Attachment A to Resolution No. R4-2006-016

Revision of the Implementation Plan
for the TMDL for Chloride in the Upper Santa Clara River, Resolution 04-004

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on August 3, 2006.

Amendments

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Chapter 7. Total Maximum Daily Loads (TMDLs) Upper Santa Clara River TMDL

This TMDL was adopted by: The Regional Water Quality Control Board on October 24, 2002.
This TMDL was remanded by: The State Water Resources Control Board on February 19, 2003
This TMDL was adopted by: The Regional Water Quality Control Board on July 10, 2003.
This TMDL was revised and adopted by: The Regional Water Quality Control Board on May 6, 2004.
This TMDL was approved by: The State Water Resource Control Board on July 22, 2004
The Office of Administrative Law on November 15, 2004
The U.S. Environmental Protection Agency on April 28, 2005
This TMDL was revised and adopted by: The Regional Water Quality Control Board on August 3, 2006.

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements Santa Clara River Chloride
Problem Statement	Elevated chloride concentrations are causing impairments of the water quality objective in Reach 5 (EPA 303(d) list Reach 7) and Reach 6 (EPA 303(d) list Reach 8) of the Santa Clara River. This objective was set to protect all beneficial uses; agricultural beneficial uses have been determined to be most sensitive, and not currently attained at the downstream end of Reach 5 (EPA 303(d) list Reach 7) and Reach 6 (EPA 303(d) list Reach 8) in the Upper Santa Clara River. Irrigation of salt sensitive crops such as avocados and strawberries with water containing elevated levels of chloride results in reduced crop yields. Chloride levels in groundwater are also rising.
Numeric Target (Interpretation of the numeric water quality objective, used to calculate the load allocations)	This TMDL has a numeric target of 100mg/L, measured instantaneously and expressed as a chloride concentration, required to attain the water quality objective and protect agricultural supply beneficial use. These objectives are set forth in Chapter 3 of the Basin Plan. The numeric target for this TMDL pertains to Reaches 5 and 6 of the Santa Clara River and is based on achieving the existing water quality objective of 100 mg/L, measured instantaneously, throughout the impaired reaches. A subsequent Basin Plan amendment will be considered by the Regional Board to adjust the chloride objective based on technical studies about the chloride levels, including levels that are protective of salt sensitive crops, chloride source identification, and the magnitude of assimilative capacity in the upper reaches of the Santa Clara River, provided that County Sanitation Districts of Los Angeles County choose to submit timely and complete studies in accordance with tasks 2 through 6 of Table 7.6.2.
Source Analysis	The principal source of chloride into Reaches 5 and 6 of the Santa Clara River is discharges from the Saugus Water Reclamation Plant (WRP) and Valencia WRP, which are estimated to contribute 70% of the chloride load in Reaches 5 and 6.
Linkage Analysis	Linkage between chloride sources and the in-stream water quality was established through a statistical analysis of the WRP effluent and water quality data at Blue Cut and Highway 99. The analysis shows that additional assimilative capacity is usually added to Reaches 5 and 6 from groundwater discharge, but the magnitude of the assimilative capacity is not well quantified. Consequently, the Implementation Plan includes a hydrological study (Surface Water/Groundwater Interaction? Of the upper reaches of the Santa Clara River.
Waste Load Allocations (for point sources)	The numeric target is based on the water quality objective for chloride. The proposed waste load allocations (WLAs) are 100 mg/L for Valencia WRP and 100 mg/L Saugus WRP. The waste load allocations are

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	expressed as a concentration limit derived from the existing WQO, thereby accommodating future growth. Other NPDES discharges contribute a minor chloride load. The waste load allocation for these point sources is 100 mg/L.
Load Allocation (for non point sources)	The source analysis indicates nonpoint sources are not a major source of chloride. The load allocations for these nonpoint sources is 100 mg/L.
Implementation	Refer to Table 7-6.2. The implementation plan proposes that during the period of TMDL implementation, compliance for the WRPs' effluents will be evaluated in accordance with interim waste load allocations. Saugus WRP: The interim waste load allocation for chloride is the sum of State Water Project treated water supply concentration plus 114 mg/L, as a twelve month rolling average. At no time shall the interim wasteload allocation exceed 230mg/L. Interim Waste Load Allocation=Treated Potable Water Supply + 114 mg/L, not to exceed 230 mg/L. (114 mg/L is the maximum difference in chloride concentration between the State Water Project treated water and the Saugus WRP treated effluent over the last five years.) Valencia WRP: The interim waste load allocation for chloride is the sum of State Water Project treated water supply concentration plus 134 mg/L, as a twelve month rolling average. At no time shall the interim wasteload allocation exceed 230 mg/L. Interim Waste Load Allocation=Treated potable Water Supply + 134 mg/L, not to exceed 230 mg/L. (134 mg/L, is the maximum difference in chloride concentration between the State Water Project treated water and the Valencia WRP treated effluent over the last five years.)
Margin of Safety	An implicit margin of safety is incorporated through conservative model assumptions and statistical analysis.
Seasonal Variations and Critical Conditions	Three critical conditions are identified for this TMDL. The driest six months of the year is the first critical condition for chloride because less surface flow is available to dilute effluent discharge, pumping rates for agricultural purposes are higher, groundwater discharge is less, poorer quality groundwater may be drawn into the aquifer and evapotranspiration

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	effects are greater in warm weather. During drought, the second critical condition reduced surface flow and increased groundwater extraction continues through several seasons with greater impact on groundwater resource and discharge. The third critical conditions is based on the recent instream chloride concentration increases such as those that occurred in 1999, a year of average flow, when 9 of 12 monthly averages exceeded the objective. Data from all three critical conditions were used in the statistical model described. Hydrological modeling will be completed to evaluate whether additional loading will impact the WQO or beneficial uses during non-critical conditions.

Table 7-6.2. Upper Santa Clara River Chloride TMDL Implementation Implementation Tasks	Completion Date
1. Alternate Water Supply a) Should (1) the monthly average in-river concentration at Blue Cut, the reach boundary, exceed the water quality objective of 100mg/L, measured for the purposes of this TMDL as a rolling twelve month average, for three months of any 12 months, (2) each agricultural diverter provide records of the diversion dates and amounts to the Regional Board and County Sanitation Districts of Los Angeles County (CSDLAC) for at least 2 years after the effective date of the TMDL and (3) each agricultural diverter provide photographic evidence that diverted water is applied to avocado, strawberry or other chloride sensitive crop and evidence of a water right to divert, then CSDLAC will be responsible for providing an alternative water supply, negotiating the delivery of alternative water by a third party, or providing fiscal remediation to be quantified in negotiations between CSDLAC and the agricultural diverter at the direction of the Regional Water Quality Control Board until such as time as the in-river chloride concentrations do not exceed the water quality objective. b) Should the instream concentration exceed 230 mg/L more than two times in the three year period, the discharger identified by the Regional Board Executive Officer shall be required to submit, within ninety days of a request by the Regional Board Executive Officer, a workplan for an accelerated schedule to reduce chloride discharges. 2. Progress reports will be submitted by CSDLAC to Regional Board staff on a semiannual basis from the effective date of the TMDL for tasks 4, 6, and 7, and on an annual basis for Task 5.	Effective Date of TMDL (05/04/2005)
3. Chloride Source Identification/Reduction, Pollution Prevention and Public Outreach Plan: Six months after the effective date of the TMDL, CSDLAC will submit a plan to the Regional Board that addresses measures taken and planned to be taken to quantify and control sources of chloride, including, but not limited to: execute community-wide outreach programs, which were developed based on the pilot outreach efforts conducted by CSDLAC, assess potential incentive/disincentive programs for residential self-regenerating water softeners, and other measures that may be effective in controlling chloride. CSDLAC shall develop and implement the source reduction/pollution prevention and public outreach program, and report results annually thereafter to the Regional Board. Chloride	6 months after Effective Date of TMDL (11/04/2005)

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sources from imported water supplies will be assessed. The assessment will include conditions of drought and low rainfall, and will analyze the alternatives for reducing this source.	
4. CSDLAC will convene a technical advisory committee or committees (TAC(s)) in cooperation with the Regional Board to review literature develop a methodology for assessment, and provide recommendations with detailed timelines and task descriptions to support any needed changes to the time schedule for evaluation of appropriate chloride threshold for Task 6. The Regional Board, at a public hearing will re-evaluate the schedule for Task 6 and subsequent linked tasks based on input from the TAC(s), along with Regional Board staff analysis and assessment consistent with state and federal law, as to the types of studies needed and the time needed to conduct the necessary scientific studies to determine the appropriate chloride threshold for the protection of salt sensitive agricultural uses, and will take action to amend the schedule if there is sufficient technical justification.	12 months after Effective Date (05/04/2006)
5. Groundwater/Surface Water Interaction Model: CSDLAC will solicit proposals, collect data, develop a model in cooperation with the Regional Board, obtain peer review, and report results. The impact of source waters and reclaimed water plans on achieving the water quality objective and protecting beneficial uses, including impacts on underlying groundwater quality, will also be assessed and specific recommendations for management developed for Regional Board consideration. The purpose of the modeling and sampling effort is to determine the interaction between surface water and groundwater as it may affect the loading of chloride from groundwater and its linkage to surface water quality.	2.5 years after Effective Date of TMDL (11/20/2007)
6. Evaluation of Appropriate Chloride Threshold for the Protection of Sensitive Agricultural Supply Use and Endangered Species Protection: CSDLAC will prepare and submit a report on endangered species protection thresholds. CSDLAC will also prepare and submit a report presenting the results of the evaluation of chloride thresholds for salt sensitive agricultural uses, which shall consider the impact of drought and low rainfall conditions and the associated increase in imported water concentrations on downstream crops utilizing the result of Task 5.	2.5 years after Effective Date of TMDL (11/20/2007)
7. Develop Site Specific Objectives (SSO) for Chloride for Sensitive Agriculture: CSDLAC will solicit proposals and develop technical analyses upon which the Regional Board may base a Basin Plan amendment.	2.8 years after Effective Date of TMDL (02/20/2008)

Table 7-6.2. Upper Santa Clara River Chloride TMDL Implementation Implementation Tasks	Completion Date
8. Develop Anti-Degradation Analysis for Revision of Chloride Objective by SSO: CSDLAC will solicit proposals and develop draft anti-degradation analysis for Regional Board consideration. 9. Develop a pre-planning report on conceptual compliance measures to meet different hypothetical final wasteload allocations. CSDLAC shall solicit proposals and develop and submit a report to the Regional Board that identifies potential chloride control measures and costs based on different hypothetical scenarios for chloride water quality objectives and final wasteload allocations.	
10. a) Preparation and Consideration of a Basin Plan Amendment (BPA) to revise the chloride objective by the Regional Board. b) Evaluation of Alternative Water Supplies for Agricultural Beneficial Uses: CSDLAC will quantify water needs, identify alternative water supplies, evaluate necessary facilities, and report results, including the long-term application of this remedy. c) Analysis of Feasible Compliance Measures to Meet Final Wasteload Allocations for Proposed Chloride Objective. CSDLAC will assess and report on feasible implementation actions to meet the chloride objective established pursuant to Task 10a). d) Reconsideration of and action taken on the Chloride TMDL and Final Wasteload Allocations for the Upper Santa Clara River by the Regional Board.	3 years after Effective Date of TMDL (05/04/2008)
11. a) Implementation of Compliance Measures, Planning: CSDLAC to submit a report of planning activities which include but are not limited to: (1) identifying lead state/federal agencies; (2) administering a competitive bid process for the selection of EIR/EIS and Engineering Consultants; (3) Development of Preliminary Planning and Feasibility Analyses; (4) Submittal of Project Notice of Preparation/Notice of Intent; (5) Preparation of Draft Facilities Plan and EIR; (6) Administration of Public Review and Comment Periods; (7) Development of Final Facilities Plan and EIR and incorporation and response to comments; (8) Administration of final public review and certification process; and (9) Filing a Notice of Determination and Record of Decision.	5 years after Effective Date of TMDL (05/04/2010)
b) Implementation of Compliance Measures, Planning: CSDLAC to provide a schedule of related tasks and subtasks related to Task 11a),	5 years after Effective Date of

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and provide semi-annual progress reports on progress of planning activities, thereafter, until completion of Final Facilities Plan and EIR.	TMDL (05/04/2010)
12. The Regional Board staff will re-evaluate the schedule to implement control measures needed to meet Final Wasteload Allocations adopted pursuant to Task 10 d) and the schedule for Task 13. The Regional Board, at a public meeting will consider extending the completion date of Task 13 and reconsider the schedule to implement control measures to meet Final Wasteload Allocations adopted pursuant to Task 10 d). CSDLAC will provide the justification for the need for an extension to the Regional Board executive Officer at least 6 months in advance of the deadline for this task.	6 years after Effective Date of TMDL (05/04/2011)
13. a) Implementation of Compliance Measures, Complete Environmental Impact Report: CSDLAC shall complete a Facilities Plan and Environmental Impact Report for advanced treatment facilities to comply with final effluent permit limits for chloride.	6 years after Effective Date of TMDL (05/04/2011)
b) Implementation of Compliance Measures, Engineering Design: CSDLAC will begin the engineering design of the recommended project.	6 years after Effective Date of TMDL (05/04/2011)
c) Implementation of Compliance Measures, Engineering Design: CSDLAC will provide a design schedule of related tasks and sub-tasks, and provide semi-annual progress reports on progress of design activities, thereafter, until completion of Final Design. In addition CSDLAC will provide a construction schedule of related tasks and sub-tasks, and provide semi-annual progress reports on progress of construction activities, thereafter, until completion of recommended project.	7 years after Effective Date of TMDL (05/04/2012)
d) Implementation of Compliance Measures, Construction: CSDLAC shall have applied and received all appropriate permits and have completed construction of the recommended project.	11 years after Effective Date of TMDL (05/04/2016)
14. The interim effluent limits for chloride shall remain in effect for no more than 11 years after the effective date of the TMDL. Water Quality Objective for chloride in the Upper Santa Clara River shall be achieved. The Regional Board may consider extending the completion date of this task as necessary to account for events beyond the control of the CSDLAC.	11 years after Effective Date of TMDL (05/04/2016)