CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

RESOLUTION ORDER NO. R7-2007-0039

A Resolution Amending the Water Quality Control Plan
of the Colorado River Basin Region to Establish the Total Maximum Daily Load
and Implementation Plan for
Bacterial Indicators in the Coachella Valley Storm Water Channel
Riverside County, California

WHEREAS, The California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Board), finds that:

1. An updated Water Quality Control Plan for the Colorado River Basin (Basin Plan) was adopted by the Regional Board on November 17, 1993, approved by the State Water Resources Control Board (State Water Board) on February 17, 1994, and approved by the Office of Administrative Law on August 3, 1994. This Basin Plan includes amendments adopted by the Regional Board through October 2005.

2. Warm freshwater habitat (WARM), wildlife habitat (WILD), preservation of rare, threatened, and endangered species (RARE), fresh water replenishment (FRSH), water contact recreation (REC I), and non-contact recreation (REC II) are the beneficial uses designated for the Coachella Valley Storm Water Channel.

3. The Basin Plan includes numeric bacteria water quality objectives, expressed as E. coli and Enterococci bacterial indicators, to protect REC I and REC II beneficial uses. Applicable Basin Plan objectives include general surface water objectives for all surface waters of the Region.

4. E. coli bacterial indicator water quality objectives are not being met in the Coachella Valley Storm Water Channel for the REC 1 beneficial use. Limited available water quality data suggest urban runoff contributes to violations of the water quality objectives. Other potential sources of bacterial indicators include, natural background sources, agricultural runoff, bacteria re-growth, and septic system discharges. However, the extent of their contributions is not known.

5. Pursuant to Section 303(d) of the Clean Water Act [42 U.S.C. § 1313(d)], the section of the Coachella Valley Storm Water Channel from approximately Indio to the Salton Sea is listed as water quality impaired due to pathogens of unknown sources. Section 303(d) of the Clean Water Act requires the establishment of a Total Maximum Daily Load (TMDL) for the impaired portion of the Coachella Valley Storm Water Channel to ensure compliance with water quality standards.

6. Section 303(d) requires TMDL allocations among sources of pathogens to ensure the TMDL is met and compliance with water quality standards is achieved according to an implementation plan and schedule.

7. Existing data are not sufficient to identify the extent to which sources contribute to the impairment. Therefore, this TMDL has been divided into two phases. The first phase will last three years following TMDL approval by the USEPA and includes further data collection and analysis to assess critical conditions, sources, and source controls. If water quality objectives are not achieved by the end of Phase 1, the second phase will be initiated. Phase 2 will last approximately four years, and may include implementation of additional management practices, and/or revision of the water quality objectives. Appropriate and required regulatory procedures will be followed prior to implementing Phase 2 actions.

8. Regional Board staff prepared and distributed a Draft Project Report, titled "Total Maximum Daily Load and Implementation Plan for Bacterial Indicators in the Coachella Valley Storm Water Channel, Riverside County, California", and supporting documents regarding adoption of the Basin Plan Amendment in compliance with applicable state and federal environmental regulations (California Code of Regulations., Title 23, § 3775 et seq.; 40 C.F.R. §§ 25, 130, 131 (2006).)

9. The Project Report and the Basin Plan Amendment, which establishes the TMDL and the Implementation Plan, are attached to this Resolution, and meet the requirements of Section 303(d) of the Clean Water Act.

10. The Regional Board has reviewed the Project Report and supporting documents, and proposed Basin Plan Amendment.

11. The Secretary for Resources certified the basin planning process as being exempt from certain environmental review requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.). Therefore, an Initial Study, Negative Declaration, and Environmental Impact Report are not required (Pub. Resources Code § 21080.5; California Code of Regulations., Title 14, § 15251, subd. (g)). In accordance with Section 3777 of Title 23 of the California Code of Regulations, the Project Report-Basin Plan Amendment package includes a CEQA Environmental Checklist and Determination that assesses the potential environmental impacts of the Basin Plan Amendment and discusses alternatives, among other analyses. The Project Report, Basin Plan Amendment, and CEQA Environmental Checklist and Determination, and supporting documentation are considered substitute environmental documents that may be relied on in lieu of an Initial Study, Negative Declaration, and Environmental Impact Report (California Code of Regulations., Title 14, § 15252).

12. The adoption of the Basin Plan Amendment, based on the Project Report, is a regulatory action subject to the requirements of Public Resources Code Section 21159. Consistent with the requirements of that Section, the CEQA Environmental Checklist and Determination includes an analysis of reasonably foreseeable environmental impacts resulting from project implementation, an analysis of reasonably foreseeable feasible mitigation measures, and an analysis of reasonably foreseeable alternative means of compliance (Pub. Resources Code § 21159, subd. (a)(1)-(3); California Code of Regulations., Title 14, § 15187, subds. (b), (c)(1)-(3)). The analysis in the CEQA Environmental Checklist and Determination takes into account a reasonable range of environmental, economic, and technical factors,

population and geographic areas, and specific sites. The CEQA analysis determined that the proposed Basin Plan Amendment would not have a significant adverse effect on the environment. Regional Board staff has presented the CEQA Environmental Checklist and Determination to the Regional Board, which reviewed and considered the analysis before adopting this amendment.

13. The Regional Board has considered federal and state anti-degradation policies and other relevant water quality control policies and finds the Basin Plan amendment consistent with those policies.

14. On January 30, 2003, a Public CEQA Scoping Meeting for the subject TMDL was held in Palm Desert, CA. Also, a public information meeting regarding the TMDL process was conducted in Palm Desert on February 24, 2004.

15. In a letter dated April 30, 2007, USEPA informed the Regional Board that while the TMDL contains numeric targets, loading capacity, and allocations expressed in only the E. coli bacterial indicator, the Basin Plan water quality objectives include both fecal coliform and E. coli as bacterial indicators to support the designated beneficial uses. USEPA therefore recommended that the TMDL and Basin Plan Amendment contain numeric targets, load allocations (LAs), and waste load allocations (WLAs) in terms of both E. coli and fecal coliform.

16. In a letter dated May 10, 2007, the Regional Board responded to USEPA's comments and provided the rationale for selecting E. coli as the only indicator for the subject TMDL. The rationale included written guidance from USEPA about using such indicators. Further, the rationale explained that E. coli is being used in the TMDL as a surrogate for fecal coliforms. Consequently, a load reduction in E. coli into the CVSC will result in a load reduction in fecal coliforms into the CVSC.

17. On May 11, 2007, State Water Resources Control Board TMDL staff, USEPA TMDL staff, and Regional Board TMDL staff reached agreement that it was appropriate for the Regional Board to consider adoption of the TMDL using only E. coli for the numeric target, load allocations (LAs), waste load allocations (WLAs), and monitoring so long as the Regional Board directed its staff to prepare an amendment to the Basin Plan that (a) rectifies current limitations of having three bacteria indicator organisms (fecal coliform, E. coli, and enterocci), (b) clarifies which indicators apply to which surfaces waters of the Region, and, as necessary, (c) develops site-specific objectives. Accordingly, the TMDL Basin Plan amendment has been revised consistent with that agreement.

18. Consistent with Sections 3778 and 3779 of Title 23, California Code of Regulations, Regional Board staff consulted with stakeholders in the region and with other potentially affected parties about the proposed action, and considered and addressed comments on the matter.

19. On May 16, 2007, the Regional Board held a Public Hearing to consider the Project Report and Basin Plan Amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244, and 40 Code of Federal Regulations Part 25.

20. The Basin Plan Amendment must be reviewed and approved by the State Water Board. Once approved by the State Water Board, the amendment is submitted to the State Office of Administrative Law (OAL) for its concurrence that the amendment meets State Administrative Procedure Act requirements. A Notice of Decision is filed with the Secretary for Resources after the State Water Board and OAL have acted on this matter, where it is posted for public inspection for at least 30 days. Following State Water Board and OAL approval, the Basin Plan Amendment is forwarded to the U.S. Environmental Protection Agency for its review and approval.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Regional Board adopts the amendment to the Water Quality Control Plan for the Colorado River Basin as set forth in the attached Basin Plan Amendment.

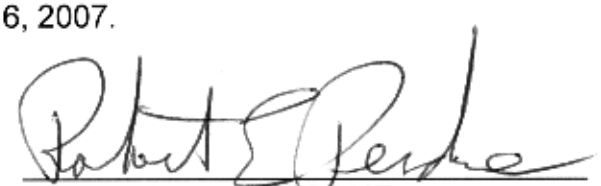
2. The Executive Officer is directed to forward copies of the adopted Basin Plan Amendment to the State Water Board in accordance with the requirement of Section 13245 of the California Water Code.

3. The Regional Board requests the State Water Board approve the Basin Plan Amendment, as adopted, in accordance with Sections 13245 and 13246 of the California Water Code and forward the approved Basin Plan Amendment to the OAL and U.S. Environmental Protection Agency for their approvals.

4. The Executive Officer is directed to file a Notice of Decision with the California Secretary for Resources after OAL approval of the Basin Plan Amendment in accordance with Section 21080.5, Subdivision (d)(2)(E), of the Public Resources Code, and Section 3781 of Title 23 of the California Code of Regulations.

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

I, Robert Perdue, 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, Colorado River Basin Region, on May 16, 2007.



ROBERT PERDUE
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

Resolution No. R7-2010-0028

Revising a Basin Plan Amendment Adopted by Regional Board
Resolution No. R7-2007-0039 on May 16, 2007

WHEREAS, the California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Water Board), finds that:

1. An updated Water Quality Control Plan for the Colorado River Basin (Basin Plan) was adopted by the Regional Water Board on November 17, 1993, approved by the State Water Resources Control Board (State Water Board) on February 17, 1994, and approved by the Office of Administrative Law on August 3, 1994. This Basin Plan includes amendments adopted by the Regional Water Board through June 2006.

2. The federal Clean Water Act (33 U.S.C., § 1251 et seq.) requires the Regional Water Board to develop water quality objectives sufficient to protect beneficial uses designated for each water body found within its region.

3. The Basin Plan includes numeric bacteria water quality objectives, expressed as E. coli, Fecal Coliform, and Enterococci bacterial indicators, to protect REC I and REC II beneficial uses. Applicable Basin Plan objectives include general surface water objectives for all surface waters of the Region.

4. Pursuant to Section 303(d) of the Clean Water Act (33 U.S.C. § 1313(d)), the section of the Coachella Valley Storm Water Channel from Valley Sanitary District Wastewater Treatment Plant in Indio to the Salton Sea is listed as water quality impaired due to pathogens of unknown sources. Section 303(d) of the Clean Water Act requires the establishment of a Total Maximum Daily Load (TMDL) for the impaired portion of the Coachella Valley Storm Water Channel to ensure compliance with water quality standards.

5. Regional Water Board staff prepared and circulated a Draft Project Report, titled "Total Maximum Daily Load and Implementation Plan for Bacterial Indicators in the Coachella Valley Storm Water Channel, Riverside County, California," and supporting documents regarding adoption of a Basin Plan Amendment in compliance with applicable state and federal environmental regulations (Cal. Code Regs., tit. 23, § 3775 et seq.; 40 C.F.R. §§ 25, 130, 131 (2009).)

6. The Secretary for Natural Resources certified the basin planning process as being exempt from certain environmental review requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). Therefore, an Initial Study, Negative Declaration, and Environmental Impact Report are not required (Pub. Resources Code, § 21080.5; Cal. Code Regs., tit. 14, § 15251, subd. (g)). In accordance with Section 3777 of Title 23 of the California Code of Regulations, the Project Report-Basin Plan Amendment package includes a CEQA Environmental Checklist and Determination that assesses the potential environmental impacts of the Basin Plan Amendment and discusses alternatives, among other analyses. The Project Report, Basin Plan Amendment, and CEQA Environmental Checklist and Determination, and supporting documentation are considered substitute environmental documents that may be relied on in lieu of an Initial Study, Negative Declaration, and Environmental Impact Report (Cal. Code Regs., tit. 14, § 15252).

7. The Regional Water Board has considered federal and state anti-degradation policies and other relevant water quality control policies and finds the Basin Plan amendment consistent with those policies.

8. On January 30, 2003, a public CEQA Scoping Meeting for the subject TMDL was held in Palm Desert, CA. Also, a public information meeting regarding the TMDL process was conducted in Palm Desert on February 24, 2004.

9. On May 24, 2005, the Draft Project Report was submitted for external scientific peer review, in accordance with Health and Safety Code Section 57004. The draft final TMDL Project Report has been changed to conform to the recommendations of the peer reviewers or staff has provided an explanation of why any particular change was not made, as required by Health and Safety Code Section 57004, subdivision (d)(2).

10. The Regional Water Board has determined that the scientific portions of the draft TMDL Project Report are based on sound scientific knowledge, methods, and practices in accordance with Health and Safety Code Section 57004.

11. In a letter dated April 30, 2007, the United States Environmental Protection Agency (USEPA) informed the Regional Water Board that while the TMDL contains numeric targets, loading capacity, and allocations expressed only in terms of the E. coli bacterial indicator, the Basin Plan water quality objectives include both fecal coliform and E. coli as bacterial indicators to support the designated beneficial uses. Therefore, the USEPA recommended that the TMDL and Basin Plan Amendment contain numeric targets, load allocations (LAs), and waste load allocations (WLAs) in terms of both E. coli and fecal coliform.

12. In a letter dated May 10, 2007, the Regional Water Board responded to USEPA's comments and provided the rationale for selecting E. coli as the only indicator for the subject TMDL. The rationale included written guidance from the USEPA about using such indicators. Further, the rationale explained that E. coli is being used in the TMDL as a surrogate for fecal coliforms. Consequently, a load reduction in E. coli into the CVSC will result in a load reduction in fecal coliforms into the CVSC.

13. On May 11, 2007, TMDL staff from the State Water Board, USEPA, and Regional Water Board staff reached agreement that it was appropriate for the Regional Water Board to consider adoption of the TMDL using only E. coli for the numeric target, LAs, WLAs, and monitoring so long as the Regional Water Board directed its staff to prepare an amendment to the Basin Plan that: (a) rectifies current limitations of having three bacteria indicator organisms (fecal coliform, E. coli, and enterocci); (b) clarifies which indicators apply to which surface waters of the Region, and, as necessary; (c) develops site-specific objectives. The TMDL Basin Plan amendment has been revised to be consistent with that agreement.

14. Consistent with Sections 3778 and 3779 of Title 23, California Code of Regulations, Regional Water Board staff consulted with stakeholders in the Region and with other potentially affected parties about the proposed action, and considered and addressed comments on the matter.

15. On May 16, 2007, the Regional Water Board adopted Resolution No. R7-2007-0039 amending the Basin Plan to establish a TMDL for Bacterial Indicators in the impaired portion of the Coachella Valley Storm Water Channel to ensure compliance with water quality standards. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244, and 40 Code of Federal Regulations Part 25.

16. The Regional Board directed staff to hold three stakeholder workshops in the interim period between when the Basin Plan Amendment was adopted and when it was finally approved to further explain the objectives and requirements of the TMDL.

17. On July 25, 2007, November 19, 2007, and April 23, 2008 Regional Board staff held stakeholder workshops as directed.

18. On January 18, 2008, the Regional Board Executive Officer requested that the Coachella Valley Storm Water Channel Bacterial Indicators TMDL be withdrawn from State Water Board consideration for adoption based on comments received from affected stakeholders and to allow Coachella Valley Agricultural Stakeholders to conduct early implementation monitoring on their discharges.

19. On February 22, 2008, the State Water Board returned the Coachella Valley Storm Water Channel Bacterial Indicators TMDL to the Regional Board.

20. On May 15, 2008 the Coachella Valley Agricultural Stakeholder Water Quality Task Force (CVAS) submitted a project plan describing an E. coli bacterial indicator monitoring program of subsurface drain collectors serving agricultural lands that discharge to the Coachella Valley Storm Water Channel.

21. On August 17, 2009, a Final Report prepared for CVAS, titled "Bacterial Indicator Monitoring for Coachella Valley Subsurface Drainage Entering the Coachella Valley Stormwater Channel," was submitted to the Regional Water Board by the Coachella Valley Water District. The overall results of this monitoring program appears to indicate that bacterial indicators entering the CVSC in flows from subsurface drain collectors serving agricultural lands have only de minimis effect on the bacterial indicator impairment in CVSC. The TMDL Basin Plan amendment has been revised to be consistent with these monitoring results.

22. On June 17, 2010, the Regional Water Board held a Public Hearing to consider the revisions to the amendment language of the CVSC Bacterial Indicators TMDL. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244, and 40 Code of Federal Regulations Part 25.

23. The Basin Plan Amendment must be reviewed and approved by the State Water Board. Once approved by the State Water Board, the amendment is submitted to the State Office of Administrative Law (OAL) for its concurrence that the amendment meets State Administrative Procedure Act requirements. A Notice of Decision is filed with the Secretary for Natural Resources after the State Water Board and OAL have acted on this matter, where it is posted for public inspection for at least 30 days. Following State Water Board and OAL approval, the Basin Plan Amendment is forwarded to the USEPA for its review and approval.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. Pursuant to the California Water Code, Sections 13240 and following, the Regional Water Board, after considering the entire record, including oral comments provided at the hearing, hereby reaffirms the Project Report for Resolution No. R7-2007-0039 and adopts the revisions to the Basin Plan Amendment as set forth in Attachment 1.

2. The Executive Officer is directed to forward copies of the adopted, revised Basin Plan Amendment to the State Water Board in accordance with the requirements of Section 13245 of the California Water Code.

4. The Regional Water Board requests the State Water Board approve the revised Basin Plan Amendment, as adopted, in accordance with Sections 13245 and 13246 of the California Water Code and forward the approved, revised Basin Plan Amendment to the OAL and USEPA for their respective approvals.

5. The Substitute Environmental Documents prepared by Regional Water Board staff pursuant to Public Resources Code Section 21080.5 were previously certified and revisions are also hereby certified.

6. The Executive Officer is directed to file a Notice of Decision with the Secretary for Natural Resources after OAL approval of the Basin Plan Amendment in accordance with Public Resources Code Section 21080.5, subdivision (d)(2)(E), and the California Code of Regulations, Title 23, Section 3781.

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

I, Robert Perdue, 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, Colorado River Basin Region, on June 17, 2010.

Robert Perdue
Executive Officer

June 17, 2010

An Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Coachella Valley Stormwater Channel Bacterial Indicators Total Maximum Daily Load

AMENDMENT

(Proposed changes are in reference to the Basin Plan as amended through June 2006. Proposed additions are denoted by underlined text, proposed deletions are denoted by ~~strikethrough~~ text)

To CHAPTER 4- IMPLEMENTATION, Section V. TOTAL MAXIMUM DAILY LOADS (TMDLS) AND IMPLEMENTATION PLANS, add the following new subsequent Sections and renumber accordingly:

G. Coachella Valley Stormwater Channel Bacterial Indicators Total Maximum Daily Load

1. TMDL ELEMENTS

Table G-1: Coachella Valley Stormwater Channel Bacterial Indicators TMDL Elements

<table>
<tr><th>ELEMENT</th><th>DESCRIPTION</th></tr>
<tr><td>Project Definition</td><td>Coachella Valley Stormwater Channel (CVSC) is on the California 303(d) List for impairment by pathogens of unknown sources. This listing applies to the 17-mile length of the CVSC from Indio to the Salton Sea. This violation of water quality standards (WQSs) is a threat to public health, and impairs the following CVSC beneficial uses (BUs): Water Contact Recreation (REC I) and Water Non-Contact Recreation (REC II). WQSs consist of designated beneficial uses, specified numeric or narrative water quality objectives (WQOs) that protect these BUs, and antidegradation requirements to ensure that existing uses and the level of water quality necessary to protect the existing uses are maintained and protected. The following Table summarizes REC I bacteria indicator WQOs for all surface waters in the Colorado River Basin Region, excepting the Colorado River:

Bacterial Indicator Water Quality Objectives

<table>
<tr><th>Indicator Parameter</th><th>30-Day Geometric[a] Mean</th><th>Maximum Instantaneous</th></tr>
<tr><td>E. coli</td><td>126 MPN[b]/100 Milliliter (ml)</td><td>400 MPN/100 ml</td></tr>
<tr><td>Fecal coliform</td><td>200 MPN/100 ml</td><td>c</td></tr>
<tr><td>Enterococci</td><td>33 MPN/100 ml</td><td>100 MPN/100 ml</td></tr>
</table>
a- Based on a minimum of no less than 5 samples equally spaced over a 30-day period.
b- Most probable number.
c- No more than 10 % of total samples during any 30-day period exceed 400 MPN per 100 ml</td></tr>
</table>

	Federal Clean Water Act (CWA), Section 303(d)(1)(A) requires all states to identify surface waters impaired by pollution (i.e., that do not meet WQSs), and to establish Total Maximum Daily Loads (TMDLs) for pollutants causing the impairments. As a result, a TMDL to address bacterial indicator organisms is proposed for CVSC, which has been completed pursuant to the State of California TMDL Guidance issued in June 2005, and USEPA guidance published in April 2001.
Watershed Description	CVSC is located in Coachella Valley in Riverside County, California. The Coachella Valley is bounded to the north by the San Bernardino and Little San Bernardino Mountains, and to the south by the San Jacinto and Santa Rosa Mountains, and the Salton Sea. The Coachella Valley has been heavily agricultural since the early 1900's. Agricultural lands are irrigated by groundwater and water from the Colorado River delivered to the Valley through the Coachella Canal via the All-American Canal. CVSC is an unlined, engineered extension of the Whitewater River, and serves as a conveyance channel for irrigation return water, treated wastewater from three National Pollutant Discharge Elimination System (NPDES) permitted municipal wastewater treatment plants, wastewater discharge from one NPDES permitted aquaculture facility (Kent SeaTech Corporation Fish Farm (KSCFF), owned/operated by Kent SeaTech Corporation), and urban and stormwater runoff. The Coachella Valley Water District (CVWD) operates and maintains the CVSC. The three permitted wastewater treatment plants are: • Valley Sanitary District Wastewater Treatment Plant (VSDWTP), Indio, owned/operated by Valley Sanitary District; • Mid-Valley Water Reclamation Plant (MVWRP), Thermal, owned/operated by CVWD; and • Coachella Sanitary District Wastewater Treatment Plant (CSDWTP), Coachella, owned/operated by the City of Coachella and the Coachella Sanitary District. Average annual flows in CVSC are decreasing due to changes in agricultural practices and suburban development. The CVSC and its tributary drains provide flood control and protection in addition to habitat for many types of wildlife including migratory songbirds, waterfowl, coyotes, raccoons, and rodents. Although recreation in the stormwater channel is prohibited by CVWD, people are known to recreate in and around the stormwater channel.
Data Analysis	During the development of this TMDL, water quality samples were collected monthly at eight locations in the CVSC, from February to September 2003, to evaluate bacteria concentrations and loading. Eleven of the 59 samples collected exceeded the 400 MPN/100 ml E. coli WQO in the Colorado River Basin Water Quality Control Plan (Basin Plan) and one of the proposed numeric targets for this TMDL. Based on the 2004 State of California's 303(d) Listing Policy, this exceedance rate would be sufficient to confirm the impairment identified in the 303(d) List.
Source Analysis	To identify potential sources of bacteria, Regional Water Board staff reviewed bacteria data provided by the three NPDES wastewater treatment facilities (WWTFs) and the City of Coachella, which is the only Municipal Separate Storm

	Sewer System (MS4) permittee discharging into the impaired section of the CVSC. Data reviewed indicate that all three WWTFs met their applicable bacteria WQOs. Data also indicate that urban and stormwater flows contain fecal coliform levels in violation of its applicable WQOs for REC I and REC II. These water quality violations range up to 900,000 MPN/100 ml at Avenue 52 Storm Drain in Coachella, September 1999. Due to the limited data available, actual contribution from urban and stormwater runoff and contributions from other point and nonpoint sources require further characterization. To assist with characterizing the bacterial contribution from agricultural sources (Agricultural Dischargers), the Coachella Valley Agricultural Stakeholder Water Quality Task Force (CVAS) was formed for the purpose of collecting water samples and monitoring the amount of E. coli discharged from agricultural sources. Samples were collected from subsurface drain collectors that service agricultural land and ultimately discharge into the CVSC. Monitoring was conducted from July 2008 through June 2009. Four hundred fifty water samples were collected from five (5) representative subsurface drain collectors at receiving water locations upstream from the collectors, and at receiving water locations downstream from the collectors. The samples were analyzed for E. coli concentrations. The analysis of results from this monitoring program indicated that E. coli levels in the subsurface drain collectors were typically two orders of magnitude lower than the E. coli levels in the CVSC. Out of one hundred fifty samples collected from the drain collectors, four exceeded the 400 MPN/100 ml Instantaneous Maximum E. coli WQO. None of the ninety 30-day geometric means calculated for E. coli exceeded the Basin Plan WQO of 126 MPN/100 ml. No significant correlation could be made between the E. coli levels measured in the drain collector discharges and the E. coli levels measured in the CVSC. The overall results of this monitoring program indicate that bacteria entering the CVSC in flows from subsurface drain collectors serving agricultural lands have only a de minimis effect on the bacterial indicator impairment in the CVSC. To further identify possible sources of bacteria to CVSC, a Ribotype or DNA microbial source tracking (MST) method was used. MST methods match fingerprints from bacterial strains isolated from a water system to those isolated from hosts such as humans, cows, geese, chicken, or municipal wastewater. The DNA monitoring and analysis study was conducted from October 2003 through March 2004. Two hundred water samples were collected from three sites along CVSC. E. coli strains were isolated from water samples, ribotypes fingerprinted, and then compared to a source library. The DNA monitoring and analysis study determined the percentage distribution of fecal sources in the CVSC. The following potential bacterial sources were identified in CVSC from the two hundred samples collected during the study: avian (40%), human (25%), rodents plus other wild mammals (25%), and livestock (<3%). Approximately 6% of the E. coli species originated from unknown sources. This distribution provides an idea of the possible sources of bacteria in CVSC, although it does not reflect the relative loading from those sources. Although scientific studies support the use of ribotype-based MST methods, there are concerns regarding their accuracy due to spatial and temporal vectors, stability of the markers, and sampling design.

Critical Conditions and Seasonal Variation	The climate in the Coachella Valley is arid with hot summers and warm winters and very low average annual rainfall (<3 inches/year). The water in the CVSC mainly originates from irrigation return flows, rising groundwater, fish farm effluent, treated municipal wastewater, urban runoff, and stormwater runoff. Analysis of available water quality data suggest slightly higher concentrations of bacteria in warm months, but the bacteria concentrations do not appear to be correlated with flow.
Numeric Targets	TMDL numeric targets derived from the Basin Plan's WQOs have been established for E. coli as a log mean (Geomean) of 126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), or 400 MPN/100 ml for a single sample. The rationale supporting Regional Water Board staff's decision to choose only one bacterial indicator for the CVSC, E. coli, is as follows: The Colorado River Basin Region's Basin Plan has bacterial indicator WQOs for E. coli, fecal coliform, and enterococci. In most cases, these indicators do not cause human illness directly; rather, they have shown a correlation as indicators of the presence of other harmful pathogens in water bodies. The general inclusion of all three bacterial indicators in the Basin Plan has presented region-wide application problems and confusion for the regulated community. The CVSC is considered a fresh water recreational surface water. The decision to express the numeric targets, loading capacity, and allocations in the CVSC TMDL in terms of E.coli only was based on recommendations from USEPA guidance to eliminate fecal coliform as an indicator of pathogens causing human illness, and to rely instead on either E. coli and/or Enterococci. The USEPA water quality criteria document, titled "Ambient Water Quality Criteria for Bacteria, 1986" recommends replacing fecal coliform with either E. coli or enterococci as bacterial indicators for the protection of fresh water recreational users. The USEPA provided draft implementation guidance in May 2002, titled "Implementation Guidance for Ambient Water Quality Criteria for Bacteria," that reaffirmed the 1986 guidance. Further, E. coli, which is a species of fecal coliform, is being used in the TMDL as a surrogate for fecal coliform. Consequently, a load reduction in E. coli into the CVSC that will attain the E. coli WQOs will also result in a load reduction in fecal coliform and attain the fecal coliform WQOs. The TMDL targets must not be exceeded more frequently than the allowable exceedence rate described in the State of California's 303(d) Listing Policy, as a result of controllable sources with the exception of the three NPDES WWTFs, which have met their applicable bacteria WQOs and thus, shall be required to continue to meet their WQOs. All other responsible parties, however, shall be required to attain their respective WLA and LA numeric targets within ten (10) years after USEPA approves the TMDL.
Linkage Analysis	For this TMDL, the connection between pollutant loading and protection of BUs is established by the fact that TMDL numeric targets and allocations are equal to WQOs for the most stringent BU of CVSC in the Basin Plan. Therefore, this TMDL's numeric targets protect all BUs of CVSC. There is a one-to-one relationship between loading allocations and numeric targets in this TMDL. For example, a 30-day geometric mean wasteload/load allocation of 126 MPN/100 ml for E. coli at the point of discharge makes it more likely that 126 MPN/100 ml or less will be present in the CVSC, especially if contributions from natural

<table>
<tr><td></td><td>background sources are not exceeding these allocations. The potential for increased or decreased concentration downstream due to growth and decay dynamics may be offset by dilution from subsurface drainage from irrigated agricultural lands and effluent from permitted wastewater treatment plants.</td></tr>
<tr><td>TMDL Calculations and Allocations</td><td>A TMDL is a numeric calculation of the loading capacity of a water body to assimilate a certain pollutant and still attain all WQSs. The TMDL is the sum of the individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background sources, and a margin of safety (MOS) to address uncertainties. Discharges from all current and future point sources and controllable nonpoint sources of pollution to the impaired section of CVSC shall not exceed the following WLAs and LAs for E. coli:.

Both WLAs and LAs for E. coli are:

1) the log mean (Geomean) of samples collected shall not exceed 126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), or

2) 400 MPN/100 ml for a single sample.

The allocations are applicable throughout the entire stretch of the impaired section of the CVSC year-round. The numeric target concentrations are based on extensive epidemiological studies conducted by the USEPA and others. To address the uncertainty concerning bacterial die-off and re-growth dynamics in CVSC, and to better address critical conditions and seasonal variations, this TMDL provides a MOS by including a monitoring and review plan that uses data collected during implementation to evaluate TMDL effectiveness and the need for revision.

Load allocations (LAs) and wasteload allocations (WLAs) for bacteria indicator dischargers into CVSC are described below:

<table>
<tr><th>Allocation Type</th><th>Discharger</th><th>E. Coli Allocations</th></tr>
<tr><td>Point Source (WLAs)</td><td>VSDWTP

CSDWTP

MVWRP</td><td>A log mean (Geomean) of ≤126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period)</td></tr>
<tr><td>Point Source (WLAs)</td><td>KSCFF

Cal-Trans

City of Coachella (MS4 co-permittee)</td><td>A log mean (Geomean) of the MPN of ≤126/100 ml (based on a minimum of not less than five samples during a 30-day period), or 400 MPN/100 ml for a single sample</td></tr>
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	Nonpoint Source (LAs)	Agricultural Runoff Federal Lands Tribal Lands	A log mean (Geomean) of ≤126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), or 400 MPN/100 ml for a single sample
	Nonpoint Source (LAs)	Septic Systems	Zero (0) MPN/100 ml
Monitoring Plan	Dischargers listed in Table G-2 will be required to develop and submit as a whole, or in groups, a comprehensive water quality monitoring program for the 303(d) listed segment of CVSC to the Regional Water Board Executive Officer for review and approval 90 days after USEPA approves the TMDL. The monitoring plan will include a sufficient number of monitoring stations and monitoring events to adequately address all potential sources of bacteria.		

2. IMPLEMENTATION ACTIONS FOR ATTAINMENT OF TMDL

The implementation plan is divided into two phases and begins 90 days following USEPA approval of the TMDL. Phase I actions will take three years to complete and will focus on monitoring and addressing bacterial indicators associated with wastewater discharges from NPDES facilities, and urban and stormwater runoff. Regional Water Board staff will coordinate closely with USEPA to address waste discharges from tribal lands. If E. coli WQOs are not achieved by the end of Phase I, Regional Water Board staff will implement additional actions to control E. coli sources in Phase II. Enforcement actions against violators of the TMDL will occur in both phases if necessary. This approach provides for immediate assessment of known sources of bacterial indicators while allowing time for additional monitoring to assess TMDL implementation, effectiveness, and need for modification.

Farmers and the CVWD are specifically exempted from having to complete Phase I monitoring actions regarding agricultural discharges. The Regional Water Board acknowledges the monitoring completed by CVAS in 2008-2009, and finds that its monitoring accurately characterizes the contribution of irrigated agriculture to the bacterial indicator impairment in the CVSC. The Regional Water Board considers CVAS's effort as an early implementation of this TMDL. Accordingly, this effort does not exempt Agricultural Dischargers and the CVWD from completing Phase II actions, should Phase II become necessary and available data indicate discharges into the CVSC from irrigated agriculture exceed E. coli WQOs based on the criteria listed in Table 3.2 of the Water Quality Control Policy For Developing California's Clean Water Act Section 303 (d) List – September 2004.

2.1 Phase I Implementation Actions

Phase I actions will occur within three years, and begin immediately after USEPA approves the TMDL. Phase I requires:

- Monitor CVSC for bacteria loading from city of Coachella, KSCFF, Cal-Trans, federal lands, and tribal lands;
- Identify significant federal and tribal dischargers to CVSC and notify them of their role in TMDL implementation;
- Receive a written report from each tribal entity, or from USEPA, describing measures to ensure waste discharges from tribal property do not violate or contribute to a violation of this TMDL~~;~~
- Prepare an amendment to the Basin Plan that rectifies current limitations of having three bacterial indicator organisms, clarifies which indicators apply to specified surface waters of the Region, and as necessary, determines the need for site-specific objectives; and
- Monitor, track, and survey CVSC to determine if Phase I activities achieve bacteria WQOs.

2.2 Phase I Implementation Responsible Parties and Schedule

The time schedule and parties responsible for implementing Phase I actions are provided in Table ~~E~~*G*-2 below.

Table G-2: Phase I Actions and Time Schedules

Due	Action
Immediately following Regional Water Board approval of TMDL	Regional Water Board staff shall begin preparing an amendment to the Basin Plan that rectifies current limitations of having three bacteria indicator organisms, clarifies which indicators apply to which surface waters of the Region, and as necessary, develops site-specific objectives. This Basin Plan amendment shall be drafted and presented to the Regional Water Board for consideration of adoption at the earliest practicable date, but no later than eighteen (18) months following USEPA approval of the CVSC Bacterial Indicators TMDL.
90 days after USEPA approves the TMDL	Pursuant to requests from Regional Water Board staff, the responsible parties, which includes Kent Seatech Corporation Fish Farm (NPDES permittee), Cal-Trans (MS4 permittee); and the city of Coachella (MS4 permittee), shall submit to Regional Water Board staff with the cooperation and assistance of the Coachella Valley Water District, which operates and maintains the impaired section of CVSC, data that characterize their contribution of bacteria to the CVSC or shall develop bacterial indicator water quality monitoring programs. Quality Assurance Project Plans (QAPPs) shall be developed and submitted to the Regional Water Board Executive Officer for review and approval. Monitoring data will be provided to Regional Water Board staff on a quarterly basis and will be used to assess contributions of bacteria to CVSC from anthropogenic sources (stormwater and urban runoff, and

	other sources). Responsible parties that join groups to complete Phase I actions shall be allowed an additional 90 days to submit their QAPP.
90 days after USEPA approves the TMDL	Regional Water Board staff shall begin to identify significant federal and tribal dischargers to CVSC and notify them of their role in TMDL implementation.
90 days after USEPA approves the TMDL	Regional Water Board staff develops a plan to conduct TMDL surveillance and track TMDL activities. The objectives of the plan are to assess monitoring data, measure milestone attainment, and determine compliance with the TMDL.
90 days after USEPA approves the TMDL	Pursuant to a request from the Regional Water Board, each tribal entity, in coordination with USEPA, shall submit a technical report describing measures to ensure that waste discharges to CVSC from tribal land do not violate or contribute to a violation of this TMDL.
3 years after USEPA approves the TMDL	Regional Water Board staff shall submit a written report to the Regional Water Board describing monitoring results, milestone attainment, and the need to revise the TMDL, if necessary.

Phase I actions are intended to aid in developing an effective assessment of critical conditions and sources, which will be used to develop and implement appropriate control measures in Phase II. Responsible parties, who are fulfilling their responsibilities, have no obligation to undertake the actions assigned to others, who may fail to perform.

2.3 Phase II Implementation Actions

Actions taken in Phase I (within three years after USEPA approves the TMDL) will determine whether WQOs have been achieved, sources of bacterial pollution have been identified, and whether additional actions are required in Phase II (within seven years after end of Phase 1) to meet WQOs. If monitoring and assessment in Phase I indicate that waste discharges to CVSC from anthropogenic activities violate this TMDL, and that violations persist despite recommended operation and maintenance procedures and control measures in their existing permits, the Regional Water Board shall require the implementation of additional actions to control anthropogenic sources of bacteria in Phase II. The Regional Water Board will require responsible parties to select and implement new/additional management practices (MPs) for Phase II, following characterization of sources and a determination of whether these sources can be controlled. This determination shall take into consideration background conditions and cost factors. The Regional Water Board may revise Municipal Separate Storm Sewer System (MS4) permit water quality based effluent limitations, which may be expressed in terms of narrative management practice (MP) requirements. The Regional Water Board may also consider revising WQOs for CVSC to address natural background sources of bacteria. This revision would be accomplished through the establishment of a Site Specific Objective (SSO) after completing a Use Attainability Analysis (UAA). If an SSO is required, it would be developed by the end of Phase 2 based on available resources.

Violations of WQOs will be addressed by implementing MPs identified in the discharger's existing Regional Water Board permit, or by implementing measures provided in the SWRCB's Nonpoint Source Program Plan and/or Nonpoint Source Program Strategy and Implementation Plan (PROSIP). Appropriate and required regulatory procedures will be followed prior to implementing any additional control practice(s).

2.4 TMDL Review Schedule

Annual reports will be provided to the Regional Water Board describing progress in attaining milestones. The reports will assess:

- Water quality improvement in terms of E. coli concentration;
- Milestones achieved, delayed, or not achieved, and why; and
- Compliance with Regional Water Board orders and requests.

2.5 Triennial Review

Federal law requires states to hold public hearings to review WQSs, and modify/adopt standards as appropriate (CWA Section 303(c); 40 CFR Section 131.20). State law requires formulating and periodically reviewing and updating regional water quality control plans (Basin Plan) (CWC Section 13240). All Basin Plan amendments and supporting documents adopted by the Regional Water Board must be submitted to the SWRCB, and then OAL, for review and approval. Lastly, the USEPA has final approval authority for Basin Plan amendments concerning surface waters.

The first review of this TMDL is scheduled for completion three years after USEPA approves the TMDL to provide adequate time for implementation and data collection. Subsequent reviews will be conducted concurrently with the Triennial Review of the Basin Plan. The TMDL review schedule is shown below in Table G-3.

Table G-3: TMDL Review Schedule

Activity	Date*
Begin TMDL Review	Two years after USEPA approves the TMDL
Terminate First TMDL Review, and conduct Regional Water Board Public Hearing	Three years after USEPA approves the TMDL
Terminate Second Review and Conduct Regional Water Board Public Hearing	Six years after USEPA approves the TMDL
Etc.	
* Dates are contingent upon availability of Regional Water Board resources.	

Monitoring results and progress toward milestone attainment will be provided during Triennial Review public hearings. If TMDL progress is insufficient, staff will recommend to the Regional Water Board additional MPs to control pollutant sources, enforcement action, TMDL revision, or other means to achieve WQOs.

This proposed review schedule reflects the Regional Water Board's commitment to periodic review and refinement of this TMDL, via the basin plan amendment process.