified information in the joint plan.

The State Board recognizes that there will be DPR projects of varying complexity and believes that the regulations are sufficiently flexible to accommodate complex projects to which the commenter refers. The regulations do not limit the involvement of multi-agency water and wastewater systems in a DPR project provided that there is a single agency, the DiPRRA, responsible for oversight of the project and is permitted as a public water system. There can be multiple projects with common multi-agency water and wastewater partners that facilitate regional direct potable reuse implementation provided each project has a single DiPRRA.

For complicated projects that involve various systems, a DiPRRA for one project can be a partner agency for another project or projects, and an entity can be involved as a partner agency in more than one DPR project, if they provide, for instance, wastewater, to more than one DPR project.

The intent of the joint plan is to define each DPR project and describe the role and responsibility of each partner agency in the project. The DiPRRA submits the joint plan with the permit application for a DPR project.

No revisions were made to the proposed regulations as a result of these comments.

C.20-3: Subsection (a)(7)

Commenter 03 suggested that the plan required by subsection (a)(7) “should focus on optimizing feedwater quality for the DPR process as opposed to targeting chemical concentrations in the influent water for the DPR water treatment plant.” Commenter 14 expressed support for the comments provided by commenter 03.

Response:

A project can choose to optimize the feedwater quality for the DPR process as well if it helps them to achieve the specified requirement in subsection (a)(7). No revision to the language is necessary.

C.20-4: Subsection (a)(7)

Referring to subsection (a)(7), Commenter 25 believes the terms “achievable”, “permitted” and “compliant concentrations” should be defined.

Response:

“Achievable” is a common word and does not need to be defined. Achievable means capable of being done or carried out. “Permitted” is not used in the proposed

regulations. The term “compliant concentrations” is also not used in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

C.20-5: Subsection (a)(8)

Referring to subsection (a)(8), Commenter 25 requested that “procedures or references for existing WTP source control programs for five most populated districts” be provided.

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”.

The proposed regulations apply to DPR projects. There are no existing DPR projects in California. Applying the proposed regulations to other wastewater treatment plants or water treatment plants not part of a DPR project is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.20-6: Subsection (a)(15)

Referring to subsection (a)(15), Commenter 25 wanted the regulations to “provide required commitments, arrangements, and contracts for alternative supply programs for both DPR and WTP facilities”, and to “provide references and compliance conditions for all existing alternative sources for serving WTPs and WSDs.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”. The commenter additionally used “WSDs” but did not define the term. The State Board interpreted the term to mean “water distribution systems”.

The level of detail requested by the commenter is not necessary to be included in the proposed regulations. How a DiPRRA and its partner agency(ies) will provide an alternative source depends on the specifics associated with a given DPR project and would necessarily be handled on a project-by-project basis. Details of how a DPR project would comply with the regulations would be included in the engineering report required pursuant to section 64669.75. Drinking water supplies other than DPR are covered under existing drinking water regulations and are beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

Section 64669.25:

C.25-1:

Commenter 09 enquired about how the public will be notified that a DPR project “is in place.”

Response:

Public notification about the status of a DPR project is addressed in section 64669.25 (Public Meeting) of the proposed regulations. The public meeting requirements are to educate and inform the public and to receive public testimony on the proposed use, as described in the ISOR. More than one public meeting may be necessary depending on the project. Section 64669.100 (Annual Report) and section 64669.130 (Consumer Confidence Report) also provide regular status updates on a DPR project after the project has been approved for operation.

No revisions were made to the proposed regulations as a result of these comments.

Section 64669.30:

C.30-1:

Commenter 16 stated that qualification requirements for a DiPRRA are needed, such as a requirement for 30 years of experience in operating an IPR project prior to implementing a DPR project. The commenter stated that “This ensures general requirements, permits, technical, managerial, and financial capacity, wastewater source control, pathogen control, chemical control, water safety plan, and monitoring/reporting can be met at a lower level as a prerequisite. Minimum qualification requirements will safeguard the public's health and trust.”

Response:

The commenter’s view regarding qualification criteria for a DiPRRA is well taken, and the State Board anticipates that entities considering potable reuse would undertake due diligence in their investigation regarding which form of potable reuse to pursue for their community. However, the suggested 30 years of project experience operating as an IPR project being a potential prerequisite for implementing a DPR project is not feasible and is not additionally necessary for the regulations to be protective of public health. Regulations currently exist for IPR projects which are different than the DPR criteria in the proposed regulations. Subjecting IPR projects to DPR criteria is beyond the scope of the proposed regulatory action. Also consider that entities wishing to pursue potable reuse may not have IPR as a potential option, so it is not feasible to require IPR as a prerequisite for DPR. The proposed regulations require that a DiPRRA is a public water system, and that the DiPRRA and partner agencies for a DPR project have adequate technical, managerial, and financial capacity to support a DPR project that will remain in compliance with the proposed regulations. Compliance with the proposed regulations would ensure protection of public health.

No revisions were made to the proposed regulations as a result of these comments.

C.30-2: Subsection (a)

Commenter 22 stated that the requirements for a DiPRRA and partner agency(ies) of a DPR project to demonstrate technical, managerial, and financial (TMF) capacity is vague, and provided some examples in the form of questions regarding implementation of the proposed regulations. In oral comments, the commenter elaborated that “It’s kind of vague as it’s written because it [costs] varies quite a bit between the capacity of facility, location of the facility and how an agency operates, whether it’s a special district or within a municipal city government.”

The commenter questioned how an agency will be able to demonstrate reliable and continuing funding sources and suggested that “regulations should work in parallel with State Revolving Fund and other funding agency requirements to assess reliable funding sources.”

The commenter questioned “how would the State Board assess operation and maintenance cost, capital cost, energy cost, personnel cost, etc.?” and stated that “these cost items vary considerably depending on capacity of the facility, operations of the agency, agency location, etc.”

The commenter questioned how an agency will be able to demonstrate reliable and continuing funding sources, if the agency's rate payers do not approve a water rate increase. “In particular, the City is unclear if the financial capacity required by DPR regulations may conflict with Proposition 218 requirements if a retail water agency’s rate payers challenges a rate increase, which may impact reliable and continuing funding for the DPR project.”

The commenter requested "clarification on how the State Board or other regulatory body will require to determine adequate financial capacity, bond ratings, community types, and any other criteria."

Response:

Subsection (a) requires that a DiPRRA shall demonstrate that it and its partner agencies have sufficient TMF to comply with the regulations, and it lists what the demonstration must include. The purpose and necessity of each requirement in the demonstration is included in the ISOR. The approach for demonstrating TMF would be similar to how current TMF capacity is demonstrated for public water systems when seeking a drinking water permit. Generally accepted principles for technical, management and financial aspects of operating a public water system would similarly apply.

The commenter suggests that the requirement is vague because costs are different among projects. The requirements in subsection (a) applies to the information a DiPRRA must provide to demonstrate TMF for a DPR project and there is no requirement in the proposed regulations to compare costs among different DPR

projects. The proposed regulations provide the flexibility for each project to be evaluated on a case-by-case basis.

For continuous and reliable funding, the State Board envisions that projects would state that they do have the funding available and give some description of what the sources of funding are. The suggestion that the regulations “work in parallel with” funding entity requirements “to assess reliable funding sources” is beyond the scope of the proposed regulatory action.

Subsection (a)(1) requires the DiPRRA to identify those project elements in the engineering report that have associated ongoing costs, including operation and maintenance costs, capital replacement costs, energy costs, personnel costs, etc. This information is then used by the DiPRRA in subsection (a)(2) to identify what reliable and continuing funding sources would be used to cover the costs identified in subsection (a)(1). The proposed regulations do not require the State Board to do this assessment, as suggested by the commenter.

There is no conflict between the proposed regulations and Proposition 218. Public water systems that want to increase their funding to address operations costs would have to comply with Proposition 218 whether the project is a DPR project or not.

The approach for evaluating TMF would be similar to how current TMF capacity is evaluated. As stated previously, for continuous and reliable funding, the State Board envisions that projects would state the costs and give some description of what sources of funding are available to cover the costs. The proposed regulations do not include requirements for “bond ratings, community types” and the State Board does not speak for other regulatory bodies, so clarification for these is beyond the scope of the proposed regulatory action. The request for clarification of “any other criteria” is not sufficiently clear. The commenter should refer to the ISOR (pages 22-23) for an explanation of the criteria in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

Section 64669.35:

C.35-1:

Commenter 15 opined that the operator training extent and course content should depend on the technologies employed, and because the technologies employed cannot be predicted, the regulations should provide the flexibility in requirements for operator training.

Response:

Setting requirements for the extent and course content of operator training is beyond the scope of the proposed DPR regulations. Section 64669.35 does not contain requirements for operator training; this section contains requirements for operator

certification. Operator training may include a variety of training courses on various topics and content, but these are regulated under various operator certification programs.

A valid operator certificate provides assurance that an operator has satisfied the continuing education requirements of an operator certification program. The proposed regulations do require that a DPR project provide information demonstrating that operators have received training in the proper operation of the treatment processes utilized, the California SDWA and its implementing regulations, the potential adverse health effects associated with consumption of drinking water that does not meet drinking water standards (which includes the proposed regulations), and implementation of wastewater source control. The proposed regulations require that information on operator training be provided in the operations plan (see section 64669.80).

No revisions were made to the proposed regulations as a result of these comments.

C.35-2:

Commenter 16 stated that subsection (e), which allows the DiPRRA to submit a waiver for unmanned operation or operation under reduced operator oversight, should be removed. The commenter provided the following examples illustrating why 24/7 on-site operator staffing must be required at all times:

- a) wastewater treatment plant outage;
- b) raw effluent discharge into outfall;
- c) chlorine disinfectant gas spill/leak;
- d) sanitary sewer overflow at the headworks;
- e) switching over source of water without pretreatment causing irreversible corrosion in the entire distribution system;
- f) recycled water link to PFAS contamination to groundwater and agricultural land due to beneficial use/spreading; and
- g) unlicensed illegally discharging hazardous waste into storm drains that flow directly into the ocean resulting in beach closures due to high coliform counts on non-rainy events.

Response:

The comment about low probability high consequence events is well taken. As stated in the ISOR, “[t]he physical presence of the chief and shift operator(s) while the plant is operating allows for the most timely response to any alarms; enables the assessment of any issues in the operation of the treatment processes, continuous analyzers and other monitoring equipment, control system and other treatment plant activities; and allows for process control quality checks to be conducted. This kind of close observation of the treatment by operators of the operation of a new treatment plant is a necessary measure to ensure public health protection.” The proposed regulations in subsection 64669.35(e) require the DiPRRA to demonstrate “an equivalent degree of operational oversight and treatment reliability with either unmanned operation or operation under reduced operator oversight.” If a waiver is granted, the operator must be able “to

monitor operations and exert physical control over the water treatment plant within the period specified in the operations plan, or one hour, whichever is shorter.” Thus, for the waiver to be granted, the DiPRRA will need to demonstrate that the ability to respond to an emergency such as those described by the commenter is not reduced.

The comment provided examples of events and consequences. While some of the examples are not associated with direct potable reuse, many of these can be just as well or better detected by reliable online instruments and alarms and are addressed by the multi-barrier treatment, continuous online treatment process monitoring, and SCADA and other requirements in the proposed regulations. The proposed regulations minimize the likelihood of an incident that may be hazardous to public health, not only through operator requirements, but also through the various other sections that provide stringent requirements. While the State Board understands that many public water systems choose to utilize on-site operators when a treatment plant is in operation, the proposed regulations offer opportunity for a project to demonstrate to the State Board that “an equivalent degree of operational oversight and treatment reliability with either unmanned operation or operation under reduced operator oversight” after 12 months of operations with on-site operators while the plant is operating.

Lastly, the commenter suggested that a DPR facility must take all wastewater inflows. It should be noted that typically surface water treatment plants are designed to divert water from raw surface water sources into the plant for treatment, so flow control/diversion facilities are present that enables a plant to stop intaking water when raw water quality has deteriorated to a degree that interferes with reliable operations and compliance with regulations. The State Board expects public water systems operating DPR projects to provide the same capability. The proposed regulations include early warning requirements for the DiPRRA to detect potential upstream issues that could interfere with operations, reduce reliability, or increase contaminant levels in the treated water.

No revisions were made to the proposed regulations as a result of these comments.

C.35-3:

Commenters 02, 08, 10, 22, 23, and 30 expressed a need for a “broad alternatives clause” to allow for flexibility in certification of operators, similar to that afforded by the indirect potable reuse (IPR) regulations. These commenters recommended that an alternative be provided to the requirement that DPR project treatment plants be operated only by certified water treatment operators. The commenters indicated that this would allow a highly trained wastewater operator to oversee the entire DPR treatment train without needing to follow the traditional path to obtain a water treatment operator certification. Commenters 08 and 30 additionally pointed out that the operator certification requirements in the current draft have unexpectedly deviated from the previous draft and previous industry expectations and opined that the same operator certification requirements should not apply to both raw water augmentation and treated water augmentation forms of DPR. Commenter 30 also expressed concern that existing

IPR projects use operators that may not have water treatment certifications and that if an IPR project were to transition into a DPR project that there would be human resources impacts. Commenters 03, 11, 14, 21, and 31 expressed support for the comments provided by commenter 23.

Response:

The State Board appreciates the commenters' desire to allow more flexibility in the proposed regulations. However, the alternative that the commenters proposed is not appropriate. Unlike the IPR regulations, the proposed DPR regulations are drinking water regulations that are implemented by public water systems regulated under authority of the federal and state Safe Drinking Water Acts (SDWA). The federal and state SDWA have specific definitions and requirements for public water systems, water treatment plants, operator certification, and water treatment operators. Additionally, the federal SDWA has operator certification requirements that the State must comply with to maintain primacy and, thus, the authority to implement the provisions of the federal SDWA.

A DPR project is operated under a water supply permit issued to the DiPRRA (a public water system) that, in accordance with the federal and state SDWA, is required to use certified water treatment operators. As a result, the regulations define facilities that provide treatment pursuant to the requirements of Sections 64669.45, 64669.50, and 64669.110 as water treatment plants and are required to be operated only by certified water treatment operators. Obtaining operator certification and pathways for operator certification are regulated by the Operator Certification Program and is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.35-3a:

Commenter 22 questioned the need for AWTO™ (Advanced Water Treatment Operator certification program of the California-Nevada Section of the American Water Works Association and the California Water Environment Association) certified operators when certified water treatment operators are required and opined that the AWTO™ certification requirement is duplicative and not necessary.

Response:

Pages 24-25 of the ISOR provides the purpose and necessity for the T5 and the AWTO™ certification requirements.

Please refer to responses to comment C.35-3 regarding requirements for water treatment operators. The AWTO™ certification requirement responds to findings from the 2016 Advisory Group which provided a strong recommendation on the need for an advanced water treatment facility operator certification (pages 8-10, Advisory Group report, 2016). The 2016 Panel also endorsed operator training and certification specifically for potable reuse operators (page 249, Olivieri et al., 2016).

No revisions were made to the proposed regulations as a result of these comments.

C.35-3b:

Commenter 22 opined that the operator certification requirements would be onerous for entities considering DPR, and the requirement for on-site operator staffing would pose “a significant hurdle to staffing a potable reuse plant, particularly for smaller agencies.” The commenter recommended that the on-site staffing requirement in subsection (d) be removed.

Response:

Please refer to responses to comment C.35-3 regarding requirements for water treatment operators and responses to comment C.35-3a regarding requirements for AWTO™ certification. The demonstration of TMF is necessary whether the entity is a large or small agency. DPR projects are voluntary, and if an entity wishes to be a DiPRRA, it must comply with the regulations, including the TMF requirements and operator certification requirements. The ISOR (page 25) describes the purpose and necessity for the requirement for on-site operators in subsection (d). In its “Memorandum of findings: Expert panel preliminary findings, recommendations, and comments on draft DPR criteria” dated June 23, 2022, the 2022 Panel recommended the regulations “Include a criterion that requires 24/7 operation for at least 12 months before considering a request for reducing the number of operators and/or unstaffed operations.”

No revisions were made to the proposed regulations as a result of these comments.

C.35-4:

Commenter 10 pointed out staffing challenges that agencies will face with the T5/T3 operator certification requirement without a pathway to train and develop existing staff to operate a DPR plant. The commenter suggested that utilizing a DPR pilot plant to provide qualifying experience for staff would benefit developing in-house T5/T3 certified operators.

Response:

Section 64669.80(c)(3) requires the operations plan include information on the training of operations personnel on the proper operation of the project's treatment processes. The responsibility for fostering development and training of personnel is the responsibility of the entity employing the personnel, which would be described in the joint plan.

Qualifying experience for treatment operators is regulated by the Operator Certification Program and is beyond the scope of the proposed regulatory action. No revisions were made to the proposed regulations as a result of these comments.

C.35-5:

Commenter 08 stated that the benefits provided by a reservoir is not explicitly stated in section 64669.35(e) as a potential rationale to support a request for a waiver from the on-site operator presence requirements in subsection (d). The commenter further opined that “While this does not explicitly refer to the benefits provided by a reservoir, this section should provide the City with the flexibility to rely on the benefits of the reservoir, in part, to demonstrate that treatment reliability can be maintained in the absence of 24/7 operator staffing.”

Response:

Section 64669.35(e) provides flexibility for projects, after 12 months of operation pursuant to subsection (d), to submit a waiver from the requirement that chief or shift operators must be on-site at all times when a treatment plant providing pathogen and/or chemical treatment is operating for the DPR project, provided that the DiPRRA demonstrates an equivalent degree of operational oversight and treatment reliability with either unmanned operation or operation under reduced operator oversight. If a waiver is granted, the chief or shift operators would not be required to be physically present on-site at all times but must be able to monitor operations and exert physical control over the water treatment plant within an approved period not exceeding one hour. The proposed regulations do not restrict what a DiPRRA may propose as part of its demonstration for the waiver.

No revisions were made to the proposed regulations as a result of these comments.

C.35-6:

Commenter 26 supported the requirements for T5 certified chief operators and AWT3 certified (a specific certificate issued by the AWTO™ certification program) operators on-site at all times.

Response:

The State Board thanks the commenter for the support.

Section 64669.40:

C.40-1:

Commenter 15 stated that “using very broad restriction may be appropriate, although it is difficult to see how tight criteria in this area are helpful as long as potable water produced meets established safe criteria. Presumably criteria for Wastewater Source Control would be influenced by technologies used to treat that water. Because technologies should be expected to evolve and improve, tight criteria here is counterproductive.”

Response:

Assuming that the commenter uses “tight” to mean “strict”, the State Board believes the criteria specified in section 64669.40 are not overly “tight” considering the hazards

posed, and are appropriate, considering the need for public health protection from constituents of sewage/wastewater that will serve as the source of the DPR project water. The proposed criteria in section 64669.40 do not include requirements for treatment technologies. However, should technologies improve such that the sewage/wastewater is of higher quality, it would be a benefit to the DPR project and drinking water consumers. A stringent approach to the protection of public health is not “counterproductive”, as the commenter asserts. Rather, it is appropriately protective of public health.

No revisions were made to the proposed regulations as a result of these comments.

C.40-2:

Commenter 03 acknowledged that subsection (c)(1) does not specify the location for online monitoring for the early warning program and requested that an additional statement be added to the ISOR to explain that “utilities would have flexibility to assess both monitoring technologies and locations (i.e., wastewater treatment plant influent vs. sewershed locations) to select approaches that are the most effective and appropriate” as well as requesting a change in a term used in the ISOR to reflect “early warning” instead of “sewershed surveillance”. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The comment is regarding proposed edits to the ISOR; no changes are needed in the proposed regulation text to address the comment. As noted by the commenter, the proposed regulations do not specify where the early warning monitoring should occur, so utilities will have flexibility to propose the kind of online monitoring and monitoring location best suited for a project to meet the requirements of subsection (c). The change in term requested for the ISOR is noted; however, the term in the ISOR is explanatory and is consistent with the proposed regulatory language.

C.40-3:

Commenter 22 appreciated the streamlining of the wastewater source control requirements, with the removal of online sewershed surveillance programs.

Response:

The State Board thanks the commenter for the support.

Section 64669.45:

C.45-1:

Commenter 20 submitted comments on behalf of the 2022 Expert Panel which stated that the Panel understands but does not agree with the State Board’s rationale for not using pathogen data collected as part of a DPR research study to collect raw wastewater pathogen data. The panel also opined that “the proposed log reduction value (LRV) crediting regime is not based on the most current data on occurrence and

removal of pathogens for treatment processes in California.” Commenters 14 and 23 expressed support for the Panel’s position and stated that the use of the “high-quality new datasets with modern modeling approaches can identify LRTs that protect public health while avoiding the economic and environmental costs of overtreatment.” Additionally, commenters 02, 03, 10, 11, 21, and 31 expressed support for the comments provided by commenter 23.

Response:

As explained in pages 30-35 of the ISOR, a more conservative approach in developing the proposed LRV crediting regime was taken using pathogen occurrence data from the scientific literature rather than relying solely on the specific dataset proposed by the panel. The State Board is not aware of any disagreements that the 2022 Panel has regarding data on removal of pathogens for treatment processes in California. The State Board appreciates the 2022 Panel's perspective and, although we disagree with the 2022 Panel on the derivation of the LRV crediting regime, the 2022 Panel has concluded that the proposed regulations are protective of public health.

The commenter uses the term LRT when the term used in the proposed regulations is LRV, log reduction value, although clearly the term that the commenter uses has the same meaning as the term used in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

C.45-2: Subsection (d)(3) and (f)

Commenter 20 submitted comments on behalf of the 2022 Expert Panel which stated that the Panel views section 64669.45 (d)(3) of the proposed regulations as a necessary addition to the regulations. The commenter also stated that the Panel observed that “the proposed allowable pathogen log reduction for groundwater storage of DPR water is based on a 0.033 log per day value that is from an outdated reference (Yates et al, 1985) that used completely different boundary conditions and is therefore not applicable in a DPR context”, and “that there are more appropriate scientific methods to assess reductions of viruses during groundwater recharge and storage.” The commenter stated that the 2022 Panel did not discuss the addition of section 64669.45 (d)(3) with State Board staff and implied that the 2022 Panel would have offered a different approach or value to use. The commenter stated that this “illustrates the need for a pathogen alternative clause similar to the chemical alternatives clause”, so that an alternative to the proposed allowable pathogen log reduction for groundwater storage can be allowed. Commenter 22 opined that “An alternatives clause should be provided for DPR projects to illustrate effective pathogen control requirements protective of public health without excessive and burdensome levels of treatment.”

Response:

Section 64669.45(f) of the proposed regulations has been revised consistent with the 2022 Panel's recommendation that will allow the DiPRRA to propose an alternative pathogen reduction value in lieu of the required pathogen reduction value of 0.033 log

per day per subsection (d)(3). Subsection (f) allows for a higher virus log reduction credit for groundwater storage if certain conditions are met. The reduction rate in (d)(3) is a conservative default value that does not require project specific study.

In addition, pursuant to the 2022 Panel's broader recommendation regarding a pathogen alternative clause, please see responses to comment C.45-5 regarding another area where a specific requested alternative was incorporated into the proposed regulations, and responses to comment GC 37 regarding the rationale for not including a broad alternatives clause for pathogens in the proposed regulations.

C.45-3: Subsection (a)

Commenters 06, 12, 13, 14 and 23 believe that the proposed regulations require an excessive degree of treatment for pathogens and support the use of lower log reduction values for pathogens. These commenters supported the LRV figures proposed by the 2022 Panel and agree with the 2022 Panel's perspective that the pathogen dataset generated by the DPR research be used exclusively to determine the pathogen log reduction values. Additionally, commenters 02, 03, 10, 11, 21, and 31 expressed support for the comments provided by commenter 23.

Response:

The State Board agrees with the 2016 Panel finding that the DPR treatment must be reliable, and that a key attribute to promote reliability includes using a treatment train that provides redundancy (with multiple, independent treatment barriers) and meets "performance criteria greater than the public health threshold LRV goals" established for pathogens. (Olivieri, 2016)

The State Board believes that the minimum LRVs of 16/10/11 required in the proposed regulations are necessary to protect public health and the 4-log redundancy LRV's 20/14/15 required in the proposed regulations provide the necessary redundancy should there be a treatment failure with the loss of some pathogen reduction. The ISOR (pages 30-35) provides the basis for the LRVs required in the proposed regulations as well as the pathogen dataset that was used in developing the LRVs. Please also refer to the responses to comment C.45-1.

No revisions were made to the proposed regulations as a result of these comments.

C.45-4: Subsection (a)

Commenter 26 strongly supports the log reduction requirements in the proposed regulations, as well as the requirements for discontinuing water delivery when any one of log reductions fall below 16, 10 and 11 for enteric viruses, Giardia and Cryptosporidium, respectively, is also reasonable and protective of public health. The commenter also supports a thorough validation study for the treatment system and determination of log reduction demonstrated.

Response:

The State Board thanks the commenter for the support.

C.45-5: Subsection (a)(3)

Commenters 03, 22, and 24 suggested that flexibility be provided in the subsection (a)(3) of the proposed regulations to allow for an alternative to be proposed for one of the three required pathogen mechanisms. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The proposed regulations do not specify a treatment technology to use to meet the pathogen control requirements in Section 64669.45. Consistent with the recommendation of the 2016 Panel that a multi-barrier approach using a combination of different treatment processes and mechanisms is necessary to ensure that a microbiologically safe drinking water is reliably produced, the proposed regulations require a certain minimum number of treatment processes and a certain minimum number of pathogen control mechanisms to be used. The proposed regulations require a physical separation mechanism, a chemical disinfection mechanism, and a UV disinfection mechanism to be used. The current federal and state drinking water regulations for surface water (Surface Water Treatment Rule) require filtration (a physical separation mechanism) and disinfection to be provided.

Within these constraints, staff has revised the regulation text in section 64469.45(a)(3) to add subsections (A) and (B) to allow for alternatives to the pathogen control mechanisms specified in the regulations as long as certain mechanisms are present that meet the requirements of the SWTR, which are necessary to maintain primacy under the federal SDWA. The proposed alternative must be demonstrated to assure an equivalent or better level of protection of public health with respect to treatment technique diversity and treatment train robustness and must be reviewed by an independent advisory panel pursuant to section 64669.120. These new requirements in section 64669.45(a)(3)(A) and (B) are consistent with similar requirements for alternatives to chemical control criteria under section 64669.50(s) (described in pages 58-59 of the ISOR) and are necessary in order for the proposed revisions to the regulations to be protective of public health.

C.45-6: Subsection (a)(7)

Commenter 18 opined that the requirement would be misinterpreted if (1) the target organism is not specified and to which the required UV dose and the required log-inactivation refer; and (2) if the UV radiation wavelength is not specified.

Response:

The proposed regulations do not specify a target organism. As described in the ISOR (page 39), the requirement is to ensure effective control of viruses regardless of the particular virus posing the greatest threat. Additionally, no specific wavelength is specified to allow for flexibility in innovation. In fact, the Innovative Approaches for

Validation of Ultraviolet Disinfection Reactors for Drinking Water Systems (U.S. EPA, April 2020) includes recommendations for inactivation at other wavelengths. The requirement in subsection (a)(7) that “[t]he treatment train shall include UV disinfection with a dose of at least 300 mJ per cm²” is expressed in a manner that is also used in the U.S. EPA UV Disinfection Guidance Manual (U.S. EPA, November 2006) and the additional specification suggested by the commenter is not necessary.

No revisions were made to the proposed regulations as a result of these comments.

C.45-7: Subsection (b)(1)

Commenter 18 noted that “certain molecular methods for surrogate detection, which are a form of presence/absence measurement, may not show the impact of UV inactivation which is most accurately quantified with culture-based methods because they assess microbe viability.”

Response:

The process for treatment validation contained in section 64669.45(a)(5) would address the issues raised by the commenter. Specifically, subsection (a)(5)(C)5 requires the validation study protocol to “Identify the surrogate and/or operational parameters that can be measured continuously and that will correlate with the reduction of the pathogen(s) or surrogate(s) for the pathogen(s).” The regulations do not require a specific surrogate to be used.

No revisions were made to the proposed regulations as a result of these comments.

C.45-8: Subsection (a)(1)

Citing subsection (a)(1) regarding the requirement for the treatment train to be designed and constructed to comply with the 20/14/15 LRV requirement for enteric virus, Giardia lamblia cyst, and Cryptosporidium oocyst, respectively, Commenter 25 requested “current WTP requirements for enteric virus, Giardia lamblia cyst, and Cryptosporidium oocyst in finished waters” be provided in the proposed regulations.

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”.

The proposed regulations apply to DPR projects. There are no existing DPR projects in California. The proposed regulations establish requirements for pathogen treatment in the DPR project for the production of drinking water. Among those are the LRVs stated by the commenter. Providing current requirements for water treatment plants not part of a DPR project is beyond the scope of the proposed regulatory action. That said, there are other State and federal requirements that address the treatment requirements for various types of conventional sources of drinking water such as surface water and groundwater. These requirements are contained in drinking regulations (notably the

Surface Water Treatment Rules and the Ground Water Rule) and in drinking water permits.

No revisions were made to the proposed regulations as a result of these comments.

C.45-9: Subsection (a)(2)

Citing subsection (a)(2) regarding the requirement for the treatment train to consist of no less than four separate treatment processes for each of the pathogens enteric virus, Giardia lamblia cyst, and Cryptosporidium oocyst, Commenter 25 requested that the regulations provide “current WTP separate treatment process requirements”, and to “provide any references and requirements for known WTP which require four separate treatment processes (with 4 parallel or sequential trains) for any component in their facilities.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”.

Presumably the commenter is interested that the proposed regulations provide the information for comparative purposes. However, the requirements in the proposed regulations are not identical or comparable to those for non-DPR projects, and therefore, including information requested by the commenter is beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.45-10: Subsection (a)(3)

Citing subsection (a)(3), Commenter 25 requested the regulations to provide definitions for “diverse”, “distinctive”, or “different” when applied to treatment mechanisms and provide “references for such when applied to WTP or WDS. Provide any references and requirements for known WTP which require three ‘diverse’ separate treatment processes (12 parallel or 4 sequential/parallel sets of three diverse treatment trains) for any component in their facilities.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”. The commenter additionally used “WDS” but did not define the term. The State Board interpreted the term to mean “water distribution system”.

There is no need to define “diverse”. It is a word that is commonly used to mean different or dissimilar. The mechanisms that provide the required diversity are provided in subsection (a)(3) of the proposed regulations. The word “different” is not used in this part of the regulations. It is used twice elsewhere in the regulations. It, too, is commonly

used to mean “not the same”. The word “distinctive” is not used in the regulations. There is no need to define those words in the regulations.

The commenter should note that their description of “12 parallel or 4 sequential/parallel sets of three diverse treatment trains” is not a requirement in the proposed regulations.

No revisions were made to the proposed regulations as a result of these comments.

C.45-11: Subsection (d)(2)

Commenter 08 stated “the July 2023 draft DPR regulations now provides the opportunity for a direct potable reuse responsible agency (DiPRRA) to obtain up to two logs of pathogen log reduction credit based on reservoir dilution, as demonstrated by hydrodynamic modeling and tracer studies.”

Response:

The commenter should note that subsection (d)(2) states in part: “Continuous mixing may be credited with no more than two logs of the pathogen log reduction criteria in subsections (a)(1) and (b)(3). The credit pursuant to this subsection may only be used to meet the requirements of subsection (b)(2) for up to 60 minutes in any 24-hour period.”

No revisions were made to the proposed regulations as a result of these comments.

C.45-12:

Commenter 22 recommended that agencies should be given the opportunity to choose to immediately divert or provide additional barriers to accomplish the log removal values of 16/10/11 instead of requiring both.

Response:

The commenter is correct that the regulations require both a four-log redundancy and diversion. However, the two requirements are needed to address different situations. Redundancy, which is additional treatment beyond the minimum required to produce acceptable drinking water, is a reliability recommendation from the 2016 Panel to address treatment failures that are not detected by the monitoring systems. The current DPR Criteria Expert Panel agreed with the State Board on the need for significant redundancy and had suggested a 5-log redundancy in its analysis (but found the 4-log specified in the regulations as being protective of public health). Diversion is necessary when the monitoring system detects a treatment failure such that the water is inadequately treated. Both are necessary to ensure that inadequately treated water is not delivered to consumers.

No revisions were made to the proposed regulations as a result of these comments.

C.45-13: Subsection (a)(3)

Commenter 22 opined that the requirement “under §64669.45(a)(3) for each treatment mechanism being validated for no less than 1.0 log reduction for enteric virus, Giardia cysts, and Cryptosporidium oocysts appears arbitrary considering the required treatment train stipulated in §64669.50 (i.e., ozone-biologically activated carbon, reverse osmosis, and ultraviolet-advanced oxidation process.” The commenter further opined that “a DPR project already exceeding the 20/14/15-log reduction requirements through a diverse treatment train and multiple redundant validated technologies yet without a chemical disinfection system providing 1.0 log reduction for Cryptosporidium oocysts should not be penalized compared to other DPR Projects meeting the minimum log-reduction requirements per §64669.45.(a).”

Response:

Subsection (a)(3) states that “[T]he treatment train shall consist of no less than three diverse treatment mechanisms each for enteric virus, Giardia lamblia cyst, and Cryptosporidium oocyst. The three treatment mechanisms shall include one membrane physical separation mechanism, one chemical inactivation mechanism, and one UV inactivation mechanism, with each treatment mechanism validated for no less than 1.0 log reduction for each of the three pathogens, enteric virus, Giardia lamblia cyst, and Cryptosporidium oocyst. Additional treatment mechanisms may be used.” The commenter should note that subsection (a)(3) does not require that all processes be validated to achieve no less than 1.0 log, only those related to the three mechanisms as described in the subsection. A treatment train that includes additional mechanisms are allowed, and those extra mechanisms do not need to be validated to achieve 1.0 log or more. The proposed regulations do not require that the treatment processes used for chemical control be validated for pathogen control, as suggested by the commenter. The DiPRRA would propose the treatments to be used to meet the pathogen control requirements and which to be used to meet the chemical control requirements. Some of these proposed treatment processes could serve dual purposes under sections 64669.45 and 64669.50 or they might not.

No revisions were made to the proposed regulations as a result of these comments.

C.45-14: Subsection (d)

Commenter 22 opined that “[T]he language provided in the Initial Statement of Reasons, Page 42 paragraph 3, is, however, contradictory to the intent of §64669.45.(d)” and asserted that “[T]he purpose of the LRV process is to limit human health exposure risks: blending may not remove or inactivate organisms but by reducing the concentration of pathogens within the drinking water supply the same objectives as LRVs are achieved.” The commenter suggests that the pathogen LRVs could be satisfied equally by both treatment (removal and inactivation) and non-treatment options. The commenter recommends that the non-treatment options provided in subsection (d) be allowed to meet the requirements in subsections (a)(2) and (a)(3) that require the treatment train to consist of no fewer than four separate treatment processes and no fewer than three diverse treatment mechanisms.

Response:

The ISOR (pages 42-45) explains the purpose and necessity for subsection (d). As described in the ISOR, the DPR regulations must be consistent with existing regulations, and the Surface Water Treatment Rule currently only recognizes removal and inactivation to address the pathogen risk.

While blending operations have been approved for projects to meet chemical MCLs, blending is not a removal method, as suggested by the commenter. Blending has not been approved to address pathogens in the Surface Water Treatment Rule and therefore is not an approved treatment process or treatment mechanism for pathogens.

As described in the ISOR, subsection (d) allows for blending or mixing options to provide up to 2 log credit to meet the extra 4-log redundancy requirements, such that projects that have the water conveyance or reservoir capacity can take advantage of those benefits to improve the reliability of the treatment train. This, however, does not mean that blending or mixing are considered treatment processes or treatment mechanisms to meet subsections (a)(2) or (a)(3).

No revisions were made to the proposed regulations as a result of these comments.

C.45-15:

Commenter 22 recommended that the DPR regulations should be revised to include sources of water approved for use as a diluent water under the IPR regulations to be automatically accepted for drinking water use without further review. The commenter opined that the diluent water must meet the same requirements as drinking water sources with respect to meeting regulatory limits and monitoring, that the diluent water has essentially undergone all the permit review steps for consideration as a drinking water source.

Response:

A diluent water source approved under the IPR regulations is considered non-potable water and has not undergone permit review as a potential drinking water supply under the federal and state SDWAs. The proposed regulations do not assume that a diluent water source, which is heretofore considered for IPR use, would always be acceptable as a drinking water source, and hence the proposed regulations specify that a blend source meet the requirements of subsection (d)(1).

No revisions to the proposed regulations are needed to address the comment.

C.45-16:

Commenter 25 indicated that since DPR treatment is continuous there is the expectation that “nighttime storage” would be required. The commenter then observed that the proposed regulations do not mention how and where the “nighttime storage”

would occur, suggesting that the nighttime storage might occur in the groundwater aquifer.

Response:

The proposed regulation requires “continuous” treatment of wastewater being used for the production of drinking water. That is not to say that a DPR project will always be producing drinking water. If any of the required treatment fails to operate effectively, the production of drinking water must cease. If the DPR project is not needed for periods of time, the treatment train may cease operation during those periods. “Nighttime storage” is not necessary if a DiPRRA decides to shut down treatment when the demand for water is low.

No revisions were made to the proposed regulations as a result of these comments.

C.45-17: Subsection (a)(5)(C)5.

Citing subsection (a)(5)(C)(5.) regarding the requirements for the validation study protocol to “identify the surrogate and/or operational parameters that can be measured continuously and that will correlate with the reduction of the pathogen(s) or surrogate(s) for the pathogen(s),” Commenter 25 requested that the regulations define what “measured” means, elaborate on the form of measurement and requirements for remeasuring, and define what “continuously” means (e.g., once every 1, 5, 10, 15 sec). The commenter also requested that the regulations provide “all existing parameters used in existing WTPs that are both measured ‘continuously’ and are correlated with ‘pathogens or surrogates’.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”.

The requirement in subsection (a)(5)(C)(5.) is for a DPR project to propose a validation study protocol that would identify the surrogate and/or operational parameters that meet the specified criteria, propose how these surrogates and operational parameters would be measured, and propose the measurement frequency.

The type and frequency of measurement would depend on the treatment process, surrogates, operational parameters, available technology, reliability of treatment and measurement technology, and other factors. The regulations provide flexibility for a project to select the monitoring that would work best to meet the criteria, subject to State Board approval. This flexibility accommodates advances in monitoring technology in the future. Adding definitions for “measured” and “continuously” is not necessary as these are common words often used in drinking water regulations and elsewhere. Including information requested by the commenter for non-DPR water treatment plants is beyond the scope of the proposed regulatory action.

No revisions are necessary in the proposed regulations to address the comment.

C.45-18: Subsection (b)(1)

Citing subsection (b)(1), Commenter 25 requested that the regulations “provide reference to any existing requirements and compliant facilities for LRVs in existing WTPs drawing influent from rivers receiving any STP tertiary effluents within 5 miles of WTP intakes.”

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”. The commenter additionally used “STP” but did not define the term. The State Board interpreted the term to mean “sewage treatment plant”.

Presumably the commenter is interested that the proposed regulations provide the information for comparative purposes. However, the requirements in the proposed regulations are not identical or comparable to those for non-DPR projects, and therefore, including information requested by the commenter is beyond the scope of the proposed regulatory action.

No revision is necessary in the proposed regulations to address the comment.

C.45-19: Subsection (b)(2)

Citing subsection (b)(2), Commenter 25 requested the regulations define or reference “validated” vs “approved” trains and operations and requested “clarifications as to ‘treatment train’ and ‘available’ options, if same as presented and approved in the validation study report for EV/GLC/CO.”

Response:

The term “validation” is defined in section 64669.05(a)(34), to mean “a demonstration of the pathogen or chemical contaminant reduction capacity of a treatment process.” The term “validate” therefore is the verb form of “validation”, which would mean “to perform a validation” or “to demonstrate the pathogen or chemical contaminant reduction capacity of a treatment process.”

The term “approved trains and operations” is not used in the regulation text, so need not be defined and furthermore a comparison cannot be made between “validated vs approved trains and operations.”

The term “treatment train” is defined in section 64669.05(a)(32) to mean a group or assemblage of physical, chemical, and biological treatment processes that conditions or treats water to achieve a specific water quality objective.

A validation study report, with requirements as described in sections 64669.45 and 64669.50, would be a report that describes the validation of a treatment process.

The “available options” as used in section 64669.45(b)(2) refers to the options in subsection (d) as noted in (b)(2), which includes options for blending, mixing, and groundwater recharge, that are options a DPR project may utilize to meet a portion of the pathogen log reduction criteria as described in subsection (d).

No revision is necessary in the proposed regulations to address the comment.

C.45-20: Subsection (d)(1)

Citing subsection (d)(1), Commenter 25 requested clarification for the use of the term “finished water” as an approved permitted water source for use in a blending operation described in section 64669.45(d)(1).

Response:

“Finished water” is defined in existing regulations in 22 CCR section 64400.41 to mean water entering or in the distribution system of a public water system that is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system. Subsection (d)(1) allows a DPR project to use such water for blending to meet the requirement set forth in the subsection. This water may be used to blend with DPR project water at a point proposed by the project, subject to State Board approval.

No revision is necessary in the proposed regulations to address the comment.

C.45-21: Subsection (d)(3)

Citing subsection (d)(3), Commenter 25 requested clarification of which terminology to use for storage in groundwater basin, whether the water is “DPR project water” or “finished water”. The commenter also requested the same clarification for water used for mixing.

Response:

Section 64669.45(d)(3) uses the term “DPR project water” with respect to recharge or groundwater storage. Likewise, section 64669.45(d)(2) uses the term “DPR project water” with respect to mixing in a reservoir. The term “finished water” is not used in subsection (d)(3) because “finished water” means the water is for consumption without further treatment. A DPR project’s proposal to utilize options in subsections (d)(3) or (d)(2) to meet a portion of the 16/10/11 or 20/14/15 pathogen log reduction criteria means that the DPR project water may not meet the definition of a “finished water” (that is, additional treatment is needed). Please note that the definition for “DPR project water” in section 64669.05(a)(11) is broader than the definition for “finished water”.

No revision is necessary in the proposed regulations to address the comment.

C.45-22: Subsection (f)

Citing subsection (f), Commenter 25 requested clarification as to the relationship between viruses and pathogens as it relates to subsection (f), and suggested that the terms “credit”, “limitation” and “process” were confusing or used in error.

Response:

Virus is the only type of pathogen the State Board gives credit for in the subsection because the scientific literature only justifies giving credit for virus reduction with groundwater storage over time. The State Board believes it is clear that “process” means a “treatment process”, the “two log limitation” means the cap on the two logs, and “credit” means the pathogen reduction attributed to a treatment process. The term “credit” is often used in drinking water regulations and IPR regulations when addressing compliance with specified requirements.

No revision is necessary in the proposed regulations to address the comment.

Section 64669.50:

C.50-1: Subsection (d)

Commenters 20 and 24 suggested clarification is needed on the ozone/BAC design requirements in subsection (d)(1) and (d)(2) to clarify that ozone would reduce two of the four specified chemical indicators, while BAC would be designed to reduce the other two specified chemical indicators.

Response:

The State Board agrees that additional clarity can be provided by specifying the indicators associated with the ozone process and those associated with the BAC. Subsection (d) has been revised to clarify that if an alternative design ratio is proposed, the ozone process shall be designed to reduce the chemical indicators carbamazepine and sulfamethoxazole by no less than 1.0 log with a pilot scale demonstration. Similarly, if an alternative empty-bed contact time is proposed, the BAC shall be designed to reduce the chemical indicators formaldehyde and acetone by no less than 1.0 log with a pilot scale demonstration.

C.50-1a: Subsection (d)

Commenter 22 asserted that the ozone/BAC process required in subsection (d) is “based on a small sample size of one or two demonstration facilities, lacking long-term operation data from a fullscale facility where it could be optimized further or design/operating criteria may need to be adjusted for a wastewater source in a different region” and suggested that subsections (d)(1) and (d)(2) containing design criteria for the ozone and BAC processes be removed because the criteria are “too restrictive and does not provide the flexibility to optimize design and operating conditions.” The commenter also asked what happens “i[f] a utility were to design the ozone/BAC system as specified currently in the DPR regulations and it does not meet performance.”

Response:

The purpose and necessity for ozone/BAC and the ozone/BAC design criteria are discussed on pages 46-48 of the ISOR. Subsections (d)(1) and (d)(2) provide clarification for subsection (d) and provides conservative design criteria for ozone/BAC for those projects that do not wish to conduct project-specific pilot scale testing of the ozone/BAC treatment. In addition to the design requirements, the proposed regulations require projects to validate the design of the ozone/BAC process pursuant to subsection (e) and monitor the process pursuant to subsection (f).

The commenter brings up an important point that sometimes a treatment process designed and constructed might not ultimately meet performance expectations. Hence, the proposed regulations include a validation requirement of the installed treatment process and an ongoing monitoring requirement. It is the responsibility of the DiPRRA to ensure compliance with the proposed regulations, and to discuss with DDW staff any performance issues or compliance issues during operations.

It should be noted that subsections (d)(1) and (d)(2) do allow the flexibility for different design criteria to be used if it can be demonstrated at pilot scale that the alternative design criteria can achieve the reductions required by subsections (d)(1) and (d)(2).

No revision is necessary in the proposed regulations to address the comment.

C.50-2: Subsection (n)

Commenters 08, 23, and 30 expressed a need for a “broad alternatives clause” to allow for flexibility in setting the total organic carbon (TOC) critical limit. These commenters believe that continuous mixing within a reservoir should be an allowable alternative to use to meet the critical TOC limit of 0.5 mg/L in the effluent of a reservoir. Commenter 23 stated that mixing in a reservoir would achieve the same level of protection as blending. Commenter 08 opined that raw water augmentation projects with a reservoir should not be forced to shut down or divert if the advanced treated effluent to the environmental buffer exceeds the critical limit for TOC. Commenter 30 stated that the wastewater industry may not be familiar with automated shutdowns, and hence a reservoir that could be used to raise the TOC critical limit is beneficial. Additionally, commenters 02, 03, 10, 11, 14, 21, and 31 expressed support for the comments provided by commenter 23.

Response:

The State Board agrees that mixing of DPR project water in a reservoir is a potential alternative approach to achieving compliance with the TOC critical limit. However, the State Board does not agree that such an alternative can be used continuously to achieve the TOC critical limit. Continuous discharge of DPR project water with a TOC level above the critical limit would eventually result in the reservoir water exceeding the critical limit at the effluent. The State Board agrees that mixing of DPR project water exceeding the TOC critical limit over a short period of time can result in a situation where the effluent from the reservoir will continue to meet the TOC critical limit.

Commenter 08 should note that the proposed regulations do not limit how or where the TOC would be monitored to determine compliance with the TOC limit, other than compliance must be ascertained “prior to distribution”. Therefore, a plant would not be required to shut down or divert if the advanced treated effluent to a reservoir exceeds the TOC critical limit, if the TOC control point is not established at the location where advanced treated effluent discharges to the reservoir. A project would need to determine the locations of the control points with respect to the locations of the diversions and shut-downs. A TOC control point established downstream of a reservoir prior to distribution would benefit from any mixing in the reservoir, for example.

While a project may be designed to minimize disruption to operations when shut-down or diversion is triggered or minimize the occurrence of events triggering shut-down or diversion, the ability for automated shutdowns when the SCADA system detects an event triggering shut-down or diversion is necessary for public health protection.

Section 64669.50(n) of the proposed regulations has been revised to allow for flexibility in setting the TOC limit for the scenario proposed by the commenters:

- Attenuation of elevated TOC concentration of limited duration with mixing in a reservoir downstream of the advanced treatment may be used to temporarily increase the TOC critical limit measured prior to the mixing so that the TOC of wastewater origin is no more than 0.5 mg/L in the water entering the distribution system.*
- The magnitude and duration of proposed alternative TOC critical limit must be justified by hydrodynamic modeling, tracer testing, and the diluent capacity of the reservoir, to demonstrate that the TOC of wastewater origin is no more than 0.5 mg/L in the water entering the distribution system.*
- The proposed alternative TOC critical limit, hydrodynamic modeling, and tracer testing must be reviewed by an independent advisory panel.*

C.50-3:

Commenter 08 indicates that the DPR regulations do not include specific allowances to quantify the benefits of the reservoir in terms of chemical control.

Response:

The regulations do allow for the use of the reservoir to achieve chemical control under certain circumstances. The regulations contemplate that there may be times when there are undetected, short-term failures in the treatment process. These failures could result in an increase in organic chemicals as measured by total organic carbon (TOC).

The regulations establish a critical limit for TOC, which is intended to protect public health. As described in the responses to comment C.50-2, over the short-term, the reservoir can serve to attenuate TOC critical limit exceedances thorough mixing that will dilute the TOC level to ensure that the critical limit is not exceeded in the effluent of the reservoir. However, using the reservoir to continuously attenuate TOC levels that

exceed the critical limit will eventually result in the dilution capacity of the reservoir to be exceeded and the reservoir effluent to exceed the TOC critical limit.

The regulations also require in subsection (m) that the design and operation of the entire treatment train, including connected facilities such as storage tanks, detention basins, pipelines, and water conveyance provide continuous mixing of the flow along the path of flow between the terminus of the wastewater collection system and the entry point to the drinking water distribution system sufficient to attenuate a one-hour elevated concentration (spike) of a contaminant by a factor of 10. The regulation text in subsection (m) was clarified to include the reservoir among the connected facilities.

C.50-4: Subsection (a)(3)

Commenters 18 and 26 recommended that the advanced oxidation process (AOP) required should be a UV radiation-based AOP. Commenter 18 stated, “It is essential to state that the required advanced oxidation process is one that employs UV together with an oxidant to generate highly reactive radical species.”

Commenter 26 strongly supported the order of chemical treatment being ozone/BAC followed by reverse osmosis followed by advanced oxidation “through UV and often peroxide” and suggested that “these requirements should be clarified in the regulations.”

Response:

Commenter 18 is correct that the advanced oxidation process is commonly understood to include both UV and an oxidant. However, requiring the advanced oxidation process be UV radiation-based as Commenters 18 and 26 recommend or defining advanced oxidation as the Commenter 18 suggests would preclude the use of new technologies in the future to meet the requirements set forth in the regulations.

Subsection (b) requires the sequence of processes in the treatment train to be ozone/BAC followed by reverse osmosis followed by advanced oxidation. The specific components comprising advanced oxidation is deliberately not specified to allow for technological innovation, as discussed in the ISOR (page 53). The requirements for the design and validation of the advanced oxidation are contained in subsection (k), so the varying types of advanced oxidation must comply with this subsection.

Commenter 26 should note that alternatives may be proposed for the processes in subsection (b) pursuant to subsections (r) through (t), and an ozone/BAC process may not be required in certain cases pursuant to subsection (c).

No revision is necessary in the proposed regulations to address the comment.

C.50-5: Subsection (f)

Commenter 18 recommended nitrite be monitored post-O3/BAF, and a limit be established at this point which “should be based on an assumed (yet, literature-based) nitrite rejection yield by the aged RO [reverse osmosis] membranes.” The commenter

also suggested that nitrate could be an issue too, but not as a hydroxyl radical scavenger, as stated in the ISOR, and if nitrate monitoring is also considered, then a limit should be set for nitrate too.

Response:

The commenter used the term “BAF” which the State Board assumed that the commenter was referring to the BAC process. The State Board agrees with the commenter that advanced oxidation scavengers are an issue. The nitrite monitoring of the ozonation process feedwater is necessary for the ozone/BAC process and can also provide information to characterize whether nitrite will be an issue in the feedwater for the downstream advanced oxidation process. The presence of scavengers would be addressed in the advanced oxidation demonstration process, which would help a project determine whether monitoring for nitrite (or other advanced oxidation scavengers) is necessary for reliable operation of the advanced oxidation process to achieve the design requirements.

No revision is necessary in the proposed regulations to address the comment.

C.50-6: Subsection (g)(1)(C)

Commenter 03 cited subsection (g)(1)(c) and opined that “limiting the pH to a specific range may negatively affect the membrane performance.” The commenter recommended changing the language to “An influent pH that corresponds to the manufacturer’s recommended range or range determined to be optimal based on pilot studies.”

Response:

The requirement in subsection (g)(1) is not an operational requirement. It is the test conditions used in the ASTM method D4194-23. As stated in subsection (g), a RO membrane selected for use must have been tested by the manufacturer to meet the test conditions specified as demonstrated through Method A of ASTM's D4194-23 standard test method.

No revision is necessary in the proposed regulations to address the comment.

C.50-7:

Commenter 22 opined that the treatment requirements are excessive, given the strict operational controls such as online source monitoring and the ability to divert off-spec water flows that are required in the proposed regulations, and recommended that the State Board consider the operational controls as a “sufficient means of protecting public health without also requiring additional treatment,” such as the ozone/BAC, which is not required for IPR.

Response:

The commenter assumes that all chemical peaks can be detected by online instrumentation, which is not the case. There is no instrumentation that is able to

analyze for all unknown contaminants. A system designed to divert off-specification flows still has to be able to measure when off-specification occurs. The treatment requirements in the proposed regulations, including the requirement for ozone/BAC (an additional barrier for DPR), are based on a multi-barrier treatment concept intended to address the multitude of chemicals in wastewater as well as being necessary to protect public health from unnoticed failures and unnoticed chemical peaks.

For example, the 2016 Panel recommended additional treatment to address unauthorized short-term peak discharges of chemicals into the wastewater collection system. The 2022 Panel concurred with the addition of ozone/BAC to address the issue.

No revision is necessary in the proposed regulations to address the comment.

C.50-8:

Commenter 26 appreciates the chemical indicator monitoring requirements but believes the monitoring frequency to be inadequate to ensure that advanced treat is performing as it should all the time.

Response:

Chemical indicators are currently more sensitive than available direct measurement techniques proposed by the commenter. Online monitoring is required for pathogen and chemical control points per section 64669.85. The proposed regulations do not specify a frequency of treatment process performance monitoring for the most part, but the expectation is that the monitoring be continuous to ensure the operation is as expected and fully compliant with the regulations. To determine compliance with the TOC critical limit and to ensure that treatment is performing as it should be, TOC is to be measured at least every 15 minutes, which is an adequate frequency to determine compliance that is protective of public health.

No revision is necessary in the proposed regulations to address the comment.

C.50-9: Subsection (e)(3)(A)

Commenter 25 requested that definitions and distinctions between critical and non-critical limits be provided and compared to “approved limits”. The commenter suggested that definitions or more specific descriptions be provided for what “continuous” means and what “recorded” means (digital, tapes, written). The commenter requested that definitions, references, or explanations for term “as designed” vs “approved” be provided.

Response:

Section 64669.05(a)(9) provides the definition for “critical limit” to mean a maximum and/or minimum value of a continuously monitored parameter that indicates that a treatment process or an operation is effectively controlling the pathogen or chemical risk. The terms “non-critical limit” and “approved limits” are not used in the regulation

text. Including definitions for terms not used in the regulation text is beyond the scope of the proposed regulatory action.

A definition for “continuous” is not necessary as it is a common word often used in drinking water regulations and elsewhere. A definition for what “recorded” entails is not necessary as it is a common word that is also often used in drinking water regulations.

The term “not operating as designed” used in section (e)(3)(A) refers to the design pursuant to subsection (d), as in “not operating as designed pursuant to subsection (d).” The term “approved” does not appear in section (e)(3)(A) so it is unclear how to provide a definition, reference, or explanation for it that contrasts with the term “as designed”, as requested by the commenter. The dictionary meanings for “approved” and “designed” are different. A system may be operating “as designed” whether it is “approved” or not. Similarly, a system may be “approved” for use but during operation may not be operated “as designed”, for instance when a failure occurs that causes a system to not operate “as designed”.

No revision is necessary in the proposed regulations to address the comment.

C.50-10: Subsection (f)

Commenter 25 requested definitions and distinctions for “full scale operations” compared to “normal operations”. The commenter requested definition for “continuously” and requirement for recording method (digital, tapes, written) be provided. The commenter requested that alarms be provided when monitoring shows limits are exceeded, and clarification whether nitrite monitoring is required to be recorded.

Response:

The term “full-scale operations” has no correlation to the term “normal operations”, which is not a term used in section 64669.50. The term “full-scale operations” is used in subsection (f) to differentiate from “pilot scale”, which is used in subsection (d). The terms “full-scale” and “pilot scale” are commonly used terms in the field of engineering.

Please see responses to comments C.45-17 and C.50-9 regarding the necessity for definitions for “continuous” and “record”. The requirements for alarms for critical limits at control points are contained in section 64669.85.

Subsection (f) requires that nitrite be continuously monitored. Section 64669.80 requires a description of the sampling and recording frequency for continuously monitored parameters to be included in the operations plan.

No revision is necessary in the proposed regulations to address the comments.

C.50-11: Subsection (g)

Commenter 25 requested clarification as to how use of singular or multiple inline RO membrane units would be configured (single unit or multiple units arranged for parallel or sequential operation) to demonstrate the 99% removal requirement in subsection (g). The commenter also requested clarification as to whether manufacturers verification information would be sufficient to meet the requirements, whether startup testing is needed, or whether the requirement is to verify during operations “based on feed/product ratios for wastewater saline concentrations.”

Response:

Subsection (g) requires that RO membranes selected for use by a DPR project must conform to the criteria in the subsection. Subsection (g)(1) refers to “each membrane element” needing to be demonstrated using Method A of ASTM D4194-23, which describes how the test is performed.

Subsection (g) does not specify how a project designs its RO train, or how the RO train is configured (e.g., number of RO elements in a RO vessel, how many RO vessels in a RO stage, how many RO stages in a train). These are typically project-specific design decisions, and a project must include this information in the engineering report.

Please see responses to comment C.50-12 regarding startup testing.

No revision is necessary in the proposed regulations to address the comment.

C.50-12: Subsection (g)(2):

Commenter 25 suggested that a 20-week full-scale operation “testing period” should be required for all treatment processes. The commenter requested clarification regarding monitoring, recording, and sampling during the first 20 weeks of full-scale operations. The commenter suggested that instrument monitoring or sampling/lab testing frequencies (e.g., weekly, daily, hourly, or by minute) be required. The commenter suggested that “references for such requirements at existing WTPs and suppliers for WDS” be provided.

Response:

The commenter used “WTP” but did not define the term. The State Board interpreted it to mean “water treatment plant”. The commenter additionally used “WDS” but did not define the term. The State Board interpreted the term to mean “water distribution system”.

When a project specifies the membrane to use, it must ensure that the membranes are capable of achieving the requirements in subsection (g)(2). The 20-week requirement for RO is a verification to check that the RO system meets the requirements of the proposed regulations. Whereas the RO system does not require validation testing, the design for the ozone/BAC and advanced oxidation must be validated prior to delivery of water.

Process validation is required for ozone/BAC and advanced oxidation; these validations must be conducted at full-scale, and no duration is necessary for completing the validation testing steps provided in the validation testing protocol. For validation testing, consideration of all factors that impact efficacy of treatment must be considered, including an appropriate testing duration, which may be fewer than 20 weeks.

The commenter requested clarification regarding monitoring, recording, and sampling during the first 20 weeks of full-scale operations. Additional requirements beyond those specified in subsection (g)(2) are not necessary in order to be protective of public health. The monitoring is conducted to test the selected RO membranes and demonstrate a minimum level of performance and reliability and would be proposed by the project.

The suggestion that “references for such requirements at existing WTPs and suppliers for WDS” be provided is beyond the scope of the proposed regulatory action.

No revision is necessary in the proposed regulations to address the comment.

C.50-13: Subsection (h)

Commenter 25 suggested that the regulations specifically require that the instrumentation proposed in an approved engineering report must be installed and operated as part of the approved facilities.

Response:

The engineering report is a submittal that describes how a DPR project would comply with the regulations. A DPR project would provide the appropriate level of detail in an engineering report sufficient to communicate how it would comply with the regulatory requirements. A DPR project is also required to submit an operations plan, which is typically submitted after a facility has been constructed. The operations plan would include information about the instrumentation installed, and the regulations do require a project to operate in accordance with an approved operations plan. The commenter suggests that a project might propose the use of instrumentation that it ultimately does not intend to install or operate. Adding an additional requirement as suggested by the commenter is not necessary as the existing requirements are sufficient to provide the necessary information to the State Board to determine whether a project ultimately resembles the one that is proposed and whether any alterations to the project meets standards.

No revision is necessary in the proposed regulations to address the comment.

C.50-14: Subsection (i)

Citing subsection (i) regarding a requirement for the RO treatment process during full-scale operations, Commenter 25 suggested to that the regulations “[p]rovide for generation of database for compliance and alarms for those values exceeding limits for

non-compliance/compromise of standards.” and “[p]rovide clear reference to the final ‘engineering report’, including the ‘operations plan’ to be approved by the Board for construction and operations.”

Response:

Subsection (i) requires that the DiPRRA record when the critical limits are exceeded and specifically requiring that this be done through “generation of database” is unnecessary and duplicative. The requirement for alarms for the RO treatment process is described in subsection (h).

The commenter did not express what is unclear in subsection (i) in terms of engineering report or operations plan. The engineering report requirements are contained in section 64669.75. A project may use the State Board’s acceptance of an engineering report in its decision-making process regarding scheduling and construction, but the State Board does not directly approve a project for construction. The operations plan requirements are contained in section 64669.80. The operations plan is not developed for construction purposes and is typically submitted for review after construction is complete and before issuance of a permit to operate.

No revision is necessary in the proposed regulations to address the comment.

C.50-15: Subsection (k)(2)

Commenter 25 suggested that clarifications of why the term “capable” is used in subsection (k)(2) vs requiring what is actually monitored, recorded, and alarmed. The commenter also requested that existing operations requirements and their approvals for existing Advanced Oxidation Processes be provided.

Response:

The proposed regulations require various reports to be submitted, including the validation study report, the engineering report and the operations plan. These reports serve different purposes, and the requirements specify what each document must include or do. The term “capable” is used in subsection (k)(2) because this subsection refers to submittal of a validation study report, which is done before the completion of an engineering report, at a stage where not all decisions regarding monitoring may have been made yet. The concern that “what is capable of being monitored” is not the same as “what is actually monitored” is addressed in the following subsection (l) which requires continuous monitoring of surrogates and/or operational parameters.

No revision is necessary in the proposed regulations to address the comment.

C.50-16: Subsection (o)

Commenter 25 suggested that the “10 percent of the time” requirement should be expressed as a unit of time (e.g., 3 days, 73.2 hours, or 4400 minutes). The commenter suggested that the information in subsection (o) be “posted on publicly accessible sources (web pages) and noticed to subscribers.”

Response:

The requirement is appropriately expressed as a “percent of the time”. The calculations provided by the commenter assumes that a treatment train is always operating at 100% each day for the entire month, which is not realistic.

The proposed regulations include requirements for public notification such as consumer confidence reports, annual reports, and public hearings, among various other reporting requirements. These requirements convey the necessary public information to consumers about the water and water quality for protection of public health. Notifications are typically issued directly to customers of a public water system by the public water system. The State Board practices for posting materials are beyond the scope of the proposed regulatory action.

No revision is necessary in the proposed regulations to address the comment.

C.50-17: Subsection (q)

Citing subsection (q) requiring that a DiPRRA evaluate water quality data on treatment byproduct precursors and treatment byproducts and develop a plan to optimize operations to minimize the production of treatment byproducts, commenter 25 suggested that clarification should be provided about “how the State will use the collected data by subsection and what the expectations are for permittees.”

Response:

The expectation is that a DiPRRA would need to comply with the requirements in subsection (q). The State would review the data to ensure compliance with the requirements.

No revision is necessary in the proposed regulations to address the comment.

C.50-18: Subsection (r)

Commenter 25 suggested that a stand-alone regulatory section be developed to specify how the State Board would review and approve requests for proposed alternatives. The commenter further suggested that definitions, guidance, or reference materials is needed for the terms “equivalent”, “better performance”, “contaminants” and “byproducts”.

Response:

The proposed regulations include the requirements, that, if followed by a DPR project, would ensure that public health is adequately protected. Including requirements in the proposed regulations for the State Board to comply with is beyond the scope of the proposed regulatory action. Proposals for alternatives are necessarily submitted on a case-by-case basis, with proposals describing how an alternative would meet the criteria in the regulations.

Subsection (r) specifies the requirements that a DiPRRA would need to comply with in order to use an alternative to the treatment or treatment sequence requirement specified in the proposed regulations. Developing additional guidance or reference materials is beyond the scope of the proposed regulatory action. The terms “equivalent”, “performance”, “contaminants”, and “byproducts” are commonly used in drinking water and IPR regulations and in drinking water statutes. No definitions are needed for these terms.

No revision is necessary in the proposed regulations to address the comment.

C.50-19: Subsection (g)

Commenter 25 suggested that the terms “inflow/outflow”, “influent/effluent”, and “upstream/downstream” be defined to ensure consistent usage throughout the regulations.

Response:

The terms “inflow” and “outflow” are not used in the proposed regulations, so the terms need not be defined. Terms such as “influent” and “effluent”, and “upstream” and “downstream” enjoy common usage, and do not need definition in the regulations. These terms are used as intended in the proposed regulations.

No revision is necessary in the proposed regulations to address the comment.

Section 64669.55:

No comments received.

Section 64669.60:

C.60-1: Subsection (g)

Commenter 08 stated that online nitrate monitoring is not necessary when there is a reservoir downstream of the chemical treatment process to dilute out any nitrate peaks.

Response:

The online nitrate monitoring verifies whether the chemical treatment is operating correctly, measured in the finished water prior to distribution or other location downstream of the reverse osmosis process. This measure of public health protection is necessary when sewage-containing wastewater known to have high levels of nitrates/nitrites is being treated for drinking water use, to ensure the treatment is effective. Periodic grab samples would not adequately provide that level of public health protection.

No revision is necessary in the proposed regulations to address the comment.

C.60-2: Subsection (a)

Commenters 03 and 22 suggested that there should be flexibility to propose a different location to sample the municipal wastewater that feeds the DPR project, other than “at a location immediately after secondary treatment and prior to the treatment processes” for chemical control. Commenter 03 suggested that some projects may propose a type of secondary treatment, such as membrane bioreactors, as an alternative chemical control treatment process, as the reason why the flexibility should be allowed. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The suggested additional flexibility in the sampling location of the municipal wastewater feeding a DPR project is acceptable. The regulation text in subsections 64669.60(a) and 64669.65(a) have been revised to address the comment as follows: “...municipal wastewater that feeds the DPR project at a location ~~immediately~~ after secondary wastewater treatment and prior to the treatment processes pursuant to section 64669.50, or at an alternate location approved by the State Board.”

C.60-3: Subsection (h)

Commenter 03 suggested that “clarification should be added to this subsection to allow the State Board to extend its approval to return to monthly monitoring indefinitely, provided that concentrations for the compound remain within the typical range. A waiver similar to subsection 64669.65(e)(1) could also be considered. Adding this clarification would avoid resource intensive additional monitoring that does not have a public health benefit if these compounds are demonstrably removed through advanced treatment.” Commenter 14 expressed support for the comments provided by commenter 03.

Response:

Chemicals with MCLs have an established public health significance, and the potential for violating the MCL is higher if it is known that the contaminant exceeds the MCL in the wastewater feeding the DPR project. Monitoring is necessary to provide continuing information on the concentrations of the contaminant and potential changes in concentrations that may impact treatment efficiency.

No revision is necessary in the proposed regulations to address the comment.

Section 64669.65:

C.65-1: Subsection (g)

Commenters 23, 21, 13, 06, 03, 14, 12, 29, and 30 provided several related comments that recommend that the State Board rely solely on a single external independent CEC Panel established by the State Board for DPR to determine the statewide CEC monitoring requirement for DPR, instead of including requirements in sections 64669.65(g) and 64669.75-1(c)(2)(B). Additionally, commenters 02, 03, 10, 11, 14, and 31 expressed support for the comments provided by commenter 23.

Response:

A CEC Panel for DPR is not in existence and is not guaranteed to be created in the future, so referencing a CEC panel in the proposed regulations would be vague and lack clarity. The proposed regulations do allow DPR projects to use the findings and reports from State Board advisory bodies among other sources of information, to identify chemicals and to identify human health protective levels/thresholds (see sections 64669.65(g)(3) and 64669.75(c)(2)(B)2.).

While a CEC Panel for DPR may be established in the future, it would still be necessary for DPR projects to understand the State Board requirements for CECs for the protection of public health, as specified in sections 64669.65(g) and (h) and section 64669.75(c)(2)(B) of the proposed regulations.

Please also see responses to comments GC 23 and C.75-3 for additional information.

No revision is necessary in the proposed regulations to address the comment.

C.65-2: Subsection (e)

Commenter 03 asserted that the requirement in subsection (e) to take actions in response to a detection of a chemical with a notification level is not necessary to protect public health if the concentration is less than the notification level. The commenter also asserted that “for pollutants that have been investigated and the DiPRRA has demonstrated an understanding of the source(s) and control measures are in place to ensure that NLs [notification levels] are not exceeded, repeated investigations should not be required.” Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The necessity of subsection (e) is described on page 71 of the ISOR. Given that the source of water for a DPR project is municipal wastewater, it is not adequately protective of public health to only begin to take action when a notification level is exceeded. Hence, subsection (e) specifies actions to be taken starting when a chemical with a notification level is detected, with progressively more actions to be taken when the notification level is exceeded and when the response level is exceeded at monitoring locations downstream of advanced treatment. Actions taken in accordance with subsection (e) would ensure that chemicals with notification levels are adequately monitored, that the DiPRRA adequately collects data about potential new contaminants, that notification is provided if there is a notification level exceedance, and that adequate controls are in place to ensure that water exceeding the response level is not delivered to the public.

To address the second comment, while the DiPRRA may have an understanding of the source(s) of chemicals previously detected, the proposed regulations do not presume that all subsequent detections of chemicals would always be from the same wastewater source. For example, even though the existence of a chemical in a DPR project influent

may be known (at a known range of concentrations), it does not mean that the chemical was not released into the sewer system at concentrations exceeding discharge requirements and therefore should be investigated, especially since such incidents could indicate other chemicals being released by a discharger as well. Hence, it is necessary that the proposed regulations require source investigations to provide any new information. However, the DiPRRA may provide evidence in a waiver request that the source of a chemical is the same as previously identified to justify why it thinks a new source investigation may not be required, as described in subsection (e)(1).

No revision is necessary in the proposed regulations to address the comment.

C.65-3: Subsection (e)(1)

Commenter 03 asserted that “If the advanced treatment process can be demonstrated to treat these compounds effectively, it is not reasonable to require additional investigations and actions when they are detected in municipal wastewater samples. Resource-intensive follow-up efforts would not be appropriate in these cases and would not provide a public health benefit.” The commenter suggested edits to subsection (e) and provided an example of vanadium being routinely detected in the municipal wastewater supply to a DPR project but not in a demonstration facility product water. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

The commenter is advised that subsection (e)(1) includes options for waivers from the various monitoring requirements in subsection (e) to be requested for the wastewater feed sampling location.

To request a waiver from the confirmation and increased sampling requirements, the DiPRRA must demonstrate to the State Board that the detection is within the known concentration range of the chemical, and the source of the chemical has been identified in previous source control investigations. Additionally, it should be noted that a DPR project may not be monitoring for all chemicals with notification levels, only those that are specified for monitoring.

While the treatment may reduce a chemical concentration, it is also important for the DiPRRA to have conducted a source investigation as to the possible sources of the contaminant. A treatment may reduce the chemical to a certain extent, above which the treatment may be less effective. Having a clear understanding of the source(s) of the contaminant is necessary to help ensure the reliability of the treatment barrier to protect public health.

The commenter should note that subsection (e)(1) has the same effect as the commenter's suggested edits to the second sentence in subsection (e).

No revision is necessary in the proposed regulations to address the comment.

C.65-4: Subsection (b)(4)

Commenter 03 pointed out that there is no approved U.S. EPA method or other method developed by consensus standard bodies for N,N-dimethylacetamide, and due to a preference for consistent lab methods requested that the State Board recommend a method/technique that can be used to analyze N,N-dimethylacetamide.

Response:

The commenter is correct about the need for an approved method for N,N-dimethylacetamide. However, the requirement for monitoring in the proposed regulations will prompt the eventual development of an approved method.

Until an approved method is available for N,N-dimethylacetamide (or for other chemicals for which methods are unavailable), laboratories may develop methods for analysis, following the processes set forth in subsection 64669.70(b)(3)(C), which include a submittal to the State Board. The methods developed by laboratories under that section are likely to assist method-approving agencies and entities in making available approved methods for a number of chemicals.

No revision is necessary in the proposed regulations to address the comment.

C.65-5: Subsection (e)(1)

Commenter 03 suggested that the waiver criteria in subsection (e)(1) should be allowed to consider the data collected for the source water characterization under section 64669.75. Additionally, the commenter proposed an alternative criteria as the basis for a waiver from collecting the confirmation and increased sampling requirements (e.g., “whether the constituent is within the known concentration range and whether it can be reliably removed through the treatment process and should provide an indefinite off-ramp if concentrations remain within a certain range”) instead of basing a waiver on whether the detected chemical is within the known concentration range of the chemical and whether the source of the detected chemical has been identified in previous source control investigations, suggesting that “source investigations almost never identify the source for 100% of the influent loading of a chemical.”

Response:

Any monitoring conducted to characterize the wastewater pursuant to 64669.75(c)(2)(A) may have been conducted years ago and thus not be representative of current wastewater or wastewater quality. However, if the wastewater characterization data was collected within the previous two years, they can be used, as stated in subsection (e)(1).

The proposed regulations require an effort to be made to identify the origin of a chemical's presence in wastewater. The exact source of the chemical may not be 100% identifiable with regard to the particular business responsible for the industrial discharge, for example, and its specific location. However, the investigation can lead to identification of the general location of the discharge/release, and the types of industries, businesses, or household uses that could contribute to the chemical's

presence in wastewater. Such information can contribute to the development of strategies to reduce the chemical's presence in the waste stream.

With regard to the “indefinite offramp” comment, please note that a project may not be monitoring for all chemicals with notification levels, only those that are specified for monitoring.

No revision is necessary in the proposed regulations to address the comment.

C.65-6: Subsections (g) and (h)

Commenter 03 suggested that the requirement to identify a list of chemicals for special monitoring on an annual basis in subsection (h) is inconsistent with the requirement in subsection (h)(1) that these identified chemicals be monitored for no less than two years. The commenter further opined that “it is also not likely that new literature or resources will be available over the course of a single year to make new monitoring recommendations” and recommended that the plan for special monitoring be instead updated every 5 years with the engineering report, suggesting that a “Panel for CEC in DPR projects would be the most appropriate means to identify CECs to monitor and update recommendations periodically.”

Response:

Subsection (h) specifies that the selection of new chemicals to monitor for would be done annually and subsection (h)(1) specifies the frequency and duration of monitoring for chemicals that have been identified for monitoring. These requirements ensure that a DiPRRA has awareness of new available information about chemicals of concern and methods to analyze for new chemicals. There may not be new information published annually, but the yearly requirement enables the DiPRRA to be more proactive regarding new CECs. It would not be adequately protective of public health if the special monitoring plan per subsection (h) updated every 5 years instead of annually. For example, monitoring for a chemical of potential concern that has an available analytical method should not be deferred for as long as 5 years.

With regard to the comment about a CEC panel for DPR, please see responses to related comments C.65-1, C.75-2, and C.75-3.

No revision is necessary in the proposed regulations to address the comment.

C.65-7: Subsections (g) and (h)

Commenters 23, 22, 30, and 03 preferred that CEC monitoring be the same statewide and were concerned that a special monitoring plan is required to be developed by each DPR project. The commenters believe that a single statewide CEC list should be used, instead of project-specific monitoring. Commenter 03 was “concerned about the State Board's expectation that project-specific monitoring lists would be expected to be based on a wider scope of consideration of chemicals than the CEC Expert Panels.”

Additionally, commenters 02, 10, 11, 14, 21, and 31 expressed support for the comments provided by commenter 23.

Response:

The commenters did not provide a reason for strongly asserting that all CEC monitoring should be the same for all DPR projects across the state. Nevertheless, while the CEC special monitoring plan developed pursuant to section 64669.65(h) would be project-specific, the proposed regulations allow for monitoring to be conducted by a regional monitoring consortium so that cost savings can be realized (section 64669.90(b)).

There will likely and necessarily be differing monitoring requirements among DPR projects. This is because not all DPR projects will have the same wastewater source. Thus, there should be project-specific CEC monitoring requirements for protection of the public health.

Statewide monitoring requirements for only a single set of chemicals for all projects would not necessarily address the chemicals of potential concern for different DPR projects.

With regard to the comment about a CEC expert panel, please see responses to related comments C.65-1, C.75-2, and C.75-3.

No revision is necessary in the proposed regulations to address the comment.

C.65-8:

Commenter 26 remarked on improvements needed for the recycled water CEC panel and the aquatic [ecological] health CEC panel, particularly about timeliness and public participation. The commenter believes the State Board CEC efforts need to be consolidated, with one list of CECs that need to be monitored. The commenter suggested that CEC monitoring should be for three years, and when levels for a particular chemical are below a State Board-established level, monitoring could cease for that chemical.

Commenter 25 suggested that “the water quality and monitoring requirements, including comprehensive monitoring for Chemicals of Emerging Concern, should ultimately be made uniform across all to ensure that all drinking water, whether it is sourced from DPR, groundwater, or reservoirs and rivers, meets the same high quality.”

Commenters 26 and 25 strongly urged the state to provide funding to support an independent scientific advisory committee to update the list of CECs and monitoring program every three years. The commenter further suggested that if the state budget funding is unavailable, the State Board should fund the effort by using the new water recycling permit fee. The commenter also suggested a timeline and task for the CEC committee. Lastly, the commenter asserted that “[t]he investment is needed to achieve

consumer acceptance and support of DPR and IPR potable water supplies: a necessity for California to achieve its bold recycled water targets.”

Response:

Regarding response to the comment about using a single CEC list, please refer to responses to comments GC 23, C.65-1, and C.75-3. Regarding response to the comment about CEC monitoring for three years with subsequent ceasing under certain circumstances, please refer to comment C 65-9.

The comments regarding funding of a science advisory committee for CECs, the function and makeup of the CEC panel, whether the recycled water, drinking water, and ecological CEC panels should become a single panel, the schedule of state-wide monitoring of the panel's recommended CECs, and whether CECs should be monitored in all water sources supplying drinking water beyond the requirements for DPR, are beyond the scope of the proposed regulatory action.

No revisions were made to the proposed regulations as a result of these comments.

C.65-9: Subsection (h)

Commenter 26 suggested that the CEC monitoring should be conducted monthly for at least three years and until the levels are below the State Board approved detection limit.

Response:

The proposed regulations require projects to monitor for State Board specified chemicals, including CECs, at specific monitoring locations (at least the wastewater feed, downstream of advanced treatment, and in the finished water). The objectives for sampling CECs at each monitoring location are different and therefore some of the monitoring requirements and follow up actions when a CEC is detected at these locations are different, as specified in section 64669.65 and described in the ISOR. It is unclear to which monitoring location the commenter is referring. However, the commenter's suggested CEC monitoring frequency and monitoring reduction conditions result in a shorter duration of CEC monitoring that may not adequately capture the occurrence of a CEC for which routine monitoring was determined to be necessary.

All DPR projects must conduct a thorough characterization of the wastewater quality including for chemicals specified by the State Board, and the requirements for doing this is contained in section 64669.75(c)(2) (Engineering Report). Characterization includes at least two years of sampling results for the list of CECs. A completed Engineering Report is required to be submitted with the water supply permit application. After completion of the permit review process and a DPR project is approved for operation, the DiPRRA conducts routine monitoring for CECs per the monitoring plan developed pursuant to section 64669.90. Requests for reduction in routine monitoring of a specific CEC must comply with section 64669.65(f).

The DPR regulations also contain requirements for annually identifying and considering new CECs in section 64669.65(g) and requirements to evaluate newly identified CECs for potential monitoring in subsection (h). The reasons for the necessity of annual reviews are described in the ISOR. Attention from the DiPRRA and the DPR project to additional CECs is necessary for public health protection because of the many chemicals that can be introduced into the sewershed through normal human activities. In addition, because there may be changes in the inventory of chemicals that are released into the sewershed, it is important that the DiPRRA stays up to date on available information on chemicals of potential public health concern related to their health risks that might be important to the DPR project and to the protection of its drinking water customers. The varied nature of sewage/wastewater among different DPR projects necessitates a project-specific approach.

The State Board reaffirms the requirements in section 64669.65 offers a robust, proactive and forward-looking monitoring approach for CECs that would be protective of public health.

No revisions were made to the proposed regulations as a result of these comments.

C.65-10: Subsections (g)(5)

Commenter 03 asserted that subsection (g)(5) requires identification of chemicals that may exceed health risk thresholds based on multiple sources including information on most prescribed pharmaceuticals, including results from internet sites that track pharmaceutical use. The commenter opined that “this would require water and wastewater professionals to understand the metabolic fate of these drugs within the human body prior to excretion, which is not within the scope of their expertise.” The commenter additionally noted that internet sites may not be a reliable source of information but that scientific literature on pharmaceuticals in wastewater required by subsection (g)(4) should be a sufficient source of information. Commenter 14 expressed support for the comments provided by commenter 03.

Response:

There is no need for water and wastewater professionals to become pharmacologists.

The focus of subsection (g)(5) should be on pharmaceuticals detected in sewage/wastewater. Information on the Internet about most prescribed drugs should not be the only source of information that is used in evaluating chemicals for possible special monitoring, but that information might be helpful in identifying pharmaceutical chemicals that require further investigation. Of course, use of published scientific literature is appropriate.

No revisions were made to the proposed regulations as a result of the comments.

Section 64669.70:

No comments received.

Section 64669.75:

C.75-1: Subsection (c)(2)(B)

Commenters 23, 21, 13, 06, 03, 14, 12, 29, and 30 stated that the regulations require projects to develop public health thresholds for CECs based on human health risk assessments, and that requiring utilities to develop their own public health threshold values for chemical is too onerous. Additionally, commenters 02, 10, 11, and 31 expressed support for the comments provided by commenter 23.

Response:

The regulations do not require projects to develop public health thresholds for CECs. The regulations require projects to use public health thresholds, as stated in section 64669.75(c)(2)(B). Comparing water quality results to various health protective levels is a common activity, such as comparing water quality results to MCLs, action levels, or notification levels, or to other similar health-based values for chemicals that are available in technical reports and in scientific journals.

Section 64669.65(g) requires the DiPRRA to identify once a year, in consultation with the State Board, chemicals that are of potential concern that should be considered for monitoring based on review of the sources of information specified. The regulations provide a list of sources to review for identifying chemicals. Subsection (h) requires a project to propose a monitoring plan for identified chemicals subject to the criteria specified.

No revisions were made to the proposed regulations as a result of the comments.

C.75-2: Subsection (c)(2)(B)

Commenters 23, 21, 13, 06, 03, 14, 12, 22, 29, and 30 stated that the regulations require projects to monitor for CECs in both their feed and treated waters, and to compare the measured levels against toxicological thresholds. The commenters were concerned that the lack of prioritization of sources to use for determining which health-based values will result in different thresholds being used and result in inconsistent and diverging CEC monitoring statewide. The commenters were also concerned that determining wastewater CECs for monitoring on a project-specific basis is not feasible. Additionally, commenters 02, 10, 11 and 31 expressed support for the comments provided by commenter 23.

Response:

Some commenters appear to conflate the routine monitoring requirements in section 64669.65(g) with the requirements for wastewater characterization in section 64669.75(c)(2), which is conducted during the development of the engineering report that is required to be submitted with the DPR permit application. It is critical for DPR projects to adequately characterize the wastewater quality, in order to determine whether a proposed treatment train is adequate. Hence, section 64669.75(c)(2)

specifies the components of the characterization of the quality of the municipal wastewater, including water quality data requirements in section 64669.75(c)(2)(A) and data assessment requirements section 64669.75(c)(2)(B).

The list of chemicals is determined through the process described in section 64669.75(c)(2). DPR projects will be located in different communities, with different types of industrial discharges and different qualities of discharges from businesses and households. Hence, the wastewater characteristics are not expected to be the same for all DPR projects throughout the state, and thus the monitoring to characterize the wastewater quality would not be expected to be the same throughout the state.

Chemicals of concern in wastewater vary due to differences in dischargers and potential contaminating activities, which are location-specific and vary across the state. Using a singular CEC list for all DPR projects across the state may result in under-monitoring, which would not be health protective for a project, or over-monitoring in other cases. While a singular statewide CEC list might be a useful reference, limiting all CEC monitoring across all DPR projects to a single list could cause locally relevant CECs of potential public health significance to be overlooked, which is not protective of public health.

Regarding the sentiment that determining which health-based values to use will result in different thresholds being applied, it is unlikely that DDW staff would use or recommend that a DiPRRA use different thresholds for the same contaminant. The consistent use of notification levels state-wide is a good example of this consistency throughout DDW. Additionally, DDW staff typically provide opportunities for discussions with projects throughout the development of the project and project engineering reports, so a DPR project would expect feedback from DDW staff, such as described in section 64669.75(c)(2).

No revisions were made to the proposed regulations as a result of the comments.

C.75-3: Subsection (c)(2)(B)

Commenters 23, 21, 13, 06, 03, 14, 12, 29, and 30 strongly recommended that the State Board establish a single external independent CEC panel and require that all DPR projects rely on the single CEC panel to develop a standard statewide monitoring requirement for CECs instead of including requirements in sections 64669.65(g) and 64669.75(c)(2)(B). Additionally, commenters 02, 10, 11, and 31 expressed support for the comments provided by commenter 23.

Response:

Relying on a CEC panel that only meets occasionally to review past CEC data is not adequately timely to be health protective. The proposed regulations are based on a prospective, forward-looking, proactive approach, while the commenters are suggesting that the state takes a retrospective and backwards-looking approach for wastewater CECs for DPR.

Relying on a CEC panel that meets only occasionally is inadequate for the variety of DPR projects and the timeliness needed to stay on top of discoveries and developments on CECs. The commenters suggested a CEC panel be used for DPR that is in part modeled after a recycled water CEC panel. The monitoring framework offered by the recycled water CEC panel is based on review of past water quality data, which have resulted in the identification of only a few relevant CECs. The recycled water CEC panel suggested only five “health-based” CECs for monitoring, and most of them are already known (that is, they may not be considered truly “emerging” CECs) and are already being monitored.

The proposed regulations allow for CEC monitoring recommendations provided by State Board advisory bodies to be considered. However, limitations as noted above prohibit their utility as the sole solution for identifying wastewater CECs that is protective of public health. Hence, the proposed regulations specify the requirements to allow the flexibility and adaptability in the determination of CECs of importance for each DPR project, based on the source water characteristics. This approach is similar and consistent with approaches in drinking water and wastewater in determining potential chemicals of concern.

Please also refer to responses to comments GC 23 and C.65-1.

No revisions were made to the proposed regulations as a result of the comments.

Section 64669.80:

C.80-1:

Commenter 25 noted the term “shutoff” should be spelled consistently, and to verify whether the variations using hyphens or spaces are intentionally used.

Response:

The typos have been corrected. The comment is appreciated.

Section 64669.85:

C.85-1:

Commenter 09 asserted that real-time monitoring has been abandoned and that it is a mistake. The commenter alluded to an IPR project detecting ozone using real-time monitoring.

Response:

The requirements for “real-time” monitoring is included in the proposed regulations, in section 64669.85 (Pathogen and Chemical Control Point Monitoring and Response).

Regarding the detection of ozone, it appears that the commenter is referring to acetone. Acetone was not directly measured using real-time monitoring but was the result of a source control investigation conducted after discovery of total organic carbon (TOC) peaks recorded by the online TOC analyzer, which was installed to do “real-time” monitoring.

No revision is necessary in the proposed regulations to address the comment.

Section 64669.90:

No comments received.

Section 64669.95:

C.95-1: Subsection (b)

Commenter 03 indicated that “Section 64669.95(b) requires the submission of analytical results by the 10th day of the month following sample collection. Due to the time required for analysis of certain constituents, this deadline may not be feasible.”

Response:

The proposed regulations do not require submission of analytical results by the 10th day of the month following sample collection. Rather, the proposed regulations require reporting of analytical results pursuant to subsection 64469(a), which requires analytical results of all sample analyses completed in a calendar month shall be reported no later than the tenth day of the following month. Thus, the reporting requirement relates to when the sample analysis was completed not when the sample was collected.

No revision is necessary in the proposed regulations to address the comment.

C.95-2: Subsection (a)(13), (15), (16)

Commenter 03 indicated that subsections (a)(13), (15), and (16) “require a summary of source control program activities, cross-connection incidents/ investigations, and a summary of water quality complaints and reports of gastrointestinal illness to be included in monthly compliance reports. These activities are likely to involve investigations or other actions that may take multiple months to complete. Therefore, it is recommended to include these items in the annual report instead of the monthly report.”

Response:

The commenter is correct about the variety of activities that need to be reported in the monthly compliance reports. However, the requirement is not to complete the investigations or other activities in a single month. The summaries of activities are to be included in the monthly reports when information from an investigation is available at the time the monthly report is prepared and following the completion of those activities.

With regard to inclusion of reports/complaints of gastrointestinal illness, highlighting them in monthly reporting is important for public health protection in case follow-up is needed. Reporting illness in an annual report makes little sense from the standpoint of timeliness. Monthly reporting of gastrointestinal illness is a current requirement of the Surface Water Treatment Rule.

No revision is necessary in the proposed regulations to address the comment.

Section 64669.100:

No comments received.

Section 64669.105:

No comments received.

Section 64669.110:

No comments received.

Section 64669.120:

No comments received.

Section 64669.125:

No comments received.

Section 64669.130:

No comments received.

REVISIONS FOLLOWING THE 45-DAY COMMENT PERIOD

As a result of comments received during the 45-day comment period, the State Board revised the proposed DPR regulations for the reasons described in the preceding responses to comments. Additionally, following the 45-day comment period, the State Board noticed that the several typos in the regulation text that were not substantive. Therefore, the correction was included in the proposed regulations provided during the 15-day comment period. Revisions were made to the following sections:

Section	Purpose of Change
64669.05	To clarify terminology.
64669.20(a)(8)	To clarify terminology.
64669.20(b)	To allow flexibility for certain municipal wastewater collection agencies to not participate in the joint plan.
64669.20(a)	To clarify terminology.

Section	Purpose of Change
64669.45(a)(3)	To allow flexibility for alternative treatment mechanisms.
64669.45(b)(9)	Non-substantive revision to correct section numbering.
64669.45(c)	To clarify requirements for the supervisory control system.
64669.45(f)	To clarify that alternatives can be proposed for both the two log limitation and the virus reduction rate in groundwater.
64669.50(d)	To clarify the specific indicators for which reduction must be demonstrated for each process in ozone/BAC.
64669.50(f)	Non-substantive revision to correct section numbering.
64669.50(m)	To clarify that reservoirs can be included in satisfying the mixing criteria.
64669.50(n)	To allow flexibility for reservoir mixing to temporarily increase the TOC critical limit.
64669.60(a)(1)	To allow an alternative monitoring location for DPR project feed water quality to be approved.
64669.65(a)(1)	To allow an alternative monitoring location for DPR project feed water quality to be approved.
64669.65(b)	To clarify terminology.
64669.75(c)(2)	To clarify terminology.
64669.75(c)(3)	Non-substantive revision to include a word inadvertently left out.
64669.80(c)(10)	To clarify terminology.
64669.120(a)	To add additional tasks requiring an independent advisory panel review related to changes made to sections 64669.45(a)(3) and 64669.50(n).

On October 19, 2023, the revisions to the revised regulations were made available to the public for an additional “15-day comment period,” with public comments accepted until 12:00 p.m. (noon) on November 6, 2023.

SUMMARY AND RESPONSE TO COMMENTS RECEIVED DURING THE 15-DAY COMMENT PERIOD

The table below presents a record of those having provided written comments on the proposed revisions to the DPR regulations during the 15-day comment period. Unless otherwise noted, the number associated with a specific commenter(s) in the comment summaries and responses sections that follow correspond to the numbers assigned to the commenter(s) in the tables below.

No.	Name	Affiliation
1	Molina, Steven	Yucaipa Valley Water District
2	Hamlin, Sheryl ^(a)	General Public
3	Chaudhuri, Mickey Malik, Ajay	Metropolitan Water District of Southern California Los Angeles County Sanitation Districts
4	Gold, Mark Bothwell, Sean Breck, Justin Brown, Garry	Natural Resources Defense Council California Coastkeeper Alliance Los Angeles Waterkeeper Orange County Coastkeeper

(a) Commenter submitted two comment letters.

COMMENTS AND RESPONSES

The commenter 1 stated that “DPR should always have a cross-connection specialist to oversee these programs. They will need to fill out a cross connection incident report every time the filtration system fails and contaminants make its way to the potable system. They will also need to oversee all safeguards to the facility to ensure safe drinking water is always being served.”

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. However, the commenter should note that the DiPRRA, as a public water system, is subject to regulations for cross-connection control that are applicable to all public water systems, including requirements for cross-connection specialists. For DPR, the DiPRRA is additionally required to comply with section 64669.105 regarding cross-connection control. A filtration system is one treatment process in a treatment train, and sections 64669.45 and 64669.50 specify the conditions under which corrective action must be taken. Such corrective action may include the activity suggested by the commenter. Additionally, the conditions triggering acute and chronic exposure threats for which flow diversion or shutoff must occur are specified in section 64669.85 (Pathogen and Chemical Control Points). When such condition occurs, the actions described in the following sections, including notification and reporting activities, may occur as specified: sections 64669.95 (Compliance Reporting), 64669.100 (Annual Report), 64669.130 (Consumer Confidence Report), and 64669.125 (Public Notification). An after-action review by operators and other specialists as suggested by the commenter as part of an incident investigation is a good one. The DiPRRA is the responsible party for ensuring that safe drinking water is delivered to the public and therefore must identify the personnel and other resources needed.

Commenter 2 stated that the requirements for discontinuing delivery of water needs to be elaborated. The commenter suggested that when the water is discontinued due to failure to meet criteria, the water should be diverted to an IPR use rather than sitting in the plant where it will contaminate the plant and possibly overflow it.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. The commenter should note that the proposed regulations require diversion or shutoff in order to prevent delivery of inadequately treated water to the distribution system. Decisions regarding how a project chooses to comply with the regulations is an implementation issue and is dependent on the project (and options available to a project). It is not necessary for the proposed regulations to include requirements suggested by the commenter in order to be protective of public health.

Commenter 2 provided a link to an article that studied inactivation of antimicrobial-resistant bacteria in a hospital wastewater ozone treatment system and provided a recommendation from the study that “ozone-resistant bacteria, such as Raoultella and Pseudomonas, in this study, implies that these bacteria might play a pivotal role as an AMR reservoir in the environment and should be extensively monitored.”

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. However, it should be noted that the 2016 Panel provided a thorough review of antimicrobial-resistance as it pertains to DPR (Chapter 7, Olivieri et al., 2016). Reference pathogens regulated by the proposed regulations are described in the ISOR. The commenter should note that pathogens are known to exhibit a range of responses to various mechanisms of treatment; hence, the regulations include the requirement for multi-barrier treatment with robust treatment barriers using at least three diverse mechanisms and four different treatment processes for each of the regulated pathogens. Additionally, the treatment must be validated using the most resistant pathogen surrogate (hardest to treat for the process or mechanism). The literature submitted by the commenter studied hospital wastewater where the ozone treatment was applied to the raw wastewater. The results may not be translatable to DPR treatment, given the different source wastewater, treatment train design, and other treatment operational requirements.

Commenter 2 stated that “One disadvantage of UV disinfection is that it does not lead to continuous disinfection, and therefore does not prevent the increase of bacteria after UV disinfection. In fact, the increase in bacterial numbers in wastewater after UV disinfection treatment might be more significant for several reasons. Unlike drinking water disinfection, pathogens in the effluents of wastewater treatment...” and provided a link that was unable to be accessed.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. The commenter should note that existing requirements in the Surface Water Treatment Rule for maintaining a disinfectant residual in the distribution system is applicable to a DPR project. See section 64669.45(g). See also responses to commenter 2 above regarding multibarrier treatment. The link provided by the commenter was unable to be accessed.

Commenter 3 expressed appreciation for the State Board having revised portions of the regulations based on the comments the commenter provided during the 45-day comment period.

Response:

The support and appreciation are noted. Thank you.

Commenter 3 reiterated some of the comments provided by the commenter during the 45-day comment period.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. For responses to comments submitted during the 45-day comment period, please see the responses provided in the preceding section titled, "Summary and Response to Oral and Written Public Comments – 45-day Comment Period."

Commenter 4 expressed support for the proposed regulations with amendments and expressed concern that their comment letter submitted during the 45-day comment period was not received or shared with the State Board members.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. The commenter should note that while their comment letter was discovered after the close of the public comment period, the State Board staff did review and brief the Board Members on the summary of responses received during the 45-day public comment period, which included the oral comments made by the commenters during the public hearing, and the letter has been included as a letter received on time and has been responded to accordingly per the APA process.

Commenter 4 reiterated some of the comments provided by the commenter during the 45-day comment period.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. For responses to comments submitted during the 45-day comment period, please see the responses provided in the preceding section titled, “Summary and Response to Oral and Written Public Comments – 45-day Comment Period.”

Commenter 4 strongly stated that they would urge the State Board to “add language to the final motion of approv[al] to require State Water Board Staff to solve these major issues” regarding their CEC monitoring recommendation and their recommendation on waste discharge requirements regarding brine discharges, which were provided by the commenter during the 45-day comment period.

Response:

No response is necessary because the comments were not directed specifically at the revisions made and provided during the 15-day comment period. For responses to comments submitted during the 45-day comment period, please see the responses provided in the preceding section titled, “Summary and Response to Oral and Written Public Comments – 45-day Comment Period.”

POST COMMENT PERIOD REVISIONS

Following the comment periods, the State Board recognized typographical errors in the proposed regulations. Specifically,

- section 64669.45(d)(1) had a missing word “that” in the statement “...Continuous blending of DPR project water with an extracted ground water source or a surface water source of drinking water [that] has received permit approval from the State Board...” Therefore, the State Board revised the final regulation text to add the word “that” as shown within the square brackets. The revision is non-substantive and has no regulatory effect.
- section 64669.50(e) had a missing dash between “full” and “scale”. The change was made to be consistent with the terminology “full-scale” used in other parts of the proposed regulations. The revision is non-substantive and has no regulatory effect.
- section 64669.50(g)(1) - the publication month for the ASTM reference was inadvertently omitted. The publication month was added to provide the required

reference information. The revision is non-substantive and has no regulatory effect.

- section 64669.85(c) referred to incorrect subsection numbers (a), (b), (e), (h), and (k) rather than referring to those subsections under section 64669.50, as intended and indicated elsewhere in the regulation package (e.g., ISOR). Therefore, the State Board revised the section number in the final regulation text. The revision is non-substantive and has no regulatory effect.

STATE BOARD ADOPTION HEARING

On December 19, 2023, after the close of the two public comment periods, the State Board held a regular board meeting in which an adoption hearing was put on the agenda as agenda item 3, during which the five State Water Resources Control Board Members² considered a resolution to adopt the proposed regulations for direct potable reuse. At the hearing, a brief presentation was provided to the public, as well as an opportunity for the public to present oral statements. Nine members of the public presented oral statements, each supporting the adoption of the proposed regulations. Following the presentation and oral statements, the State Water Resources Control Board Members passed Resolution No. 2023-0046, thereby adopting the proposed regulations for direct potable reuse. The proceedings as well as other pertinent documents have been placed in the rulemaking file.

STATEMENTS OF DETERMINATION

Mandate Determination – Local Agencies and School Districts

The State Board has determined that the proposed regulations would not impose a mandate on local agencies or school districts that requires state reimbursement. The State Board implemented a statutory mandate in Water Code section 13561.2, the regulations do not require any entity to engage in a DPR project, and the regulations do not impose unique requirements on local governments. No state reimbursement is required.

Alternatives Considered

The State Board has determined that no alternative considered by the State Board would be more effective in carrying out the purpose for which the regulation is proposed, would be as effective as and less burdensome to affected private persons than the adopted regulation, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. The

² Members: E. Joaquin Esquivel (Chair), Dorene D'Adamo (Vice Chair), Sean Maguire, Laurel Firestone, and Nichole Morgan.

adoption of these proposed regulations was expressly required by Water Code section 13561.2, so there is no alternative to the adoption of these proposed regulations. As explained in the ISOR and the FSOR, each of the proposed provisions is necessary for the protection of public health. Pursuant to Water Code section 13561.2, subdivision (a)(2), the expert panel has determined that the proposed criteria are protective of public health.

Additionally, no alternatives were proposed to the State Board that would lessen any adverse economic impact on small businesses.

The State Board implemented a statutory mandate in Water Code section 13561.2 and the regulations do not require any entity, including private persons or small businesses, to engage in a DPR project.

ADDITIONAL STATEMENTS

Incorporation by Reference

As indicated in the ISOR, the State Board is incorporating by reference ASTM International's Standard D4194-23 (February 2023). The incorporation by reference is necessary because, due to its nature and volume, it would be too cumbersome, unduly expensive, and impractical to publish the ASTM Standard in the California Code of Regulations. The documents incorporated by reference are listed in Appendix A (Documents Incorporated by Reference) of the ISOR and were made available to the public upon request from the State Board contacts listed in the ISOR. A link was also provided in Appendix B of the ISOR to ASTM International's website, where the document is available to the public.

Similarly, as indicated in the ISOR, the State Board is incorporating by reference the following U.S. EPA protocols: the Protocol for the Evaluation of Alternative Test Procedures for Organic and Inorganic Analytes in Drinking Water (EPA 815-R-15-007, February 2015) and the Protocol for the Evaluation of Alternate Test Procedures for Analyzing Radioactive Contaminants in Drinking Water (EPA 815-R-15-008, February 2015). The incorporation by reference is necessary because, due to its nature and volume, it would be too cumbersome and impractical to publish the two protocols in the California Code of Regulations. The documents incorporated by reference are listed in Appendix A (Documents Incorporated by Reference) of the ISOR and were made available upon request from the State Board contacts listed in the ISOR. A link was also provided in Appendix B of the ISOR to U.S. EPA's website, where the documents are available to the public.

Public Notice Mailing

The State Board has complied with the provision of Government Code sections 11346.4(a)(1) through (4) regarding the mailing of notice of proposed action at least 45 days prior to public hearing or close of the public comment period. The date upon which

the notice was mailed was on or before July 21, 2023, and the date the notice was emailed was on or before July 21, 2023. Subsequent to the notice, a revised notice was provided to update the public hearing time and the public hearing room; the public hearing date and address location did not change. The date upon which the revised notice was mailed was on or before August 25, 2023, and the date the notice was emailed was on or before August 25, 2023.

Similarly, the State Board has complied with the provision of Government Code sections 11346.8(a) through (e), as well as section 44 of Title 1 of the California Code of Regulations, regarding the mailing of notice of proposed action at least 15 days prior to the close of the public comment period. The date upon which the notice was mailed was on or before October 19, 2023, and the date the notice was emailed was on or before October 19, 2023.

Public Hearing Statement

In anticipation of a request for a public hearing, the State Board held a public hearing in Sacramento on September 7, 2023. The location, time, and date of the hearing was provided in the public notice for the regulatory action (SBDDW-23-001).

California Environmental Quality Act

In the resolution adopting the proposed regulatory text, Resolution 2023-0046, the State Water Board found the following:

23. The California Environmental Quality Act (CEQA) provides an exemption for classes of projects which have been determined by the Secretary for Natural Resources to have no significant effect on the environment and are, therefore, declared to be categorically exempt from the requirement for the preparation of environmental documents pursuant to Public Resource Code section 21084 and title 14 of the California Code of Regulations, section 15300. Title 14 of the California Code of Regulations, section 15307 provides that Class 7 exemptions consist of actions taken by regulatory agencies to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment. Additionally, title 14 of the California Code of Regulations, section 1508 provides that Class 8 exemptions consist of actions taken by regulatory agencies to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment.

24. The State Water Board finds that adoption of the proposed regulations represents actions taken by a regulatory agency pursuant to its general and specific statutory authority for the maintenance and protection of the environment and natural resources, most centrally, relating to surface waters and groundwater, which are both critically limited in many areas of California and are of critical importance to California's diverse ecosystems. Direct potable reuse projects, when implemented, may allow public water systems access to water sources formerly discharged into the ocean as municipal wastewater, which would reduce the dependence of these water systems on other

sources of water and result in more water available for uses, such as the protection and enhancement of natural resources and the environment. Regulatory procedures for protection of the environment include individualized permitting for direct potable reuse projects that would require individualized CEQA analysis, the issuance of waste discharge requirements to any wastewater treatment facility pursuant to article 4, chapter 4, division 7 of the Water Code, and the issuance of drinking water permits pursuant to article 7, chapter 4, division 104 of the Health and Safety Code to any public water system that is part of a direct potable reuse project. The State Water Board finds that there are no facts [i]n the record to indicate or suggest that the proposed regulations fall within any of the enumerated exceptions for the appropriate use of a categorical exemption as set forth in title 14 of the California Code of Regulations, section 15300.2. Accordingly, the adoption of the proposed regulations satisfies the requirements of title 14 of the California Code of Regulations, sections 15300, 15307, and 15308, and is both a Class 7 and Class 8 exempt project under CEQA.

On January 18, 2024, the State Water Board submitted a Notice of Exemption to the Office of Planning and Research. The Notice of Exemption was published on January 19, 2024, one which date the 35 day statute of limitations commenced for the filing of any action challenging the State Water Board's determination that the adoption of the proposed regulatory text is exempt from CEQA. The State Water Board has received no notice of any litigation or action filed challenging this determination.

ATTACHMENTS

Addendum to the Final Statement of Reasons

ADDENDUM TO THE FINAL STATEMENT OF REASONS
Direct Potable Reuse Regulations
Title 22, California Code of Regulations

On June 24, 2024, the State Water Board submitted to the Office of Administrative Law (OAL) the rulemaking file. During OAL review of the rulemaking file, the following non-substantive changes were made to the proposed regulations to correct typographical errors and clarify that the citations to the Code of Federal Regulations (CFR) are included by reference.

- section 64669.50(g)(1) – the phrase “which is hereby incorporated by reference” is added to clarify that the ASTM document referenced is incorporated by reference. The revision is non-substantive and has no regulatory effect.
- section 64669.65(b)(1) – the phrase “which is hereby incorporated by reference” is added to clarify the intended incorporation of 40 CFR section 131.38 by reference. The date is corrected to July 1, 2023, which is the version of the CFR that was available at the time that the notice of proposed action and ISOR were made available. The revision is non-substantive and has no regulatory effect.
- section 64669.70(b)(1) – the phrase “which is hereby incorporated by reference” is added to clarify the intended incorporation of 40 CFR parts 141 and 143 by reference, using the July 1, 2023 version of the CFR that was available at the time that the notice of proposed action and ISOR were made available. The revision is non-substantive and has no regulatory effect.
- section 64669.70(b)(2) – the phrase “which is hereby incorporated by reference” is added to clarify the intended incorporation of 40 CFR part 136 by reference, using the July 1, 2023 version of the CFR that was available at the time that the notice of proposed action and ISOR were made available. The revision is non-substantive and has no regulatory effect.
- section 64669.70(b)(3)(A) – the phrase “which is hereby incorporated by reference” is added to clarify the intended incorporation of 40 CFR parts 141 and 143 by reference, using the July 1, 2023 version of the CFR that was available at the time that the notice of proposed action and ISOR were made available. The revision is non-substantive and has no regulatory effect.
- section 64669.70(b)(3)(C) – the phrase “which is hereby incorporated by reference” is added to clarify that the EPA publications referenced are incorporated by reference. The revision is non-substantive and has no regulatory effect.

- section 64669.75(c)(2)(A)2. – the phrase “which is hereby incorporated by reference” is added to clarify the intended incorporation of 40 CFR section 131.38 by reference, using the July 1, 2023 version of the CFR that was available at the time that the notice of proposed action and ISOR were made available. The revision is non-substantive and has no regulatory effect.

The following documents are added to the rulemaking file as being incorporated by reference. The incorporation by reference is necessary because, due to its nature and volume, it would be too cumbersome and impractical to publish in the California Code of Regulations. Title 40 of the CFR is widely available to the public and is available on the National Archives webpage at <https://www.ecfr.gov/>, the GovInfo website at <https://www.govinfo.gov/>, and other websites.

- 40 CFR part 136 (July 1, 2023)
- 40 CFR part 141 (July 1, 2023)
- 40 CFR part 143 (July 1, 2023)

Additionally, some reference citations which did not directly implement, interpret, or make specific the statute cited as a reference for the proposed regulation section were revised or removed.