



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

*File in: Alameda Sediment TMDL*

*CT 2345- mail log  
only/NO assignment  
Ken Harwood*

*JAN 26  
EXECUTIVE DIRECTOR*

Ms. Celeste Cantú  
Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

Dear Ms. Cantú:

Thank you for submitting the total maximum daily loads (TMDLs) for pathogens and sediments in Morro Bay, Los Osos Creek, and Chorro Creek, California. The pathogen TMDLs were submitted for EPA review in a letter dated December 10, 2003, and the sediment TMDLs were submitted in a letter dated December 20, 2003. Based on our review, EPA concludes that the TMDLs adequately address the pollutants of concern and that upon implementation will result in attainment of applicable water quality standards. The TMDLs include allocations as needed, take into consideration seasonal variations and critical conditions, and provide adequate margins of safety. The State has provided adequate opportunities for public review of the Basin Plan Amendments that include all of the components of the TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The attached review checklists discuss the basis for this approval decision in greater detail. I appreciate the State and Regional Boards' work to complete and adopt the TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3572 or Cheryl McGovern at (415) 972-3415.

Sincerely,

*Alexis Strauss 20 Jan. 2004*  
Alexis Strauss  
Director  
Water Division

Enclosure

cc: Roger Briggs, Executive Officer, Central Coast Regional Board

## TMDL Checklist

**State: California**

**Waterbodies: Morro Bay, Los Osos Creek, Chorro Creek**

**Pollutant(s): Sediment**

**Date of State Submission: December 20, 2003**

**EPA Reviewer: Cheryl McGovern**

Review Criteria	Comments
<p><b>1. Submittal Letter:</b> State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p>	<p>Submittal letter, p. 1: TMDLs are for sediment in Morro Bay, Los Osos Creek, and Chorro Creek. These waterbodies were listed on the State's 1998 303(d) list for impairment due to sediment.</p>
<p><b>2. Water Quality Standards Attainment:</b> TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>Submittal letter enclosure Administrative Record Index State Water Resources Control Board for Central Coast Regional Water Quality Control Board Resolution No. R3-2002-051, p. 7 states: " This listing indicates an exceedance of the Basin Plan narrative water quality objective for sediment, which states that: "the suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses." It continues on p.8 of the same document: "The Regional Board will evaluate the TMDL(sic) by monitoring the numerical targets and tracking implementation actions." Page 19 of the enclosure shows loads assigned to different tributaries in the watershed in tons/year that will result in a 50% reduction in estimated current sediment loading to these three waterbodies. Volume B of the Administrative Record, p. 78 indicates that half of the erosion in the watershed is accelerated or human-induced. This reduction should result in attainment of the narrative water quality standard and associated targets.</p>
<p><b>3. Numeric Target(s):</b> Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>Volume B of the Administrative Record, Draft TMDL (final TMDL is not included in Administrative Record but Ling Tseng, Division of Water Quality confirmed that the final document is unchanged from the draft version contained in the administrative record, personal communication 1/5/2004) p. 38-40 describes applicable water quality standards, including beneficial uses, applicable numeric and narrative criteria. Pages 69-78 describe numeric water quality targets for the TMDL's identified, and an adequate basis for targets as interpretation of water quality standards. EPA has approved these standards. Targets consist of 1) Residual Pool Volume <math>V^*</math> (a ratio) = Mean values &lt;0.21 (mean of at least 6 pools per sampling reach) Max values &lt;0.45; 2) Median Diameter (D50) of</p>

	<p>Sediment Particles in Spawning Gravels with D50 = Mean values &gt; 69 mm and Minimum values &gt; 37 mm; 3) Percent of Fine Fines (&lt;0.85 mm) in Spawning Gravels with Percent fin fines &lt; 21%; 4) Percent of Coarse Fines (all fines &lt; 6.0 mm) in Spawning Gravels with Percent coarse fines &lt; 30%; 5) Tidal Prism Volume in the bay and estuary 4,200 acre-feet and are located on p. 136 of the Submittal Letter enclosure.</p>
<p><b>4. Source Analysis:</b> Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.</p>	<p>Volume B of the Administrative Record, p. 495 - 549 contain the Tetra Tech contracted report "Morro Bay Sediment Loading Study and p. 438-466 contain the Characterization Morro Bay National Estuary Program dated July 2000, and p. 467 contains the final report Sand Transport Analysis, Morro Bay prepared for the U.S. Army Corps of Engineers which combined provide evidence that all significant sources of sediment were consider in this TMDLs.</p>
<p><b>5. Allocations:</b> Submittal identifies appropriate wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, wasteload allocations are zero. If no nonpoint sources are present, load allocations are zero.</p>	<p>Submittal Letter enclosure, p. 45 lists load allocations at various locations in the watershed. Since all sources of sediment are from nonpoint sources of pollution, there are no wasteload allocations in these TMDL's. Specifically, allocations of tons/year of sediment are as follows: For Chorro Creek: Chorro Creek at Reservoir, 6,541; Dairy Creek, 440; Pennington Creek, 966; San Luisito Creek 7,315; San Bernardo Creek, 10,270; Minor Tributaries, 4,489. For Los Osos Creek: Los Osos Creek, 3,052; Warden Creek and Tributaries, 1,812.</p>
<p><b>6. Link Between Numeric Target(s) and Pollutant(s) of Concern:</b> Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>As previously mentioned above, a 50% reduction of sediment load into these waterbodies will result in an elimination of anthropogenic sources of sediment. Volume B, p. 78 states that " Staff therefore, assume that a 50 percent reduction in sediment loading from each subwatershed would produce the target conditions, since the targets represent conditions expected to occur under natural sediment loading."</p>
<p><b>7. Margin of Safety:</b> Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Volume B, p. 82, includes an implicit margin of safety through the use of conservative assumptions in the development of the source analysis and beneficial use characterization. Staff used more conservative assumptions following 1) Tetra Tech's 1998 values of sediment load which are one and half times greater than SCS's values, 2) the use of the low range of estimates for historical loss of bay volume, and 3) the use of sediment deposition estimates that don't account for the amount of sediment that gets flushed out of the bay through tidal action.</p>
<p><b>8. Seasonal Variations and Critical Conditions:</b> Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Volume B of the Administrative Record, p. 82 documents the consideration of seasonal and annual variations in sediment discharges and flow rates in</p>

	<p>the Morro Bay watershed. The analysis describes 100 year streamflow events contribute about 700,000 tons of sediment to the Bay which compares to 1,300 tons of sediment in a two year flood event. The TMDLs address this variation by using probability-weighted averages for annual sediment yield developed by Tetra Tech.</p>
<p><b>9. Public Participation:</b> Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p>Public workshops, meetings, and hearings were conducted as these TMDLs were developed and approved as documented in the submittal letter enclosure titled Administrative Record Index State Water Resources Control Board for Central Coast Regional Water Quality Control Board Resolution No. R3-2002-051, p. 3-59.</p>
<p><b>10. Technical Analysis:</b> Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>Staff report and responsiveness summaries provided detailed technical justifications for each TMDL element.</p>