State of California
California Regional Water Quality Control Board, Los Angeles Region

RESOLUTION NO. R4-2007-016
October 4, 2007

Amendment to the *Water Quality Control Plan for the Los Angeles Region* to Incorporate a Total Maximum Daily Load for Boron, Chloride, Sulfate, and TDS (Salts) for Calleguas Creek Watershed

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region, finds that:

1. The Federal Clean Water Act (CWA) requires the California Regional Water Quality Control Board, Los Angles Region (Regional Board) to establish water quality standards for each water body within its region. Water quality standards include beneficial uses, water quality objectives that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. Water bodies that do not meet water quality standards are considered impaired.

2. CWA section 303(d)(1) requires each state to identify the waters within its boundaries that do not meet water quality standards. Those waters are placed on the state's "303(d) List" or "Impaired Waters List". For each listed water, the state is required to establish the Total Maximum Daily Load (TMDL) of each pollutant impairing the water quality standards in that waterbody. Both the identification of impaired waters and TMDLs established for those water must be submitted to U.S. EPA for approval pursuant to CWA section 303(d)(2). For all waters that are not identified as impaired, the states are nevertheless required to create TMDLs pursuant to CWA section 303(d)(3).

3. A consent decree between (U.S. EPA), Heal the Bay, Inc. and BayKeeper, Inc. was approved on March 22, 1999, which resolved litigation between those parties relating the pace of TMDL development. The court order directs the U.S. EPA to ensure that TMDLs for all 1998-listed impaired waters be established within 13 years of the consent decree. The consent decree combined water body pollutant combinations in the Los Angeles Region into 92 TMDL analytical units. In accordance with the consent decree, the Calleguas Creek Salts TMDL addresses waterbodies with salts listings in analytical units 3 and 4. Based on the consent decree schedule, a TMDL for chloride was adopted by USEPA in March 2002 to address analytical unit 3. According to the consent decree, the remaining salts in analytical unit 4 (TDS, sulfate, and boron) TMDLs must be approved or established by United States Environmental Protection Agency (USEPA) by March 2012. This TMDL will supercede the chloride TMDL for analytical unit 3 previously established by EPA.

4. The elements of a TMDL are described in 40 CFR 130.2 and 130.7 and section 303(d)(1)(C) and (D) of the CWA, as well as in U.S. EPA guidance documents (Report No. EPA/440/4-91/001). A TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources and natural background (40 CFR 130.2). TMDLs must be set at levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal

variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality (40 CFR 130.7(c)(1)). 40 CFR 130.7 also dictates that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters. TMDLs typically include one or more numeric "targets", i.e., numerical translations of the existing water quality standards, which represent attainment of those standards, contemplating the TMDL elements described above. Since a TMDL must represent the "total" load, TMDLs must account for all sources of the relevant pollutants, irrespective of whether the pollutant is discharged to impaired or unimpaired upstream reaches.

5. Neither TMDLs nor their targets or other components are water quality objectives, and thus their establishment does not implicate Water Code section 13241. Rather, under California Law, TMDLs are programs to implement existing standards (including objectives), and are thus established pursuant to Water Code section 13242. Moreover, they do not create new bases for direct enforcement against dischargers apart from the existing water quality standards they translate. The targets merely establish the bases through which load allocations (LAs) and waste load allocations (WLAs) are calculated. WLAs are only enforced for a discharger's own discharges, and then only in the context of the discharger's National Pollutant Discharge Elimination System (NPDES) permit (or other permit, waiver, or prohibition), which must contain effluent limits consistent with the assumptions and requirements of the WLAs (40 C.F.R. 122.44(d)(vii)(B)). The Regional Board will develop permit requirements through subsequent permit actions that will allow all interested persons, including but not limited to municipal storm water dischargers, to provide comments on how the WLAs should be translated into permit requirements.

6. As envisioned by Water Code section 13242, the TMDL contains a "description of surveillance to be undertaken to determine compliance with objectives." The Compliance Monitoring and Special Studies elements of the TMDL recognize that monitoring will be necessary to assess the on-going condition of the Calleguas Creek watershed and to assess the on-going effectiveness of efforts by dischargers to reduce salts loading to the Calleguas Creek. Special studies may also be appropriate to provide further information about new data, new or alternative sources, and revised scientific assumptions. The TMDL does not establish the requirements for these monitoring programs or reports, although it does recognize the type of information that will be necessary to secure. The Regional Board's Executive Officer will issue orders to appropriate entities to develop and to submit monitoring programs and technical reports. The Executive Officer will determine the scope of these programs and reports, taking into account any legal requirements, and issue the orders to the appropriate entities.

7. Upon establishment of TMDLs by the State or U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). This Water Quality Control Plan for the Los Angeles Region (Basin Plan) and applicable statewide plans serve as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board. Attachment A to this resolution contains the Basin Planning language for this TMDL.

8. The Calleguas Creek Watershed is located in southeast Ventura County, California, and in a small portion of western Los Angeles County, and drains an area of approximately 343 square miles from the Santa Susana Pass in the east, to Mugu Lagoon in the southwest. Current land use is approximately 26 percent agriculture, 24 percent urban,

and 50 percent open space. The tributaries and the streams of the Calleguas Creek Watershed are divided into fourteen segments, or reaches. Eleven out of fourteen reaches in the Calleguas Creek Watershed are identified on the 2002 Clean Water Act Section 303(d) list of water-quality limited segments as impaired due to elevated levels of boron, chloride, sulfate, and TDS. The listings were approved by the State Water Resources Control Board on February 4, 2003. Additionally, USEPA added listings in Revolon Slough for TDS, sulfate and boron. The proposed TMDL addresses impairments of water quality caused by these salts, and the Implementation Plan is developed to achieve water quality objectives for salts in the Calleguas Creek Watershed.

9. Over the past forty years, large volumes of salts have been imported into the Calleguas Creek watershed from the State Water Project, the Santa Clara River through the Freeman Diversion, and deep aquifers which are pumped for water supply purposes. The Calleguas Creek watershed also contains naturally occurring or background concentrations of salts because soils are derived from marine sediments. Salts become stranded on the watershed and accumulate over time. The result is a general salt imbalance on the watershed that manifests itself in higher surface water and groundwater concentrations of salts throughout the watershed. High salts concentrations have limited the beneficial uses of surface water and groundwater from unconfined aquifers of the Calleguas Creek Watershed. Therefore, salt export will be required throughout the watershed to effectively reduce the salts loads to surface and groundwater. The overall goal of this TMDL is to achieve a salt balance within each subwatershed, reduce salt load to surface water, and achieve and maintain water quality objective for salts in the watershed. All stakeholders and the Regional Board agree that an approach that integrates water supply and water quality is the preferred approach to addressing salt impairments in the Calleguas Creek Watershed. The Regional Board's endorsement of this approach is in part conditioned upon the stakeholders' agreement to ensure maintenance of in-stream flows necessary to protect beneficial uses.

10. Boron is only listed in the Simi and Pleasant Valley (Revolon) subwatershed including Revolon Slough (reach 4), Arroyo Simi (reach 7), and tributaries to Arroyo Simi (reach 9). Therefore, boron allocations are only included for the Simi Valley WWTP and not for the other POTWs that discharge to other subwatersheds.

11. Numeric targets for the TMDL are based on the specific numeric water quality objectives (WQOs) provided in the Basin Plan. Surface water quality objectives for the Calleguas Creek watershed are applicable upstream of Potrero Road. Site specific objectives have not been determined for Calleguas Creek below Potrero Road. However, the Basin Plan provides beneficial use guidelines to determine criteria for selection of effluent limits to protect sensitive beneficial uses including agricultural supply. The Basin Plan also includes objectives for groundwater basins.

12. The Regional Board's goal in establishing the TMDL for salts in Calleguas Creek Watershed is to protect the agriculture irrigation and groundwater recharge beneficial uses of the Calleguas Creek Watershed and to achieve the numeric and narrative water quality objectives set to protect those uses.

13. Calleguas Creek stakeholders have been actively engaged with USEPA and the Regional Board on a variety of watershed planning initiatives in the Calleguas Creek Watershed. Key stakeholders have formed the Calleguas Creek Watershed Management Plan

(CCWMP), an established, stakeholder-led watershed management group that has been continually operating since 1996. The CCWMP has broad participation from federal, State and county agencies, municipalities, POTWs, water purveyors, groundwater management agencies, and agricultural and environmental groups. As part of its mission to address issues of long-range comprehensive water resources, land use, economic development, open space preservation, enhancement and management, the CCWMP proposed to USEPA and Regional Board to take the lead on development of the TMDLs.

14. Regional Board staff has worked with the CCWMP and USEPA in the development of a detailed technical document that analyzes and describes the specific necessity and rationale for the development of this TMDL. The technical document entitled "Calleguas Creek Watershed Boron, Chloride, Sulfate, and TDS TMDL" (Technical Report) prepared by Larry Walker Associates is an integral part of this Regional Board action and was reviewed, and accepted by the Regional Board as a supporting technical analysis before acting. The technical document provides the detailed factual basis and analysis supporting the problem statement, numeric targets (interpretation of the narrative and numeric water quality objectives, used to calculate the pollutant allocations), source analysis, linkage analysis, waste load allocations (for point sources), load allocation (for nonpoint sources), margin of safety, and seasonal variations and critical conditions of this TMDL. Final Technical Report was submitted to the Regional Board on May 31, 2007. The Regional Board staff report for this TMDL, "Calleguas Creek Watershed Boron, Chloride, Sulfate, and TDS (Salts) TMDL", is based on the analysis in the Technical Report prepared by Larry Walker Associates.

15. On October 4, 2007, prior to the Board's action on this resolution, public hearings were conducted on the TMDL for boron, chloride, sulfate, and TDS in the Calleguas Creek Watershed. Notice of the hearing for the TMDL boron, chloride, sulfate, and TDS in the Calleguas Creek Watershed was published in accordance with the requirements of Water Code Section 13244. This notice was published in the Ventura County Stars on June 2, 2007.

16. The public has had a reasonable opportunity to participate in the review of the amendment to the Basin Plan. A draft of the TMDL was released for public comment on June 4, 2007; a Notice of Hearing and Notice of Filing were published and circulated 45 days preceding Board action; Regional Board staff responded to oral and written comments received from the public; and the Regional Board held a public hearing on October 4, 2007 to consider adoption of the TMDL.

17. In amending the Basin Plan to establish this TMDL, the Regional Board considered the requirements set forth in Sections 13240 and 13242 of the California Water Code.

18. Because the TMDL implements existing numeric water quality objectives (i.e., numeric water quality objectives in the Basin Plan), the Regional Board (along with the State Water Resources Control Board) have determined that adopting a TMDL does not require the water boards to consider the factors of Water Code section 13241. The consideration of the Water Code section 13241 factors, by section 13241's express terms, only applies "in establishing water quality objectives." Here the Regional Board is not establishing water quality objectives, but as required by section 303(d)(1)(C) of the Clean Water Act is adopting a TMDL that will implement the previously established objectives that have not been achieved. In making this determination, the Regional Board has considered and relied upon a legal memorandum from the Office of Chief Counsel to the State Water

Board's basin planning staff detailing why TMDLs cannot be considered water quality objectives. (See Memorandum from the Staff Counsel Michael J. Levy, Office of Chief Counsel, to Ken Harris and Paul Lillebo, Division of Water Quality: *The Distinction Between A TMDL's Numeric Targets and Water Quality Standards*, dated June 12, 2002.)

19. While the Regional Board is not required to consider the factors of Water Code section 13241, it, nonetheless, has developed and received significant information pertaining to the Water Code section 13241 factors and has considered that information in developing and adopting this TMDL. The past, present, and probable future beneficial uses of water have been considered in that the Calleguas Creek watershed is designated for a multitude of beneficial uses in the Basin Plan. Various living organisms (including vegetation, fish, invertebrates, and wildlife) are present in, transient through, and will be present in the Calleguas Creek. Dry weather surface water in the Calleguas Creek watershed is primarily composed of groundwater, municipal wastewater, urban non-stormwater discharges, and agricultural runoff. In the upper reaches of the watershed, upstream of any wastewater discharges, groundwater discharge from shallow surface aquifers provide a constant base flow. The environmental characteristics of the Calleguas Creek are spelled out at length in the Basin Plan and in the technical documents supporting this Basin Plan amendment, and have been considered in developing this TMDL. Water quality conditions that reasonably could be achieved through the coordinated control of implementation actions including integrating watershed-scale infrastructure projects to desalt groundwater and wastewater, and administrative programs to reduce salt loadings to the Calleguas Creek watershed. TMDL implementation will be carried out by water agencies, municipalities, POTWs, and non-point dischargers in the Calleguas Creek Watershed to desalt groundwater and wastewater. These projects focus on desalting groundwater underlying Calleguas Creek and discharging salts to the Pacific Ocean through a brineline and ocean outfall outside of southern Ventura County. Water quality in Calleguas Creek will be attained by reducing the amount of salts imported and added to water in the watershed, reducing salts loads from groundwater exfiltration, transporting salts downgradient and exporting salts out of the watershed. Responsible agencies also have several options for implementing structural and nonstructural BMPs to attain a salt balance and attain water quality objectives. Authorizing certain storm water dischargers to rely on BMPs in the first instances reflects the reasonableness of the action in terms of the ability to implement the requirements, as well as an understanding that the water quality conditions can reasonably be attained under different hydrological conditions. However, to the extent that there would be any conflict between the consideration of the factor in Water Code section 13241 subdivision (c), if the consideration were required, and the Clean Water Act, the Clean Water Act would prevail. Economic considerations were considered throughout the development of the TMDL. Some of these economic considerations arise in the context of Public Resources Code section 21159 and are equally applicable here. The implementation program for this TMDL recognizes the economic limitations on achieving immediate compliance. The TMDL also authorizes the use of BMPs, to the extent authorized by law, for various storm water dischargers. Economic considerations were considered and are reflected in an implementation program that is flexible and allows 15 years for POTWs, permitted stormwater and non-permitted stormwater dischargers, and agricultural dischargers to comply with the final allocations. The need for housing within the region has been considered, but this TMDL is unlikely to affect housing needs. Whatever housing

impacts could materialize are ameliorated by the flexible nature of this TMDL and the implementation schedule.

20. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that the changes to water quality objectives (i) consider maximum benefits 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. Likewise, the amendment is consistent with the federal Antidegradation Policy (40 CFR 131.12).

21. Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) requirements for preparing environmental documents (14 Cal. Code Regs. § 15251(g); 23 Cal. Code Regs. § 3782.) The Regional Water Board staff has prepared "substitute environmental documents" for this project that contains the required environmental documentation under the State Water Board's CEQA regulations. (23 Cal. Code Regs. § 3777.) The substitute environmental documents include the TMDL staff report entitled "Calleguas Creek Watershed Boron, Chloride, Sulfate, and TDS TMDL", the environmental checklist, the comments and responses to comments, the basin plan amendment language, and this resolution. The project itself is the establishment of a TMDL for boron, chloride, sulfate, and TDS in the Calleguas creek watershed. While the Regional Board has no discretion to not establish a TMDL (the TMDL is required by federal law), the Board does exercise discretion in assigning waste load allocations and load allocations, determining the program of implementation, and setting various milestones in achieving the water quality standards. The CEQA checklist and other portions of the substitute environmental documents contain significant analysis and numerous findings related to impacts and mitigation measures.

22. A CEQA Scoping hearing was conducted on November 15, 2006 at the City of Camarillo - City Council Chambers, 601 Carmen Drive, Camarillo, California. A notice of the CEQA Scoping hearing was sent to interested parties including cities and/or counties with jurisdiction in or bordering the watershed. The notice of CEQA Scoping hearing was also published in the Ventura County Stars on October 10, 2006

23. In preparing the substitute environmental documents, the Regional Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends those documents to serve as a tier 1 environmental review. This analysis is not intended to be an exhaustive analysis of every conceivable impact, but an analysis of the reasonably foreseeable consequences of the adoption of this regulation, from a programmatic perspective. Many compliance obligations will be undertaken directly by public agencies that will have their own obligations under CEQA. In addition, public agencies including but not limited to Calleguas MWD, Camrosa Water District, CamSan, City of Thousand Oaks, Simi Valley, Moorpark, VCWW, and Camarillo are foreseeably expected to facilitate compliance obligations. The "Lead" agencies for such tier 2 projects, will assure compliance with project-level CEQA analysis of this programmatic project. Project level impacts will need to be considered in any subsequent environmental analysis performed by other public agencies, pursuant to Public Resources Code section 21159.2.

24. The foreseeable methods of compliance of this TMDL entail construction and operation of an infrastructure of extraction wells, surface water diversions, pipelines, reverse osmosis facilities, reclaimed water distribution facilities, a brine export pipeline, and an ocean outfall. These facilities require planning and implementation which has been underway for a number of years. Construction activities on several pipeline alignments have been completed and environmental review of the project has been completed for a key area and the ocean outfall. The above projects have already been subject to extensive environmental review. Both Camrosa Water District and Calleguas Municipal Water District have certified program level EIRs for the Renewable Water Resource Management Program for the Southern Reaches of the Calleguas Creek Watershed and the Regional Salinity Management Project that examine the foreseeable environmental impacts from constructing and operating a system to comply with the salts TMDL.

25. Consistent with the Regional Board's substantive obligations under CEQA, the substitute environmental documents do not engage in speculation or conjecture, and only consider the reasonably foreseeable environmental impacts, including those relating to the methods of compliance, reasonably foreseeable feasible mitigation measures to reduce those impacts, and the reasonably foreseeable alternative means of compliance, which would avoid or reduce the identified impacts.

26. The proposed amendment could have a potentially significant adverse effect on the environment. However, there are feasible alternatives, feasible mitigation measures, or both, that if employed, would substantially lessen the potentially significant adverse impacts identified in the substitute environmental documents; however such alternatives or mitigation measures are within the responsibility and jurisdiction of other public agencies, and not the Regional Board. Water Code section 13360 precludes the Regional Board from dictating the manner in which responsible agencies comply with any of the Regional Board's regulations or orders. When the agencies responsible for implementing this TMDL determine how they will proceed, the agencies responsible for those parts of the project can and should incorporate such alternatives and mitigation into any subsequent projects or project approvals. These feasible alternatives and mitigation measures are described in more detail in the substitute environmental documents. (14 Cal. Code Regs. § 15091(a)(2).)

27. From a program-level perspective, incorporation of the alternatives and mitigation measures outlined in the substitute environmental documents may not forseeably reduce impacts to less than significant levels.

28. The substitute documents for this TMDL, and in particular the Environmental Checklist and staff's responses to comments, identify broad mitigation approaches that should be considered at the project level.

29. To the extent significant adverse environmental effects could occur, the Regional Board has balanced the economic, legal, social, technological, and other benefits of the TMDL against the unavoidable environmental risks and finds that specific economic, legal, social, technological, and other benefits of the TMDL outweigh the unavoidable adverse environmental effects, such that those effects are considered acceptable. The basis for this finding is more fully set forth in the substitute environmental documents. (14 Cal. Code Regs. § 15093.)

30. Health and Safety Code section 57004 requires external scientific peer review for certain water quality control policies. Prior to public notice of the draft TMDL, the Regional Board submitted the scientific basis and scientific portions of the Calleguas Creek Watershed Salts TMDL to Professor Ferdi L. Hellweger for external scientific peer review. The peer review report was received by the Regional Board on April 23, 2007. The peer review found that the proposed TMDL included an appropriate conceptual model, and reasonable allocations and implementation plan to attain water quality objectives. Minor modifications were made to the scientific portions of the TMDL to address concerns identified during the peer review process.

31. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, Section 11353, Subdivision (b). As specified above, Federal law and regulations require that TMDLs be incorporated into the water quality management plan. The Regional Board's Basin Plan is the Regional Board's component of the water quality management plan, and the Basin Plan is how the Regional Board takes quasi-legislative, planning actions. Moreover, the TMDL is a program of implementation for existing water quality objectives, and is, therefore, appropriately a component of the Basin Plan under Water Code section 13242. The necessity of developing a TMDL is established in the TMDL staff report, the section 303(d) list, and the data contained in the administrative record documenting the salts impairments of the Calleguas Creek Watershed.

32. The Basin Plan amendment incorporating a TMDL for salts for the Calleguas Creek Watershed must be submitted for review and approval by the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL), and the U.S. EPA. The Basin Plan amendment will become effective upon approval by OAL and U.S. EPA. A Notice of Decision will be filed with the Resources Agency.

33. If during the State Board's approval process Regional Board staff, the SWRCB or State Board staff, or OAL determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Officer should make such changes consistent with the Regional Board's intent in adopting this TMDL, and should inform the Board of any such changes.

THEREFORE, be it resolved that pursuant to sections 13240 and 13242 of the Water Code, the Regional Board hereby amends the Basin Plan as follows:

1. Pursuant to Sections 13240 and 13242 of the California Water Code, the Regional Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the amendments to Chapter 7 of the Water Quality Control Plan for the Los Angeles Region, as set forth in Attachment A hereto, to incorporate the elements of the Calleguas Creek Watershed Salts TMDL.

2. The Regional Board hereby approves and adopts the CEQA substitute environmental documentation and the referenced Environmental Impact Reports entitled "Program Environmental Impact Report/Environmental Assessment for the Renewable Water Resource Management Program for the Southern Reaches of the Calleguas Creek Watershed," and "Supplemental Environmental Impact Report/Environmental Assessment for the Regional Salinity Management Project" , including all findings contained therein, 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.

3. The Regional Board shall reconsider this TMDL if the Executive Officer determines that adequate flows to protect in-stream beneficial uses may not be maintained.

4. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Board in accordance with the requirements of section 13245 of the California Water Code.

5. The Regional Board requests that the State Board approve the Basin Plan amendment in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward it to OAL and the U.S. EPA.

   If during the State Board's approval process, Regional Board staff, the State Board or OAL determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.

6. The Executive Officer is authorized to sign a Certificate of Fee Exemption.

I, Deborah J. Smith, Interim Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on October 4, 2007.

Deborah J. Smith
Interim Executive Officer

October 4, 2007
Date

Attachment A to Resolution No. R4-2007-016

Proposed Amendment to the Water Quality Control Plan – Los Angeles Region

to Incorporate the

Total Maximum Daily Load for Boron, Chloride, Sulfate, and TDS (Salts) in the Calleguas Creek Watershed

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on October 4, 2007

Amendments

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Add:

List of Figures, Tables, and Inserts
Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)
Calleguas Creek Watershed Salts TMDL

This TMDL was adopted by:

The Regional Water Quality Control Board on October 4, 2007.

This TMDL was approved by:

The State Water Resources Control Board on [Insert date].
The Office of Administrative Law on [Insert date].
The U.S. Environmental Protection Agency on [Insert date].

This TMDL is effective on [Insert Date]

The elements of the TMDL are presented in Table 7-22.1 and the Implementation Plan in Table 7-22.2

Table 7-22.1. Calleguas Creek Watershed Salts TMDL: Elements

<table>
<tr><th>TMDL Element</th><th>Key Findings and Regulatory Provisions</th></tr>
<tr><td>Problem Statement</td><td>Eleven of fourteen reaches in the Calleguas Creek Watershed (CCW) are identified on the 2002 Clean Water Act Section 303(d) list of water-quality limited segments as impaired due to elevated levels of boron, chloride, sulfate, or TDS (salts). Salts primarily impact two beneficial uses: agricultural supply and groundwater recharge.

The segment of Reach 4 below Laguna Road is tidally influenced and therefore not impaired for chloride, boron, sulfate, and TDS. Consequently, the waste load and load allocations developed for Reach 4 in this TMDL do not apply below Laguna Road.

The goal of this TMDL is to protect and restore the water quality in the Calleguas Creek watershed by controlling the loading and accumulation of salts.</td></tr>
<tr><td>Numeric Targets</td><td>Numeric targets are based on the site-specific numeric water quality objectives (WQOs) provided in the Basin Plan.

1. <u>Surface Water Quality Objectives</u>

Site-specific surface water quality objectives for the Calleguas Creek watershed are applicable upstream of Potrero Road. Site specific objectives have not been determined for Calleguas Creek below Potrero Road because the reach is tidally influenced. Below are WQOs for Calleguas Creek upstream of Potrero Road.

<table>
<tr><th>Constituent</th><th>Water Quality Objective Upstream Potrero Road (mg/L)</th></tr>
<tr><td>Boron</td><td>1</td></tr>
<tr><td>Chloride</td><td>150</td></tr>
<tr><td>Sulfate</td><td>250</td></tr>
<tr><td>TDS</td><td>850</td></tr>
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</td></tr>
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<table>
<tr><th>TMDL Element</th><th>Key Findings and Regulatory Provisions</th></tr>
<tr><td></td><td>2. Groundwater Quality Objectives
<table>
<tr><th>Groundwater Basin</th><th>Boron (mg/L)</th><th>Chloride (mg/L)</th><th>Sulfate (mg/L)</th><th>TDS (mg/L)</th></tr>
<tr><td>Arroyo Simi/Simi Valley</td><td>1.0</td><td>150</td><td>600</td><td>1200</td></tr>
<tr><td>Arroyo Simi/South Las Posas</td><td>3.0</td><td>400</td><td>1200</td><td>2500</td></tr>
<tr><td>Arroyo Las Posas/South Las Posas</td><td>1.0</td><td>250</td><td>700</td><td>1500</td></tr>
<tr><td>Arroyo Las Posas/North Las Posas</td><td>1.0</td><td>150</td><td>250</td><td>500</td></tr>
<tr><td>Arroyo Santa Rosa and Conejo/Arroyo Santa Rosa</td><td>1.0</td><td>150</td><td>300</td><td>900</td></tr>
<tr><td>Arroyo Santa Rosa/Tierra Rejada</td><td>0.5</td><td>100</td><td>250</td><td>700</td></tr>
<tr><td>Arroyo Conejo/Thousand Oaks</td><td>1.0</td><td>150</td><td>700</td><td>1400</td></tr>
<tr><td>Arroyo Conejo/Conejo Valley</td><td>1.0</td><td>150</td><td>250</td><td>800</td></tr>
<tr><td>Conejo and Calleguas/Pleasant Valley</td><td>1.0</td><td>150</td><td>300</td><td>700</td></tr>
</table></td></tr>
<tr><td>Source Analysis</td><td>Sources of salts in the watershed include water supply (water imported from the State Water Project or Freeman Diversion and deep aquifer groundwater pumping), water softeners that discharge to publicly owned treatment works (POTWs), POTW treatment chemicals, atmospheric deposition, pesticides and fertilizers, and indoor water use (chemicals, cleansers, food, etc.). These salts are then transported through POTW discharges and runoff to surface water, shallow groundwater, and/or stranded on the watershed in the soils. Salts transported in the surface water to the ocean are currently the only salts that are exported from the watershed. While the concentration of salts in the introduced water is usually below the Basin Plan Objectives, the quantity of water brought into the watershed is sufficient to rank introduced water as the greatest source of salts to the watershed.

Salts are transported during dry weather to the surface water are quantified via the following mechanisms: groundwater pumping, groundwater exfiltration, POTWs, dry weather urban and agricultural runoff. Wet weather loadings from each of these sources have the potential to be significant, but tend to be lower in concentration and do not occur during the critical conditions for salts. Wet weather loads are significant from the perspective of transporting stranded salts off the watershed.</td></tr>
</table>

TMDL Element	Key Findings and Regulatory Provisions
Linkage Analysis	The linkage analysis for salts focuses on the surface water concentrations of salts. However, surface water concentrations are only one component of the watershed salts issue. Because it is difficult to model other aspects of the salt problem (i.e. surface water and groundwater interactions, stranded salts), two simplified approaches have been used to demonstrate that salts will be removed from the watershed, which should have a correspondingly positive impact on surface water and groundwater salts concentrations. First, a surface water model was developed to provide a linkage between sources and surface water quality and to demonstrate the impact of projects on receiving water quality in the watershed. Second, a salt balance was developed to quantify the removal of salts from the watershed with the goal of achieving a mass balance in which the mass of boron, sulfate, TDS and chloride imported into Calleguas Creek subwatersheds is no more than the mass of boron, sulfate, TDS and chloride exported from the Calleguas Creek subwatershed. Achieving a salt balance in the watershed will prevent additional build-up of salts in any medium in the watershed and protect ground water supplies from increasing in salt concentrations. The Calleguas Creek Modeling System is a mass balance based model that was developed for the surface water to provide a linkage between sources and surface water quality. To estimate the salts balance in the watershed, a simple chloride mass balance was developed by the Camrosa Water District (Hajas, 2003a) and modified to address the other salts.
Waste Load Allocations	**A. POTWs** The TMDL includes waste load allocations (WLAs) for five POTWs in the Calleguas Creek watershed: Simi Valley Water Quality Control Plant (WQCP), Hill Canyon Wastewater Treatment Plan (WWTP), Moorpark WWTP, Camarillo Water Reclamation Plant (WRP), and Camrosa Water Reclamation Facility (WRF). At the end of the implementation period, only SVWWTP and the Hill Canyon WWTP are expected to discharge to surface waters. Moorpark WWTP and Camrosa WRF currently discharge directly to ponds under dry weather conditions. As part of the TMDL implementation, (the Renewable Water Resources Management Program (RWRMP)) will introduce treated wastewater from the Camarillo WRP into the Camrosa recycled water storage and distribution system. Surplus treated wastewater from Camarillo WRP and Camrosa WRF will be discharged at a point downstream of Potrero Road Bridge to Calleguas Creek. Dry weather WLAs are included for the case when Camarillo WRP, Camrosa WRP, and Moorpark WWTP need to discharge to the stream (for example, if

TMDL Element	Key Findings and Regulatory Provisions
	there is insufficient recycled water demand during the wet season). Including WLAs for these POTWs ensures that water quality objectives are not exceeded as a result of their discharge. POTW mass-based WLAs are calculated as the POTW effluent flow rate multiplied by the water quality objective and include a mass-based adjustment factor (AF) that is subtracted from the product of the flow-rate and the water quality objective. The adjustment factor is used to link POTW allocations to the required reductions in background loads. The adjustment factors are implemented through mechanisms that export salts out of the subwatershed, such as groundwater pumping, to meet the salt balance requirements. To ensure that the loading capacity is achieved in surface water and the reductions in background loads are achieved, minimum salt exports shown below are required for POTWs and are included in WLAs as a component of the adjustment factors. If the background load reductions are not achieved, POTWs shall be responsible for providing additional load reductions to achieve water quality standards. The AF is set equal to the difference between the minimum salts export requirement to attain a salt balance in the subject reaches and the actual salts export. If the calculated annual dry weather salt exports from the subwatershed to which the POTW discharges are less than the minimum required exports for the previous year and the annual average receiving water concentration at the base of the subwatershed to which the POTW discharges exceeds water quality objectives for the previous year, the POTW allocations will be reduced using the adjustment factor. The adjustment factors are also used to address unusual conditions in which the inputs to the POTWs from the water supply may challenge the POTWs ability to meet the assigned WLAs. The adjustment factor allows for the additional POTW loading only when the water quality objectives are met in the receiving waters. POTW allocations can be adjusted upwards when imported water supply chloride concentrations exceed 80 mg/L and discharges from the POTW exceed the WLA. In order to apply the AF to the assigned WLAs, the POTW is required to submit documentation of the water supply chloride concentrations, receiving water chloride concentration, the effluent mass, and evidence of increased salt exports to offset the increased discharges from the POTW to the RWQCB for approval. WLAs shown in table below apply to POTWS during dry weather when the flows in the receiving water are below the 86th percentile flow. During wet weather, the loading capacity of the stream is significantly increased by stormwater flows with very low salt concentrations. Any discharges from the POTWs during wet weather would be assimilated

TMDL Element	Key Findings and Regulatory Provisions

by these large storm flows and would not cause exceedances of water quality objectives.

Boron is only listed in the Simi and Pleasant Valley (Revolon) subwatersheds and exceedances of boron do not occur in other portions of the watershed. Therefore, boron allocations are only included for the Simi Valley WQCP.

Interim limits are included to allow time for dischargers to put in place implementation measures necessary to achieve final waste load allocations. The monthly average interim limits are set equal to the 95th percentile of available discharge data.

1. Minimum Salt Export Requirements for Adjustment Factor [a]

POTW	Minimum Chloride Export (lb/day)	Minimum TDS Export (lb/day)	Minimum Sulfate Export (lb/day)	Minimum Boron Export (lb/day)
Simi Valley WQCP	460	3220	9120	3.3
Moorpark WWTP	460	3220	9120	3.3
Hill Canyon WWTP	1060	7920	4610	0
Camrosa WRF	1060	7920	4610	0
Camarillo WRP	1060	7920	4610	0

[a] Minimum export requirements include a 10% Margin of Safety.

2. Interim Monthly Average WLAs for POTWs

POTW	Chloride (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Boron (mg/L)
Simi Valley WQCP	183	955	298	N/A
Hill Canyon WWTP	189	N/A	N/A	N/A
Moorpark WWTP	171	N/A	267	N/A
Camarillo WRP	216	1012	283	N/A
Camrosa WRF*	N/A	N/A	N/A	N/A

* Camrosa WRF has not discharged to surface water during the period under which interim limits were calculated. When effluent data are available, the Regional Board may adopt interim WLAs for Camrosa WRF.
N/A: The 95th percentile concentration is below the Basin Plan objective so interim limits are not necessary.

TMDL Element	Key Findings and Regulatory Provisions

3. Final WLAs for POTWs[a,d]

POTW	Chloride (lb/day) [c]	TDS (lb/day) [c]	Sulfate (lb/day) [c]	Boron (lb/day) [c]
Simi Valley WQCP	150*Q-AF	850*Q-AF	250*Q-AF	1.0*Q-AF
Hill Canyon WWTP	150*Q-AF	850*Q-AF	250*Q-AF	N/A
Moorpark WWTP[b]	150*Q-AF	850*Q-AF	250*Q-AF	N/A
Camarillo WRP[b]	150*Q-AF	850*Q-AF	250*Q-AF	N/A
Camrosa WRF[b]	150*Q-AF	850*Q-AF	250*Q-AF	N/A

a. The allocations shown only apply during dry weather (as defined in this TMDL). During wet weather discharges from the POTWs do not cause exceedances of water quality objectives.

b. These POTWs are not expected to discharge after the end of the implementation period.

c. AF is the adjustment factor and equals the difference between the minimum salts export requirement and the actual salts export.

d. Q represents the POTW flow at the time the water quality measurement is collected and a conversion factor to lb/day based on the units of measurement for the flow.

N/A Boron is not listed in the reaches to which the POTW discharges. No WLA is required.

B. Urban Runoff

Permitted stormwater dischargers that are responsible parties to this TMDL include the Municipal Stormwater Dischargers (MS4s) of the Cities of Camarillo, Moorpark, Thousand Oaks, County of Ventura, Ventura County Watershed Protection District, and general industrial and construction permittees. Permitted stormwater dischargers are assigned a dry weather wasteload allocation equal to the average dry weather critical condition flow rate multiplied by the numeric target for each constituent. Waste load allocations apply in the receiving water at the base of each subwatershed. Because wet weather flows transport a large mass of salts at low concentrations, these dischargers meet water quality objectives during wet weather. Dry weather allocations apply when instream flow rates are below the 86th percentile flow and there has been no measurable precipitation in the previous 24 hours.

Interim limits are assigned for dry weather discharges from areas covered by NPDES stormwater permits to allow time to implement appropriate actions. The interim limits are assigned as concentration based receiving water limits set to the 95th percentile of the discharger data as a monthly average limit except for chloride. The 95th percentile for chloride was 267 mg/L which is higher than the recommended

TMDL Element	Key Findings and Regulatory Provisions

criteria set forth in the Basin Plan for protection of sensitive beneficial uses including aquatic life. Therefore, the interim limit for chloride for Permitted Stormwater Dischargers is set equal to 230 mg/L to ensure protection of sensitive beneficial uses in the Calleguas Creek watershed.

1. Interim Dry Weather WLAs for Permitted Stormwater Dischargers

Constituent	Interim Limit (mg/L)
Boron Total	1.3
Chloride Total	230
Sulfate Total	1289
TDS Total	1720

2. Final Dry Weather WLAs for Permitted Stormwater Dischargers

Subwatershed	Critical Condition Flow Rate (mgd)	Chloride Allocation (lb/day)	TDS Allocation (lb/day)	Sulfate Allocation (lb/day)	Boron Allocation (lb/day)
Simi	1.39	1,738	9,849	2,897	12
Las Posas	0.13	157	887	261	N/A
Conejo	1.26	1,576	8,931	2,627	N/A
Camarillo	0.06	72	406	119	N/A
Pleasant Valley (Calleguas)	0.12	150	850	250	N/A
Pleasant Valley (Revolon)	0.25	314	1,778	523	2

C. Final WLAs for Other NPDES Dischargers

Concentration-based WLAs are assigned at the Basin Plan objectives for other NPDES dischargers.

Constituent	Allocation (mg/L)
Chloride	150
TDS	850
Sulfate	250
Boron[a]	1.0

Other NPDES dischargers include, but are not limited to, permitted groundwater cleanup projects that could have significant salt concentrations as a result of the stranded salts in the shallow groundwater basins being treated. To facilitate the cleanup of the basins prior to alternative discharge methods (such as the brine line) being

<table>
<tr><th>TMDL Element</th><th>Key Findings and Regulatory Provisions</th></tr>
<tr><td></td><td>available, interim limits for other NPDES dischargers will be developed on a case-by-case basis and calculated as a monthly average using the 95th percentile of available discharge data.</td></tr>
<tr><td>Load Allocations</td><td>Dry weather load allocations are assigned as a group allocation to irrigated agricultural discharges. The load allocation is equal to the average dry weather critical condition flow rate multiplied by the numeric target for each constituent. Load allocations apply in the receiving water at the base of each subwatershed. Because wet weather flows transport a large mass of salts at a typically low concentration, these dischargers should meet water quality objectives during wet weather. Dry weather allocations apply when instream flow rates are below the 86th percentile flow and there has been no measurable precipitation in the previous 24 hours.

Interim limits are assigned for dry weather discharges from irrigated agricultural areas to allow time to implement appropriate actions. The interim limits are assigned as concentration based receiving water limits set to the 95th percentile of the discharger data as a monthly average limit except for chloride. The 95th percentile for chloride was 499 mg/L which is higher than the recommended criteria set forth in the Basin Plan for protection of sensitive beneficial uses including aquatic life. Therefore, the interim limit for chloride for Irrigated Agricultural Dischargers is set equal to 230 mg/L to ensure protection of sensitive beneficial uses in the Calleguas Creek watershed.

I. Interims Load Allocations for Irrigated Agricultural Dischargers

<table>
<tr><th>Constituent</th><th>Interim Limit (mg/L)</th></tr>
<tr><td>Boron Total</td><td>1.8</td></tr>
<tr><td>Chloride Total</td><td>230</td></tr>
<tr><td>Sulfate Total</td><td>1962</td></tr>
<tr><td>TDS Total</td><td>3995</td></tr>
</table>

II. Final Load Allocations for Irrigated Agricultural Dischargers

<table>
<tr><th>Subwatershed</th><th>Chloride Allocation (lb/day)</th><th>TDS Allocation (lb/day)</th><th>Sulfate Allocation (lb/day)</th><th>Boron Allocation (lb/day)</th></tr>
<tr><td>Simi</td><td>641</td><td>3,631</td><td>1,068</td><td>4</td></tr>
<tr><td>Las Posas</td><td>2,109</td><td>11,952</td><td>3,515</td><td>N/A</td></tr>
<tr><td>Conejo</td><td>743</td><td>4,212</td><td>1,239</td><td>N/A</td></tr>
<tr><td>Camarillo</td><td>59</td><td>336</td><td>99</td><td>N/A</td></tr>
<tr><td>Pleasant Valley</td><td>305</td><td>1,730</td><td>509</td><td>N/A</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>TMDL Element</th><th>Key Findings and Regulatory Provisions</th></tr>
<tr><td></td><td>
<table>
<tr><td>Revolon</td><td>7,238</td><td>41,015</td><td>12,063</td><td>48</td></tr>
</table>
</td></tr>
<tr><td>Margin of Safety</td><td>A margin of safety for the TMDL is designed to address uncertainties in the analysis that could result in targets not being achieved in the waterbodies. The primary uncertainties associated with this TMDL include the impact of implementing a salt balance on receiving water quality. The effect of the salt balance is estimated by the mass-balance and subject to the following uncertainties: 1) the flow rates used to determine the loading capacity may change due to TMDL implementation, 2) the use of a daily load for determining allocations and an annual mass balance to attain water quality objectives, and 3) the sources of salts may not be completely known. Both implicit and explicit MOS are included for this TMDL. The implicit MOS stems from the use of conservative assumptions made during development of the TMDL. The mass of salts transported out of the watershed during wet weather is on average over 15% of the annual mass of salts introduced to the watershed for all constituents. The salt export during wet weather ranges from 7% to 41% for TDS, 9% to 48% for chloride, and 13% to 89% for sulfate of the export required to meet a salt balance in the watershed. This mass is not used to determine compliance with the salt balance and represents a significant implicit margin of safety. The model also contains a component that serves to model the impact of “stranded” salts in the watershed. The component assumes low irrigation efficiencies and the ability of all salts applied as irrigation water anywhere in the watershed to be discharged to receiving water in critical years. This likely overestimates the impact of “stranded” salts and results in a higher concentration of salts due to irrigation in the receiving water.

An explicit MOS of 10% is applied to the adjustment factors for the POTWs to account for the uncertainties in the TMDL analysis. By applying the margin of safety to the adjustment factor, more salts are required to be exported than are necessary to offset the background loads in the watershed. This additional salt export provides a margin of safety on the salt balance to address uncertainties that the salt balance will result in compliance with water quality objectives. The 10% explicit MOS is determined sufficient to address the uncertainties associated with the estimated impact of the salt balance on receiving water loadings.</td></tr>
<tr><td>Future Growth</td><td>Ventura County accounts for slightly more than 2% of the state’s residents with a population of 753,197 (US Census Bureau, 2000). GIS analysis of the 2000 census data yields a population estimate of 334,000 for the CCW, which equals about 44% of the county population. According to the Southern California Association of Governments (SCAG), growth in Ventura County averaged about 51% per decade</td></tr>
</table>

TMDL Element	Key Findings and Regulatory Provisions
	from 1900-2000; with growth exceeding 70% in the 1920s, 1950s, and 1960s. Significant population growth is expected to occur within and near present city limits until at least 2020. Increased growth requires additional water. Therefore, future growth could result in increased loads of salts being imported into the watershed. However, the TMDL implementation plan is designed to maintain a salts balance in the watershed. If additional salts are imported into the watershed, a larger volume of salts will also be exported out of the watershed to maintain the balance. Consequently, increased imports from future growth are not expected to result in higher concentrations in receiving waters.
Seasonal Variations and Critical Conditions	The critical condition for salts is during dry weather periods. During wet weather, stormwater flows dilute the salt discharges and receiving water concentrations are significantly lower than water quality objectives. Dry weather, defined as days with flows lower than the 86th percentile flow and no measurable precipitation, is a critical condition regardless of the dry weather flows in the stream. The driving conditions for exceedances of water quality objectives are the concentrations in the water supply (which is driven by surface water concentrations in Northern California) and the previous year's annual precipitation and corresponding flows. Elevated salts concentrations during dry weather occur when stranded salts are discharged into the surface water after higher than average rainfall years. The elevated concentrations occur during years when the previous annual flow is greater than the 75th percentile of the annual flows for the watershed (critical year). The higher concentrations occur during the dry periods of critical years regardless of whether the annual flow for the critical year is an average flow year, higher than average year, or lower than average year. The key parameter determining a critical year is the total annual flow volume for the previous year. Based on model results, four critical years were defined based on modeled results that resulted in receiving water concentrations greater than the 99th percentile concentration during at least 10% of the dry period. The critical years identified from the model occur with conditions similar to what occurred in 1978, 1979, 1983 and 1998.
Special Studies and Monitoring Plan	**<u>Special Studies</u>** Several special studies are planned to improve understanding of key aspects related to achievement of WLAs and LAs for the Salts TMDL. ***1. Special Study #1 (Optional) – Develop Averaging Periods and Compliance Points*** The TMDL technical report has provided information that shows

TMDL Element	Key Findings and Regulatory Provisions
	instantaneous salts objectives may not be required to protect groundwater recharge and agricultural beneficial uses. It is possible that the beneficial uses will be protected and a salt balance achieved without achieving instantaneous water quality objectives in all reaches of the watershed. This optional special study is included to allow an investigation of averaging periods for the salts objectives in the CCW. Additionally, this study will investigate the locations of beneficial uses and the possibility of identifying compliance points for the salts objectives at the point of beneficial use impacts. The use of compliance points would alleviate the need to develop site-specific objectives for the reaches of the watershed upstream of the POTW discharges (described in Special Study #3) while still ensuring the protection of beneficial uses. Sensitive beneficial uses are not present in the upper reaches and POTW discharges dilute the salts from the upper reaches and may allow compliance with the objectives at the point of groundwater recharge downstream. This is an optional special study to be conducted if desired by the stakeholders or determined necessary or appropriate by the Executive Officer. ***2. Special Study #2 (Optional) – Develop Natural Background Exclusion*** Discharges of groundwater from upstream of the Simi Valley (Reaches 7 and 8) and Hill Canyon WWTPs (Reaches 12 and 13) and downstream of the Camrosa WRP (Reach 3) contain high salts concentrations. Natural marine sediments may contribute to the high concentrations in those discharges. This special study would evaluate whether or not the groundwater discharges in these areas would qualify for a natural sources exclusion. The special study could follow a 'reference system/anti-degradation approach' and/or a 'natural sources exclusion approach' for any allocations included in this TMDL that are proven unattainable due to the magnitude of natural sources. The purpose of a 'reference system/anti-degradation approach' is to ensure water quality is at least as good as an appropriate reference site and no degradation of existing water quality occurs where existing water quality is better than that of a reference site. The intention of a 'natural sources exclusion approach' is to ensure that all anthropogenic sources of salts are controlled such that they do not cause exceedances of water quality objectives. These approaches are consistent with state and federal anti-degradation policies (State Board Resolution No. 68-16 and 40 C.F.R. 131.12). This is an optional special study to be conducted if desired by the stakeholders or determined necessary for establishing a natural sources exclusion by the Executive Officer.

TMDL Element	Key Findings and Regulatory Provisions
	3. Special Study #3 (Optional) – Develop Site-Specific Objectives The TMDL implementation plan provides for actions to protect the agricultural and groundwater recharge beneficial uses in the CCW. As shown in the linkage analysis, some downstream reaches may not achieve the water quality objectives through implementation of this TMDL because of the transport of salts out of the watershed through those reaches. Consequently, an optional special study is included to allow the CCW stakeholders to pursue development of site-specific objectives for salts for reaches upstream of the Hill Canyon WWTP and Simi Valley WQCP (Reaches 7, 8, 12, and 13), Calleguas Creek Reach 3, Revolon Slough (Reach 4) and Beardsley Wash (Reach 5). These alternative numeric water quality objectives would be developed based on the beneficial uses to be protected in a reach and the attainability of the current water quality objectives. This is an optional special study to be conducted if desired by the stakeholders or determined necessary or appropriate by the Executive Officer. ***4. Special Study #4 (Optional) – Develop Site-Specific Objectives for Drought Conditions*** During drought conditions, the load of salts into the watershed increases as a result of increasing concentrations in imported water. Stakeholders in the CCW cannot control the increased mass entering the watershed from the water supply. However, the stakeholders do have the ability to manage the salts within the watershed to protect beneficial uses and export the additional mass of salts out of the watershed. If necessary, site-specific objectives may be developed to address situations that result in higher imported water salt concentrations to allow management of the salts and protection of beneficial uses. This special study may be combined with Special Study #3 if desired. This is an optional special study to be conducted if desired by the stakeholders or determined necessary or appropriate by the Executive Officer of the Regional Board. ***5. Special Study #5 (Optional) – Develop Site-Specific Objectives for Sulfate*** Sulfate is a necessary nutrient for plant growth and sulfate containing products are often applied to agriculture as fertilizers and pesticides. Therefore, site-specific objectives may be investigated and developed for sulfate that more accurately protects agricultural supply beneficial uses. Additionally, this study could evaluate whether or not a sulfate balance is necessary to maintain in the watershed. This special study

TMDL Element	Key Findings and Regulatory Provisions
	may be combined with Special Study #3 and/or #4 if desired. This is an optional special study to be conducted if desired by the stakeholders or determined necessary or appropriate by the Executive Officer of the Regional Board. **<u>Monitoring Plan</u>** To ensure that the goal of a salts balance in the watershed is being achieved and water quality objectives are being met, a comprehensive method of tracking inputs and outputs to the watershed will be developed. A monitoring plan will be submitted to the RWQCB for Executive Officer approval within six months of the effective date of the CCW Salts TMDL. Monitoring will begin one year after Executive Officer approval of the monitoring plan to allow time for the installation of automated monitoring equipment. ***1. Input Tracking*** Inputs to the watershed are tracked through four mechanisms:1) Information on the import of State Water Project water is readily available and provides information on the mass of salts brought into the watershed; 2) Groundwater pumping records provide information on the mass of salts imported into the watershed from deep aquifer pumping; 3) Import records of water supply form the Santa Clara River can be obtained to determine the mass of salts imported through this source; 4) Monitoring data on imported water quality can be compared to monitoring of effluent quality to estimate the amount of salts added through human use of the water. ***2. Output Tracking and Determining Compliance with Water Quality Objectives*** Outputs from the watershed will be tracked through surface water monitoring at key locations in the watershed and monitoring of discharges to the brine line. Monitoring will include both flow and quality. Compliance with water quality objectives will be determined at key locations where beneficial uses occur in the watershed. The stations used for output tracking will also be used to determine compliance with water quality objectives. The monitoring program will determine if the TMDL compliance points are protective of the beneficial uses for the subwatershed. If the monitoring determines that the compliance points are not protective of beneficial uses, an alternative compliance point will be selected. The Executive Officer may revise the TMDL compliance point based on the result of the monitoring. Additionally, if other places in the watershed are identified where sensitive beneficial

TMDL Element	Key Findings and Regulatory Provisions
	uses occur, water quality monitoring stations can be added to determine compliance with water quality objectives. For the RWRMP, three new or upgraded automated flow measuring and sample collection stations will be installed at three points on the stream system to continuously record flow and various water quality parameters during dry weather. Preliminary monitoring locations include Arroyo Conejo in Hill Canyon, Conejo Creek at Baron Brothers Nursery and Calleguas Creek at University Drive. For the NRRWMP, one new or upgraded automated flow measuring and sample collection station will be added downstream of Simi Valley at the point at which groundwater recharge begins. A preliminary monitoring location is at Hitch Blvd. where an existing flow gauging station exists. However, the amount of groundwater recharge upstream of this site will need to be evaluated to determine the exact monitoring location. For Revolon Slough, the existing monitoring station at Wood Road. will be used to monitor quality and flow on Revolon Slough to determine the outputs from the Revolon portion of the Pleasant Valley subwatershed. Additional land use monitoring will be conducted concurrently at representative agricultural and urban runoff discharge sites as well as at POTWs in each of the subwatersheds and analyzed for chloride, TDS, sulfate, and boron. The location of the land use stations will be determined before initiation of the Calleguas Creek Watershed TMDL Monitoring Program (CCWTMP). All efforts will be made to include at least two wet weather sampling events during the wet season (October through April) during a targeted storm event. ***3. Reporting and Modification of the Calleguas Creek Watershed TMDL Monitoring Program*** A monitoring report will be prepared annually within six months after completion of the final event of the sampling year. An adaptive management approach to the CCWTMP will be adopted as it may be necessary to modify aspects of the CCWTMP. Results of sampling carried out through the CCWTMP and other programs within the CCW may be used to modify this plan, as appropriate. These modifications will be summarized in the annual report. Possible modifications could include, but are not limited to the, following: ▪ The inclusion of additional land use stations to accurately characterize loadings; ▪ The removal of land use stations if it is determined they are duplicative (*i.e.*, a land use site in one subwatershed accurately characterize the land use in other subwatersheds); ▪ The inclusion of additional in-stream sampling stations; and ▪ The elimination of analysis for constituents no longer identified in land use and/or instream samples.

TMDL Element	Key Findings and Regulatory Provisions
	If a coordinated and comprehensive monitoring plan is developed and meets the goals of this monitoring plan that plan should be considered as a replacement for the CCWTMP. ***4. Other Monitoring*** Other surface water and groundwater monitoring will be implemented as necessary to assess the impacts of the implementation actions and adjust the activities as necessary to protect beneficial uses and achieve the salts balance. Examples of additional monitoring that may be conducted include: ▪ Monitoring under Phase 2 and 3 of the RWRMP to evaluate the effects of replenishment water releases and groundwater treatment and releases. ▪ Monitoring to assess the impacts of management of the Simi Basin groundwater dewatering wells under Phase 1 of the NRRWMP.
Implementation Plan	The identified implementation actions provided in this TMDL will result in a salt balance in the stream and are expected to result in compliance with the allocations. The implementation plan is comprised of actions that directly impact discharges to the receiving water and actions that will indirectly impact discharges to receiving water. Responsible agencies and jurisdictions shall consider minimum flow requirements that may be imposed by federal or state regulatory agencies when implementing actions to comply with this TMDL. Should the proposed implementation actions not result in compliance with objectives and site-specific objective are not adopted, additional implementation actions may be required to achieve the water quality objectives. Any plans or programs for implementation of the TMDL for the Southern Reaches of the CCW upstream of the Conejo Creek Diversion and the Northern Reaches of the CCW, that would result in significant reduction in instream flow, including but not limited to, an application for Water Reclamation Requirements (WRRs) shall include an analysis of potential impacts to instream beneficial uses that could result from the reclamation of wastewater or extracted groundwater. For Phase 1 of the Southern Reaches of the CCW Renewable Water Resource Management Program (RWRMP), Water Rights Decision 1638 from SWRCB satisfies these requirements and establishes the minimum flow requirements for Conejo and Calleguas Creek downstream of the Conejo Creek Diversion Project. Any WRRs shall require that timely written notice be given to the Regional Board, and to any regulatory agency whose instream flow is at issue, if diversion or reclamation of waste water or extraction of groundwater results or threatens to result in (or contributes to) insufficient flows to maintain beneficial uses. The Executive Officer shall issue an order pursuant to

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Water Code section 13267, which requires responsible agencies and jurisdictions to file a technical report if reclamation of waste water or extraction of groundwater results or threatens to result in (or contributes to) insufficient flows to maintain beneficial uses. The order shall require that the technical report identify the causes of the impairments or threatened impairments, and identifies options to abate the conditions. The Regional Board shall reconsider this TMDL if adequate flows to protect instream beneficial uses are not maintained.

The implementation actions described in the TMDL represent a range of activities that could be conducted to achieve a salts balance in the watershed. Future considerations may result in other actions being implemented rather than the options presented. However, any proposed actions will be reviewed using the salt balance model to ensure the action does not adversely impact other implementation actions in the watershed or the salt balance of a downstream subwatershed.

Currently, the implementation plan is presented in phases with a tentative schedule for each phase. The implementation of projects may occur earlier than planned or begin during an earlier phase. Additionally, many of the implementation actions require the use of the Regional Salinity Management Conveyance (RSMC or brine line). As such, the implementation schedule for those actions will be linked the construction schedule for the RSMC.

The implementation plan for the Salts TMDL includes regional and subwatershed specific implementation actions. There are four key structural elements to the regional implementation: Regional Salinity Management Conveyance (RSMC), Water Conservation, Water Softeners, and Best Management Practices for Irrigated Agriculture. Subwatershed implementation includes Renewable Water Resource Management Program (RWRMP) for the Southern Reaches and Northern Reach Renewable Water Management Plan (NRRWMP). Detailed discussion for each implementation element including description of the action, status and schedule for implementing the action, and a summary of the expected contribution to achievement of the salts balance are provided in the Staff Report and Technical for this TMDL. Proposed implementation actions in the watershed, responsible agencies, and the estimated completion date based on the effective date of the TMDL are summarized below.

Summary of Proposed Implementation Actions
<table>
<tr><th>Action</th><th>Responsible Agency/ies</th><th>Schedule for Completion</th></tr>
<tr><td>Water Conservation</td><td>POTWs, Permitted Stormwater</td><td>3 years</td></tr>
</table>
</td></tr>
</table>

TMDL Element	Key Findings and Regulatory Provisions

	Dischargers, and Other NPDES Permittees	
Water Softeners	POTWs and Permitted Stormwater Dischargers	10 years
Best Management Practice for Agricultural Dischargers	Agricultural Dischargers	2 years
RMSC Phase 1	Calleguas MWD	2 year
RMSC Phase 2	Calleguas MWD	5 year
RMSC Phase 3	Calleguas MWD	10 years
RWRMP Phase 1	Camrosa WD, CamSan	3 years
RWRMP Phase 2	Camrosa WD, TO	6 years
RWRMP Phase 3	Camrosa WD, TO	10 years
RWRMP Phase 4	To Be Determined	15 years
NRRWMP Phase 1	Calleguas MWD, Simi Valley, Moorpark WWTP	3 years
NRRWMP Phase 2	Calleguas MWD, VCWW, Camarillo	7 years
NRRWMP Phase 3	Camarillo, Simi Valley	10 years
NRRWMP Phase 4	To Be Determined	15 years
Final Completion Date		15 years

The sections below provide discussion of the application of the final WLAs for POTWs, specific permitted stormwater discharges, other NPDES dischargers, and agricultural dischargers.

I. POTWs, permitted stormwater discharges, and other NPDES discharges

The final WLAs will be included for permitted stormwater discharges, POTWs, and other NPDES discharges in accordance with the compliance schedules provided in Table 7-22.2. The Regional Board may revise these WLAs based on additional information developed through special studies and/or monitoring conducted as part of this TMDL.

- **POTWs**

WLAs established for the POTWs in this TMDL will be implemented through NPDES permit limits. Compliance will be determined through monitoring of final effluent discharge as defined in the NPDES permit. The proposed permit limits will be applied as end-of-pipe mass-based monthly average effluent limits. Daily maximum effluent limit is not required because chloride is not expected to have an immediate or acute effect on the beneficial

TMDL Element	Key Findings and Regulatory Provisions
	uses. Compliance with the minimum salt export requirements for POTWs will be based on the salt export from the subwatershed to which they discharge. The mechanisms for meeting the minimum salt export requirements and for monitoring progress towards meeting those requirements will be included in the monitoring program work plan and approved by the Executive Officer. At the end of each year, the amount of salt exported will be compared to the minimum required salt export. POTW allocations will be reduced using the adjustment factor if both of the following conditions occur: • The annual dry weather salt exports from the subwatershed to which the POTW discharges are below the minimum required exports for the previous year; and • The water quality objectives were exceeded in the receiving water at the base of the subwatershed The POTW allocations will be reduced for the following year by the difference between the minimum required salt export and the actual amount exported. The discharger shall be notified by the Regional Board that the assigned WLAs are reduced and the reduced effluent limits shall be applied for the next year. If the POTW allocations are reduced, the POTW will need to increase the amount of salt export or reduce the mass of salts discharged from the POTW before the end of the following year when the adjustment will be evaluated again. POTWs can only request to adjust the assigned WLAs upwards using the adjustment factor under limited conditions provided below: • Water quality objectives are met in the receiving waters; • Imported water supply chloride concentrations exceed 80 mg/L; and • Discharges from the POTW exceed the allocation. When imported water supply chloride concentrations exceed 80 mg/L, the POTW will monitor the effluent to determine if the wasteload allocation is exceeded. If the wasteload allocation is exceeded and the POTW desires an adjustment to the allocation, the POTW will submit documentation of the water supply chloride concentrations, the receiving water chloride concentration, the

TMDL Element	Key Findings and Regulatory Provisions
	effluent mass, and the evidence of increased salt exports to offset the increased discharges from the POTW to the Regional Board for approval. The adjustment factor will apply for three months and the POTW must submit the evidence outlined above every three months to keep the adjustment factor active. As long as the required information is submitted, the adjustment factor will be in effect upon notification in writing from the RWQCB. ▪ **Urban Stormwater Discharger** A group mass-based dry weather WLA has been developed for all permitted stormwater discharges, including municipal separate storm sewer systems (MS4s), and general industrial and construction stormwater permits. USEPA regulation allows allocations for NPDES-regulated stormwater discharges from multiple point sources to be expressed as a single categorical WLA when the data and information are insufficient to assign each source or outfall individual WLAs (40 CFR 130). The grouped allocation will apply to all NPDES-regulated municipal stormwater discharges in the CCW. MS4 WLAs will be incorporated into the NPDES permit as receiving water limits measured in-stream at the base of each subwatershed. ▪ **Other NPDES Dischargers** WLAs established for other NPDES permitted dischargers in this TMDL, including minor non-stormwater permittees (other than Camrosa WRP) and general non-stormwater permittees, will be implemented through NPDES permit limits. The proposed permit limits will be applied as end-of-pipe concentration-based effluent limits, and compliance determined through monitoring of final effluent discharge as defined in the NPDES permit. **II. Agriculture** Load allocations for salts will be implemented through Conditional Waiver of Discharges from Irrigated Lands (Conditional Waiver Program) adopted by the LARWQCB on November 3, 2005. Compliance with LAs will be measured in-stream at the base of the subwatersheds and will be achieved through the implementation of BMPs consistent with the Conditional Waiver Program. The Conditional Waiver Program requires the development of an agricultural water quality management plan (AWQMP) to address

TMDL Element	Key Findings and Regulatory Provisions
	pollutants that are exceeding receiving water quality objectives as a result of agricultural discharges. Therefore, implementation of the load allocations will be through the development of an agricultural management plan for salts. Implementation of the load allocations will also include the coordination of BMPs being implemented under other required programs to ensure salts discharges are considered in the implementation. Additionally, agricultural dischargers will participate in educational seminars on the implementation of BMPs as required under the Conditional Program. Studies are currently being conducted to assess the extent of BMP implementation and provide information on the effectiveness of BMPs for agriculture. This information will be integrated into the AWQMP that will guide the implementation of agricultural BMPs in the Calleguas Creek watershed. After implementation of these actions, compliance with the allocations and TMDL will be evaluated and the allocations reconsidered if necessary based on the special studies and monitoring plan section of the implementation plan. As shown in Table 7-22.2, implementation of LAs will be conducted over a period of time to allow for implementation of the BMPs, as well as coordination with special studies and implementation actions resulting from other TMDL Implementation Plans (Nutrient, Historic Pesticides and PCBs, Sediment, Metals, Bacteria, etc.).

Table 7-22.2 Calleguas Creek Watershed Salts TMDL: Implementation Schedule

Item	Implementation Action	Responsible Party	Completion Date
1	Effective date of interim Salts TMDL waste load allocations (WLAs)	POTWs, Permitted Stormwater Dischargers[1] (PSD), and Other NPDES Permittees	Effective date of the amendment
2	Effective date of interim Salts TMDL load allocations (LAs)	Agricultural Dischargers	Effective date of the amendment
3	Responsible jurisdictions and agencies shall submit compliance monitoring plan to the Los Angeles Regional Board for Executive Officer approval.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	6 months after effective date of the TMDL
4	Responsible jurisdictions and agencies shall begin monitoring as outlined in the approved monitoring plan.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	1 year after monitoring plan approval by Executive Officer
5	Responsible jurisdictions and agencies shall submit workplans for the optional special studies.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	Within 10 years of effective date of the TMDL
6	Responsible jurisdictions and agencies shall submit results of the special studies.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	2 years after workplan approval by Executive Officer
7	Re-evaluation of the interim WLAs and interim LAs for boron, chloride, sulfate, and TDS based on new data. Responsible jurisdictions and agencies shall demonstrate that implementation actions have reduced the boron, sulfate, TDS, and chloride imbalance by 20%.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	3 years after effective date of the TMDL
8	Re-evaluation of the interim WLAs and interim LAs for boron, chloride, sulfate, and TDS based on new data. Responsible jurisdictions and agencies shall demonstrate that implementation actions have reduced the boron, sulfate, TDS and chloride imbalance by 40%.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	7 years after effective date of the TMDL
9	Re-evaluation of the interim WLAs and interim LAs for boron, chloride, sulfate, and TDS based on new data. Responsible jurisdictions and agencies shall demonstrate that implementation actions have reduced the boron, sulfate, TDS, and chloride imbalance by 70%.	POTWs, Permitted Stormwater Dischargers (PSD), Other NPDES Permittees, and Agricultural Dischargers	10 years after effective date of the TMDL
10	The Los Angeles Regional Board shall reconsider this TMDL to re-evaluate numeric targets, WLAs, LAs and the implementation schedule based on the results of the special studies and/or compliance monitoring.	The Regional Board	12 years after effective date of the TMDL
11	Responsible jurisdictions and agencies shall demonstrate that the watershed has achieved an annual boron, sulfate, TDS, and chloride balance.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	15 years after effective date of the TMDL
12	The POTWs and non-storm water NPDES permits shall achieve WLAs, which shall be expressed as NPDES mass-based effluent limitation specified in accordance with federal regulations and state policy on water quality control.	POTWs and Other NPDES Permittees	15 years after effective date of the TMDL

[1] Permitted stormwater dischargers that are responsible parties to this TMDL include the Municipal Stormwater Dischargers (MS4s) of the Cities of Camarillo, Moorpark, Thousand Oaks, County of Ventura, Ventura County Watershed Protection District, and general industrial and construction permittees.

Item	Implementation Action	Responsible Party	Completion Date
13	Irrigated agriculture shall achieve LAs, which will be implemented through the Conditional Waiver for Irrigated Lands as mass-based receiving water limits.	Agricultural Dischargers	15 years after effective date of the TMDL
14	The permitted stormwater dischargers shall achieve WLAs, which shall be expressed as NPDES mass-based limits specified in accordance with federal regulations and state policy on water quality control.	Permitted Stormwater Dischargers	15 years after effective date of the TMDL
15	Water quality objectives will be achieved at the base of the subwatersheds designated in the TMDL.	POTWs, PSD, Other NPDES Permittees, and Agricultural Dischargers	15 years after effective date of the TMDL