

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – DIVISION OF DRINKING WATER
APRIL 17, 2024**

ITEM 6

**Draft Responsive Summary for Comments on Proposed Hexavalent Chromium
Maximum Contaminant Level Regulation**

INTRODUCTION

A Notice of Proposed Rulemaking, Initial Statement of Reasons (ISOR), and Text of Proposed Regulations for a Hexavalent Chromium Maximum Contaminant Level (MCL) were released on June 16, 2023, for public comment. Following are summaries of comments received on the proposed regulations and rulemaking materials and the Division of Drinking Water's (DDW) draft staff responses. Final responses to all timely received oral and written comments will be included in the Final Statement of Reasons (FSOR) submitted to the Office of Administrative Law (OAL). Comment periods are as follows:

- Written comments on the proposed regulatory action noticed on June 16, 2023, were due at 12:00 p.m. (noon) on August 18, 2023.
- Oral comments were received during an Administrative Procedure Act (APA) public hearing on August 2, 2023.
- The comment period for a draft Environmental Impact Report (EIR) ran concurrently with the above-described comment period on the proposed regulatory action.
- A 15-day notice of changes to the proposed regulations to (1) remove the requirement that a public water system describe in its Compliance Plan how it would comply by the applicable compliance date and (2) require Tier 2 public notification for hexavalent chromium MCL exceedances occurring prior to the applicable compliance dates was released on November 22, 2023, with written comments on the changes to the proposal due by 12:00 p.m. (noon) on December 15, 2023.
- A second 15-day notice of the addition of material to the rulemaking record—specifically, the *Public Review Draft of a Proposed Health-Protective Concentration for the Noncancer Effects of Hexavalent Chromium in Drinking Water* and a *Consolidation and Alternatives Analysis*—was released on January 31, 2024, with written comments on the addition of the specified materials to the rulemaking record due by 12:00 p.m. (noon) on March 4, 2024.

Copies of written comments received may be obtained by submitting a request and identifying the item noticed for public comment to commentletters@waterboards.ca.gov; or by visiting the State Water Resources Control Board's (SWRCB, State Water Board, or Board) public comment website at <https://ftp.waterboards.ca.gov/?u=PCL-FTP&p=8ZHs8m>.

Oral comments may be heard on the video recording of the August 2, 2023 State Water Resource Control Board meeting at <https://www.youtube.com/watch?v=CFS5-oY1euU> and read in Appendix F to the proposed Final EIR.

All documents related to the proposed rulemaking, including the Draft and proposed Final EIR are available and posted on the State Water Board’s Hexavalent Chromium MCL webpage at https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/SWRCBDDW-21-003_hexavalent_chromium.html.

DDW staff reviewed all oral and written comments timely received. Generalized comments and responses are provided below. To aid the reader, Table 1 provides commenter names and the date(s) their comments were received. Responses to comments on the Draft EIR can be found in the proposed Final EIR.

Table 1. List of Commenters

Commenters ¹	Date Received ²
American Chemistry Council	16-Aug-2023
American Chemistry Council, California Association of Winegrape Growers, California Cement Manufacturers Environmental Coalition, California Chamber of Commerce, California Construction and Industrial Materials Association, California League of Food Producers, California Manufacturers & Technology Association, Partnership for Sound Science in Environmental Policy, Plumbing Manufacturers Association, Western Growers, and Western Wood Preservers Institute	18-Aug-2023
American Chemistry Council, California Association of Winegrape Growers, California Chamber of Commerce, California League of Food Producers, California Manufacturers & Technology Association, Partnership for Sound Science in Environmental Policy, Plumbing Manufacturers International, Western Growers Association, Western Wood Preservers Institute	15-Dec-2023; 20-Feb-2024
American Water Works Association, California-Nevada Section	4-Mar-2024
Aqua Metrology Systems Limited	5-Aug-2023; updated 9-Aug-2023

¹ Commenters are listed alphabetically by last name, with organizations listed first.

² “Oral” has been used in the Date Received column to indicate the comment was received as an oral comment at the public hearing held on August 2, 2023.

Commenters ¹	Date Received ²
Association of California Water Agencies (ACWA), California Municipal Utilities Association (CMUA), California-Nevada Section of the American Water Works Association (CA-NV AWWA), and California Water Association (CWA)	18-Aug-2023; 14-Dec-2023
Beaumont-Cherry Valley Water District	15-Aug-2023; 4-Mar-2024
California Association of Mutual Water Companies and Community Water Systems Alliance	15-Dec-2023; 4-Mar-2024
California Association of Sanitation Agencies (CASA)	18-Aug-2023
California Chamber of Commerce	18-Aug-2023
California Legislature	15-Dec-2023
California Manufacturers & Technology Association (CMTA)	18-Aug-2023
Central Valley Clean Water Association (CVCWA)	18-Aug-2023
City of Dixon	16-Aug-2023; 15-Dec-2023
City of Los Banos	14-Dec-2023
City of Patterson	18-Aug-2023
City of Woodland Utility Engineering	11-Aug-2023; 15-Dec-2023
Coachella Valley Regional Water Management Group	15-Dec-2023
Coachella Valley Water District	17-Aug-2023; 14-Dec-2023
Community Members from El Comité para tener agua sana, limpia y económica (ECTASLE), Gente Organizada Trabajando por el Agua (GOTA), Asociación de Gente Unida por el Agua (AGUA), and other CA communities	18-Aug-2023
Community Water Center, La Asociación de Gente Unida por el AGUA, Clean Water Action, Physicians for Social Responsibility Los Angeles, Integrated Resource Management, Erin Brockovich, Inc, Environmental Working Group, Tuolumne River Trust, Leadership Counsel for Justice and Accountability, Center for Public Environmental Oversight, California Coastkeeper Alliance, Breast Cancer Prevention Partners, California Indian Environmental Alliance, California Environmental Voters, Sierra Club California, Natural Resources Defense Council, and CALPIRG Education Fund	18-Aug-2023
Community Water Systems Alliance (CWSA)	18-Aug-2023
Del Amo Action Committee	15-Aug-2023
Desert Water Agency	15-Dec-2023
Hidden Valley Lake Community Services District	11-Aug-2023

Commenters ¹	Date Received ²
Howard Jarvis Taxpayers Association	17-Aug-2023
Indio Water Authority	15-Dec-2023
Lagerlof Lawyers, LLP (on behalf of Chanac Creek Mutual Water Company)	18-Aug-2023
Metropolitan Water District of Southern California	15-Aug-2023
Mission Springs Water District	18-Aug-2023; 14-Dec-2023
Oak Trail Ranch Mutual Water Co., Inc.	16-Aug-2023
Paradise Lake Mutual Water Company	14-Dec-2023
Residents of Eastern Coachella Valley and the Imperial Valley	18-Aug-2023
Rural Community Assistance Corporation	8-Dec-2023
San Andreas Mutual Water Company and Santa Cruz County Water Advisory Commission	4-Mar-2024
Santa Ynez Rancho Estates Mutual Water Company	14-Dec-2023
Solano County Taxpayers Association	17-Aug-2023; 4-Mar-2024
Soquel Creek Water District	16-Aug-2023
ToxSorb Ltd	15-Feb-2024
Twentynine Palms Water District	18-Aug-2023
Water Quality Association (WQA) and Pacific Water Quality Association (PWQA)	17-Aug-2023
Yolo County Taxpayers Association (YCTA)	18-Aug-2023
Andrea Abergel	Oral
Salma Alatorre	Oral
Rosabel Bejar	Oral
Norman Benson	Oral; postmarked 15-Aug-2023
Nick Blair	Oral
Thom Bogue	Oral
Sonora Bouey	18-Aug-2023
Erin Brockovich	2-Aug-2023
Jesus Calvillo	Oral
Karina Cervantez	Oral
Michael Claiborne	Oral
Eileen Conneely	Oral
Valentin Cornejo	Oral
Castulo Estrada	Oral
Edmund Fitzgerald	Oral
Oracio Gonzalez	Oral
Mayra Hernandez	Oral
Trudi Hughes	Oral
Kelli Hutton	Oral

Commenters ¹	Date Received ²
Kyle Jones	Oral
Antonio Juaregui	Oral
Ryan Kuntz	26-Nov-2023
Joanne Le	Oral
Paul G. Lego	17-Aug-2023
Marciela Mares-Alatorre	Oral
Evangelina Marujo	Oral
Nydia Medina	Oral
Jesus "Tutuy" Montes	Oral
Maria Luisa Munoz	Oral
Yasmeen Nubani	Oral
Oscar Ortiz	Oral
Bryan Osorio	Oral
Michael Prado, Sr.	Oral
Becky Quintana	Oral
Gerald Rounds	16-Aug-2023
Uriel Saldivar	Oral
Raquel Sanchez	Oral
Yesenia Segovia	Oral
Rob Spiegel	Oral
Mike Steinbock	10-Aug-2023
Becky Steinbruner	4-Mar-2024
Linda Ullrich	9-Aug-2023
Andria Ventura	Oral
Jared Voskuhl	Oral
Adam Wachtel	4-Mar-2024
James Ward	Oral
Tim Worley	Oral

COMMENTS AND RESPONSES

1. Comment: Commenters request that the use of reduction/coagulation/filtration (RCF) (due to public water systems without direct sewer access), ion exchange, and reverse osmosis be re-examined as Best Available Technologies (BATs), especially as being feasible for small public water systems (PWS).

Response: *The BATs (RCF, ion exchange, and reverse osmosis) have been confirmed by the external scientific peer review as effective and widely applicable. RCF has proven successful for treating hexavalent chromium in small PWS and is commercially available for flows down to 1 gallon per minute (gpm) (ISOR section 4.3.2). Further, RCF does not require direct sewer access. As described in the cost estimating methodology (CEM) in the Standardized Regulatory Impact Analysis (SRIA) (contained within ISOR Attachment 2, section 1.3.a.2.C), cost estimates conservatively assumed the need for disposal in the absence of direct sewer access and included disposal costs accordingly. Both RCF and ion exchange treatment have proven successful for small PWS, and treatment systems are*

commercially sold for hexavalent chromium for small PWS. Reverse osmosis implemented as centralized treatment may not always be feasible, especially for small PWS (as discussed in ISOR section 4.3.3). While reverse osmosis is often limited by high costs, the treatment has been successfully implemented in the form of point-of-use/point-of-entry (POU/POE) systems (ISOR sections 4.3.3 and 11.9.1).

2. Commenter states that the State Water Board has not addressed the significant differences between RCF reagents and their overall feasibility, safety, and effectiveness. Commenter submitted information regarding the differences between stannous chloride, ferrous sulfate, ferrous chloride, and electrolytic stannous and notes that stannous-based reagents have more favorable chemistry for reducing hexavalent chromium compared to ferrous-based reagents, that bulk stannous chloride is highly toxic and corrosive, and that electrolytic stannous is safe, inexpensive, and can be generated on demand.

Response: The variety of RCF reagents available is one of the reasons RCF treatment is broadly applicable for the treatment of hexavalent chromium. Reagent selection should be made on a case-by-case basis based on water chemistry and other factors noted by the commenter (ISOR section 4.4.2).

3. Commenters request further consideration of stannous chloride without filtration as BAT as it may offer a more cost-effective method for compliance with the proposed regulation. Some commenters request that the application of stannous chloride be quickly evaluated and approved by DDW, where appropriate. One commenter notes that studies show that the application of stannous chloride combined with filtration can be used to remove hexavalent chromium.

Response: As described in Health and Safety Code section 116370 (HSC 116370), BAT are technologies proven effective under full-scale field applications for contaminants with primary drinking water standards. As explained in the ISOR section 4.3.4, the direct application of stannous chloride into drinking water without filtration does not constitute BAT for hexavalent chromium at this time. However, the use of stannous chloride with filtration is a form of RCF, which is proposed as BAT. For those who wish to apply stannous chloride without filtration, additional evaluation of distribution water quality will be required. So far, stannous chloride application without filtration has not been proven effective, and staff is unaware of any recent evidence that shows otherwise. The concerns regarding applying stannous chloride without filtration are the accumulation of chromium and stannous in the distribution system, as well as clogging issues for consumers. Because stannous chloride without filtration has not been designated BAT, it cannot be used to estimate compliance costs (HSC 116365(b)(3)).

4. Commenters state that the State Water Board did not, but should, consider consolidation, alternative water supplies, and blending as BATs. In addition, a commenter is concerned that treatment technologies are costly compared to blending and requests that in-pipe blending be allowed. Another commenter stated that the cost estimates were conservative because most PWS are going to consolidate, drill a new well, or purchase water, and that better assumptions could have been developed to

derive more accurate cost estimates (e.g., which PWS are within three miles of safe water, which sources are near other sources).

Response: *The State Water Board recognizes that there may be other alternative options to comply with the MCL, but alternatives that are not forms of treatment cannot be considered BAT, which is what HSC 116365(b)(3) requires economic feasibility to be based on. That said, blending is already allowed as a treatment option in circumstances where there is enough time to blend before reaching the first customer. Consistent with existing regulations, if in-pipe blending is used, additional sampling requirements may be added, including adding a sample tap directly before the first customer. The commenters may be interested in the document Consolidation and Alternatives Analysis, found in the Documents Relied Upon tab of the rulemaking file, that shows consolidation potential for up to 36 percent of PWS and blending potential for up to 43 percent of PWS.*

5. Commenters seek clarification whether a PWS is required to use BAT to comply with the new MCL.

Response: *PWS are not required to use BAT. Any treatment technology that proves to be effective can be used.*

6. Commenter would like the option to use new technologies, possibly in the form of effective water purification systems at each household. Commenters ask if financing would be available and if new homes could have this type of system installed.

Response: *Residential water treatment devices (e.g. POU/POE) can be used at each household instead of centralized treatment under certain circumstances (HSC 116380). Such devices, however, may not be an available solution for new housing developments, where PWS must prove they can meet long-term water demands before they can be permitted. While financial assistance is beyond the scope of this regulation, it is currently available for PWS (please visit https://www.waterboards.ca.gov/water_issues/programs/grants_loans/).*

7. Commenter suggests that water contaminated with hexavalent chromium could be diluted with less contaminated water, such that hexavalent chromium levels could be evened out statewide.

Response: *While this solution is often used for water sources in close proximity (referred to as blending), it is often very difficult and expensive to transport water over large distances. For this reason, this approach is rarely implemented.*

8. Commenter claims that proposed BAT (such as ion exchange or RCF) can be highly water intensive, will require PWS to have a method of disposal, and therefore will lead PWS to concentrate contaminants in a different geographical location. Additionally, the commenter claims these factors and the danger of storing more chemicals will lead to additional discharge and permitting requirements. Utilizing more chemicals, more water, and more staff time to improve water quality only slightly does not coincide with the State's desire to make "conservation a way of life."

Response: *While the Board values making conservation a way of life, the proposed MCL has been statutorily mandated (HSC 116365 and 116365.5). The environmental impacts of compliance with the proposed regulations have been*

analyzed in the EIR prepared in connection with this rulemaking. Impacts regarding hazardous materials and effects on hydrology are discussed in chapters 12 and 13, respectively, of the Draft EIR.

9. Regarding POU/POE testing and certification, commenter notes the gap between the proposed MCL of 10 micrograms/liter (10 µg/L) and the level to which the National Sanitation Foundation/American National Standards Institute (NSF/ANSI) standard 58 certifies devices (100 µg/L). Commenter highlights the roles of third-party certification and national standards and states that certification to national standards (100 µg/L) is a necessity.

Response: *The State Water Board relies on third-party certification (including NSF/ANSI) for its Residential Water Treatment Devices Registration Program. While NSF/ANSI 58 criteria is based on federal standards, the percentage reduction achieved by the device is also included with the certification, allowing calculation of removal levels achieved by each device. In addition, certification to the proposed MCL may become available in the future.*

10. Commenter is concerned that the proposed MCL could render their wells noncompliant for use unless the well water is “blended or treated for dilution.”

Response: *PWS that have sources with annual average hexavalent chromium concentrations (calculated pursuant to Title 22 of the California Code of Regulations section 64432(i) [22 CCR 64432(i)]) higher than the proposed MCL will need to take action to come into compliance. Taking the source offline, treating the water, and blending the water are all options (alternatives to centralized treatment are discussed in ISOR section 11.9). Specific compliance options can be discussed with the PWS’s District Engineer.*

11. Commenters state that DDW’s claims regarding the availability and viability of alternatives to centralized treatment are unsupported (including POU/POE devices, switching to surface water, purchasing water from another PWS, and consolidation, and separating potable and non-potable water), and/or the alternatives discussed do not work for their PWS, which could lead to economic hardship and fire protection risk. Commenters point out that DDW does not provide any analysis of the feasibility of these alternatives.

Response: *While not all alternatives to centralized treatment may work for all PWS, these alternatives have been implemented across the state and show broad feasibility (ISOR section 11.9). In addition, HSC 116365(b)(3) requires that economic feasibility be determined using BAT, not alternatives to treatment.*

12. Commenters would like the compliance timeline extended for PWS or there to be a staggered reduction in the concentration level until it reaches the proposed 10 µg/L. Commenters state that PWS need more time to comply with the California Environmental Quality Act (CEQA), California Coastal Act, applying for and contracting with Division of Financial Assistance (DFA), Proposition 218 compliance, engineering design, procurement and construction challenges, installation, permitting, and/or any potential challenges (administrative, financial, and operational) introduced by alternatives to centralized treatment.

Response: Please see ISOR section 5.3. The State Water Board does not believe a grace period longer than the proposed regulation compliance periods would be in the best interest of public health. A lengthy grace period likely would delay compliance activity, including for those PWS for which compliance is easily obtained. The development of the proposed MCL has been public for years: the State Water Board was ordered to adopt a new MCL for hexavalent chromium in 2017, and public meetings on this topic have been held since early 2020. By the time the first PWS must comply with the MCL (two years after the effective date of the regulation), they will have had ample time to prepare: nine years since the MCL was ordered, six years since public meetings began, and four years since the draft proposed MCL of 10 µg/L was released. In addition, because compliance with the proposed MCL is based on a running annual average or quarterly results, a PWS may not be in violation for as long as an additional year after its compliance deadline. This is also the first MCL that has any additional compliance period, compared to previous MCLs that were effective when the regulation became effective.

13. Commenters state that the changes in the regulation text associated with CCR 64432 (first 15-day comment period) do not go far enough to address insufficient compliance timeframes. Some commenters state that the change in the text acknowledges that many PWS will not be able to comply by the current compliance dates. Commenters say that a better approach would be to establish a longer (three- to five-year) compliance period and/or to add the following language: “a PWS shall not be deemed in violation of the hexavalent chromium MCL while that PWS is implementing an approved compliance plan or while State Water Board action on a timely submitted compliance plan is pending.”

Response: The State Water Board believes that the proposed compliance schedule is broadly achievable by most PWS. Circumstances in which some PWS struggle to comply will be assessed on a case-by-case basis with the assigned DDW engineer. The suggested language could allow PWS continuously to submit a compliance plan for consideration and thereby put off compliance with the proposed MCL indefinitely; this would not be consistent with the State Water Board’s mandate to protect public health.

14. Commenters claim that the compliance timeline exposes those living in disadvantaged communities to a dangerous carcinogen longer than those in more privileged areas. Consequently, commenter asks the Board to ensure that PWS develop compliance plans during the compliance period and that enforcement actions focus on PWS that have not made progress on their plans.

Response: PWS that exceed the MCL during the compliance period will be required to submit compliance plans within 90 days of the exceedance, and the dates within those plans are enforceable. Enforcement actions will be considered if PWS violate their compliance plan or compliance period deadline and issued if appropriate.

15. Commenters suggest that the four-year compliance period for very small PWS be shortened to three years, particularly considering small PWS disproportionately serve communities of color.

Response: The State Water Board believes the proposed compliance periods are necessary, even for very small PWS, and that it allows the smallest PWS to benefit from the work and supply chains established by larger PWS. In addition, smaller PWS often do not have the capital reserves or other resources (e.g., full-time staff) to quickly complete expensive projects. Spreading compliance out over a longer period provides more financial flexibility to the PWS that most need it.

16. Commenters request that PWS be required to comply in a shorter period where possible.

Response: Terms such as “where possible” or “as short as practicable” tend to be subjective, unenforceable, and noncompliant with the clarity standard of the APA. The proposed consumer notification requirements are expected to encourage prompt compliance. No change was made to the proposed regulation.

17. Commenter notes that it may not be possible for all PWS (especially small PWS who do not have in-house staff) to complete and submit a compliance plan within 90 days of an exceedance.

Response: The State Water Board believes that 90 days after an exceedance (which can take up to a year to determine) is enough time to develop and submit a compliance plan. Further, a compliance plan consists of providing a short statement and identifying up to four dates. Preparation of a compliance plan can begin as soon as a PWS knows it is likely to exceed the MCL.

18. Commenter states POU/POE devices would be well-suited to their PWS, but this option is limited to three years and is therefore difficult to implement.

Response: POU/POE use is not limited to three years. Rather, POU/POE permits are limited to three years, after which PWS can receive a new permit, if eligible.

19. Commenters state that Tier 2 reporting should only be used for actual MCL (or other specific) violations and that requiring it before the compliance date misinforms the public and creates the false impression that a condition of non-compliance exists.

Response: Tier 2 notification is the appropriate level of notification for contaminants involving non-acute health effects, such as those identified for hexavalent chromium and for persistent violations.

20. Commenters suggest that instead of the proposed change [addition of requirement to perform Tier 2 public notification in the event of MCL exceedance prior to the applicable compliance date], additional communication could be achieved through adding a communication plan to the required Compliance Plan.

Response: The proposed requirements for Tier 2 notification and consumer confidence reports provide clear and consistent communication to affected consumers statewide. No specific, enforceable elements were proposed by commenters and the proposed regulations do not preclude PWS from conducting additional communications with customers.

21. Commenters state that the proposed change to the regulation text associated with CCR 64432 [addition of requirement to perform Tier 2 public notification in the event of MCL exceedance prior to the applicable compliance date] is unnecessary, does not provide a benefit, and does not address commenter's concerns.

Response: *Tier 2 public notification ensures the public is informed of the presence of hexavalent chromium in their drinking water while a treatment solution is being developed in adherence of a compliance schedule.*

22. Commenter supports the goal of strengthening consumers' understanding of drinking water quality [addition of requirement to perform Tier 2 public notification in the event of MCL exceedance prior to the applicable compliance date] and therefore urges the State Water Board to invest in accessible resources and communication tools for PWS pertaining to water notice advisories. Another commenter suggests that reporting should also be extended to customers and the public via city and county website portals.

Response: *Commenter's support is noted. DDW will provide public notification templates for use for Tier 2 public notices. While reporting via city and county website portals is not required, DDW may explore this approach as part of revisions to the Consumer Confidence Report in a future rulemaking.*

23. Commenters urge the State Water Board to ensure there is a clear pathway to total compliance.

Response: *Ensuring a clear pathway to total compliance is one of the goals of the compliance period and compliance plans. Particularly, compliance plans are expected to help PWS and DDW staff identify issues that may compromise compliance by the applicable deadline.*

24. Commenters request that the health benefit claims of "improving public perception of the water supply" that may then result in "decreased consumption of bottled water" and "may help efforts to reduce childhood consumption of unhealthy substitutes (i.e., sweetened beverages) to drinking water; therefore, providing a positive health benefit" be removed from the rulemaking record. Commenters state that these claims are unsupported and unquantifiable. A commenter suggests that the proposed MCL may increase the cost of drinking water in some areas, making substitutes a more affordable choice and decreasing public confidence in California's drinking water regulations.

Response: *Public perception about drinking water can be intertwined with public consumption of drinking water. As such, there can be a desire for alternatives to drinking water, many of which can be less healthy and more expensive. The ISOR merely notes the possibility that an improved perception may reduce the desire to purchase those alternatives.*

25. Commenters request that the rulemaking be suspended until the California Office of Environmental Health Hazard Assessment (OEHHA) publishes the updated hexavalent chromium Public Health Goal (PHG), which is currently being reviewed by OEHHA. Commenter also states that the current PHG for hexavalent chromium is based on an outdated peer review and therefore should not be used as the basis for the proposed MCL, especially considering the State Water Board delayed the review of the

tetrachloroethylene (PCE) and trichloroethylene (TCE) MCLs in 2017 while OEHHA reviewed the TCE PHG.

Response: *OEHHA and the State Water Board routinely re-examine and update PHGs and MCLs. HSC 116365 requires that OEHHA and the State Water Board review their PHGs and MCLs every five years. Because the development of PHGs and MCLs are multi-year processes, it is likely that there would be some overlap between when a MCL is being developed and when a PHG is updated. The process for developing a MCL begins 18 to 36 months before a document is made public and the formal rulemaking process begins, and includes an assessment of occurrence data, and identification and analysis of potential treatment technologies, costs, and environmental impacts. Similarly, the PHG process can take three or more years, including research and development of an initial draft, a first public comment period, submission for external scientific peer review, consideration of peer reviewer comments, and a second public comment period before finalization of the PHG. In determining whether to wait for OEHHA's revision of the PHG, the State Water Board must balance the protection of public health that would be afforded by establishing an MCL now at the level determined to be technically and economically feasible with the potential uncertainty of where OEHHA may set a revised PHG.*

There are significant differences between the situation for PCE and TCE and that of hexavalent chromium. For PCE and TCE, the State Water Board was only at the point of assessing whether it should begin the process of updating the MCLs. No work had actually begun to update the MCLs, and waiting for an update of those PHGs did not entail cessation or disruption of work on developing new MCLs that was already progressing. In addition, unlike hexavalent chromium, MCLs already existed for PCE and TCE, providing at least some public health protection. It is important to also note that the Legislature required that a MCL be adopted for hexavalent chromium, and this fulfillment of requirement is more than twenty years overdue.

26. Commenter requests that all documents and communications related to the following be submitted as part of the administrative record for the hexavalent chromium MCL rulemaking: (1) OEHHA's publication of the hexavalent chromium PHG in 2011; (2) OEHHA's decision to update the hexavalent chromium PHG in 2016; (3) OEHHA's July 6, 2022 memorandum to DDW regarding OEHHA's decision not to update the hexavalent chromium PHG; (4) OEHHA's March 27, 2023 announcement of a second data call-in for the hexavalent chromium PHG update; and (5) all correspondence, documents, and information submitted by anyone to OEHHA in response to, relating to, or concerning items (2), (3), and (4).

Response: *(1) OEHHA's 2011 PHG is included in the Documents Relied Upon section of the rulemaking record. (2) OEHHA's 2016 letter states merely an intent to review the PHG for hexavalent chromium, which results in a PHG update only when there is enough evidence to warrant a recalculation of the PHG; as this*

document was not used as a basis for this rulemaking, it is not included in the rulemaking record. (3) OEHHA's 2022 memorandum, which points to an updated PHG that "would not likely vary significantly from the 2011 value," was also not used as a basis for this rulemaking and so is not included in the rulemaking record. Likewise, items (4) and (5) were not used as a basis for this rulemaking and so are not included in the rulemaking record. OEHHA documents related to hexavalent chromium can be found on its website at <https://oehha.ca.gov/water/public-health-goal/hexavalent-chromium-drinking-water> or requested directly from OEHHA.

27. Commenter cautions the State Water Board against attempting to rely on OEHHA's 2022 memorandum as doing so "would be unlawful, arbitrary, capricious, and would further jeopardize the legal foundation" of the proposed MCL.

Response: *The State Water Board does not rely on OEHHA's 2022 memo. It is not listed in the documents relied upon for the preparation of the ISOR (see section 13 of the ISOR for the "documents relied upon," consistent with Government Code section 11346.2(b)(3)). The State Water Board is, however, relying in part on the "Proposed Health -Protective Concentration for Noncancer Effects of Hexavalent Chromium in Drinking Water," as identified in the 15-day notice. In that document, OEHHA has announced a draft noncancer health protective concentration (one of two precursors to the PHG) of 5 µg/L, which is lower than the proposed MCL of 10 µg/L. Although the State Water Board recognizes that the health -protective number for noncancer effects is still in draft form and that there is additional peer review and public comment before it is finalized, it supports the likelihood the PHG will remain below the proposed MCL.*

28. Commenter states that the State Water Board's decision to release the first 15-day notice (dated 22 November 2023) the day after OEHHA released its noncancer PHG document suggests that the State Water Board is driving toward a preordained outcome and has no intention of considering new scientific information.

Response: *The State Water Board finds the proposed MCL to be as close to the PHG that is economically and technologically feasible and OEHHA's release of a noncancer PHG document did not contradict that finding.²⁵*

29. Commenters assert that HSC 116365(e)(2) requires concurrent PHG publication and an MCL proposal for a "newly regulated contaminant."

Response: *It would be impossible for the State Water Board to set an MCL "as close as feasible to the corresponding public health goal" if the PHG were not established before the State Water Board adopted an MCL. This statute requires that a PHG is in place when the State Water Board proposes to adopt an MCL for a newly regulated contaminant. This is consistent with the Legislature's amendment to the statute in 1999, when it deleted the term "concurrently" from subsection (e)(2) of HSC 116365. (Stats. 1999, Ch. 777, Sec.1.) Current language "at the same time" is interpreted to mean that a PHG must be in place when the State Water Board proposes to adopt an MCL for a newly regulated contaminant.*

30. Commenters request that any up-to-date science be provided that confirms that setting the hexavalent chromium MCL at 10 µg/L will ensure a significant improvement in public health. A commenter states that documented toxicity cases only involved direct occupational hazards and that in a country where the risk of developing cancer is 1 in 2 or 1 in 3, the protective effect of reducing the risk of one chemical would be moot. A commenter stated that the proposed regulation will make people pay more for water without appreciable health improvement.

Response: The process of establishing a PHG is the jurisdiction of OEHHA, the State Water Board is required to utilize the PHG when establishing an MCL. The potential increase in water rates was considered when developing the MCL.

31. Commenter points to 22 CCR 25707(a), which they say dictates how the State Water Board must assess whether a chemical presents a significant risk of cancer at levels of exposure. Therefore, commenter asserts that the State Water Board must review all pertinent studies, identify the “significant risk of cancer at levels of exposure not in excess of current regulatory standards,” and quantify and provide the number of cancer cases that will be avoided if a new and lower MCL were adopted.

Response: CCR 25707(a) contains instructions for OEHHA, not the State Water Board, which cannot make health determinations in this context. Health-related claims or risk calculations not already published by OEHHA are beyond the scope of the proposed regulation.

32. Commenters state that there is no evidence, or it is unclear, that the proposed MCL would result in any health benefit, that there is no health benefit for MCLs set below 50 µg/L, and/or that 100 µg/L is considered safe by the federal government.

Response: The State Water Board is required to set the MCL as close to the PHG as is technically and economically feasible, and is not required to conduct an analysis of the health benefits. Because the PHG is set at the point where the contaminant in drinking water is not anticipated to cause or contribute to adverse health effects or that does not pose any significant risk to health, anything closer to that level would have a health benefit. -

33. Commenters point out that if OEHHA’s update of the hexavalent chromium PHG changes the PHG, it would also change the State Water Board’s estimate of the benefits attributable to the regulation. Given the uncertainty regarding the timing of PHG update, commenter states that the State Water Board should conduct a sensitivity analysis to understand the potential impacts of alternative PHGs on the benefit estimates in the revised SRIA and how those changes would propagate through the economic feasibility analysis.

Response: While it is true that a changed PHG would change the benefits attributable to the regulation, it would not change the economic feasibility analysis, which is dependent on the estimated costs rather than estimated benefits. Pursuant to HSC 116365, the MCL must be set as close to the PHG as is technologically and economically feasible.

34. Commenter states that since the State Water Board reports that 1 in 2,000 residents should be impacted within 70 years and that California has a population of

38 million residents, there should be 1,950 annually reported cases on average of people impacted by drinking water containing hexavalent chromium. Commenter challenges the notion that residents will be significantly impacted by drinking water containing hexavalent chromium.

Response: The statistic of 1 in 2,000 residents impacted over 70 years refers to drinking water at the MCL of 10 µg/L. Fortunately, some PWS already deliver water to their customers at less than the proposed MCL of 10 µg/L. Therefore, a calculation only utilizing the California population does not capture an accurate estimate for only the PWS that the proposed MCL will impact. The estimate of cancer cases reduced (Table 26 on Tab E of ISOR Attachment 1) is based on the reduction that each individual source would be required to make as a result of the proposed (or alternative) MCL, and the impact of each source is only calculated for the proportional population of each PWS (see ISOR section 5.2.1 for calculation details). Table 26 shows that the proposed MCL is estimated to reduce around 13 cancer cases per year (far below the 1,950 cases referred to by the commenter), and an alternative MCL of 1 µg/L is estimated to reduce around 51 cases per year. The difficulty associated with determining the causes of individual cancer cases prevents the kind of comparison suggested by the commenter. Please see response to comment 117 for more details.

35. Commenter indicates that many residents need assistance with being notified that there is hexavalent chromium in their water. Commenter shares that as a child, she was responsible for translating a notification telling their family not to drink their water because it was contaminated with hexavalent chromium, and her parents could not read the English-language notification.

Response: Pursuant to CCR 64465(c), Tier 1 public notices must be provided in English, Spanish, and any language spoken by at least 10 percent of customers; Tier 2 public notices must contain information in Spanish explaining the importance of the notice and information on how to obtain a translated notice.

36. Commenter questions how much health impact is expected if the MCL is 20 µg/L as opposed to 10 µg/L and asks whether that difference is worth a \$100 million investment.

Response: The cancer risk for drinking water with 10 µg/L of hexavalent chromium is 1 in 2,000, and the risk for water with 20 µg/L of hexavalent chromium is 1 in 1,000. The health impact of an alternative MCL of 20 µg/L would be about 3 cancer cases avoided per year, while the proposed MCL of 10 µg/L would reduce about 13 cases per year (ISOR Attachment 1, Table 26). Because the State Water Board did not perform a cost-benefit analysis as to what the health benefits are worth monetarily, there is no such analysis or information to disclose. The analysis of benefits was considered generally, consistent with Government Code section 11346.5, and included protection of public health. Information on the compliance cost and health benefit analysis is provided in the ISOR.

37. Commenters would like the uncertainty of the health impacts of drinking water containing multiple contaminants to be acknowledged (as they are poorly understood) in the form of additional analysis of the health risks associated with drinking water with

multiple contaminants. Commenters ask that any cumulative impact be more carefully considered, including the cost burden of existing and projected or reasonably anticipated future drinking water regulations. Commenters request that the regulation include an analysis of recent trends in water rates and known instances of disproportionate water affordability burdens, a complete list of regulatory priorities indicating where each contaminant is in the regulatory queue, and order-of-magnitude estimates of potential compliance costs based on a preliminary analysis of available occurrence and treatment cost data.

Response: Health-related claims or risk calculations not already published by OEHHA are beyond the scope of the proposed regulation. Commentators questioning potential health risks associated with hexavalent chromium (including synergistic health impacts) are encouraged to contact OEHHA to discuss. It is not practical to evaluate costs using the cumulative burden of existing and projected/future drinking water regulations due to a lack of data and staff time for extra research. Please also see response to comment 78 regarding cost burdens and the requirements for determining economic feasibility.

38. Commenter would like to know why this MCL rulemaking is based on the historical dumping of waste by Pacific Gas and Electric Company (PG&E) (“the Erin Brockovich scenario”). Commenter would like to see the causes of hexavalent chromium.

Response: The proposed regulation is required by HSC 116365. On page four, the ISOR notes that the presence of hexavalent chromium in California drinking water source may be naturally occurring or caused by industrial activities that used hexavalent chromium. These industrial activities include manufacturing of textile dyes, wood preservation, leather tanning, and anti-corrosion processes, where hexavalent chromium contaminated waste migrated into groundwater.

39. Commenters request confirmation/recalculation of economic feasibility of the proposed MCL before adoption because the current analysis does not employ best practices, lacks analytical rigor and transparency, is results-oriented, does not fully capture the cost of compliance (including indirect health risks associated with the economic impacts of increased water rates, especially in communities with populations at or near poverty levels), and/or focuses on unrealistic costs. A commenter requests to see and validate the detailed calculations and assumptions behind the economic analysis.

Response: As detailed in section 11 of the ISOR, the State Water Board analyzed many aspects of economic feasibility: compliance costs were broken down to the system level to allow consideration of how average, median, and high compliance costs would impact California residents; values for alternative MCLs were calculated for each cost or information point (most tables in ISOR Attachment 1 contain the proposed MCL and all 20 alternative MCLs) to allow for alternatives consideration in every aspect; available funding; alternative compliance options. In addition to the CEM in ISOR Attachment 2, the cost calculations are available as a Python code that details each step.

While indirect health risks have been associated with high water bill burdens, recommended solutions include federal investments in water infrastructure, state

oversight of water bills, municipal tiered water pricing, and comprehensive assistance policies for low-income households (Sarango et al., 2023). Any indirect health risks that resulted from higher water bills would not be quantifiable. Failing to promulgate a health-based drinking water standard with quantifiable benefits to avoid potential health risks (stemming from other primary causes) would be a detriment to public health, especially when failing to promulgate such a standard would not reduce any health risk currently caused by existing high water bill burdens.

40. Commenters critique the affordability metrics/benchmarks used. Other commenters requested an affordability impact analysis, the use of alternative measures/metrics to determine affordability, an affordability justification for the proposed MCL, and/or clarification regarding the difference between economic feasibility and affordability.

Response: The State Water Board must adopt a standard for hexavalent chromium that is as close as possible to the PHG, considering only technological and economic feasibility, and has no discretion to set a different “affordable” MCL that is less protective of public health. The proposed regulation does not preclude PWS from applying for an exemption pursuant to HSC 116425 or using an alternative means of compliance that may be more affordable (discussed in ISOR section 11.9). Please see ISOR sections 11.1 and 11.3 for additional discussion on affordability.

41. Commenter requests that economic effects be shown on a per household/connection basis, not on a per person basis, because most water bills are paid for by a household.

Response: While the proposed regulation included per person costs, it also included discussions of estimated costs borne per household/connection in ISOR sections 11.2.1 (Monthly Household Compliance Costs Analysis), 11.3 (Systems Challenged to Meet the Proposed MCL), 11.4 (Unit Costs Variability), and smaller parts of other ISOR sections (including ISOR Attachment 2). Economic impacts were shown on a per household/connection basis in ISOR Tables 6, 7, and 9 and ISOR Attachment 1 Tables 9.2A, 9.2B, and 14A.

42. Commenter requests clarity regarding how a monthly water bill increase of \$53 could be considered economically feasible.

Response: Economic feasibility is not determined based on a single value. As detailed in ISOR section 11, many aspects were considered in the determination of economic feasibility.

43. The proposed MCL conflicts with HSC 116365 (a) and (b) (part of the California Safe Drinking Water Act), which requires the MCL to be set as close to the PHG as is technologically and economically feasible and at a level that avoids any significant risk to public health. Commenters assert that the State Water Board used a cost-benefit analysis to set an MCL which was specifically disapproved by the Court of Appeal, to acknowledge that regulations are not infeasible because they impose financial burdens on businesses or consumers and failed to take into account aspects that would make

the MCL more affordable, such as savings (e.g., from no longer needing to purchase bottled water).

Response: ISOR section 11.10 describes the consideration of future regulations in the context of economic feasibility, which contributed to the lack of economic feasibility for lower alternative MCLs. Staff was unable to demonstrate economic feasibility for levels below 10 µg/L; proving a negative (in this case, that each lower MCL is infeasible) is not always possible. It is possible that lower levels will become more feasible in the future, which will be evaluated during future DDW MCL reviews.

As mandated in HSC 116365, the MCL must be set as close to the PHG as is technologically and economically feasible. While lower levels may be technologically feasible, 10 µg/L was determined to be as close to the PHG as is economically feasible at this time (ISOR section 11). HSC 116365(b)(3) requires that economic feasibility be considered using BAT centralized treatment costs (rather than any alternative, more affordable options), so further quantification/monetization of benefits would not alter the economic feasibility analysis. In addition, the data needed to quantify the benefits suggested is not currently available (e.g., who already buys bottled water and which compliance options would work for each PWS). Please also see the responses to comment 44 regarding monetizing benefits and comment 82 regarding the consideration of other cost savings.

44. Commenters state that a cost-benefit analysis should be conducted/improved (by weighing the added cost of implementation with the public health benefit), as required by the California Safe Drinking Water Act and Department of Finance (DOF) SRIA regulations. Commenter states that the Board failed to consider numerous cost savings and health benefits. Commenter states this created an analysis that is higher than the real costs borne by PWS and individuals, providing false justification for a high MCL when a lower MCL is likely economically feasible.

Response: The proposed MCL is not and cannot be based on a cost-benefit analysis. A discussion of this topic is available in section 11.1 of the ISOR. In addition, *California Manufacturers & Technology Association v. State Water Resources Control Board* (2021, 64 Cal.App,5th 266) determined that a cost-benefit analysis is not required under the California Safe Drinking Water Act.

The calculated costs used in the proposed regulation were conservative by necessity, when there were no data to show that costs would be lower. The costs presented in the proposed regulation have been revised in a multi-year process that included multiple rounds of public comments. Even if health benefits or other savings were monetized, they would likely not change the outcome of the regulation because a cost-benefit analysis is not used to determine the economic feasibility of potential MCLs. While the ISOR includes statewide costs, it also includes discussions of estimated costs borne by PWS and individuals in sections 11.2.1 (Monthly Household Compliance Costs Analysis), 11.3 (Systems Challenged to Meet the Proposed MCL), 11.4 (Unit Costs Variability), 11.6

(Economic Feasibility for NTNCWS), 11.7 (Economic Feasibility for TNCWS), and smaller parts of other ISOR sections (including ISOR Attachment 2).

45. Commenters request that the economic impacts of the proposed MCL on individual PWS be considered rather than just looking at averages and overall statewide impact and focus more on the costs to be incurred by affected small PWS, which are underestimated and/or unreasonably high. In addition, commenter claims averaging was used extensively to mask the extent of economic impacts on individual PWS and their ratepayers (starting with section 11.3.1 and cost-effectiveness analysis). Narrowing the average to just households with PWS affected by the proposed MCL would more accurately reflect the burdens that disadvantaged communities will bear. Similarly, commenters note that the figure of \$4.75 per person per year (where costs are spread across all Californians) is not representative of impacts of the proposed regulation, especially for small PWS.

Commenter requests a clear explanation of the cost estimation process used to develop median values in Table 6 (ISOR, pp. 44). Particularly, commenter points to the discontinuities of cost information provided for small PWS with fewer than 100 connections (\$308).

Response: The economic impacts of the proposed MCL on individual PWS were considered. Compliance costs and impacts were considered down to the system level, and part of the economic feasibility analysis focused on the highest costs incurred by each PWS size category (see ISOR section 11 for details on the economic feasibility analysis). The cost estimates for the proposed regulation were developed over many years with input from the public (see the Historical Timeline on our [Hexavalent Chromium Information webpage](#)).

The State Water Board recognizes that some PWS are disadvantaged or lack economies of scale such that any new or increased drinking water standards will be difficult for those PWS to comply with. Limiting new or revised drinking water standards to only what is affordable to the most disadvantaged PWS would likely result in no new or increased standards ever being developed, despite the fact that the majority of Californians are served by larger PWS that are able to spread the cost of treatment over a larger number of individuals. The result would be that affordability for a small percentage of the population would be driving health protections for the majority of the population.

Many cost metrics were calculated and shared in the proposed regulation documents. In addition to statewide averages, the average costs to households in affected PWS were also presented in ISOR sections 11.2.1 and 11.3 and ISOR Attachment 2 section C.5. The Disadvantaged Community (DAC) status of each affected PWS was also reviewed in ISOR section 11.3.

The cost--effectiveness analysis (including section 11.3.1) includes cost averages for different groups, but also includes many other cost metrics, such as medians, maximums, summations, and individual customer costs. These costs, the data used to develop the costs, the attached cost tables (ISOR Attachment 1), and the [Python code](#) (which includes each step) were included to provide transparency.

We agree that the figure of \$4.75 per person per year is not representative of the impacts of the proposed regulation; the figure was intended to help conceptualize the total cost of the regulation. The CEM (ISOR Attachment 2 section I) has been updated since the 2014 rulemaking, resulting in updated costs.

The discontinuities in ISOR Table 6 reflect PWS data. The median cost of \$308 for an alternative MCL of 40 µg/L is calculated from a single PWS (see ISOR Attachment 1 Table 7.1A for a breakdown of the number of PWS in each system size category). That system's cost does not change for other alternative MCLs. However, for an alternative MCL of 35 µg/L, the smallest size category contains 3 PWS (the two other costs were \$52 and \$71, producing a median cost of \$71), and for an alternative MCL of 30 µg/L, the smallest size category contains 5 PWS (the other four were \$55, \$71, \$97, and \$292, producing a median cost of \$97).

46. Commenters cite *Cal. Manufacturers and Technology Assn v. State Water Resources Control Board* (2021) 64 Cal.App,5th 266, 286 (the “subject case”): (1) that the OSHA -related case law cited to help define/determine economic feasibility is inappropriate: a regulation that “threatens the survival of some companies” in the context of private industry is different than a regulation that threatens the survival of public or private PWS, and also (2) that the Superior Court decision says that water bills increasing by an estimated \$5,630 per year (or \$469.17 per month) is not acceptable.

Response: *Impacts on businesses that are PWS are discussed in ISOR Attachment 2 section C.2 and C.3, and impacts on businesses served by PWS are discussed in section C.5. These different types of businesses are discussed together in some places where it is required to discuss all impacted businesses.*

*The State Water Board does not believe that the Superior Court decision put forth an opinion in the subject case regarding the economic feasibility of the regulation, only that economic feasibility was not properly considered: “In remanding this case to the Department, however, the court is not definitively holding that an MCL of 10 ppb is not economically feasible” (*California Manufacturers & Technology Association v. State Water Resources Control Board* (2017) Super. Ct., Sacramento County, Case No. 34-2015-80001850).*

*Because the third appellate district court in the subject case specifically addressed the meaning of economic feasibility in the context of HSC 116365, the State Water Board is required to follow its holding. In that case, the appellate court rejected that HSC 116365 required a balancing of costs and benefits, concluding that a “feasibility analysis, rather than a cost–benefit analysis” is required by the statute (per the subject case). In coming to that conclusion, the court recognized the U.S. Supreme Court had considered similar statutory language in a previous case involving Occupational Safety and Health Administration (OSHA) regulations. In that case, the industry representatives argued that the federal statute required a showing that the costs of the proposed regulation “bore a reasonable relationship to the anticipated benefits to the employees” (*Id.* at 285 (citing to *American Textile Mfrs. Institute, Inc. v. Donovan* (1981) 452 U.S. 490, 494)). The U.S. Supreme*

Court rejected that argument, noting that the statute requires a feasibility analysis. In following that analysis, the appellate court in the subject case, noted that the Legislature placed “the public health benefits of safe drinking water above all other considerations, save those that would make attaining those benefits unachievable” (Id).

The appellate court affirmed the trial court’s conclusion that “regulations are not ‘infeasible’ because they impose financial burdens on businesses or consumers” (Id. at 282-283 (citing cases related to OSHA)). Like the industries at issue in the OSHA cases, the fact that some PWS will be financially burdened or have challenges meeting a standard does not mean that the standard is infeasible. That conclusion is not undermined by the importance of PWS for providing drinking water service; rather, it is bolstered by it. Because of that importance, the standard for drinking water service in California cannot be determined by the capacity of the least capable PWS in the state. If the drinking water industry in California were to be held only to the standards achievable by its least capable systems, the industry would be held to a standard far lower than what is feasible. As a result, the mandate of the California Safe Drinking Water Act would go unmet, and Californians would suffer the public health impacts of consuming contaminated drinking water. The court in the subject case recognized this when it interpreted the meaning of economic feasibility and looked to cases interpreting OSHA regulations for guidance.

47. Commenter claims that because the State Water Board has not complied with many of CEQA’s fundamental requirements (detailed in separate CEQA comment letter), the feasibility assessment is not valid.

Response: *The State Water Board has responded to those comments in the Final EIR.*

48. Commenter states that the range of estimated costs set forth in the Staff Report and attached tables range from \$85 to \$998 per month and average about \$300 per month (from Table 16A), which represent a significant hardship for their customers and other similar small PWS.

Response: *The referenced costs are draft costs released in March 2022. Cost estimates for the proposed regulation are lower (see ISOR Attachment 2). Please see response to comment 77.*

49. Commenter states the proposed regulation needs to account for projects that were already constructed to comply with the previous attempt at setting an MCL for hexavalent chromium, including allowing for compliance points to be changed to after blending.

Response: *When estimating costs for this regulation, previously installed hexavalent chromium treatment was not accounted for (subtracted from calculated compliance costs) because of uncertainty and inconsistencies in the data regarding those treatment plants: While some PWS continued to use installed treatment for hexavalent chromium, some discontinued or lessened the treatment, and others put partially completed treatment plans on hold.*

So long as a previous project is able to comply with the proposed MCL, it can be used. Changing compliance points is also allowed. Please discuss with your assigned engineer.

50. Commenters state that they will not be able to afford improvements needed to comply with the proposed MCL, and/or the proposed level would harm or significantly impact their community/business financially.

Response: *The State Water Board is aware that some communities may be disproportionately affected by hexavalent chromium, the proposed regulations, or both. However, affordability is not the same as economic feasibility, which is defined as being capable of being done given the management of domestic or private income and expenditure (ISOR section 11.1). Please also see response to comment 77.*

51. Commenters state that the use of \$30 per month per household as an affordability threshold for cost increases has no meaningful explanation and/or is arbitrary.

Response: *As stated on page 43 of the ISOR, “A \$30 monthly cost increase is used to approximate financial assistance needs and is not intended to convey that \$30 is necessarily an unaffordable value. Higher cutoffs will result in lower funding estimates, and lower cutoffs will result in higher funding estimates. This analysis could be repeated with other cutoff values to determine sensitivity.”*

52. Commenters state that the Food and Drug Administration (FDA) requires that food processors meet all drinking water standards, and that there has not been a robust economic feasibility analysis of the real cost and implications to food producers.

Response: *Food processors are required to meet certain federal standards, and there currently is no federal standard for hexavalent chromium. The FDA requires that “Any water that contacts food or food-contact surfaces shall be safe and of adequate sanitary quality,” (21 Code of Federal Regulations (C.F.R.) 110.37). The California Retail Food Code requires that “water meet standards for transient noncommunity systems, to the extent permitted by federal law,” which only requires that water quality meet nitrate/nitrite and bacteria standards, including compliance with the ground water rule and surface water treatment rules (see HSC 113869, defining “potable water”). Therefore, compliance with the hexavalent chromium MCL is not required by food processors, unless the processing plant is considered a non-transient PWS because it serves 25 people (such as employees) over six months per year. As compliance with the MCL is not required by food processors, additional costs to food processors who choose to comply with the MCL are not included in the economic feasibility analysis.*

53. Commenters state that the proposed regulation should include an assessment of compliance costs incurred by some or all wastewater treatment plants should the MCL be adopted.

Response: *It is not clear that there will be any immediate monitoring and treatment costs to wastewater treatment plants from the adoption of the proposed MCL. DDW is unaware of any wastewater agencies treating specifically for hexavalent chromium or best practicable treatment and control practices for hexavalent*

chromium upon which to base cost estimates. Based on a search of discharge monitoring records, DDW is also unaware of any wastewater agencies that would be affected by a hexavalent chromium limit of 10 µg/L for waters with a beneficial use of municipal and domestic supply.

In addition, no wastewater agency would have to comply with a discharge requirement based on the proposed MCL until a new permit is adopted that incorporates the proposed MCL as an effluent limit. Regional water quality control boards (RWQCBs) would use their discretion in setting effluent limits based on specific variables (monitoring frequencies, monitoring timeframe, permit renewal schedules, compliance schedules, and the application of narrative toxicity objectives), so DDW could not predict the effluent limitations in future permitting. Additionally, once drinking water systems begin treating for hexavalent chromium, all or most of the wastewater coming into the treatment system would have already been treated, relieving the wastewater agency from having to treat the water to meet the proposed MCL.

54. Water Code section 13241 requires an analysis of the proposed MCL's impact.

Response: *The State Water Board is adopting the MCL pursuant to its authorities and responsibilities under the California Safe Drinking Water Act, not the Porter-Cologne Water Quality Control Act. As a result, the analysis required for the MCL derives from the California Safe Drinking Water Act, and the State Water Board is not required to consider the factors specified in Water Code section 13241, even though some regional water boards' basin plans incorporate by reference primary drinking water standards as water quality objectives. The State Water Board has not required regional water boards to incorporate primary drinking water standards by reference as water quality objectives and has approved regional basin plans with varying degrees of MCL incorporation, including at least one basin plan with no prospective incorporation by reference. Regional water boards exercise broad discretion in determining which numeric and narrative water quality objectives to include in their basin plans. Further, consideration of the Water Code section 13241 factors was the responsibility of the regional water boards when they incorporated the MCLs as water quality objectives to reasonably protect waters designated with the beneficial use of municipal and domestic supply. There is not a requirement for additional analysis at this time.*

55. Commenters request that funding be available to assist with compliance needs be clearly identified and ensured for PWS (especially small PWS). Some commenters also request that the Board's analysis consider that capital costs could be covered by the state.

Response: *The analysis, availability, or commitment of state funding to pay for compliance projects by PWS is not a prerequisite or requirement for the State Water Board's adoption of the proposed regulation. Rather, the Board considered the possibility of state financial assistance to PWS for addressing hexavalent chromium as a potential mitigating factor for affordability. As such, accounting for*

additional resources (such as the state covering capital costs) would not alter the analysis.

56. Commenters claim that financial assistance needs have been understated, and/or the availability and reliability of State funding has been overstated.

Response: *Funding needs were estimated based on illustrative figures (see response to comment 51) to provide information to board members and the public. The availability of sufficient funding is not a prerequisite or requirement for the proposed regulation. Further, nothing about this action changes the existing process for pursuing financial assistance.*

57. Commenter requests that DDW estimate the annual demand for grant funding to cover capital costs over the first four years of the proposed MCL.

Response: *The demand for grant funding that covered capital costs would be equal to the estimated capital costs (shown for each source in ISOR Attachment 5) summed for each year based on the applicable compliance deadlines. The requested information can also be calculated by using data from State Water Board databases (ISOR Documents Relied Upon #53 and #54) to create running annual averages for each source, and by creating a list of sources (and their associated system information) with any running annual average above the proposed MCL. Costs can then be calculated for each of the listed sources following the methodology detailed in ISOR Attachment 2 section I. Affordability information is available for each system in the 2022 Drinking Water Needs Assessment (ISOR Document Relied Upon #59).*

58. Commenters would like the State Water Board to proactively plan to provide funding and support to impacted PWS, particularly those providing water service to disadvantaged communities through the Safe and Affordable Funding for Equity and Resilience (SAFER) program and other funding programs.

Response: *This is outside the scope of this regulation. Funding opportunities can be found at https://www.waterboards.ca.gov/water_issues/programs/grants_loans/.*

59. Commenters continue to advocate for the establishment of a statewide low-income rate assistance program to aid low-income households struggling with unaffordable water and sewer bills.

Response: *A statewide low-income rate assistance program is outside of the scope of this regulation.*

60. Commenters request that the State Water Board's analysis better address the State Water Board funding process, which has proven to be difficult and time consuming for many PWS, especially the smallest and those most in need.

Response: *The compliance schedule was added to this regulation to account for a variety of possible compliance delays, including the time needed to plan, fund, and implement treatment. However, issues with the funding process are outside of the scope of the proposed regulation.*

61. Commenters urge the Board to provide the necessary assistance and financial resources to support small PWS, including those serving disadvantaged communities, in complying with the best available methods and in implementing a financial plan.

Response: While technical and financial assistance are outside the scope of the proposed regulation, resources for both are currently available for PWS: information on the State Water Board's Technical Assistance Funding Program is available at https://www.waterboards.ca.gov/water_issues/programs/grants_loans/tech_asst_funding.html, and information on funding opportunities is available at https://www.waterboards.ca.gov/water_issues/programs/grants_loans/. In addition, funding plans are regularly updated and available for public comment.

62. Commenter is concerned that compliance support could unduly divert spending on infrastructure rehabilitation, other water quality regulations and programs, and other necessary investments that may provide greater health protection benefits to ratepayers.

Response: The State Water Board uses intended use plans to guide funding priorities. The most recent intended use plan is available at https://www.waterboards.ca.gov/drinking_water/services/funding/SRF.html.

63. Commenters assert that external scientific peer review is required not only for the PHG and BAT, but also the proposed MCL itself. Commenter notes the State Water Board is required to set an MCL at a level that, among other things, "avoids any significant risk to public health," which they state should be the scientific basis of the rule and, therefore, that the proposed level of 10 µg/L must be externally scientifically peer reviewed.

Response: Whether an agency proposed rule requires external scientific peer review depends on if the rule has a "scientific basis" or "scientific portions" that have not previously been peer reviewed in a manner consistent with HSC 57004. "Scientific basis" and "scientific portions" mean the "foundations of a rule that are premised upon, or derived from, empirical data or other scientific findings, conclusions, or assumptions establishing a regulatory level, standard, or other requirement for the protection of public health or the environment" (HSC 57004).

Here, the State Water Board must set the MCL value as close as technologically and economically feasible to the PHG, placing primary emphasis on the protection of public health, and avoiding, to the extent technologically and economically feasible, any significant risk to public health (HSC 116365). In setting the MCL value, the State Water Board is statutorily required to consider a variety of factors, including policy considerations of feasibility, when setting the MCL value; therefore, the MCL is not determined strictly on a scientific basis as the commenter suggests.

Consistent with HSC 57004, external scientific peer review is not required when the State Water Board considers policy and makes policy judgments. To the extent that the MCL value was influenced by a scientific basis, the State Water Board

satisfied the scientific peer review requirements under HSC 57004 because it conducted a peer review for the BAT identified in the proposed regulation, the results of which were considered when analyzing the economic and technological feasibility of the proposed MCL value.

Additionally, the value that “avoids any significant risk to public health” is the PHG (HSC 116365(c)(1)). The PHG was developed by OEHHA in a process that included a scientific peer review of that PHG in accordance with HSC 57004. The MCL for hexavalent chromium must be set as close as feasible to the PHG (HSC 116365(a)). Therefore, the scientific basis for no significant risk to public health was subjected to scientific peer review in accordance with HSC 57004. The State Water Board cannot propose adoption of the PHG as the MCL because the PHG is not technologically and economically feasible (see HSC 116365).

64. Commenter states that any reliance on the external scientific peer review conducted for the 2011 hexavalent chromium PHG would be arbitrary and capricious.

Response: The PHG peer review conducted by OEHHA is not being used to satisfy peer review requirements for this regulation.

65. Commenter requests that maximum holding time of 14 days and sample preservation with one of the buffers described in Environmental Protection Agency (EPA) Method 218.7 for samples analyzed by either 218.6 or 218.7 be included in the proposed regulation.

Response: As specified in proposed CCR 64415, analyses shall be made in accordance with the methods that are incorporated by reference. DDW will evaluate whether to amend the regulations to add holding time modifications for these methods in a future rulemaking.

66. Commenter requests clarification of the level of accuracy required for laboratories using EPA Method 218.6 to meet the Detection Limits for Purposes of Reporting (DLR). Section 9.2.4.2 of EPA Method 218.7 indicates that 50-150 percent recovery should be used, but EPA Method 218.6 does not similarly specify.

Response: The level of accuracy required for laboratories using EPA Method 218.6 is specified in section 9.3.3 of the method: plus or minus three standard deviations from the percent mean recovery (after a minimum of 20 to 30 analyses). DDW will evaluate whether to amend the regulations to add holding time modifications for these methods in a future rulemaking.

67. Commenter would like monitoring/testing costs waived to every five to seven years, or at very most, included with the three-year general mineral, physical, and inorganic requirements.

Response: Monitoring waivers are available for inorganic chemicals such as hexavalent chromium to reduce sampling frequency to once every nine years. To qualify for the waiver, a source must conduct at least three rounds of sampling (a total of nine years for groundwater or three years for surface water) that all show

results below the MCL. Hexavalent chromium has the same monitoring requirements as other inorganic chemicals, pursuant to CCR 64432.

68. Commenter notes that it is now possible to detect hexavalent chromium in water down to parts per trillion.

Response: *Some methods and laboratories can detect hexavalent chromium down to levels in the parts per trillion. As stated in the ISOR, section 5.3 (pp. 25-26), “[w]here confident quantification to a concentration at or below the PHG is infeasible, the DLR should be set to the lowest level technologically and economically feasible. Based on laboratory surveys and documented follow-up communication, the State Water Board determined that laboratories could reliably quantify hexavalent chromium in drinking water to 0.1 µg/L” and that there is sufficient capacity at that level. However, detection to levels lower than the proposed DLR would likely require additional resources (e.g., specialized equipment), which would be expected to substantially increase costs for many laboratories. Detecting hexavalent chromium down to parts per trillion level was determined to not be necessary for an MCL set in the parts per billion (ppb). The proposed DLR of 0.1 ppb or 0.1 µg/L is already two magnitudes lower than the MCL of 10 ppb or 10 µg/L.*

69. Commenter is concerned that laboratories will be required to pay higher lab fees and probably ship samples to out-of-county labs.

Response: *Surveys indicate that most laboratories can meet the DLR with small cost increases (ISOR section 10.1); however, some PWS may ship samples necessitating additional costs (ISOR section 10.1.1). Additional laboratories may seek accreditation as, during the period that the previous hexavalent chromium MCL was active, an additional 19 laboratories were accredited for hexavalent chromium analyses.*

70. Commenters request that the Human Right to Water (Water Code section 106.3, added by Assembly Bill 685 of 2012) be considered in adopting the proposed MCL by analyzing how the proposed MCL levels will contribute to efforts to provide clean, safe, and affordable drinking water to ensure safe water as a human right.

Response: *It is the policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes (Water Code section 106.3). The State Water Board has considered this policy when proposing the regulations. The proposed regulations would advance the human right to water by setting a primary drinking water standard for hexavalent chromium that is protective of public health, while avoiding negative impacts to affordability and accessibility. The proposed regulations would improve the safety of drinking water from PWS in California by prohibiting hexavalent chromium above the proposed MCL of 10 µg/L. As described in the ISOR, the proposed regulations would reduce negative health effects due to hexavalent chromium. At the same time, and as discussed in the ISOR, the proposed regulations will not result in unaffordable or inaccessible drinking water to most Californians.*

71. Commenter asserts that the proposed MCL violates the Human Right to Water because it does not satisfy the following requirements: (1) agencies must give preference and adopt policies that advance the human right to water when considering a range of policies or regulations; (2) agencies must refrain from adopting policies or regulations that run contrary to securing universal access to safe drinking water (cannot disregard the impacts of decisions on the safety, affordability, or accessibility of water); (3) agencies must note in the record the impact of the agency's actions on access to safe and affordable water (which requires, at a minimum, explicit reference to Assembly Bill 685 and an explanation of a decision's potential impact on the quality, affordability, and accessibility of drinking water).

Response: Water Code section 106.3 – often referred to as the “Human Right to Water Law” – does not contain these requirements. Rather, it declares that it is the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. It further directs state agencies, including the State Water Board, to consider this state policy when revising, adopting, or establishing policies, regulations, and grant criteria when those policies, regulations, and criteria are pertinent to the uses of water described in Water Code section 106.3. Please also see response to comment 70.

72. Commenter claims that an MCL that allows a default of 1 in 2,000 cancer cases does not prioritize public health.

Response: Please see response to comment 93. The proposed regulation is a minimum standard, and PWS may treat to lower levels if they choose. In addition, it is possible that lower levels will become more feasible in the future.

73. Commenter states that an aspect of accessibility (as used in the Human Right to Water) that may have been overlooked is the barriers that small PWS experience with alternative strategies for compliance (e.g., POU/POE, consolidation).

Response: The State Water Board recognizes that alternative means of compliance, while often less expensive than centralized treatment, may require logistical, technical, or other resources to implement. For example, consolidation with another PWS may obviate the need to install and maintain a treatment facility but demands political will and organizational planning. As described in the ISOR, the State Water Board provides financial assistance to PWS pursuing alternative means of compliance, such as consolidation. The State Water Board also provides technical assistance through DFA and third-party technical assistance providers. The proposed regulations also include a phased compliance schedule, with greater time to come into compliance for small PWS. The State Water Board has considered the impact of the proposed regulations on accessibility of safe drinking water and finds that adoption of the proposed regulations would advance that goal – not hinder it.

74. Commenter states that DDW has failed to balance the high costs with public health considerations, as required by the California Safe Drinking Water Act and appellate courts by failing to critically compare and analyze costs of the proposed and alternative

MCLs and failing to use a proper baseline to compare and analyze the public health benefits of the proposed and alternative MCLs.

Response: *Please see responses to comment 44 regarding balancing/comparing costs and benefits, comment 77 regarding requirements to adopt this MCL, and comment 117 regarding baseline requirements. There is no mandate to “balance” the costs with the benefits. In fact, the statute indicates otherwise by requiring the primary emphasis to be placed on the protection of public health.*

75. Commenter claims that not calculating the monetary value of avoided cancer cases is a violation of the California Safe Drinking Water Act.

Response: *The California Safe Drinking Water Act does not require calculating the monetary value of avoided cancer cases. The Act requires the State Water Board to adopt a primary drinking water standard at a level that is as close as feasible to the corresponding PHG placing primary emphasis on the protection of public health. Please see response to comment 444 regarding conducting a cost-benefit analysis.*

76. Commenters note that the ISOR does not indicate that the cost of future regulations was considered for the proposed MCL or higher alternative MCLs, and as such, does not properly balance the factors the State Water Board is required to consider under the Safe Drinking Water Act and the Human Right to Water Act.

Response: *The impact of future regulations was considered for the proposed MCL and for all alternative MCLs (ISOR section 11.10). Estimating the costs of future regulations is beyond the scope of the proposed regulation.*

77. Commenters are concerned that the statewide cost impact of the proposed MCL has not been fully considered, including for all affected poor and distressed communities and for those with domestic wells, such that a higher MCL might be more cost-effective.

Response: *The State Water Board is aware that some communities may be disproportionately affected by hexavalent chromium, the proposed regulations, or both. However, MCLs are not selected based on cost-effectiveness. As mandated in HSC 116365, the MCL must be set as close to the PHG as is technologically and economically feasible. While lower levels may be technologically feasible, 10 µg/L was determined to be as close to the PHG as is economically feasible at this time (ISOR section 11).*

78. Commenters state that the proposed regulation package underestimates or inaccurately or inadequately assesses the cost of compliance. Commenters request that the costs be re-evaluated to include underlying issues (such as ongoing issues with other contaminants, stranded costs, lack of alternative sources, recent infrastructure investments, cost burden on ratepayers) that make treatment more expensive for PWS and include these in a holistic view that is more appropriately inclusive of disadvantaged communities. Commenter states that a comprehensively revised SRIA and the resulting cost estimation be used to inform a reconsideration of the proposed MCL. One commenter requested that the revision account for the real costs and adjust for 2023 values.

Response: *Many of the costs referenced by commenters were included in the cost estimates, including capital costs, hazardous waste disposal, building construction costs, operational costs, managerial costs, brine/backwash disposal, additional piping, and installation (ISOR Attachment 2 section I.3.a.2). It is not practical to include every unique and site-specific element to drinking water operations that a PWS may encounter as part of their compliance action, due to a lack of data availability and staff resources. However, available PWS financial data (2021 Drinking Water Needs Assessment), including cost burdens and recent water rates, was considered in the economic feasibility analysis. As required by statute, the economic feasibility analysis was based on the costs of the proposed regulation using BAT (HSC 116365). As a result, land acquisition costs, security costs, and any other site-specific (non-general) costs were not included. Capital costs can be found in ISOR Attachment 2 section I.3.a.2 and Tables A1, A2, A3, A4, and A5.*

The initial SRIA was reviewed by DOF, and DOF's comments were incorporated into the revised SRIA (ISOR Attachment 2). Due to the extensive pre-rulemaking and rulemaking requirements, especially those associated with major regulations (SRIA development and review), any regulation dataset is likely to be years old at the time of regulation adoption. As a matter of necessity, a regulation dataset must be held constant (frozen in time) so that all regulation documents can be consistent. As a result, any dataset used for a regulation is unlikely to be the most current data. Updating the dataset, revising the SRIA, and re-promulgating this MCL would result in another dataset that is years old at the time the associated regulation would be adopted.

79. Commenters note that the cost estimates in the proposed regulation do not match the cost estimates for their PWS.

Response: *The State Water Board used assumptions that may not be applicable to individual PWS or to particular groups of PWS. Some PWS may incur costs exceeding those provided in the ISOR, while others may incur less costs utilizing other options for compliance. The costs are not intended to be utilized for PWS to budget or bid costs for treatment.*

80. Commenter states the assumption in the cost estimates that hexavalent chromium would be treated to 80 percent of the MCL (or 8 µg/L) is negligent considering the concentration goal for treatment should be at least 50 percent. Treating to 80 percent of the MCL does not leave room for safeguards or exceedances.

Response: *DDW staff disagree with the assertion that the concentration goal should be at least 50 percent for implementation of treatment. While DDW appreciates that some PWS may take such a proactive approach, 80 percent serves as an appropriate operational safety margin for the performance of the treatment plant and is consistent with the approach used in the federal Arsenic Rule and federal Stage 2 Disinfectants and Disinfection By-Products Rule.*

81. Commenter notes that a cost not considered by the regulation is the ability of PWS to raise rates considering other regulatory burdens and public sentiment. A PWS that

has recently raised rates could be unable to make additional rate increases based on regulatory or public opinion constraints.

Response: *The individual ability to raise water rates and other site-specific information and conditions were not considered due to a lack of data.*

82. Commenter claims that the Board failed to consider cost savings from consolidations, alternative water supplies, and/or existing treatment for other contaminants that could also be modified to treat hexavalent chromium.

Response: *The purpose of the State Water Board determining estimated average treatment costs is to provide values useful in determining the extent to which an MCL is economically feasible, as defined by statute. HSC 116365(b)(3) requires that economic feasibility be considered using BAT treatment costs (rather than any alternative, more affordable options). The values presented in the regulation package are estimates based on the cost of a particular BAT, as mandated by statute. The State Water Board is not obligated to develop cost estimates for non-treatment compliance options, which can also be difficult due to a lack of site-specific data. However, cost estimates for point-of-use/point of entry treatment were included in the ISOR for informational purposes. (See Table 9 of ISOR).*

83. All three BATs are capable of simultaneously removing many other contaminants. Accounting for this treatment—which the Board did not—would reduce the cost of compliance and support a lower MCL.

Response: *The co-removal of multiple regulated contaminants using the proposed hexavalent chromium BATs was considered qualitatively as a benefit of the proposed MCL (discussed in ISOR section 5.2.1). However, the calculation of the resulting cost savings is beyond the scope of this regulation and not currently possible with available data. Please also see response to comment 433 regarding further quantifying/monetizing benefits and the effect it would have on the economic feasibility analysis.*

84. Commenters ask if the Board needs to reevaluate any of its cost numbers before proceeding with the regulation; support continuing to refine all cost data and a more robust model for evaluating economic feasibility; and, state that the data was used selectively, and was outdated, sparse, weighted, and/or mischaracterized, leading to underestimated costs. Commenters request that the Board shows its work as to the data, the manipulation of the data, the interpretation of the data, and how that affected the formation of a regulation.

Response: *The cost estimates were developed over many years with input from the public (see the Historical Timeline on our [Hexavalent Chromium Information webpage](#)). They have been reviewed and have not been changed: staff believes that the data was used appropriately and that costs were estimated appropriately. Occurrence was calculated conservatively using the highest annual average hexavalent chromium concentration (over more than a decade) to determine which sources would need treatment and how much that treatment would cost (higher hexavalent chromium concentrations produced higher costs). The applicable cost data was then directly applied to these sources (see the CEM in*

ISOR Attachment 2 section I and the Python code for a full description of costs and each step of how the data was transformed/manipulated for the proposed regulation).

85. Commenters request an explanation for why RCF was assumed the predominant compliance choice to estimate costs when: (1) ion exchange appears to be more prevalent in existing PWS treatment applications, (2) ion exchange seems to be more appropriate for smaller PWS, (3) residuals management issues may significantly limit the viability of RCF in settings remote from sanitary sewer system access, and (4) the choice to primarily use RCF (rather than ion exchange) is a reversal from the 2022 draft costs. Some commenters state that (5) RCF treatment constraints were not considered, and others that (6) ion exchange is more effective at removing multiple contaminants and so should have been used instead. One commenter states that (7) DDW must evaluate whether RCF is compatible with source water conditions and existing treatment systems and substantiate the claim that RCF would actually be used by PWS for 98 percent of sources.

Response: As explained in the CEM (ISOR Attachment 2 section I), both ion exchange and RCF costs were calculated, and the most cost-effective option was chosen on a source-by-source basis, which was RCF for the majority of sources. The following responds to each numbered point: (1) While ion exchange may be more prevalent now, that does not necessarily indicate that it will continue to be the most prevalent treatment technology in the future, especially with the development of RCF technology (including the application of stannous chloride) over the last decade. (2) It does not appear that ion exchange would be any more appropriate for smaller PWS compared to RCF. RCF technology is commercially available for source flows down to 1 gpm (Aqua Metrology Systems, 2022). In addition, peer reviewers disagreed with the statement that RCF was not appropriate for “very small” PWS. (3) The cost estimates and RCF data used were for the specific case in which sewer discharge was unavailable. Residuals management was included in the RCF cost estimates. (4) The changes made after the 2022 draft costs were based on comments received regarding those costs, resulting in the addition of RCF cost estimates and the selection of the most cost-effective option for each source. (5) RCF treatment constraints were considered; however, only pH was found to have a mild effect on RCF treatment by slightly reducing the efficiency of ferric-based reductants (the reduction phase can take a couple more minutes). Because other reductants are available (such as stannous-based reductants) and because the effect was mild, the cost estimates were not altered to account for this. Staff are not aware of any other constraints (through research or public comments). (6) While ion exchange can effectively remove other contaminants, there would be added cost to account for that removal, and costs for other contaminants are beyond the scope of the proposed regulation. Some PWS may choose to implement ion exchange because they would also like to treat other contaminants at the same time. However, this site-specific preference is not a requirement. (7) The cost estimates are not meant to imply that 98 percent of sources would implement RCF treatment, but rather as BAT, it is a viable technology that is broadly applicable (and no constraints were

found that would prevent specific PWS from using it). Because RCF appears to be more cost-effective than ion exchange, it is likely that it will be widely applied.

86. Commenter points out that costs for monitoring and treating hexavalent chromium have been reduced significantly over the years.

Response: *While it is possible that treatment costs have decreased from what was presented in the proposed regulation, more recent and robust cost estimates could not be found (despite multiple rounds of asking for such information).*

87. Commenter notes that hexavalent chromium does not cost more to treat than iron and manganese, and these contaminants are not MCLs but only secondary standards.

Response: *While it is possible that treatment costs for iron and manganese (which only have secondary standards) are lower than what was presented in the proposed regulation, more recent and robust cost estimates could not be found. However, the same type of treatment (RCF) is used for iron and manganese.*

88. Commenters state that the cost burden of the proposed MCL should be analyzed with the cumulative burden of existing and projected or reasonably anticipated future drinking water regulations. Commenters request that the regulation include an analysis of recent trends in water rates and known instances of disproportionate water affordability burdens, a complete list of regulatory priorities indicating where each contaminant is in the regulatory queue, and order of magnitude estimates of potential compliance costs based on a preliminary analysis of available occurrence and treatment cost data.

Response: *It is not practical to evaluate costs using the cumulative burden of existing and projected/future drinking water regulations due to a lack of data and staff time for extra research. Please also see response to comment 78 regarding cost burdens and the requirements for determining economic feasibility.*

89. Commenter states that the costs should be based on actual experience of water supply agencies that have designed and tested these systems.

Response: *The State Water Board encourages PWS to share cost data with the regulatory development team and when available was used. However, PWS are not required to share this information and, historically, this data has been difficult to acquire.*

90. Commenters claim the Errata Sheet changed the estimated monthly costs for households or acknowledges where cost estimates were understated.

Response: *The Errata Sheet did not update/change monthly costs for households. Rather, the Errata Sheet corrected a transcription error in which one set of data (the estimated financial support costs) was entered into the text as monthly data but labelled as annual data. No values were changed in ISOR Attachment 1.*

91. Commenters point out that the state's compliance costs for the 2014 proposed MCL were much higher for small PWS than the current cost estimates. Accounting for inflation, annual costs should be more than \$7,300 per household per year for small PWS. In contrast, the proposed regulation indicates average annual costs of \$1,622 per household for the smallest PWS.

Response: *The proposed regulation was developed anew rather than building on the 2014 regulation. In addition, the cost estimates in the proposed regulation were developed and refined over years of work and input from the public (see the Historical Timeline on our [Hexavalent Chromium Information webpage](#)).*

92. Commenter notes that the affected sources in Dr. Robinson's August 2, 2023 APA Hearing Presentation summed to 494, which is a change from the 501 sources in the ISOR.

Response: *The seven affected transient non-community (TNC) sources were excluded from the hearing presentation for brevity. Those seven sources plus the 494 sources in the presentation brings the total to 501 sources, which matches the values in the ISOR.*

93. Commenter states that the costs and benefits are compared across different timeframes: The 70-year benefit of avoiding 898 cancer cases should be compared to the total cost over 70 years (\$12.6 billion), or the theoretical cancer cases avoided over 20 years should be compared to the costs over 20 years (approximately \$3.6 billion).

Response: *The costs and benefits in the SRIA are compared across the same timeframes. Because capital costs were amortized over a 20-year period and avoided cancer cases were based on a 70-year period (by necessity, as the PHG assumes water consumed over a 70-year lifetime), the cost-effectiveness ratio was calculated using annualized costs and annualized avoided cancer cases. However, the cost-effectiveness ratio can be calculated across any comparable timeframes and, because it is a ratio, it will not change. As the commenters suggest, calculating the cost-effectiveness ratio for a 70-year period (approximately \$12.6 billion divided by 898 avoided cancer cases) and for a 20-year period (approximately \$3.6 billion divided by 256 avoided cancer cases) both equal \$14 million, the same cost-effectiveness ratio (\$14,002,455) for 10 µg/L in Table 38 of the SRIA (ISOR Attachment 2).*

94. Commenters claim that the use of averages masks distributional impacts on smaller PWS and different types of PWS. In particular, commenter says the cost-effectiveness ratios are much worse for smaller PWS (including transient non-community water systems (TNCWS)) compared to larger PWS, and for PWS that are only a few ppb above the MCL. Commenter states that cost-effectiveness should be considered across PWS sizes and concentration levels.

Response: *Cost-effectiveness ratios cannot be calculated for TNCWS: because TNCWS are only assumed to serve people transiently, health benefits associated with a chronic health risk are not conservatively calculable, so an attempt to calculate a cost-effectiveness ratio results in division by zero. The cost-effectiveness ratios were calculated across all PWS (using all of the costs and all of the benefits) to account for the fact that some PWS were not assigned a quantifiable health benefit and other costs (like compliance plans, monitoring, etc.) had no quantifiable health benefit. As required in the SRIA, the cost-effectiveness of the regulation was considered as a whole. As discussed in the last paragraph of ISOR section 4.4.4.6, small PWS do not benefit from economies of scale (in other words, system-size-specific cost-effectiveness ratios are very different for large*

and small PWS). The issue of small PWS affordability is discussed further in the Hexavalent Chromium Economic Feasibility White Paper, which concludes: “Statewide protection of public health cannot be limited to what is affordable to the smallest PWS serving only a small fraction of the State’s total population.” Complying with the proposed MCL appears less cost-effective for PWS that are only a few ppb above the MCL because the cost calculations assumed that each source exceeding the proposed MCL would install treatment, no matter how little the exceedance (as little as 0.1 µg/L in the cost calculations). In practice, these sources are more likely to employ strategies such as blending and other alternatives, which are much less expensive (discussed in ISOR section 11.9). The rulemaking documents did not intend to mask distributional impacts: the SRIA (ISOR Attachment 2), the 85 data and cost tables (ISOR Attachment 1), the cost estimates for individual sources (ISOR Attachment 5), and the Python code showing each calculation step were all provided to show costs and impacts in as many ways as possible. In particular, the majority of cost tables are broken down by PWS size, impacts to sub-groups (typical businesses, small businesses, individuals and businesses served by PWS) were discussed separately in the SRIA (sections C2 through C5), and the economic feasibility analysis (ISOR section 11) distinctly considers median costs and maximum costs, as well as costs to differently-sized PWS, and even listed out costs to individual PWS in section 11.3.

95. Commenter points out that the rulemaking documents remark that the cost-effectiveness ratios are nonlinear but then does not evaluate the causes of that non-linearity as part of the MCL selection process.

Response: The nonlinearity is the result of nonlinearities in the real-world PWS data (population, PWS size, hexavalent chromium concentration, etc.). In this case, the linearities were caused by different sized PWS (with varying populations and treatment costs) added at discrete concentrations (1 through 15, 20, 25, 30, 35, 40, and 45 µg/L) based on each source’s contamination level. When moving from one potential MCL to the next, adding PWS with good economies of scale (usually larger PWS) would cause better cost-effectiveness ratios, and adding PWS without economies of scale (usually smaller PWS) would cause worse cost-effectiveness ratios.

96. Commenter states that DDW failed to evaluate the uncertainties associated with its evaluation of costs and benefits, as required by DOF SRIA regulations.

Response: The uncertainties associated with the cost-effectiveness analysis are those associated with the PHG (detailed in OEHHA (2011)) and those associated with the cost estimates: as preliminary engineering cost estimates, the associated uncertainty is -30 percent to +50 percent.

97. Commenter states that the SRIA and ISOR fail to provide sufficient information to allow external stakeholders to fully evaluate and understand the basis for the Division’s selection of the proposed MCL, depriving the public of the transparency required by the Government Code and meaningful participation in the rulemaking process. In particular, commenters state that ISOR Attachment 5 does not include the annual theoretical

cancer cases avoided for each source or a system number that allows the cases per PWS to be estimated. Other missing information includes the number of sources affected by PWS, per system costs and benefits, identifiers for public vs private PWS, environmental justice data by PWS, such as information on distribution of income, education, race, and other demographics, and frequency of testing data.

Response: *The State Water Board identified in the ISOR the steps and assumptions made in identifying approximately how many PWS would have to comply with the requirements, the costs for monitoring, and the costs for ongoing centralized treatment for sources exceeding the proposed MCL. There is sufficient data and descriptions of State Water Board processes available to the public to be able to assess approximate costs for PWS that will have to monitor and treat. While the system numbers and other details were not provided in ISOR Attachment 5, all PWS information is available in the publicly available data used for this regulation, listed as SWRCB (2021b and 2021c) in the Documents Relied Upon (ISOR section 13). Using only ISOR Attachment 5, some information can be back-calculated: the population treated by each source is equal to the source design flow (provided) divided by 1.5 (peaking factor) and then divided by either 150 gallons per capita per day (gpcd) (for CWS) or 120 gpcd (for other PWS) (see ISOR Attachment 2 section I.3.b). This would also provide a shortcut for calculating theoretical cancer cases avoided for each source.*

98. Commenters state that an annual cost of \$175 million is enormous and that expenditures of this magnitude for every contaminant the State Water Board intends to regulate are unlikely to be sustainable, and the ISOR does not demonstrate that it is. Another commenter states that the financial impact of compliance on businesses, individuals, and the state's economy is too large, and the regulation should not be adopted.

Response: *The annual costs associated with the proposed regulation were high enough to qualify it as a major regulation, requiring a SRIA, which further analyzed the costs and the impacts of those costs. The ISOR and SRIA (and the cost estimates within) only pertain to this particular regulation, and not to future regulations. Some drinking water regulations cost more than others. The cost estimates for the proposed regulation do not necessarily reflect the costs associated with complying with future MCLs. ISOR section 11.10 discusses future regulations qualitatively. With an emphasis on protecting public health (ISOR section 5.2.1), the proposed MCL was determined to be economically feasible (ISOR section 11).*

99. Commenters expressed their support for the MCL being set at 10 µg/L, the inclusion of a compliance schedule, and/or aspects of the State Water Board's rulemaking efforts.

Response: *Commenter support is noted.*

100. Commenters request that the MCL be lower than 10 µg/L. Other commenters note that the proposed MCL is too high and conflicts with the Board's mission "to preserve, enhance, and restore the quality of California's water resources, and drinking water" or

is not close enough to the PHG. Some commenters also expressed disappointment with how long it took the State Water Board to propose the MCL.

Response: *While certain treatment technologies may achieve a concentration lower than the proposed MCL, the State Water Board also is required to consider economic feasibility, pursuant to HSC 116365, which is detailed in ISOR section 11. Therefore, proposing a lower MCL for adoption that is closer to the PHG is precluded at this time. The MCL does not preclude PWS from achieving lower levels as desired by their customers. We also understand that this MCL has not been promulgated as quickly as some commenters had hoped or expected. Also, please see response to comment 44.*

101. Commenters request that the State Water Board set the MCL at a higher concentration.

Response: *The State Water Board is mandated via HSC 116365 and 116365.5 to adopt an MCL for hexavalent chromium that is as close to the PHG as technologically and economically feasible. The State Water Board cannot ignore these mandates. In addition, the State Water Board must use OEHHA's PHG as the health-related basis when establishing an MCL.*

102. Commenters request that the regulations be updated to include a requirement for additional notices sent to residents served by impacted PWS. The notice should describe health risks associated with hexavalent chromium in drinking water and state that the residents should not drink the water until the risks are addressed.

Response: *The State Water Board has revised the regulatory language in CCR 64463.4 to require Tier 2 public notices for MCL exceedances during the compliance period.*

103. Commenter states that communities with significant and harmful pollution from industry-made hexavalent chromium should be encouraged to take legal action against polluters. Commenter also states that the State Water Board should assist in these litigation efforts.

Response: *The State Water Board is aware that some PWS have been able to successfully recover the cost of treatment from responsible parties. Although adoption of the proposed regulations may provide clarity and assist PWS in their litigation or negotiation with responsible parties over reimbursement for treatment costs, that is not the intent of the State Water Board's actions in adopting the regulations. Likewise, any action the State Water Board could take to assist in recouping costs of treatment for PWS is beyond the scope of this regulation.*

104. Commenter would like the State Water Board to consider a maximum holding time of 28 days for EPA Method 218.6 based on U.S. EPA's intention that the 28-day holding time be used for EPA Method 218.6 under the appropriate circumstances.

Response: *This comment was submitted during the first 15-day comment period and is beyond the scope of the changes proposed during this comment period. However, As specified in proposed CCR 64415, analyses shall be made in accordance with the methods that are incorporated by reference. DDW will*

evaluate whether to amend the regulations to add holding time modifications for these methods in a future rulemaking.

105. Commenters state that the proposed change pertaining to the Tier 2 requirement is unnecessary because Consumer Confidence Report reporting is already required, and that level of notification is sufficient prior to the compliance deadlines.

Response: *Consumer Confidence Reports are updated and sent to consumers only once per year. The State Water Board believes that annual notices will not provide consumers with sufficient notice that their water contains hexavalent chromium levels over the proposed MCL exceedance.*

106. Commenters are concerned about environmental impacts and/or request an analysis of potential environmental impacts, such as hazardous waste production from treatment.

Response: *Environmental impacts have been evaluated in the CEQA documentation. The Final EIR is available on the State Water Board's [Hexavalent Chromium Rulemaking webpage](#).*

107. Commenter states that the proposed MCL is a mandate where the government is taking by force without compensation, taking away choices and demanding action. Commenter asks whether the State Water Board is willing to kill people to enforce its will (and clarifies that this was not a rhetorical question).

Response: *HSC 116365 and 116365.5 require the State Water Board to adopt an MCL for hexavalent chromium.*

108. Commenter asks if information regarding contaminated groundwater plumes can be provided to private well owners.

Response: *Staff are not aware of any groundwater plume maps for hexavalent chromium that cover large portions of California. However, the [drinking water occurrence map for hexavalent chromium](#) may be able to generally indicate to private well owners whether they are in an area with higher hexavalent chromium concentrations. Also available is the [2024 Aquifer Risk Map](#) that can be set to display hexavalent chromium risk per square mile section.*

109. Commenters state that the proposed regulation will make PWS provide bottled water that meets the federal (not state) standard.

Response: *The proposed regulation does not require bottled water, and bottled water would not be a means of compliance with the proposed MCL.*

110. While the presence of hexavalent chromium should not be overlooked, "the current proposal would deter from the lack of environmental responsibility and punish those PWS struggling to provide affordable water."

Response: *This regulation does not affect the liability of entities responsible for water contamination. As stated in Water Code section 13304, clean-up can be required to restore affected water to background conditions and applies regardless of the promulgation of the proposed MCL.*

111. Commenters suggest targeted remediation (implied instead of an MCL) for groundwater contaminated by PG&E to keep water affordable for everyone else. Another commenter notes that the approved remediation standards are not cost-effective for small PWS.

Response: The suggestion to conduct targeted remediation for PG&E-contaminated groundwater is beyond the scope of the regulatory action. The State Water Board is statutorily mandated to establish drinking water standards for the protection of public health, including a standard (MCL) for hexavalent chromium.

112. Commenter states that the ISOR and SRIA do not provide reasonable explanations justifying why other MCLs were not considered, such as an MCL of 9 µg/L.

Response: State Water Board staff have reviewed the ISOR and SRIA and believe that reasonable explanations were provided to justify why alternative MCLs were not selected. Potential MCLs lower than 10 µg/L were not selected because they could not be shown to be economically feasible at this time (ISOR section 11.10).

113. Commenter points out that the proposed MCL is ten times stricter than the level set by the federal government, which automatically hurts the ability of California businesses to compete with businesses in other states (Government Code section 11346.3(a)(2)).

Response: U.S. EPA has no standard that is specific for hexavalent chromium in drinking water. The federal MCL (100 µg/L) and state total chromium MCL (50 µg/L) limit total chromium (a combination of trivalent and hexavalent chromium). The State Water Board has the authority and is mandated, via HSC 116365 and 116365.5, to adopt an MCL for hexavalent chromium that is as close to the PHG as technologically and economically feasible. As stated in the Notice of Proposed Rulemaking, the State Water Board has determined that there may be a significant, statewide adverse economic impact directly affecting businesses. However, PWS are generally not in competition with other systems, and any drinking water imported from other states would need to comply with the proposed MCL (see the Notice of Proposed Rulemaking for a more detailed discussion).

114. Commenter claims that the majority of stated benefits (providing PWS with treatment guidance through BATs, providing consistency in analytical performance, consistent quality of information to PWS customers through notification and health effects language, public awareness, and the ability for small PWS to benefit from improvements in treatment realized by larger PWS through the compliance schedule, etc.) are only benefits to State Water Board staff and not to public health and safety of California residents, as stated in the ISOR. Commenter also claims that public water quality notifications are fearmongering.

Response: The State Water Board believes that the stated benefits are indeed benefits to public health and to the safety of California residents: treatment guidance benefits PWS (and anyone else) looking for generally effective treatment methods for hexavalent chromium; consistent quality of information benefits the public and PWS, who would presumably be asked fewer questions by (and spend

less time reaching out to) consumers; and the compliance schedule provides all PWS more time, and allows some PWS to learn from others with earlier deadlines. Notably, none of these seem to benefit State Water Board staff, except that as more consistent quality information is available to PWS and the public, the less PWS and the public would need to reach out to the State Water Board staff to ask questions.

115. Commenter writes that they will be required to treat sources with hexavalent chromium concentrations as low as 8 µg/L under the proposed regulation.

Response: Only sources that exceed 10 µg/L (as calculated pursuant to CCR 64432(i)) will be out of compliance with the proposed MCL. While 80 percent of the proposed MCL (or 8 µg/L) was used as a theoretical treatment goal in the cost estimates, PWS will not be required to treat to that level.

116. The APA requires that agencies adopting regulations avoid the imposition of unnecessary or unreasonable regulations (Government Code section 11346.3(a)).

Response: The State Water Board has complied with the APA and avoided the imposition of unnecessary or unreasonable regulations. The proposed regulation is statutorily required by HSC 116365 and HSC 116365.5. The State Water Board prepared a SRIA in accordance with Government Code section 11346.3.

117. Commenters cite requirements that DDW specify its own methodology for comparing regulatory alternatives with an established baseline so that the State Water Board can make decisions for the adoption of the most effective and least burdensome alternative, or the most cost-effective alternative (Government Code section 11346.36(b)(2)). Some commenters state that a different baseline of 192,770 cancer cases (the total number of cancer cases diagnosed in California in 2023) should be used.

Response: The baseline used in the SRIA was reviewed by DOF, and State Water Board staff believes a proper baseline was used. In addition, staff do not believe that using the total number of cancer cases in California would constitute a proper baseline because the proposed regulation is only addressing intestinal/stomach cancer caused by hexavalent chromium in drinking water, not other types of cancer or causes of cancer. If the number of intestinal/stomach cancer cases caused by hexavalent chromium in drinking water was known, that data would be used. However, because that data is unavailable, calculations of the changes in cancer cases were used to understand impacts compared to the baseline.

118. Commenters assert that the proposed MCL violates the Unruh Civil Rights Act. Commenters state that the Board must do more work to understand how this MCL would further systemic injustice by continuing to burden low-income communities of color with unsafe drinking water by conducting a racial equity analysis and include this with the MCL package.

Response: Adoption of the proposed MCL does not violate the Unruh Civil Rights Act, which applies to businesses in California. The proposed MCL would apply to all PWS, including those that serve low-income communities of color. Low-income communities of color will therefore benefit from the reduced risk of cancer and liver

toxicity that the proposed MCL would provide. To the extent that low-income communities of color are disproportionately affected by drinking water contaminated with hexavalent chromium, the adoption of the proposed MCL offers a significant public health benefit to those communities.

In State Water Resources Control Board Resolution No. 2021-0050, the State Water Board reaffirmed that all Californians, including people from Black, Indigenous, and other communities of color, deserve safe drinking water. In its Racial Equity Action Plan, the State Water Board decided to incorporate racial equity analysis when developing MCLs using available data, as data and methods allow. However, as explained in section 4.1.1 of the ISOR, data and methods do not allow for such analysis to be incorporated into MCL development at this time. Staff will continue to investigate and develop methods for racial equity analysis that can be incorporated into the development of future MCLs. Please direct any feedback or suggestions on this issue at the State Water Board's next update to its Racial Equity Action Plan.

119. Commenter requests live interpretation for oral comments in the future.

Response: *We regret that live interpretation for oral comments was not possible for our audiovisual and translation teams. Please contact the Office of Public Participation with this request (OPP-Contact@waterboards.ca.gov).*

120. Commenters request an extension of the 45-day comment period deadline.

Response: *A comment extension for the 45-day comment period was granted on August 18, 2023, extending the comment period to 62 days (when the first and last days do not count).*

121. Commenter would like to see the responses to the comments submitted in the initial 45-day comment period.

Response: *Consistent with APA rulemaking requirements and procedures, responses to comments received during comment periods are released when they are submitted to OAL at the end of the formal rulemaking process.*

122. Commenters request the reason(s) why the additional documents listed on the second 15-day notice were added to the Documents Relied Upon. Commenters add that DDW should not rely on OEHHA's Non-cancer Public Review Draft to support the proposed MCL regulation, the reliance gives the impression that both agencies are driving toward a predetermined outcome, and the draft document still subject to both external scientific peer review and further revision to address comments.

Response: *These documents were not relied upon in the development of the DDW proposal; however, because of the number of comments and interest related to OEHHA's review of the PHG and its potential impact on the MCL development, it was important to identify and make available to the public OEHHA's Noncancer Public Review Draft, as it could likely be discussed at the board meeting and in the final responses to comments provided to OAL. -*

123. Commenters state that neither the document "Consolidation and Alternatives Analysis" nor the July 2023 "Draft White Paper Discussion on Proposed Drinking Water

Cost Assessment Model Assumptions on Physical Consolidation” support the conclusion that there are viable alternatives for centralized treatment. In particular, DDW has not evaluated the willingness and capabilities of potential receiving systems or the availability and accessibility of funding to cover consolidation costs. Commenters also state the analysis document does not support the conclusion that blending is a viable alternative because it did not consider system-specific factors.

Response: *The “Consolidation and Alternatives Analysis” was specifically prepared and added to the documents relied upon for additional consideration of alternatives (e.g., consolidation, blending, POU/POE). The analysis was limited to the available source data. Per statute, economic feasibility must be based on BAT. The availability and provision of funding is neither part of the economic feasibility determination, nor otherwise required to be included in the analysis.*

125. Commenters note that DDW has issued scores of operating permits deploying all three proposed BAT in both small and large PWS, demonstrating that these technologies are feasible (for example, iron and manganese RCF treatment, arsenic RCF treatment, and treatment to remove nitrate, perchlorate, PFAS, and 1,2,3-TCP). Some commenters state that some of these treatment plants have already been incidentally removing hexavalent chromium, sometimes to non-detectable levels.

Response: *Staff agree that these technologies are feasible.*