



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

MAR 18 2004

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 Basin Plan Amendments containing total maximum daily loads (TMDLs) for the following pollutants and water bodies:

- Bacteria in Marina Del Rey Harbor Mother's Beach and Back Basins (MDR)
- Nitrogen Compounds and Related Effects in Los Angeles River and its Tributaries (LAR)
- Nitrogen Compounds in Santa Clara River (SCR)

The State submitted letters describing the TMDLs and implementation plans, and supporting documentation from the State Board and Regional Board administrative records, on February 10, 2004 for MDR, and March 5, 2004 for LAR and SCR. The State adopted TMDLs for the following water bodies:

Marina Del Rey

- Marina Del Rey Harbor Mother's Beach
- Back basins D, E and F

Los Angeles River

- Los Angeles River at Sepulveda Basin
- Los Angeles River from Sepulveda Dam to Sepulveda Blvd.
- Los Angeles River from Riverside Dr. to Figueroa St.
- Tunjunga Wash from Hansen Dam to Los Angeles River
- Burbank Western Channel
- Verdugo Wash from Verdugo Wash Rd to Los Angeles River
- Arroyo Secco from West Holly Ave. to Los Angeles River
- Los Angeles River from Figueroa St. to Carson St.
- Rio Hondo at the Spreading Grounds
- Rio Hondo from the Santa Ana Fwy. To Los Angeles River
- Compton Creek
- Los Angeles River from Carson St. to estuary

Santa Clara River

- Santa Clara Estuary to Highway 101 Bridge (EPA Reach 1)
- Highway 101 Bridge to Freeman Diversion (EPA Reach 2)
- Freeman Diversion to Timber Canyon (EPA Reach 3)
- Timber Canyon to Grimes Canyon (EPA Reach 4)

RESERVED
2004 AUG -3 PM 1:52
CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
100 MARKET STREET
SAN FRANCISCO, CA 94105

- Grimes Canyon to Propane Road (EPA Reach 5)
- Propane Road to Blue Cut Gauging Station (EPA Reach 6)
- Blue Cut Gauging Station to West Pier Highway 99 (EPA Reach 7)
- West Pier Highway 99 to Bouquet Canyon Road Bridge (EPA Reach 8)
- Bouquet Canyon Road Bridge to above Lang Gauging Station (EPA Reach 9)

Based on EPA's review of the TMDL submittals under Section 303(d), I have concluded that the TMDLs adequately address the pollutants of concern and, upon implementation, will result in attainment of the applicable water quality standards. These TMDLs include wasteload and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide adequate margins of safety.

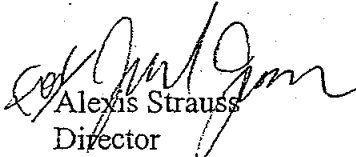
The State has provided adequate opportunities for public review and comment on the TMDLs and demonstrated how public comments were considered in the final TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The TMDL submittals contain detailed plans for implementing the bacterial density reductions for MDR, and nitrogen species load reductions for LAR and SCR. Furthermore, the implementation plans identify critical monitoring efforts to continually assess the status of the water quality for MDR, LAR and SCR. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plans provided with the TMDLs. EPA commends the Regional Board's commitment to review the TMDLs and associated data and information upon (1) the completion of the technical reports and studies evaluating and proposing measures to implement necessary pollutant load reductions, and (2) implementation of phased pollutant reductions by major sources.

We would like to continue working with you and the Regional Boards to ensure that future TMDLs are adopted and submitted to EPA on schedule and, in particular, ensure that TMDLs required under the consent decrees are adopted by the State in time to meet the decree deadlines.

The enclosed reviews discuss the basis for these decisions in greater detail. I appreciate the State and Regional Boards' work to complete and adopt these TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3435 or David Smith at (415) 972-3416.

Sincerely,


Alexis Strauss
Director
Water Division

18 March 2004

enclosures

cc: Dennis Dickerson, Los Angeles RWQCB

TMDL Checklist

State: California

Waterbodies: Santa Clara River

Pollutant(s): Nitrogen Compounds

Date of State Submission: March 5, 2004

Date Received By EPA: March 9, 2004

EPA Reviewer: Cindy Lin & David Smith

Review Criteria	Comments
<p>1. Submittal Letter: 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>Letter dated March 5, 2004. The Los Angeles Regional Water Quality Control Board (Regional Board) completed the TMDL on June 16, 2003. The TMDL was adopted by the Los Angeles Regional Water Quality Control Board through Resolution No. 03-011 on August 7, 2003, and by the State Water Resources Control Board (State Board) through Resolution No. 2003-0073 on November 19, 2003. The State Office of Administrative Law approved the TMDL on February 27, 2004.</p> <p>The Regional Board developed a TMDL and determined the primary pollutants impacting the 2002 303(d) listed Santa Clara River are ammonia, nitrate and nitrite. In order of impact, the sources of impairment are point source discharges, groundwater and non-point source loading and other non-point sources.</p>
<p>2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The Staff TMDL Report, dated June 16, 2003. The TMDL is designed to implement the existing numeric and narrative objectives for nitrogen compounds and their related effects (Staff TMDL Report, pp20-34). The Regional Board's Basin Plan provides numeric water quality objectives for ammonia (acute and chronic criteria), nitrate, nitrite, and nitrate + nitrite. Narrative objectives are provided for biostimulatory substances and toxicity. The existing water quality objectives are also protective of the ground water beneficial use (Staff TMDL Report, pp29).</p> <p>The State reasonably concluded that attainment of the specified numeric and narrative targets and associated TMDLs, load allocations, and wasteload allocations which call for the reduction of targeted pollutant loads, will result in elimination of the adverse effects associated with nitrogen loads in the water and bring about attainment of the applicable standards.</p>
<p>3. Numeric Target(s): 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>The Staff TMDL Report dated June 16, 2003, pp34-40 and Basin Plan Amendment Summary, pp6. TMDL implements numeric WQS for ammonia, nitrate, nitrite and nitrate + nitrite. The Staff TMDL Report analysis concludes that exceedences of the these nitrogen compounds can adversely affect the beneficial uses including municipal and domestic supply, groundwater recharge, agricultural supply, industrial and surface water quality, recreational water contact (REC-1 and REC-2) and sensitive habitat uses (pp21).</p> <p>Numeric targets in this TMDL are based on the water quality objectives in the Basin Plan and an explicit margin of safety (10%) (Staff TMDL Report, pp34).</p>

The numeric targets for ammonia are based on the "USEPA 1999 Update of Ambient Water Quality Criteria for Ammonia (USEPA 1999)", and have already been adopted by the Regional Board (Resolution No. 2002-11). For ammonia, numeric targets are pH and temperature dependent, and concentration based to protect water quality criteria for aquatic life.

The ammonia numeric targets are based on median concentrations of pH and temperature and do not assume application of an ammonia water effects ratio.

Numeric targets for this TMDL are listed as follows:

Total Ammonia (NH ₃ -N) (mg/L)	1Hr Avg	30 day Avg
Reach 8	14.8	3.2
Reach 7 above Valencia	4.8	2.0
Reach 7 below Valencia	5.5	2.0
Reach 7 County Line	3.4	1.2
Reach 3 above Sta Paula	2.4	1.9
Reach 3 at Sta Paula	2.4	1.9
Reach 3 below Sta Paula	2.2	1.7

In accordance with the Basin Plan, the numeric targets for nitrate, nitrite and nitrate+nitrite are daily maximum values.

Nitrate-nitrogen & Nitrite-nitrogen (mg/L)

	NO ₃ -N	NO ₂ -N	NO ₃ -N+NO ₂ -N
Reach 8	4.5	0.9	4.5
Reach 7	4.5	0.9	4.5
Reach 6	9.0	0.9	9.0
Reach 5	4.5	0.9	4.5
Reach 4	4.5	0.9	4.5
Reach 3	4.5	0.9	4.5
Reach 2	9.0	0.9	9.0
Reach 1	9.0	0.9	9.0

In addition, the Basin Plan designates ground water recharge (GWR) as a beneficial use of the Los Angeles River. For all ground waters of the Region, "ground waters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen (NO₃-N + NO₂-N), 45 mg/L as nitrate (NO₃), 10 mg/L as nitrate-nitrogen (NO₃-N), or 1 mg/L as nitrite-nitrogen (NO₂-N).

Narrative objectives for biostimulatory substances and toxicity are based on the Basin Plan. The TMDL analysis shows that the numeric targets will implement the narrative objectives. As a precautionary practice, the Implementation Plan will provide monitoring and special studies to verify that the TMDL will implement the narrative objectives.

The State's approach is a reasonable and environmentally protective approach for accounting for uncertainty in the relationship between pollutant loading levels and attainment of water quality standards, as required by the CWA Section 303(d)(1)(C).

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.

TMDL analysis provided a detailed summary of all nutrient sources in the Santa Clara River watershed and found the direct sources include discharge sources and sources transported via surface runoff or groundwater flow. Discharge sources include reservoir releases and direct point source discharges from the Saugus and Valencia WRPs and the Fillmore and Santa Paula POTWs. Groundwater sources include septic system discharges. Surface runoff sources are a result of land application activities and include diversions for groundwater recharge and/or irrigation, agricultural pumping, atmospheric deposition, and fertilizer application. Utilizing information from discharge monitoring reports, NPDES permits, groundwater quality data, rainfall data from nearby meteorological stations, fertilization loading rates, etc., loadings were computed for dry and wet periods for ammonia and nitrate by reach (Table 12, Staff TMDL Report, pp43).

Source analysis identified all potential sources and determined that point source loads contribute almost all of ammonia, nitrite, and phosphorus in the water quality impaired segments of the Santa Clara River Watershed. The source of nitrate is due to a combination of point, non-point and groundwater sources. Non-point source loads are greater during the wet year than dry year and contribute nitrate to the impaired river segments through groundwater accretion (Staff TMDL Report, pp43). Further evaluation of non-point sources is established in the Implementation Plan.

The source analysis provided an effective basis for evaluating the source loads in the watershed and determined the primary water quality parameters of concern are nutrients, specifically ammonia, nitrite and nitrate.

The Staff TMDL report adequately considered all significant sources by examining data from primary sources. The TMDL sufficiently described all sources of impairments.

5. Allocations: 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.

Staff TMDL Report, pp55-66 and Basin Plan Amendment Summary, pp7-8. The TMDL includes both waste load allocations for point sources and load allocations for non point sources.

EPA concludes that the State's approach of setting the TMDLs and allocations on a concentration basis is appropriate for the waters and pollutants of concern and consistent with the provisions of 40 CFR 130.2(i), which authorizes expression of TMDLs in terms of "mass per time, toxicity, or other appropriate measure."

Waste load Allocations

Waste load allocations are established for the Water Reclamation Plants and Publicly Owned Treatment Works, and the municipal separate storm sewer system permittees in the upper reaches of the watershed. Waste load allocations for four different alternatives (1. setting effluent concentrations at the numeric target, 2. reducing the ammonia loading, 3. & 4. evaluate loads based on expected upgrades of WRP with a nitrate effluent concentration of 8.0 mg/L or 6.7 mg/L) were considered and were calculated using the WARMF model. The tightest condition (Alternative 4) was selected because it provided full compliance in all reaches and both the ammonia and nitrate+nitrite targets will be met.

Concentration-based waste loads are allocated to the Fillmore and Santa Paula POTWs, major point sources of ammonia and nitrate+nitrite in Reach 3; concentration-based waste loads are allocated to Valencia and Saugus WRPs,

major point sources of ammonia and nitrate+nitrite in Reaches 7 and 8.

Total Ammonia (NH₃-N) mg/L:

POTW	1 Hr Avg	30 Day Avg
Saugus WRP	5.6	2.0
Valencia WRP	5.2	1.75
Fillmore POTW	4.2	2.0
Santa Paula POTW	4.2	2.0

Nitrate (NO₃-N), Nitrite (NO₂-N) and Nitrate+Nitrite (NO₂-N + NO₃-N)

30 Day Avg WLA*

POTW	NO ₂ -N	NO ₃ -N	NO ₂ -N + NO ₃ -N
Saugus WRP	0.9	7.1	7.1
Valencia WRP	0.9	6.8	6.8
Fillmore POTW	0.9	8.0	8.0
Santa Paula POTW	0.9	8.0	8.0

*Receiving water monitoring is required on a weekly basis to ensure compliance with the water quality objectives for nitrite, nitrate, nitrite + nitrate, and dissolved oxygen.

Minor Point Sources

Minor waste load allocations are set equivalent to the water quality objectives for ammonia, nitrite, nitrate and nitrate + nitrite. WLAs for minor dischargers discharging into the following reaches are:

	mg/L		
	30-Day Avg NH ₃ -N	1 Hr Avg NH ₃ -N	30-Day Avg NO ₃ -N+NO ₂ -N
Reach 7	1.75	5.2	6.8
Reach 3	2.0	4.2	8.1

MS4 and Stormwater Sources

Concentration-based waste loads are allocated to municipal, industrial and construction stormwater sources regulated under the NPDES permits. WLAs for stormwater permittees discharging into the following reaches are:

	mg/L		
	30-Day Avg NH ₃ -N	1 Hr Avg NH ₃ -N	30-Day Avg NO ₃ -N+NO ₂ -N
Reach 7	1.75	5.2	6.8
Reach 3	2.0	4.2	8.1

In general, minor point sources (including MS4 and Stormwater sources) are not considered a significant source of ammonia, nitrite or nitrate loads to the Santa Clara River. However, due to potential localized effects on water quality, these waste loads will be implemented through the individual NPDES permits

and the Monitoring and Reporting Programs associated with those permits (Staff TMDL Report, pp61).

Load Allocations

Concentration-based loads for nitrogen compounds are allocated for non-point sources. LAs for non point sources discharging into the following reaches are:

	mg/L
	NH3-N + NO2-N + NO3-N
Reach 7	8.5
Santa Clara River	10
Mint Cyn Reach 1	10
Wheeler Canyon/Todd Barranca	10
Brown/Long Canyon	10

Additional monitoring will be established in the Implementation Plan to verify the nitrogen non point source loadings from agricultural and urban runoff and groundwater discharge.

Based on the information in the Staff TMDL Report, Basin Plan Amendment, and the letter of March 5, 2004, EPA concludes that the TMDLs include as appropriate waste load and load allocations which are consistent with the TMDLs and with the provisions of the Clean Water Act and federal regulations. The Regional Board's TMDL acknowledges the presence of significantly high nutrient loadings from both point and non-point sources. TMDL is defined in the federal regulation as the sum of all waste load allocations from point sources and load allocations for non-point sources and natural background (40 CFR 130.2(i)). The State's TMDL focuses permissibly, and in EPA's view properly, on point source loadings of ammonia, nitrate and nitrite from major WRPs and POTWs and minor dischargers and MS4 and stormwater sources, and non point source loadings of ammonia, nitrate and nitrite from surface runoff and groundwater discharge.

6. Link Between Numeric Target(s) and Pollutant(s) of Concern: 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).

Staff TMDL Report, pp44-55 and Appendix A, and Basin Plan Amendment Summary, pp6. The Regional Board provided adequate linkage analysis between nitrogen sources and the in-stream water quality. An appropriate linkage was established by using hydrodynamic and water quality models. The Watershed Analysis Risk Management (WARMF) was used to model the hydrodynamic characteristics and water quality of the Santa Clara River. WARMF can simulate the physical and chemical processes that affect river hydrology and water quality. Model analysis showed major point sources (WRPS and POTWs) were the primary contributors to in-stream ammonia and nitrate plus nitrite loads. Non-point sources and minor point sources composed a much smaller fraction of the loads.

The model defines the storm flow conditions and adequately accounts for critical conditions (i.e., wet and dry weather months) and allows estimation of an implicit margin of safety associated with conservative assumptions in the model. The model includes a sensitivity analysis to account for parameter inputs with high uncertainty. The model was calibrated against critical conditions and monitoring data to verify its range of accuracy (pp48-55).

EPA concludes the analysis sufficiently describes the link between numeric targets and the pollutant sources in Santa Clara River.

<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Staff TMDL Report, pp66-69 and Basin Plan Amendment Summary, pp9. The TMDL includes an implicit and explicit margin of safety. The implicit margin of safety is included in the model through conservative model assumptions and statistical analysis. An explicit margin of safety is incorporated by reserving 10% of the load for uncertainty circumstances and limited data set availability. In addition, a number of special studies (e.g., rapid nitrogen compound disappearance, nitrate loading via groundwater) are planned to address the many assumptions built in the model.</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between WLAs and water quality.</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Staff TMDL Report, pp71-73 and Basin Plan Amendment Summary, pp9. The critical condition identified for this TMDL is based on the low flow condition defined as the 7Q10. Furthermore, the driest six months of the year are identified as a more critical condition for nitrogen compounds because less surface flow is available to dilute effluent discharge. The critical conditions for water quality in the Santa Clara River for nitrogen compounds are during low flow conditions, in particular at the end of the dry season. Model results also suggest the first strong storm events after a dry period can lead to significant short-term increases of nitrate compounds in the river. The implementation plan includes monitoring to verify this latter potential critical condition.</p> <p>The TMDL adequately accounts for the seasonal variations and critical conditions by examining the existing flow record and water quality data. The impairment assessment sufficiently included these situations in the analysis and margin of safety.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p><u>Regional Board Documents (Regional Board Administrative Record):</u> Public Stakeholder Steering Committee Meetings composed of vested stakeholders were held on a monthly basis from January 2002 to June 2003. The following public meetings were held for the Santa Clara River Nitrogen Compounds TMDL: Stakeholder meetings, October 15, 2002 and July 23, 2003; CEQA Scoping Meeting, June 12, 2003; Public Hearing, August 7, 2003. Summary of responses to public comments by Regional Board, July 2003.</p> <p>The Regional Board provided public notice and opportunities to comment on the TMDL through mailings to the Basin Plan mailing lists, by holding public meetings, and by hearing the public comments at these meetings on the TMDL. Several public comments were received in writing and in oral testimony. The State demonstrated how it considered these comments in its final decision by providing reasonably detailed responsiveness summaries, which include responses to each comment.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning nitrogen compounds impairing the specific areas of concern. We conclude the Regional Board was reasonably diligent in its technical analysis of nitrogen compounds in the Santa Clara River and its tributaries. Neither the Regional Board nor public commenters identified research nor study results which provided an analytical basis for setting the TMDL at a level higher than identified at this time.</p>