

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2010-0043

AMENDMENTS TO THE WATER QUALITY CONTROL PLAN
FOR
THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS
FOR
THE CONTROL OF METHYLMERCURY AND TOTAL MERCURY IN THE
SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

WHEREAS, the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) finds that:

1. In 1975, the Central Valley Water Board adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan), which has been amended occasionally.
2. The Basin Plan may be amended in accordance with the California Water Code (Water Code) section 13240, et seq.
3. Water Code section 13241 authorizes the Central Valley Water Board to establish water quality objectives and Water Code section 13242 sets forth the requirements for a program for implementation for achieving water quality objectives.
4. The federal Clean Water Act (CWA) section 303 requires the Central Valley Water Board to develop water quality objectives that are sufficient to protect beneficial uses designated for each water body found within its region.
5. The CWA section 303 requires the Central Valley Water Board to review the Basin Plan at least every three years and where appropriate modify water quality objectives or beneficial uses in the Basin Plan.
6. The Sacramento-San Joaquin Delta Estuary (Delta) has been identified under the federal Clean Water Act section 303(d) as impaired due to a fish consumption advisory for elevated concentrations of mercury in fish tissue, which poses a threat to humans. The mercury concentrations also pose a threat to wildlife and threatened and endangered species that consume Delta fish.
7. Pursuant to CWA section 303(d), a total maximum daily load (TMDL) is required to bring the impaired water bodies into compliance with water quality standards. These Basin Plan amendments satisfy the requirements of a TMDL. The draft staff report for the Basin Plan amendments contains TMDL elements including: the numeric targets used in the TMDL analyses; the source analyses for methylmercury and mercury; the linkage analysis between the targets and

methylmercury; seasonal variations and critical conditions analysis, load and waste load allocations; and a margin of safety.

8. The Consolidated Toxic Hot Spots Cleanup Plan (Water Code section 13394) adopted by the State Water Resources Control Board (State Water Board) identified the Delta as a toxic hot spot due to mercury. Water Code section 13392 requires that basin plans and water quality control policies be amended to prevent the creation of new toxic hot spots and the further pollution of existing hot spots.
9. The Water Quality Control Plan for the San Francisco Bay contains a TMDL for mercury in San Francisco Bay that assigned to the Central Valley a load allocation of 330 kilograms total mercury per year.
10. Section 131.38 of Title 40 of the Code of Federal Regulations (or the California Toxics Rule (CTR)) includes a criterion of 0.05 µg/L total recoverable mercury for freshwater sources of drinking water that is enforceable for all waters with a municipal and domestic water supply use designation, including the Delta.
11. The Central Valley Water Board recognizes that the Basin Plan does not include numeric fish tissue objectives for methylmercury, nor an implementation plan to control methylmercury and inorganic mercury discharges to the Delta; therefore, Basin Plan amendments are appropriate.
12. The proposed amendments modify Basin Plan Chapter II (Existing and Potential Beneficial Uses) to add the commercial and sport fishing (COMM) beneficial use as a designated beneficial use in the Delta and Yolo Bypass north of the Delta.
13. The proposed amendment modifies Basin Plan Chapter III (Water Quality Objectives) to add site-specific numeric fish tissue objectives for the Delta and Yolo Bypass north of the Delta.
14. The proposed amendments modify Basin Plan Chapter IV (Implementation) to include a methylmercury and inorganic mercury control program for the Delta and Yolo Bypass north of the Delta (Delta Mercury Control Program). The proposed amendments establish the loading capacity and allocations for methylmercury. The allocations are needed to provide a clear basis for implementation of actions to achieve compliance with applicable fish tissue objectives. The loading capacity and allocations also satisfy the federal requirements for a TMDL.
15. The proposed amendments modify Basin Plan Chapter IV (Implementation) to include interim total mercury limits for NPDES dischargers within the Delta and Yolo Bypass and total mercury reduction requirements for tributary watershed inputs to the Delta and Yolo Bypass. The draft final staff report for the Basin Plan amendments explains how the TMDL methylmercury allocations, interim total mercury limits for NPDES dischargers, and total mercury reduction requirements for tributary watershed inputs to the Delta and Yolo Bypass are set to attain all applicable water quality standards, including the CTR, the San Francisco Bay

mercury TMDL allocation, and site-specific numeric fish tissue objectives for the Delta and Yolo Bypass north of the Delta.

16. The proposed amendments divide implementation into two phases. In Phase 1, the proposed amendments require dischargers of methylmercury to conduct studies to identify potential methylmercury control methods and evaluate the effectiveness, cost, and potential environmental effects of identified methylmercury control methods. The proposed amendments also require specific point source dischargers to implement pollution minimization programs during the first phase of the control program, and non-point sources are required to reduce sediment in runoff.

At the end of Phase 1, the Central Valley Water Board will evaluate the completed studies, and will consider: modification of methylmercury objectives, allocations, and implementation schedules for methylmercury controls; and a Mercury Offset Program to compensate for loads in excess of the methylmercury allocations. The proposed amendments require dischargers to implement methylmercury management practices during Phase 2 of the control program.

17. The proposed amendments modify Basin Plan Chapter V (Surveillance and Monitoring) to include monitoring requirements to allow the Central Valley Water Board to assess progress in reducing inorganic mercury and methylmercury discharges and to determine compliance with fish tissue objectives.
18. The Central Valley Water Board has considered the factors set forth in Water Code section 13241, including economic considerations, in developing this proposed amendment. The costs of implementing the proposed amendments are reasonable, considering the size of the geographic area and the number of methylmercury dischargers affected by the amendment.
19. The proposed amendments include an estimate of the cost of the implementation program to agriculture and identify potential sources of financing, as required by Water Code section 13141.
20. Central Valley Water Board staff developed a draft staff report and draft Basin Plan amendments for independent, external scientific peer review in June 2006 in accordance with Health and Safety Code section 57004. The draft final staff report and amendments have been changed to conform to the recommendations of the peer reviewers or staff has provided sound rationale for why individual recommendations were not adopted.
21. The Central Valley Water Board finds that the scientific portions of the proposed Basin Plan amendments are based on sound scientific knowledge, methods, and practices in accordance with Health and Safety Code section 57004.
22. The Central Valley Water Board finds that the proposed amendments are consistent with the State Water Board Resolution No. 68-16, in that the addition of

fish tissue objectives (i) considers maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and the proposed amendment is consistent with the federal Antidegradation Policy (40 C.F.R. § 131.12). The proposed amendments require actions to be taken to implement management practices to ensure compliance with the fish tissue objectives. Such actions are of maximum benefit to the people of the State. Control of discharges of inorganic mercury and methylmercury to the Delta is necessary to protect beneficial uses of the Delta. The proposed amendments will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies because the amendment is intended to result in compliance with the fish tissue objectives and contains an implementation plan that incorporates an adaptive management approach designed to avoid negative impacts to beneficial uses.

23. The regulatory action proposed meets the “Necessity” standard of the Administrative Procedures Act, Government Code section 11353, subdivision (b).
24. The Central Valley Water Board staff held a California Environmental Quality Act (CEQA)(Pub. Resources Code §21000, et seq.) scoping meeting on 29 September 2005, a Board workshop on 28 November 2005, public workshops on 18 and 19 September 2006, a Board workshop on 16 March 2007, Board hearings on 24-25 April 2008, and numerous meetings with stakeholders to receive comments on the draft amendments and to identify any significant issues that must be considered.
25. The basin planning process has been certified by the Resources Agency as an exempt regulatory program because its process adequately fulfills the purposes of CEQA. The Central Valley Water Board is therefore exempt from CEQA’s requirement to prepare an environmental impact report, negative declaration, or initial study for the proposed amendments. Central Valley Water Board staff has prepared the required documentation for adoption of a Basin Plan amendment, including an environmental checklist and written report (staff report) (23 Cal. Code Regs. § 3777).
26. Central Valley Water Board staff has prepared draft final Basin Plan amendments and a staff report dated April 2010. The staff report includes environmental documentation consisting of a description of the project and proposed amendments, environmental analysis and checklist, identification of potentially significant adverse environmental impacts, an analysis of reasonable alternatives to the proposed amendments, an analysis of the reasonably foreseeable alternative methods of compliance with the proposed amendments, and an analysis of the reasonably foreseeable environmental impacts of the methods of compliance and mitigation measures. The environmental documentation also includes stakeholder comments, staff responses to comments, and this Board resolution.

27. The proposed amendments have the potential to cause significant adverse impacts upon the environment, primarily because implementation of the amendments may cause the design and location of proposed wetlands restoration projects to be reconsidered and perhaps modified. However, there are mitigation measures that, if employed, would substantially lessen the potentially significant adverse impacts. These mitigation measures are within the responsibility and jurisdiction of the dischargers implementing control actions, and not the Central Valley Water Board. Water Code section 13360 precludes the Central Valley Water Board from dictating the manner in which responsible agencies comply with any of the Central Valley Water Board's regulations or orders. When the dischargers responsible for implementing this amendment determine how they will proceed, the dischargers responsible for those parts of the project can and should incorporate mitigation into any subsequent projects or project approvals. Until additional methylmercury studies have been completed, it is not known whether wetlands that may contribute methylmercury to the Delta and Yolo Bypass also provide critical habitat to species of concern, and whether it will be possible to mitigate the potential impacts to less than significant levels.
28. From a program-level perspective, incorporation of the mitigation measures outlined in the staff report will foreseeably reduce most potential impacts to less than significant levels. Other impacts could be significant and therefore staff prepared a Statement of Overriding Considerations.
29. The Statement of Overriding Considerations evaluates the ecological and health benefits of implementing the proposed Basin Plan amendments in relation to the potentially significant adverse impacts. A fishery with mercury-contaminated fish is an environmental justice issue and is a threat to wildlife. Implementation of the proposed amendments will result in an overall improvement in water quality in the Delta region and will have a significant positive impact upon the environment by enabling humans and wildlife to safely consume Delta fish. To the extent significant adverse environmental effects could occur, the Central Valley Water Board has balanced the economic, legal, social, and other benefits of the amendments against the potentially unavoidable environmental risks and finds that specific economic, legal, social, and other benefits of the amendments outweigh the potentially unavoidable adverse environmental effects, such that those effects are considered acceptable.
30. Central Valley Water Board staff has circulated a Notice of Public Hearing, Notice of Filing, a written staff report, response to public comments documents, environmental checklist, and draft amendments to interested individuals and public agencies, including persons having special expertise with regard to the environmental effects involved with the proposed amendments, for review and comment in accordance with state and federal environmental regulations (23 Cal. Code Regs. § 3775, 40 C.F.R. Part 25, and 40 C.F.R. § 131).

31. Stakeholders, including representatives from irrigated agriculture, managed wetlands, wastewater treatment plants, municipal stormwater, environmental advocates, environmental justice advocates, and State and federal agencies, participated in a collaborative stakeholder process with Central Valley Water Board staff that contributed to the development of the proposed Basin Plan amendments for the Delta Mercury Control Program.
32. A subset of the stakeholders, with support from Central Valley Water Board staff, is developing an adaptive management plan that can be used by dischargers and other stakeholders to develop and implement activities required under Phase 1 of the Delta Mercury Control Program in an effective and efficient manner. The adaptive management plan includes, among other information: guiding principles for the overall Delta Mercury Control Program and for future offset policy, an organizational structure with roles and responsibilities, guidance for the Phase 1 methylmercury control studies and exposure reduction program, and potential funding strategies.
33. Responses to all comments have been prepared and the proposed amendments, staff report and environmental checklist have been revised as appropriate in response to comments.
34. The Central Valley Water Board held a public hearing on 22 April 2010, to receive testimony and adopt the draft Basin Plan amendments. Notice of the public hearing was sent to all interested persons and published in accordance with Water Code section 13244.
35. Based on the record as a whole, including draft Basin Plan amendments, the environmental document, accompanying written documentation, and public comments received, the Central Valley Water Board concurs with staff's conclusion that some actions to comply with the Basin Plan amendments may result in significant impacts and the Central Valley Water Board concurs with the Statement of Overriding Considerations. The Central Valley Water Board finds that the record as a whole and the procedures followed by staff comply with applicable CEQA requirements (Pub. Resources Code § 21080.5, 14 Cal. Code Regs. §15250, et seq., 23 Cal. Code Regs. § 3775, et seq.).
36. Basin Plan amendments must be approved by the State Water Board, Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA). The proposed amendments become effective under State law after OAL approval and become effective under the federal Clean Water Act after USEPA approval.
37. The Central Valley Water Board finds that the amendments to the Basin Plan were developed in accordance with Water Code section 13240, et seq.

THEREFORE BE IT RESOLVED:

1. Pursuant to Water Code section 13240 et seq., the Central Valley Water Board, after considering the entire record, including all late revisions, staff responses to comments, and oral testimony at the hearing, hereby approves the staff report and adopts the amendments to the Basin Plan as set forth in Attachment 1.
2. The Central Valley Water Board supports stakeholder development and implementation of an adaptive management plan that will help implement activities required under Phase 1 of the Delta Mercury Control Program.
3. Central Valley Water Board staff is directed to continue working with stakeholders in the development and implementation of the Phase 1 activities.
4. The Executive Officer is directed to forward copies of the Basin Plan amendments to the State Water Board in accordance with the requirements of Water Code section 13245.
5. The Central Valley Water Board requests that the State Water Board approve the Basin Plan amendments in accordance with the requirements of sections 13245 and 13246 of the Water Code and forward it to OAL and the USEPA for approval. The Central Valley Water Board specifically requests USEPA approval of all Basin Plan amendment provisions that require USEPA approval.
6. If during its approval process the Central Valley Water Board staff, State Water Board or OAL determines that minor, non-substantive corrections to the language of the amendments are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Central Valley Water Board of any such changes.
7. The Central Valley Water Board hereby approves and adopts the CEQA substitute environmental documentation, which was prepared in accordance with Public Resources Code section 21159 and California Code of Regulations, Title 14, section 15187, and directs the Executive Officer to sign the environmental checklist.
8. Following approval of the Basin Plan amendments by the OAL, the Executive Officer shall file a Notice of Decision with the Secretary for Resources in accordance with Public Resources Code section 21080.5, subsection (d)(2)(E), and California Code of Regulations, Title 23, section 3781.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 April 2010.

original signed by
PAMELA C. CREEDON, Executive Officer

Attachment 1: Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary

Attachment 1

Resolution No. R5-2010-0043 Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary

Revise Chapter II (Existing and Potential Beneficial Uses), Table II-1 for Sacramento San Joaquin Delta, to add as follows:

Yolo Bypass (8)

Sacramento San Joaquin Delta (8,9)

Addition to Table II-1 Footnote (8) under existing text:

COMM is a designated beneficial use for the Sacramento San Joaquin Delta and Yolo Bypass waterways listed in Appendix 43 and not any tributaries to the listed waterways or portions of the listed waterways outside of the legal Delta boundary unless specifically designated.

Addition to Table II-1 Footnote (9) under existing text:

COMM is a designated beneficial use for Marsh Creek and its tributaries listed in Appendix 43 within the legal Delta boundary.

Revise Chapter III (Water Quality Objectives), under “Methylmercury”, to add as follows:

For the Sacramento-San Joaquin Delta and Yolo Bypass waterways listed in Appendix 43, the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length.

Revise Chapter IV (Implementation), under “Mercury Discharges in the Sacramento River and San Joaquin River Basins”, to add as follows:

Delta Mercury Control Program

The Delta Mercury Control Program applies specifically to the Delta and Yolo Bypass waterways listed in Appendix 43.

This amendment was adopted by the Regional Water Quality Control Board on [date], and approved by the U.S. Environmental Protection Agency on [date]. The Effective Date of the Delta Mercury Control Program shall be [Effective Date], the date of U.S. EPA approval.

Program Overview

The Delta Mercury Control Program is designed to protect people eating one meal/week (32 g/day) of trophic levels 3 and 4 Delta fish, plus some non-Delta (commercial market) fish. The Regional Water Board recognizes that some consumers eat four to five meals per week (128-160 g/day) of a variety of Delta fish species. The fish tissue objectives will be re-evaluated during the Phase 1 Delta Mercury Control Program Review and later program reviews to determine whether objectives protective of a higher consumption rate can be attained as methylmercury reduction actions are developed and implemented.

Additional information about methylmercury source control methods must be developed to determine how and if Dischargers can attain load and waste load allocations set by the Board. Information is also needed about the methylmercury control methods' potential benefits and adverse impacts to humans, wildlife, and the environment. Therefore, the Delta Mercury Control Program will be implemented through a phased, adaptive management approach.

Phase 1 spans from [Effective Date] through the Phase I Delta Mercury Control Program Review, expected to be in [9 years after the Effective Date]. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic (total) mercury point sources in the Delta and Yolo Bypass; controlling sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agricultural lands, wetland, and open-water habitats; and reducing total mercury loading to San Francisco Bay, as required by the Water Quality Control Plan for the San Francisco Bay Basin.

Phase 1 also includes: the development of upstream mercury control programs for major tributaries; the development and implementation of a mercury exposure reduction program to protect humans; and the development of a mercury offset program.

At the end of Phase 1, the Regional Water Board shall conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and waste load allocations after implementing all reasonable load reduction strategies. The review also shall consider other potential public and environmental benefits and negative impacts (e.g., habitat restoration, flood protection, water supply, fish consumption) of attaining the allocations. The fish tissue objectives, the linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules shall be adjusted at the end of Phase 1, or subsequent program reviews, if appropriate.

Phase 2 begins after the Phase 1 Delta Mercury Control Program Review or [11 years after the Effective Date], whichever occurs first, and ends in 2030. During Phase 2, dischargers shall implement methylmercury control programs and continue inorganic (total) mercury reduction

programs. Compliance monitoring and implementation of upstream control programs also shall occur in Phase 2.

Load and Waste Load Allocations

Final methylmercury waste load allocations for point sources and load allocations for non-point sources are listed in Tables A through D. For each subarea listed in Table A, the sum of allocations for agricultural drainage, atmospheric wet deposition, open water, urban (nonpoint source), and wetlands and the individual allocations for tributary inputs (Table D), NPDES facilities and NPDES facilities future growth (Table B), and NPDES MS4 (Table C) within that subarea equals that subarea's assimilative capacity. New or expanded methylmercury discharges that begin after [Effective Date] may necessitate adjustments to the allocations.

Load allocations are specific to Delta subareas, which are shown on Figure xx-x. The load allocations for each Delta subarea apply to the sum of annual methylmercury loads produced by different types of nonpoint sources: agricultural lands, wetlands, and open-water habitat in each subarea, as well as atmospheric wet deposition to each subarea (Table A), and runoff from urban areas outside of Municipal Separate Storm Sewer System (MS4) service areas. The subarea allocations apply to both existing and future discharges.

Waste load allocations apply to point sources, which include individual NPDES permitted facility discharges and runoff from urban areas within MS4 service areas within the Delta and Yolo Bypass (Tables B and C, respectively).

Methylmercury allocations are assigned to tributary inputs to the Delta and Yolo Bypass (Table D). Future upstream control programs are planned for tributaries to the Delta through which management practices will be implemented to meet load allocations for tributary inputs assigned by the Delta Mercury Control Program.

Load allocations for the tributary inputs, urban areas outside of MS4 service areas, open-water habitat, and atmospheric deposition, and waste load allocations for the MS4s, are based on water years 2000 through 2003, a relatively dry period. Annual loads are expected to fluctuate with rainfall volume and other factors. As a result, attainment of these allocations shall be assessed as a five-year average annual load. Allocations for these sources will be re-evaluated during review of the Phase 1 Delta Mercury Control Program as wet year data become available.

Margin of Safety

The Delta Mercury Control program includes an explicit margin of safety of 10%.

Final Compliance Date

Methylmercury load and waste load allocations for dischargers in the Delta and Yolo Bypass shall be met as soon as possible, but no later than 2030, unless the Regional Water Board modifies the implementation schedule and Final Compliance Date.

During Phase 1, all dischargers shall implement reasonable, feasible controls for inorganic (total) mercury.

All dischargers should implement methylmercury management practices identified during Phase 1 that are reasonable and feasible. However, implementation of methylmercury

management practices identified in Phase 1 is not required for the purposes of achieving methylmercury load allocations for nonpoint sources until the beginning of Phase 2.

The Regional Water Board will, as necessary, include schedules of compliance in NPDES permits for compliance with water quality-based effluent limits based on the waste load allocations. The compliance schedules must be consistent with the requirements of federal laws and regulations, including, USEPA regulations 40 CFR 122.47, State laws and regulations, including State Water Board Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, and the Final Compliance Date. The Regional Board will review the feasibility of meeting wasteload allocations based on reliable data and information regarding variability in methylmercury concentrations and treatment efficiencies and time needed to comply with the wasteload allocations. The Phase 1 Control Studies are designed to provide this information. As needed, the Regional Board shall incorporate the Phase 1 Control Studies into compliance schedules. When Phase 1 studies are complete, the Regional Board will review the need for additional time during Phase 2 for NPDES permittees to comply with the final wasteload allocations.

Implementation Program

Point Sources

The regulatory mechanism to implement the Delta Mercury Control Program for point sources shall be through NPDES permits.

Requirements for NPDES Permitted Facilities

By [six months after Effective Date], all facilities listed in Table B shall submit individual pollutant minimization program workplans to the Regional Water Board. The dischargers shall implement their respective pollutant minimization programs within 30 days after receipt of written Executive Officer approval of the workplans. Until the NPDES permitted facility achieves compliance with its WLA, the discharger shall submit annual progress reports on pollution minimization activities implemented and evaluation of their effectiveness, including a summary of mercury and methylmercury monitoring results.

During Phase 1, all facilities listed in Table B shall limit their discharges of inorganic (total) mercury to facility performance-based levels. The interim inorganic (total) mercury effluent mass limit is to be derived using current, representative data and shall not exceed the 99.9th percentile of 12-month running effluent inorganic (total) mercury loads (lbs/year). For intermittent dischargers, the interim inorganic (total) mercury effluent mass limit shall consider site-specific discharge conditions. The limit shall be assigned in permits and reported as an annual load based on a calendar year. At the end of Phase 1, the interim inorganic (total) mercury mass limit will be re-evaluated and modified as appropriate.

NPDES permitted facilities that begin discharging to the Delta or Yolo Bypass during Phase 1 shall comply with the above requirements.

Requirements for NPDES Permitted Urban Runoff Discharges

MS4 dischargers listed in Table C shall implement best management practices (BMPs) to control erosion and sediment discharges consistent with their existing permits and orders with the goal of reducing mercury discharges.

The Sacramento MS4 (CAS082597), Contra Costa County MS4 (CAS083313), and Stockton MS4 (CAS083470) permittees shall implement pollution prevention measures and BMPs to minimize total mercury discharges. This requirement shall be implemented through mercury reduction strategies required by their existing permits and orders. Annually, the dischargers shall report on the results of monitoring and a description of implemented pollution prevention measures and their effectiveness.

The Sacramento MS4 (CAS082597), Contra Costa County MS4 (CAS083313), and Stockton MS4 (CAS083470) shall continue to conduct mercury control studies to monitor and evaluate the effectiveness of existing BMPs per existing requirements in permits and orders, and to develop and evaluate additional BMPs as needed to reduce their mercury and methylmercury discharges into the Delta and Yolo Bypass.

Nonpoint Sources

Nonpoint sources shall be regulated through the authority contained in State and federal laws and regulations, including State Water Board's Nonpoint Source Implementation and Enforcement Policy.

Table A contains methylmercury load allocations for non-point sources in the Delta and Yolo Bypass waterways listed in Appendix 43.

During Phase 1, all nonpoint sources in the Delta and Yolo Bypass shall implement reasonable, feasible actions to reduce sediment in runoff with the goal of reducing inorganic mercury loading to the Yolo Bypass and Delta, in compliance with existing Basin Plan objectives and requirements, and Irrigated Lands Regulatory Program requirements.

Attainment of methylmercury load allocations at the end of 2030 will be determined by comparing monitoring data and documentation of methylmercury management practice implementation for each subarea with loads specified in Table A and Table D.

For subareas not in compliance with allocations by 2030, the Regional Water Board may develop load allocations for individual sources and require individual monitoring and waste discharge requirements.

In subareas needing reductions in methylmercury, proponents of new wetland and wetland restoration projects scheduled for construction after [Effective Date] shall (a) participate in Control Studies as described below, or shall implement site-specific study plans, that evaluate practices to minimize methylmercury discharges, and (b) implement methylmercury controls as feasible. New wetland projects may include pilot projects and associated monitoring to evaluate management practices that minimize methylmercury discharges.

Phase 1 Control Studies

Point and nonpoint source dischargers, working with other stakeholders, shall conduct methylmercury control studies (Control Studies) to evaluate existing control methods and, as needed, develop additional control methods that could be implemented to achieve their methylmercury load and waste load allocations. The Regional Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Mercury Control Program during the Phase 1 Delta Mercury Control Program Review.

A Technical Advisory Committee, described below, will review the Control Studies' designs and results.

Study Participants

Control Studies can be developed through a stakeholder group approach or other collaborative mechanism, or by individual dischargers. Individual dischargers are not required to do individual studies if the individual dischargers join a collaborative study group(s).

Control Studies are required for:

- a. Irrigated agricultural lands that discharge to the Yolo Bypass and Delta subareas that require methylmercury source reductions.
- b. Managed wetlands and wetland restoration projects that discharge to the Yolo Bypass and Delta subareas that require methylmercury source reductions.
- c. Existing NPDES permitted facilities in the Delta and the Yolo Bypass (listed in Table B).
- d. Sacramento Area MS4, Stockton MS4, and Contra Costa County MS4 service areas within and upstream of the legal Delta boundary.
- e. State and Federal agencies whose activities affect the transport of mercury and the production and transport of methylmercury through the Yolo Bypass and Delta, or which manage open water areas in the Yolo Bypass and Delta, including but not limited to Department of Water Resources, State Lands Commission, Central Valley Flood Protection Board, U.S. Army Corps of Engineers, and U.S. Bureau of Reclamation. If appropriate during Phase 1, the Executive Officer will require other water management agencies whose activities affect methylmercury levels in the Delta and Yolo Bypass to participate in the Control Studies.
- f. Other significant sources of methylmercury not listed above, as identified and deemed appropriate by the Executive Officer.

Dischargers in the Central Valley that are not subject to the Delta Mercury Control Program but may be subject to future mercury control programs in upstream tributary watersheds are encouraged to participate in the coordinated Delta Control Studies. Dischargers in and upstream of the Delta who participate in the Control Studies will be exempt from conducting equivalent Control Studies required by future upstream mercury control programs.

Study Objectives

The Control Studies shall evaluate existing control methods and, as needed, additional control methods that could be implemented to achieve methylmercury load and waste load allocations. The Control Studies shall evaluate the feasibility of reducing sources more than the minimum amount needed to achieve allocations.

Phase 1 studies also may include an evaluation of innovative actions, watershed approaches, offsets projects, and other short and long-term actions that result in reducing inorganic (total) mercury and methylmercury to address the accumulation of methylmercury in fish tissue and to reduce methylmercury exposure.

Dischargers may evaluate the effectiveness of using inorganic (total) mercury controls to control methylmercury discharges.

Dischargers may conduct characterization studies to inform and prioritize the Control Studies. Characterization studies may include, but not be limited to, evaluations of methylmercury and total mercury concentrations and loads in source waters, receiving waters, and discharges, to determine which discharges act as net sources of methylmercury, and which land uses result in the greatest net methylmercury production and loss.

Final reports for Control Studies shall include a description of methylmercury and/or inorganic (total) mercury management practices identified in Phase 1; an evaluation of the effectiveness, and costs, potential environmental effects, and overall feasibility of the control actions. Final reports shall also include proposed implementation plans and schedules to comply with methylmercury allocations as soon as possible.

If the Control Study results indicate that achieving a given methylmercury allocation is infeasible, then the discharger, or an entity representing a discharger, shall provide detailed information on why full compliance is not achievable, what methylmercury load reduction is achievable, and an implementation plan and schedule to achieve partial compliance.

Control Study Workplans

Control Studies shall be implemented through Control Study Workplan(s). The Control Study Workplan(s) shall provide detailed descriptions of how methylmercury control methods will be identified, developed, and monitored, and how effectiveness, costs, potential environmental effects, and overall feasibility will be evaluated for the control methods.

The Control Study Workplan(s) shall include details for organizing, planning, developing, prioritizing, and implementing the Control Studies.

The Control Studies will be governed using an Adaptive Management approach.

Technical Advisory Committee and Adaptive Management Approach

The Regional Water Board commits to supporting an Adaptive Management approach. The adaptive management approach includes the formation of a Stakeholder Group(s) and a Technical Advisory Committee (TAC). Regional Water Board staff, working with the TAC and Stakeholder Group(s), will provide a Control Study Guidance Document for stakeholders to reference.

The TAC shall be comprised of independent experts who would convene as needed to provide scientific and technical peer review of the Control Study Workplan(s) and results, advise the Board on scientific and technical issues, and provide recommendations for additional studies and implementation alternatives developed by the dischargers. The Board shall form and manage the TAC with recommendations from the dischargers and other stakeholders, including tribes and community organizations.

Board staff shall work with the TAC and Stakeholder Group(s) to review the Control Study Workplan(s) and results. As new information becomes available from the Control Studies or outside studies that result in redirection and/or prioritization of existing studies, dischargers may amend the Control Study Workplan(s) with Executive Officer approval.

Mercury Control Studies Schedule

1. By [six months after the Effective Date], entities required to conduct Control Studies shall submit for Executive Officer approval either: (1) a report(s) describing how dischargers and stakeholders plan to organize to develop a coordinated, comprehensive Control Study Workplan(s), or (2) a report describing how individual dischargers will develop individual Control Study Workplans. For dischargers conducting coordinated studies, the report shall include a list of participating dischargers, stakeholders, tribes, and community groups. Dischargers shall be considered in compliance with this reporting requirement upon written commitment to either be part of a group developing a Control Study Workplan or develop an individual Control Study Workplan.
2. Control Study Workplans shall be submitted to the Regional Water Board within [nine months of the Effective Date of this amendment]. With Executive Officer approval, an additional nine months may be allowed for Workplans being developed by a collaborative stakeholder approach. The Control Study Workplan(s) shall contain a detailed plan for the Control Studies and the work to be accomplished during Phase 1. Regional Water Board staff and the TAC will review the Workplans and provide recommendations for revising Workplans if necessary.

Within four months of submittal, the Executive Officer must determine if the Workplans are acceptable. After four months, Workplans are deemed approved and ready to implement if no written approval is provided by the Executive Officer, unless the Executive Officer provides written notification to extend the approval process.

Dischargers shall be considered in compliance with this reporting requirement upon timely submittal of workplans and revisions.

3. By [four years after the Effective Date], entities responsible for Control Studies shall submit report(s) to the Regional Water Board documenting progress towards complying with the Control Study Workplan(s). The report shall include amended workplans for any additional studies needed to address methylmercury reductions. The TAC will review the progress reports and may recommend what additional or revised studies should be undertaken to complete the objectives of the Control Studies. Staff will review the progress reports and recommendations of the TAC and provide a progress report to the Regional Water Board.
4. By [seven years after the Effective Date], entities responsible for Control Studies shall complete the studies and submit to the Regional Water Board Control Studies final reports that present the results and descriptions of methylmercury control options, their preferred methylmercury controls, and proposed methylmercury management plan(s) (including implementation schedules), for achieving methylmercury allocations. In addition, final report(s) shall propose points of compliance for non-point sources.

If the Executive Officer determines that dischargers are making significant progress towards developing, implementing and/or completing the Phase 1 Control Studies but that more time is needed to finish the studies, the Executive Officer may consider extending a study's deadlines.

The Executive Officer may, after public notice, extend time schedules up to two years if the dischargers demonstrate reasonable attempts to secure funding for the Phase 1 studies but experience severe budget shortfalls.

Annually, staff shall publicly report to the Regional Water Board progress of upstream mercury program development, discharger and stakeholder coordination, Control Study Workplan status, implementation of Control Studies, actions implemented or proposed to meet load and waste load allocations, and the status of the formation and activities of the TAC.

By [four years after the Effective Date], the Executive Officer shall provide a comprehensive report to the Regional Water Board on Phase 1 progress, including progress of upstream mercury control program development, Control Studies, actions implemented or proposed to meet Delta Mercury Control Program load and waste load allocations, and the status and progress of the TAC.

If dischargers do not comply with Control Study implementation schedules, the Executive Officer shall consider issuing individual waste discharge requirements or ordering the production of technical reports and/or management plans.

Phase 1 Delta Mercury Control Program Review

By [nine years after Effective Date] at a public hearing, and after a scientific peer review and public review process, the Regional Water Board shall review the Delta Mercury Control Program and may consider modification of objectives, allocations, implementation provisions and schedules, and the Final Compliance Date.

If the Executive Officer allows an extension for the Control Studies' schedule, then the Delta Mercury Control Program Review may be delayed up to two years. If the Delta Mercury Control Program Review is delayed more than one year, the Regional Water Board should consider extending the schedule for Phase 2 implementation of methylmercury controls, and the Final Compliance Date.

The Regional Water Board shall assess: (a) the effectiveness, costs, potential environmental effects, and technical and economic feasibility of potential methylmercury control methods; (b) whether implementation of some control methods would have negative impacts on other project or activity benefits; (c) methods that can be employed to minimize or avoid potentially significant negative impacts to project or activity benefits that may result from control methods; (d) implementation plans and schedules proposed by the dischargers; and (e) whether methylmercury allocations can be attained.

The Regional Water Board shall use any applicable new information and results of the Control Studies to adjust the relevant allocations and implementation requirements as appropriate. Interim limits established during Phase 1 and allocations will not be reduced as a result of early actions that result in reduced inorganic (total) mercury and/or methylmercury in discharges.

As part of the Phase 1 Delta Mercury Control Program Review and subsequent program reviews, the Regional Water Board may consider adjusting the allocations to allow methylmercury discharges from existing and new wetland restoration and other aquatic habitat enhancement projects if dischargers provide information that demonstrates that 1) all reasonable management practices to limit methylmercury discharges are being implemented and 2) implementing additional methylmercury management practices would negatively impact fish and wildlife habitat or other project benefits. The Regional Water Board will consider the merits of the project(s) and whether to require the discharger(s) to propose other activities in the

watershed that could offset the methylmercury. The Regional Water Board will periodically review the progress towards achieving the allocations and may consider additional conditions if the plan described above is ineffective.

The Regional Water Board shall conduct the Phase 1 Delta Mercury Program Review based on information received in Phase 1. If the Regional Water Board does not receive timely information to review and update the Delta Mercury Control Program, then allocations shall not be raised but may be lowered and the 2030 Final Compliance Date shall not be changed for those individual dischargers who did not complete the Phase 1 requirements.

The Regional Water Board shall require implementation of appropriate management practices. The methylmercury management plan(s) developed in Phase 1 shall be initiated as soon as possible, but no later than one (1) year after Phase 2 begins.

The Regional Water Board shall review this control program two years prior to the end of Phase 2, and at intervals no more than 10 years thereafter.

Compliance Monitoring

Within two years after the start of Phase 2, entities responsible for meeting load and waste load allocations shall monitor methylmercury loads and concentrations and submit annual reports to the Regional Water Board. The points of compliance for waste load allocations for NPDES facilities shall be the effluent monitoring points described in individual NPDES permits. The points of compliance for MS4s required to conduct methylmercury monitoring are those locations described in the individual MS4 NPDES permits or otherwise determined to be representative of the MS4 service areas and approved by the Executive Officer on an MS4-specific basis. The points of compliance and monitoring plans for non-point sources shall be determined during the Control Studies. Compliance with the load allocations for nonpoint sources and waste load allocations for MS4s may be documented by monitoring methylmercury loads at the compliance points or by quantifying the annual average methylmercury load reduced by implementing pollution prevention activities and source and treatment controls.

Entities will be allowed to comply with their mercury receiving water monitoring requirements by participating in a regional monitoring program, when such a program is implemented.

Chapter V, Surveillance and Monitoring, contains additional monitoring guidance.

Requirements for State and Federal Agencies

Open water allocations are assigned jointly to the State Lands Commission, the Department of Water Resources, and the Central Valley Flood Protection Board as applicable. Other agencies that are identified in Phase 1 that implement actions and activities that have the potential to contribute to methylmercury production and loss in open water will be required to take part in the studies. In the Phase 1 review, the Regional Water Board will modify, as appropriate, the list of entities that are responsible for meeting the open water allocations. Open water allocations apply to the methylmercury load that fluxes to the water column from sediments in open-water habitats within channels and floodplains in the Delta and Yolo Bypass.

The State Lands Commission, Central Valley Flood Protection Board, Department of Water Resources, and other identified agencies shall conduct Control Studies and evaluate options to reduce methylmercury in open waters under jurisdiction of the State Lands Commission and