



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

June 28, 2007

Dorothy Rice  
Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

Dear Ms. Rice:

I am hereby transmitting to you the final list of waters and pollutants that EPA is adding to the State's final 2004-2006 Section 303(d) List (see Enclosure 1). We have separately identified those waters which we proposed to add and those which were already on the State's List (see Enclosure 2). A detailed responsiveness summary explaining public comments received and EPA's responses is also enclosed (see Enclosure 3).

On March 8, 2007, EPA took action on California's 2004-06 §303(d) list, disapproving the State's decision not to list 36 additional water bodies and additional pollutants for 34 waters already listed by the State.

EPA provided public notice and solicited public comment on its identification of additional waters and pollutants for inclusion on California's list. EPA reviewed the 19 written comments received from the State and other commenters. We concluded that one water body, North Fork Feather River, does not show impairment due to copper and thus does not warrant inclusion for copper on the list of additional waters and pollutants identified by EPA. We have also determined that several water body-pollutant combinations identified by EPA on March 8 were already included by California on the State's 303(d) list of water quality limited segments; therefore EPA has revised the list of our additions accordingly.

EPA has not issued an approval for the State's decision to include Walnut Creek for toxicity on the list. This waterbody-pollutant combination was originally listed on the State's 2002 list; however, the available monitoring data provides mixed toxicity results and so continued monitoring will yield better assessment conclusions in 2008. In the meantime, EPA requests the State retain Walnut Creek-toxicity on its 2004-06 list and include a footnote stating that EPA deferred action on this listing in 2004-06.

EPA is also providing clarification regarding the contents of State's 2004-06 303(d) List of Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs. EPA has issued approvals of TMDLs adopted by California after November 30, 2006, which should be included. This portion of the State's 303(d) List does not accurately reflect the specific water body-pollutant combinations of some TMDLs established by the State and approved by EPA

prior to November 2006. We provide this information to clarify the contents of this List and we request the State to update California's 2004-06 303(d) List – Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs (see Enclosure 4).

We look forward to working with the State during the 2008 listing process. If you have questions on any aspect of this final listing decision, call me at (415) 972-3572 or Peter Kozelka at (415) 972-3448.

Sincerely yours,

/signed by/

Alexis Strauss  
Director, Water Division

Enclosures

**Enclosure 1: Water body-pollutant combinations added by EPA to California’s 2004-06 §303(d) List.**

Description of Table Columns:

“RB” column identifies the Regional Water Quality Control Board having jurisdiction over a listed water body.

“Water body name” column identifies the water bodies on the 303(d) list.

“Pollutant” column identifies the pollutant(s) causing impairment.

“Water already listed by State for other pollutants?” column indicates whether the water body is already on the 303(d) list for other pollutants.

“TMDL completion date” column indicates the estimated or projected completion date of the TMDL.

**Table 1: EPA’s additions to California’s 2004-06 §303(d) List.**

<b>RB</b>	<b>Water body name</b>	<b>Pollutant</b>	<b>Water already listed by State for other pollutants?</b>	<b>TMDL completion date</b>
1	Campbell Cove	Indicator Bacteria	N	2019
1	Clam Beach	Indicator Bacteria	N	2019
1	Doran Regional Park	Indicator Bacteria	N	2019
1	Luffenholtz Beach	Indicator Bacteria	N	2019
1	Moonstone County Park	Indicator Bacteria	N	2019
1	Salmon Creek Park	Indicator Bacteria	N	2019
1	Trinidad State Beach	Indicator Bacteria	N	2019
2	Aquatic Park	Indicator Bacteria	N	2019
2	Baker Beach (3 segments: Lobos Creek, Horseshoe Cove NW and NE)	Indicator Bacteria	N	2019
2	Bolinas Beach	Indicator Bacteria	N	2019
2	Candlestick Point (3 segments: Jackrabbit Beach, Windsurfer, Sunndale Cove)	Indicator Bacteria	N	2019
2	Chicken Ranch Beach	Indicator Bacteria	N	2008
2	China Camp Beach	Indicator Bacteria	N	2019
2	Crissy Field (2 segments: East and West)	Indicator Bacteria	N	2019
2	Golden Hinde Beach	Indicator Bacteria	N	2008
2	Heart’s Desire Beach	Indicator Bacteria	N	2008
2	Lawson’s Landing	Indicator Bacteria	N	2008
2	McNears Beach	Indicator Bacteria	N	2019
2	Millerton Point	Indicator Bacteria	N	2008
2	Muir Beach	Indicator Bacteria	N	2019
3	Capitola Beach (3 segments: east of Capitola pier, east of jetty, west of jetty)	Indicator Bacteria	N	2019
3	Goleta Beach	Indicator Bacteria	N	2019
3	Haskell’s Beach	Indicator Bacteria	N	2019
3	Leadbetter Beach	Indicator Bacteria	N	2019
3	Pismo Beach Pier	Indicator Bacteria	N	2019

<b>RB</b>	<b>Water body name</b>	<b>Pollutant</b>	<b>Water already listed by State for other pollutants?</b>	<b>TMDL completion date</b>
3	Rio Del Mar Beach	Indicator Bacteria	N	2019
3	Stillwater Cove (at Beach and Tennis Club)	Indicator Bacteria	N	2019
4	LA Harbor-Consolidated Slip	Benzo(a)-anthracene, Benzo(a)-pyrene, Chrysene, Pyrene, Phenanthrene, 2-Methyl-naphthalene	Y	2008
4	LA/LB Harbor—Inner Harbor	Copper, Zinc	Y	2008
4	LA Harbor—Fish Harbor	Benzo(a)-pyrene	Y	2008
4	LA/LB Harbor—Outer Harbor	Sediment toxicity	Y	2008
4	Coyote Creek	Lead, Zinc	Y	2007
4	San Jose Creek Reach 1	Selenium, Toxicity	Y	2007
4	San Gabriel River estuary	Copper	Y	2007
4	Alamitos Bay (4 segments: Shore float; 1 <sup>st</sup> & Bayshore; 2 <sup>nd</sup> St Bridge & Bay shore; 56 <sup>th</sup> Place – bayside)	Indicator Bacteria	N	2019
4	Colorado Lagoon (3 segments: North, Center, South)	Indicator Bacteria	Y	2019
4	Long Beach City Beaches (13 segments: 3 <sup>rd</sup> Place; 5 <sup>th</sup> ; 10 <sup>th</sup> ; 16 <sup>th</sup> ; 36 <sup>th</sup> ; 54 <sup>th</sup> ; 55 <sup>th</sup> ; 62 <sup>nd</sup> ; 72 <sup>nd</sup> ; Coronado Ave; Granada Ave; Molina Ave; Prospect Ave.)	Indicator Bacteria	N	2019
4	Ormond Beach (3 segments: J St.; Oxnard Drain; Arnold Rd.)	Indicator Bacteria	N	2008
4	San Buenaventura Beach (4 segments/drains: Kalorama; San Jon Rd.; Dover Ln.; Weymouth)	Indicator Bacteria	N	2008
7	New River (Imperial)	Copper	Y	2019
7	Palo Verde Outfall Drain and Palo Verde Lagoon	Pathogens	Y	2019
8	Huntington State Beach (at Brookhurst St.)	Indicator Bacteria	Y	2019
9	Loveland Reservoir	pH	Y	2019
9	Mission Bay	Indicator Bacteria	Y	2019
9	San Diego Bay Shoreline-Bayside Park (at J St.)	Indicator Bacteria	N	2019

**Enclosure 2: Waters already on California’s 2004-06 §303(d) List.**

EPA has learned from SWRCB staff that some water body-pollutant combinations identified in our March 8, 2007 letter were already included on the State’s 2004-06 303(d) List. We concur with the State’s analysis that these waters are impaired for the specific pollutants and we clarify these water body-pollutant combinations in Table 2 below as being already on the State’s 303(d) List (either sub-list: Water Quality Limited Segments Still Needing TMDLs or Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs).

**Table 2: Clarification of Waters/Pollutants which EPA had proposed to add (in March 8, 2007 letter) which were already included on California’s 2004-06 §303(d) List.**

<b>RB</b>	<b>Water body name</b>	<b>Pollutant</b>	<b>Water already listed by State for other pollutants?</b>	<b>TMDL completion date</b>
2	Linda Mar Beach /Pacifica St. Beach	Indicator Bacteria	N	2019
4	Consolidated Slip	Dieldrin	Y	2008
4	Coyote Creek	Toxicity	Y	2008
4	LA River Reaches 1,2,3,4,5 LA River Estuary Arroyo Seco Reach 1, 2 Burbank Western Channel Echo Park Lake, Lincoln Park Lake, Peck Road Lake, Rio Hondo Reach 1, Tujunga Wash, Verdugo Wash	Trash	Y	2007
4	Latigo Canyon Beach/ Dan Blocker Memorial Beach	Indicator Bacteria	N	2002*
4	Solstice Canyon/Dan Blocker Memorial (Coral) Beach	Indicator Bacteria	N	2002*
4	Westward/Zuma Beach	Indicator Bacteria	N	2002*
8	Newport Bay (14 segments)	Pathogens	Y	2000*
9	La Jolla—Children’s Pool/ Pacific Ocean Shoreline, Scripps HA	Indicator Bacteria	Y	2019
9	Monarch Beach/Pacific Ocean Shoreline, Dana Point HAS	Indicator Bacteria	Y	2007

\*Being Addressed by USEPA approved TMDLs

## **Enclosure 3: Responsiveness Summary**

### **EPA Decision Concerning California's 2004-06 CWA §303(d) List**

#### **Introduction**

On November 30, 2006, EPA approved California's proposed 2004-06 Clean Water Act Section 303(d) List of impaired waters and associated pollutants. On March 8, 2007, EPA disapproved California's decisions not to list 36 water quality limited segments and associated pollutants, and additional pollutants for 33 water bodies already listed by the State. EPA identified these additional water bodies and pollutants for inclusion on the State's 2004-06 CWA Section 303(d) List. EPA published a public notice of availability of its decision in the Federal Register on March 15, 2007, and solicited public comment on its identification of these additional waters and associated pollutants for inclusion on California's 2004-06 Section 303(d) list. EPA also posted the notice of availability and decision documents on its Region 9 web site. Decision documents were also available upon request from Region 9.

Written comments were received from the following parties concerning the issues identified in parentheses:

1. Best, Best & Krieger, LLP (Lake Elsinore)
2. California Coastkeeper Alliance, NRDC and Heal the Bay (multiple issues)
3. City of Ventura (Ventura County beaches)
4. County of Orange (Huntington Beach and Newport Bay beaches)
5. County of Plumas (North Fork Feather River)
6. County Sanitation District of Los Angeles (San Gabriel River basin)
7. Gary Paul (San Vincente Creek)
8. Heal the Bay (multiple issues)
9. Ken Johnson (Tembladero Slough)
10. Kerstin Wasson (Tembladero Slough)
11. Klamath Riverkeeper (Klamath River)
12. Lawyers for Clean Water (Klamath River)
13. Orange County Coastkeeper (multiple issues)
14. Pacific Coast Federation of Fisherman's Associations (Klamath River)
15. Pacific Gas & Electric (N. Fork Feather River)
16. Santa Barbara Channelkeeper (Santa Barbara & Ventura county beaches)
17. Regional Board—Colorado River (Palo Verde Outfall Drain)
18. Regional Board—Santa Ana (Newport Bay)
19. State Board (TMDL completion schedule for all Regional Water Quality Control Boards)

This responsiveness summary contains summaries of comments received and EPA's responses to these comments. As similar comments were made by some commenters, the responsiveness summary groups the comments and provides summary responses. General comments are addressed first, followed by comments concerning specific water body listings.

EPA is making one change in its listing decisions based on comments received during the comment period. EPA is removing North Fork Feather River-copper from the final list. In all other respects, the final list being transmitted to California contains each of the waters and pollutants identified for listing by EPA on March 8, 2007.

### **General Comments and Responses**

**1. Several commenters supported EPA's additions of various beaches to the list based on exceedances of bacterial indicators.**

Response: Each of the beaches that EPA identified for inclusion on March 8, 2007, are retained on the State's final 2004-06 303(d) list. Some are included on the State's 303(d) List –Water Quality Limited Segments Still Needing TMDLs (see enclosure 1), others are on the State's 303(d) List –Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs (see enclosure 2).

**2. EPA should not approve California's assessment decisions for certain waters because:**

- a. the State should not include Lake Elsinore as impaired due to PCBs,**
- b. the State should not identify silviculture as source of sediment impairment in San Vicente Creek ,**
- c. the State should not delist Tembladero Slough due to nitrate.**

Response: The comments address EPA's November 30, 2006 decision to partially approve California's list submittal, which is final. One comment also addresses EPA's partial disapproval decision on March 8, 2007, whereby we added waters and associated pollutants to the State's 303(d) list. We were not inviting public comment concerning other waters such as those identified above because the State had already provided opportunities for public review and comment on its listing and delisting decisions. EPA was inviting comment only on its decisions to disapprove California's failure to list specific waters as identified in our March 8 partial disapproval letter. No response to the comments regarding specific State listing decisions of concern to the commenters is necessary because those listing decisions were previously made and are not under consideration by EPA.

**3. EPA's partial disapproval decision cites an exceedance frequency contained in the California Toxics Rule ("CTR") as part of its rationale for adding certain pollutants and/or waters to the State's 2004-06 Clean Water Act Section 303(d) list. EPA has recommended that exceedances of a four-day average should not happen more than once in three years. One of the shortcomings of using this approach to define an allowable exceedance frequency is that the majority of monitoring in receiving water is based on grab samples and is not, by any means, representative of four-day averages. This is most definitely true of samples collected during rain storms in southern California; rains often last for only a period of hours even within a large watershed. EPA should adhere, at the very least, to USEPA's own guidance that recommends an allowable frequency of 5% of grab samples**

**rather than use an approach that does not consider the size of the sample set, was designed for samples that are representative of four-day average conditions, and does not properly consider the contextual information regarding sampling conditions. USEPA should reevaluate its proposed additions to the 303(d) list that were proposed based on the allowable exceedance frequency of “not more than once in three years”.**

Response: EPA understands the comment to address EPA’s determination to identify the following waters as meeting federal listing requirements for failure to meet a CTR water quality standard: North Fork Feather River, for copper<sup>1</sup>; New River, for copper; Coyote Creek Reach 1, for lead and zinc, San Jose Creek Reach 1 for selenium, and San Gabriel River Estuary, for copper.

EPA has established numeric criteria for priority toxic pollutants in California. The rule provides, in part, that:

“CCC (Continuous Criteria Concentration) is the water quality criteria to protect against chronic effects in aquatic life and is the highest in stream concentration of a priority toxic pollutant consisting of a 4-day average not to be exceeded more than once every three years on average.”

See, 40 CFR 131.38(c)(2).

EPA notes that precipitation events of “only a period of hours” leads to elevated streamflows of longer duration (closer to one-day or more). EPA believes that it is appropriate to apply the chronic criteria, and that the assessment for the listed waters should not be limited to the applicable acute criteria. Furthermore, a recent study has reviewed the use of grab samples in comparison to chronic criteria, including results from Southern California waters, and it appears reasonable to assume that observing at least once grab sample exceedance would increase the likelihood of another exceedance with the same three year time frame (Tetra Tech report, 2006). In the absence of four-day data, the data from the grab samples taken in the listed waters may be used to determine if the water’s chronic criteria for toxic pollutants is being attained.

The comment refers to EPA’s draft guidance (released in Dec. 2005) titled: Modeling Framework Applied to Establishing an Allowable Frequency for Exceeding Aquatic Life Criteria. As indicated, this is draft guidance and subject to change. More importantly, 303(d) listing regulations require comparison with State standards, both numeric and narrative. The CTR, with its referenced frequency and return interval provisions, is the existing water quality standard and will apply until modified. In addition, with respect to each of the listed waters, EPA notes that greater than 5 percent of the grab samples referenced in the State’s submittal indicated an exceedance of the applicable concentration.

With respect to the New River, Coyote Creek Reach 1, San Jose Creek Reach 1, and the San Gabriel River Estuary, EPA concludes that available sampling data provided with the State’s submittal is sufficiently representative and reliable to be considered, and that a determination that the CTR is not being attained in those waters is appropriate. Sampling for the New River

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<sup>1</sup> As explained in response to Comment 9, below, EPA has determined to withdraw its listing of North Fork Feather River for copper.



indicates that the in-stream concentration of copper exceeded the applicable limit on 6 of the 98 sampling events between 1995 and 2003. Sampling for Coyote Creek Reach 1 indicates that the in-stream concentration of lead and zinc exceeded the applicable limit on 7 of 62, and 6 of 62 sampling events, respectively. Sampling for San Jose Creek Reach 1 indicates that the in-stream concentration of selenium exceeded the applicable limit on 11 of 78 sampling events. Sampling for San Gabriel Estuary indicates that its applicable limit for copper was exceeded on 5 of 40 sampling events. With respect to each of the listed waters it is implausible, in light of the detected frequency of the exceedances, to conclude that the applicable limit was exceeded, on a 4-day average, less frequently than once every three years. EPA has reviewed the additional sampling data for Coyote Creek and San Jose Creek submitted to the State Board in February 2007. Although the data indicate that the frequency of the exceedances has been reduced, EPA concludes that the subject waters' criteria have not been attained, and that listing is warranted.

### Algal Growth

- 4. Several commenters supported EPA's recommendation for the State to revisit and expand its assessment methodology for evaluating algae and potential impacts to designated uses. One commenter noted the algal methodology was inconsistently applied by State Board during development of the 2006 list.**

**One commenter requested the State Board to employ a "catastrophic concept" in evaluating algal growth. This approach would apply the value of 30% or greater coverage, 50% of the time to be used as threshold for automatic listing. This algal coverage value was selected because "any scientist would be hard-pressed to refute [it] as being indicative of a major water quality impairment". The commenter emphasized this approach should be used in the next listing cycle and "until the State develops its own guideline".**

Response: Comment noted. EPA will forward this comment (and specific 30/50% value) to State and Regional Board staff for their consideration of assessment of algal coverage in surface waters during the 2008 next listing cycle. Also, EPA will assist the State and Regional Board staff to develop more complete assessment methodologies to address narrative water quality objectives for nuisance and excessive biostimulatory agents.

- 5. Several commenters requested EPA to amend California's 2006 list to include the Klamath River and the Iron Gate and Copco Dam reservoirs due to impairments caused by "toxic algae", specifically *Microcystis aeruginosa* and microcystin toxin. [*Microcystis aeruginosa* is a species of cyanobacteria or blue green algae. Different cyanobacteria and other algae can produce and release different toxins into aquatic systems.]**

Response: EPA and California recognize the public health and environmental impacts associated with *Microcystis aeruginosa* (blue green algae and associated toxins) in the Klamath River and Iron Gate and Copco Dam reservoirs and are taking aggressive steps to address those impacts. In light of those actions and for the reasons discussed below, EPA has decided not to add at this time *Microcystis aeruginosa* and microcystin toxin as additional pollutants for which the

Klamath River and the Iron Gate and Copco Dam reservoirs are identified as impaired on California's 2006 Clean Water Act section 303(d) list.

California has identified the Klamath River and its reaches that include the Iron Gate and Copco Dam reservoirs as impaired due to nutrients, "organic enrichment/low dissolved oxygen," and temperature. The State's determination to list those water body-pollutant combinations as impairments was approved by EPA on November 30, 2006.

EPA believes that nutrient, dissolved oxygen, and temperature loadings contribute to the development of toxins associated with blue green algae in the Klamath River and its tributaries. EPA further believes that TMDLs developed for those pollutants in the Klamath River and its tributaries will be sufficient to address the public health and environmental impacts of blue green algae. In light of the Klamath River's current listings for those algae-causing pollutants, and the current schedule for TMDL development related to those pollutants, EPA believes that California's decision to not identify blue green algae itself as an additional pollutant at this time was reasonable and need not be disapproved by EPA in the context of its review of California's 2006 list. Under these circumstances, EPA believes that even if other pollutants are causing or contributing to an impairment, listing additional water-body pollutant combinations at this time is not likely to result in development of TMDLs that would be any more effective in reducing loadings of pollutants like nutrients, organic enrichment, and temperature that EPA believes contribute to the presence in the Klamath River of blue green algae and associated toxins. As nutrient, dissolved oxygen and temperature TMDLs currently being developed for the Klamath River and its tributaries will be sufficient to address the public health and environmental impacts of blue green algae, EPA does not consider it necessary to evaluate whether the state would have had a basis to separately list these same waters for blue green algae in the absence of these other approved listings.

**a. As stated by the commenter, "a perfect environment for the growth and proliferation of blue green algae, or what are known as cyanobacteria" is created by high levels of nutrients in a warm, quiescent environment.**

Response: In general, we concur with the commenter's description of aquatic conditions that promote blue green algae blooms. In EPA's view, scientific studies indicate a complex and not fully understood relationship between various environmental factors and the proliferation of blue green algae. Past research has identified the general factors such as physical (water mixing and temperature), chemical (nitrogen, phosphorus, organic matter), and biological (heterotrophic grazing) conditions appear correlated to blue green algae blooms. Other parameters that are indicators of potential blue green algae growth include: the presence of chlorophyll-a, the ratio of chlorophyll to phosphorus, and the degree of light penetration as measured by the amount of suspended solids, or secchi depth. In freshwater systems, several species of blue green algae may be present and the limiting nutrient is probably species-specific: e.g., nitrogen may control *Microcystis aeruginosa*, but it may not inhibit growth of *Anabaena* which can fix molecular nitrogen. Both algal types have been observed in the Klamath River and, upon senescence, could release toxins into the water. However, the presence of blue green algae does not directly correlate to levels of aqueous toxins; that is, the blue green algae may be present although not producing the toxic effect. EPA scientists have also promoted the use of hydrologic and water

quality models to help our understanding and predictive abilities for blue green algae blooms and potentially elevated toxin levels in surface waters (Hudnell, in press). Based on this technical information, EPA's approach for preventing excessive algae and blue green algae relies on management of the physical and chemical factors described above, along with insights from modeling results.

See <http://www.nalms.org/Resources/BlueGreenInitiative/Overview.htm> and Graham, et al. 2004; Camargo and Alonso, 2006.

Here is a summary of selected EPA and State actions, including TMDLs, addressing blue green algae in the Klamath River and the Iron Gate and Copco Dam reservoirs.

- EPA chairs the Klamath River Blue Green Algae Working Group, which officially convened in late spring 2006. See <http://www.humboldt.edu/~kwi/rfp.html>. The working group, is comprised of tribal, local, state and federal entities, and landowners in the Klamath Basin, and assisted by a coordinator through Humboldt State University's Klamath Watershed Group. The working group administers funding to conduct a two-year study of the presence, distribution, and possible causes of blue-green algae in the Klamath Basin. The group oversees the study and will help translate the results into management actions to reduce the occurrence, frequency and/or duration of these blooms.
- EPA has developed draft TMDLs for the Lower Lost River to address low dissolved oxygen, elevated pH and excessive algae impairments; the Lower Lost River is part of the Klamath River Basin, and is upstream of the Copco and Iron Gate reservoirs. These TMDLs recognize the impairments are caused by excessive discharges of nutrients, organic matter and biological oxygen demand and identify 50% reductions of these nutrients to attain water quality standards. EPA is currently inviting public comments on these TMDLs. See <http://www.epa.gov/region09/water/tmdl/progress.html>.
- EPA Region 9, in coordination with EPA Region 10 and Oregon Department of Environmental Quality, is assisting Regional and State Board staff in developing TMDLs for nutrients, dissolved oxygen and temperature impairments in the Klamath River, including the Copco and Iron Gate reservoirs. The technical approach is similar to that described above for Lower Lost River. We expect these TMDLs to identify both point and non-point source allocations to reduce nutrient and organic enrichment loads and also to determine optimal surface water temperatures for the Klamath River. This is expected to improve ambient water conditions, control conditions that contribute to blue green algae blooms, and preclude the need for additional control measures.
- California's State Water Resources Control Board (State Board) chairs the Statewide Blue Green Algae Work Group and has established a website devoted to blue green algae. See <http://www.waterboards.ca.gov/bluegreenalgae/index.html>. The Blue Green Algae Work Group, including the State's Office of Environmental Health and Hazard Assessment (OEHHA), recently posted draft voluntary guidance to protect people, pets and livestock from the effects of harmful algae blooms in non-marine waters of California. State Board has allocated funding for statewide sampling and analysis of blue-green algae during the bloom season, including some

sample collection in Klamath River. State Board has also contracted with OEHHA to support an exposure risk assessment based on available research and data and the forthcoming bloom season results. State Board has indicated working with PacifiCorps to develop and implement interim measures (e.g., reservoir management plans) to reduce algal blooms. See letter from Tam Doduc to Amy Vanderwarker, dated March 23, 2007.

- The North Coast Regional Board has recently resolved that staff shall continue to work with the PacifiCorps, tribes, counties and other interested parties, including posting by the Regional Water Board if necessary. In the same resolution, the Regional Board has indicated they are likely to require monitoring for: chlorophyll-a, blue green algae density, and microcystin toxin as part of TMDL development and implementation.

See North Coast Regional Board Resolution #R1-2007-0028, dated April 26, 2007, at <http://water100.waterboards.ca.gov/rb1/orders/asp/d.asp?discharger=&Submit=Submit&ordernumber=&ordertype=Resolution&county=Siskiyou&ID=813>.

**b. The commenters suggest the State Board declined to list these waterbody-pollutant combinations on the bases that there are no applicable water quality standards and that blue green algae is not a “pollutant.”**

Response: EPA did not rely on these factors in determining that the State’s decision was reasonable.

EPA is not taking a position at this time on whether blue green algae may be considered a “pollutant” or whether there may be applicable state water quality standards related to the presence of blue green algae. EPA regulations and guidance do not expressly address the question of whether a state is required to list certain waters for blue green algae when other waterbody-pollutant combinations addressing conditions contributing to algae growth would likely address the concerns posed by blue green algae. Considering the current waterbody-pollutant combinations on California’s 303(d) list associated with the presence of blue green algae, as well as the other actions being taken to address concerns resulting from blue green algae, EPA does not believe that section 303(d) of the Clean Water Act (CWA) or EPA’s regulations require the addition of blue green algae to California’s list at this time or preclude EPA’s approval of that list.

EPA notes the topic of “toxic algae” was discussed during the State Board’s October 25, 2006 meeting on the State’s 303(d) List. In the public forum, Board members heard from interested parties speaking to both sides of the issue of adding toxic algae to the State’s 303(d) List. In the 303(d) hearing, Board members made reference to the following: blue green algae were natural features and were not discharged from anthropogenic sources, blue green algae growth was probably affected by flow conditions which are influenced by water supply (largely outside EPA jurisdiction), and problems occur when blue green algae are out of balance. Staff stated that “nutrients...and quiet water control its growth” and recommended that blue green algae were best addressed via “quite low” nutrient levels in TMDLs under development for Klamath River. The State Board did not entertain a specific motion pertaining to *Microcystis aeruginosa* and microcystin toxin during the hearing, rather several board members expressed the notion to “cue it up as a priority” for the 2008 listing cycle.

See SWRCB Oct. 25, 2006 transcripts at [http://www.swrcb.ca.gov/tmdl/303d\\_lists2006.html](http://www.swrcb.ca.gov/tmdl/303d_lists2006.html).

EPA's approval of California's determination not to add to its list of pollutants impairing the Klamath River, and the Iron Gate and Copco Dam reservoirs, should not be construed as a suggestion by EPA that the public health and environmental impacts associated with blue green algae or *Microcystis aeruginosa* in the Klamath River are trivial or need not be addressed. Rather, based upon the current record, EPA considers California's present listings for the Klamath River are sufficiently comprehensive, and trigger the requirement to establish TMDLs sufficiently stringent to address those impacts.

Pursuant to 40 CFR 130.7(d), California is to submit its revised 303(d) list of waters and pollutants causing impairment by April 1, 2008. The State's notice soliciting data in support of the 2008 list includes a tentative schedule indicating that the State Water Resources Control Board will approve and submit its list in April 2008. Commenters are encouraged to submit additional data and information regarding *Microcystin aeruginosa* and the Klamath River to the North Coast Regional Water Quality Control Board, as they will review available data and complete water quality assessments for the 2008 listing cycle. The Regional Board will generate the draft 2008 List for its waters and will invite public comment prior to sending its recommendations to SWRCB. After compiling the Regional Boards' 303(d) Lists, the State Board will hold public hearing prior to its approval and subsequent submittal to EPA. California's process should afford a timely opportunity for the State to assess whether the current list of pollutants impairing the Klamath River is sufficiently comprehensive, and whether the resultant TMDLs will adequately address *Microcystis aeruginosa* and other blue green algae. It is also possible the Klamath River Blue Green Algae Working Group will come up with additional information relevant to the State's decision whether to list these waters for blue green algae or *Microcystis aeruginosa*.

EPA remains open to re-assessing its present determination regarding the listing of impairments in the Klamath River and will coordinate with the North Coast Regional Board and State Board during the 2008 listing cycle.

**c. In addition, the commenters urge EPA separately to direct the State Board and Regional Board to amend the Basin Plan to establish appropriate water quality criteria/water quality objectives for *Microcystis aeruginosa* and microcystin toxin as part of California's implementation of its CWA Continuing Planning Process and WQS review obligations established by CWA sections 303(c) and (e), 33 U.S.C. § 1313(c), (e).**

Response: Comment noted. EPA will forward the request to establish water quality criteria to both State Board and North Coast Regional Board for their consideration as a Basin Plan amendment.

**6. Several commenters supported EPA's addition of Coyote Creek for toxicity, zinc and lead.**

Response: The reaches of Coyote Creek that EPA identified for inclusion on March 8, 2007, are retained on the State's final 2004-06 §303(d) List.

## Water Body-Specific Comments

### Huntington Beach-pathogens (Santa Ana Regional Board)

- 7. EPA's proposed listing for Huntington Beach for bacterial indicators is not specific for the beach segment. Site 6N, located between the Santa Ana River mouth and Magnolia Street in Huntington State Beach is similar to EPA sample site number [OHB03] and the exceedance data provided, in which case the listing area should be decreased to this segment of Huntington State Beach.**

Response: EPA has discussed the site identification information and corresponding geographical location with Orange County Health Care Agency. EPA sample site number OHB03 (old name) corresponds with 3N (current name) and corresponds with projection at Brookhurst St. The sample results at Brookhurst St. show exceedances of fecal coliform and enterococcus geometric objectives which indicate a new segment of impaired waters. This is a different water body segment than the 2002 listing at Magnolia St. which is associated with site number 6N (current name). EPA will forward this information on specific extent of impairment to the State Board and Santa Ana Regional Board.

### Newport Bay-pathogens (Santa Ana Regional Board)

- 8. EPA added Newport Bay for several bacterial indicators, including total and fecal coliform and enterococci, for 14 sampling sites. One commenter supported the addition of these waters. Another commenter did not disagree with the addition, but indicated that the listing decision's reference to enterococci and total coliform objectives was unclear since the Basin Plan includes fecal coliform objectives.**

Response: Newport Bay pathogens is currently on the State's 2004-06 303(d) List—Water Quality Limited Segments Being Addressed by USEPA-Approved TMDLs. Accordingly, EPA is not adding these waters, since they already exist on the State's List. EPA acknowledges the Newport Bay Bacteria TMDLs are being implemented and monitoring results are being generated. We encourage the State to include enterococci analyses as part of the regular monitoring plan, if such analyses are not already included.

### Feather River – North Fork, copper (Central Valley Regional Board)

- 9. Commenters request that EPA reconsider its addition of this waterbody for copper, specifically requesting EPA to re-assess the available data for total metals results vs. dissolved metals criteria.**

Response: EPA has carefully reviewed the available copper data for Feather River-North Fork. EPA has noted that the data includes measurements of both total (unfiltered) and dissolved copper concentrations. Based on the measurements of dissolved copper concentrations, EPA has concluded this waterbody is not impaired due to copper. EPA has modified its initial decision, and is withdrawing its listing of Feather River-North Fork for copper.

Coyote Creek—Lead and Zinc (Los Angeles Regional Board)

**10. EPA cites seven exceedances in 62 samples as sufficient to list Coyote Creek for lead. EPA cites six of 62 exceedances for zinc. All of the 62 samples were grab samples collected during storms and thus, 1) they represent short-term storm conditions and 2) they are not representative of four-day average conditions in dry southern California pursuant to the 2006 Integrated Report Guidance. The commenter requests that these two waterbody-pollutant combinations not be included on the final 2006 303(d) list for California.**

Response: See response to Comment 3, above.

San Jose Creek Reach 1—Selenium (Los Angeles Regional Board)

**11. EPA cites 11 exceedances in 78 samples as sufficient to list San Jose Creek for selenium. EPA cites six of 62 exceedances for zinc. All of the 78 samples were grab samples collected from the receiving water. These were not samples collected over four days nor are they representative of average conditions over four days; thus, the “not more than once in three years” allowable exceedance frequency is not valid and should not be applied to this dataset. The commenter requests that this two waterbody-pollutant combination not be on the final 2006 303(d) list for California.**

Response: See response to Comment 3, above.

Walnut Creek-toxicity (Los Angeles Regional Board)

**12. Commenter requests that EPA remove Walnut Creek from California’s 303(d) list in the final action, given that the data clearly show that Walnut Creek is no longer impaired.**

Response: As indicated in EPA’s decision on March 8, 2007, the available data show evidence of toxicity in 1992-1993, but infrequent toxicity in 2003-2005. The State did not propose to delist this waterbody as part of the 2004-06 list. This waterbody will be retained on the State’s 2004-06 list; however, EPA requests the Los Angeles Regional Board and State Board review all available data as part of the 2008 303(d) listing cycle.

San Buenaventura Beach—Los Angeles Regional Board

**13. The commenter objected to EPA’s addition of four segments of San Buenaventura Beach for bacterial indicators.**

**a. Commenter indicated that EPA’s “frequency of exceedance” for these beaches was developed as part of the guidelines for developing aquatic life water quality criteria.**

Response: EPA believes that the commenter has misinterpreted an enclosure to EPA’s partial disapproval letter, which states: “EPA’s determination to list the coastal waters was based on the bacteriological standards for waters adjacent to public beaches, as established in California Department of Health Services, California Code of Regulations, Title 17, Article 4, sub-section 7958 (DHS 1999). See Enclosure 1, pg. 7 of March 8, 2007 letter to Tom Howard. These bacteria objectives apply to human recreational uses for coastal waters, not for aquatic life protection.

**b. Commenter states the implementation procedures for the DHS bacteria objectives do not provide a distinction between single sample exceedances and geometric mean exceedances in the corrective actions that are required.**

Response: While the DHS bacteria standards may not provide such a distinction, EPA Water Quality Criteria-Bacteria document (1986) has described analyses that demonstrate correlation between human illness rates and geometric mean indicator densities. This Water Quality criteria document states “the beach is in noncompliance with the [enterococci] criteria if the geometric mean of several bacterial density samples exceeds the value listed in Table 4.” This Water Quality criteria document establishes the rationale in our assessment protocol for bacterial indicators to evaluate both geometric mean exceedances and single sample exceedances. EPA has strongly recommended that States (BEACH Act, 2006) generate sufficient data to support geometric mean analyses (i.e., five samples within 30-day period) to evaluate beach water quality. Since California’s public health agencies are collecting such desired monitoring data at coastal beaches, it is valid to analyze for geometric mean exceedances of applicable bacterial indicators. Thus EPA’s assessment methodology as applied to coastal beaches is technically reasonable and consistent with federal guidance.

**c. The State Listing Policy does not make a distinction between geometric mean bacteria exceedances and single sample exceedances for determining impairment.**

Response: EPA is obligated to follow federal regulations and listing guidance when determining if the State omitted waters from its 303(d) list submittal. See response immediately above. EPA encourages the State to provide further details regarding its assessment methodologies for bacterial indicator results and the designated beneficial uses; i.e., human health protection.

**d. The Los Angeles Region Basin Plan states that “the single sample bacteriological objectives shall be strictly applied except when provided for in a Total Maximum Daily Load (TMDL). In all circumstances, including in the context of a TMDL, the geometric mean objectives shall be strictly applied.” The commenter believes this requirement indicates that the reference beach sample frequency approach should not be used for listing**



**decisions, but only as part of a TMDL. Consequently, the reference beach analysis should not be used to make listing decisions for the Ventura County beaches.**

Response: EPA wishes to clarify our assessment procedures applied to bacteria results for waters in the Los Angeles Region. We evaluated the data to determine the number of geomean exceedances as well as the number and percent of single sample maximum exceedances. This approach is consistent with the Los Angeles Regional Basin Plan, which states, "In all circumstances, including in the context of a TMDL, the geometric mean objectives shall be strictly applied." (Regional Board Resolution 2002-022, amendments to Chapter 3, "Water Quality Objectives" to add additional implementation provisions for the bacteria objectives)

EPA listed these San Buenaventura beaches based on geomean exceedances at each of four sampling sites. EPA did not list the subject beaches by use of the "reference beach approach".

**e. EPA evaluated bacteria results from all four sampling stations on San Buenaventura Beach and these were combined into one analysis. The commenter's analysis suggested that only one station exceeds the 10% threshold of exceedances for any water quality objective and the 4% threshold for summer data. The commenter also recognizes that bacteriological impairments may exist at this one station on the beach at the end of San Jon Road, however, the commenter feels this is a localized problem that should be addressed through localized solutions and not a TMDL for the entire beach.**

Response: EPA evaluated geomean and single sample results at each station. We found sufficient geomean exceedances at each sampling station to support our conclusion these were impaired. EPA's assessment of the whole beach is based on the sum of these analyses; we have concluded the whole beach is impaired. EPA defers to State and local Regional Board regarding the interpretation of waterbody segmentation. Further EPA recommends the commenter discuss with the Regional Board the issue of local solutions to the beach bacteria impairment.

Palo Verde Outfall Drain and Lagoon-pathogens (Colorado River Regional Board)

**14. Commenter disagrees with EPA's decision to retain Palo Verde Outfall Drain on the State's 2006 303(d) List due to pathogens. EPA's rationale was based on evaluation of exceedances for three bacterial indicators— E. coli, enterococci and fecal coliform –all of which are contained in the Colorado River Region Basin Plan for protecting water contact recreational uses (REC-1). In the March 8 letter, EPA had indicated the extent of impairment included the Palo Verde outfall drain, the lagoon, and waters down to the confluence of Colorado River.**

**a. Commenter recognized that all three indicators exist within the Basin Plan; however, it emphasizes the presence of footnote 1 in the Basin Plan stating:**

**"Fecal coliforms and E.coli bacteria are being used as the indicator microorganisms in the Region until better and similarly practical test become readily available in the region to more specifically target pathogens."**

**According to the commenter, it reflects our Regional Board's intent to replace certain existing bacteria indicators when other better indicators are developed.**

Response: As indicated in Table 1, enclosed in our March 8 letter, EPA determined that fecal and enterococci results are greater than single sample criteria by more than the allowable 10% exceedance rate. Specifically there were 6 of 41 fecal coliform and 41 of 41 enterococci exceedances in monthly samples, which are not feasible for geometric analysis. EPA's conclusion that these waters are impaired is consistent with the Basin Plan footnote language, since there are sufficient exceedances of fecal coliform results.

**b. Commenter also contends that EPA's reasons for keeping Palo Verde Outfall Drain on the list is unclear and may even conflict with directions provided within EPA guidance for the implementation of bacteria indicator criteria (EPA 2006). This recent EPA guidance, provided to States for further implementation of the 1986 criteria, recommends using either E.coli or enterococci to protect freshwater recreational uses. The 2002 guidance includes the following footnote as part of its recommendation:**

**“Only one indicator should be used. The regulatory agency should select the appropriate indicator for its own conditions.”**

**Commenter had relied on this information to apply numeric criteria for only one indicator, E. coli, as its rationale for delisting the Palo Verde Outfall Drain.**

Response: EPA Region IX acknowledges the specific language in the 2002 implementation document, although we must clarify the overall context of this statement. EPA recommends the adoption of E. coli and/or enterococci as fresh water quality criteria but allows States to choose to retain its fecal coliform criterion in the transition. Neither the Colorado River Regional Board nor the State Board has officially adopted numeric E.coli criteria as the sole bacterial indicator applicable to freshwaters in California. Within the Basin Plan, both fecal coliform and E. coli criteria apply to freshwaters with REC-1 and REC-2 designated beneficial uses. EPA recommends the Regional Board proceed to amend the Basin Plan to formally identify and adopt the specific bacterial indicators applicable to fresh and/or saline waters in the region.

**c. Commenter describes how the Regional Board has developed a draft TMDL for pathogens in Palo Verde Outfall Drain. The source analysis included a DNA study of various sources of bacteria to the waters and indicated that high levels of enterococci and E. coli were attributed to natural inputs from wildlife. The study concluded the two dominant E. coli sources were avian (48%) and rodent (29%); whereas the total human controlled sources (12%) included human, livestock and domestic animals. The Regional Board requests guidance from EPA to reconcile the presence of high natural background sources of pollution that cause water quality standard violations, including pathogen bacteria indicators.**

Response: EPA recommends the Regional Board consider revising the water quality objectives within the Basin Plan to reflect the selected bacterial indicators for freshwaters in the Colorado Region. The Regional Board may also consider revising its current approach to accommodate natural source exclusions of water quality exceedances. Such water quality standards changes will require EPA review and approval under Section 303(c). EPA encourages the Colorado

River Regional Board to discuss this approach with Los Angeles Regional Board, which has adopted a similar basin plan amendment for both bacterial water quality objectives as well as bacteria TMDLs for Santa Monica Bay beaches.

#### TMDL completion schedule for added waters

#### **15. SWRCB, in consultation with individual Regional Boards, provided additional information to clarify the TMDL completion schedule for waters that EPA added.**

Response: EPA has added these dates to pollutant information within Enclosures 1 and 2 to indicate the projected schedule of completion.

#### References

- Camargo, JA and A Alonso, 2006. *Ecological and toxicological effects of inorganic nitrogen pollution in aquatic ecosystems: a global assessment*. Environ. Impact Assess. Rev. **26**:6 pp. 831-849.
- Graham, J, J Jones, S Jones, J Downing, and T Clevenger, 2004. *Environmental factors influence microcystin distribution and concentration in the Midwestern United States*. Water Res. **38** pp. 4395-4404.
- Hudnell, K, et al., in press. Draft Report to Congress: *Scientific Assessment of Freshwater Harmful Algal Blooms*. Interagency Working Group on Harmful Algal Blooms, Hypoxia and Human Health.
- Tetra Tech, Inc. 2006. *Evaluation of Grab Sample Analysis for Assessing Attainment of Chronic Aquatic Life Water Quality Criteria for Toxics*. Report prepared for U.S. Environmental Protection Agency, Region IX.
- U.S. Environmental Protection Agency, 2006. Report to Congress: Implementing the BEACH Act 2000, <http://www.epa.gov/waterscience/beaches/report/>

#### **Enclosure 4: Clarification of California's 2004-06 §303(d) List – Water Quality Limited Segments Being Addressed by USEPA-approved TMDLs.**

On November 30, 2006, EPA issued its partial approval of State's 2004-06 303(d) list. This included impaired waters for which TMDLs have already been completed by the State as well as approved by EPA. We have identified below some corrections and clarifications regarding the State's 303(d) List – Water Quality Limited Segments Being Addressed by USEPA-approved TMDLs. There are several categories of clarifications. First, EPA has approved some State-submitted TMDLs since the November 2006 date, and we provide this information to update the State as of today's letter. Second, we have included some water body-pollutant combinations omitted from the State's 303(d) list, although the water body-pollutant combinations were identified in our TMDL approval letters. Some segments were inappropriately included on the list, although EPA has not issued its approval. Third, for some TMDLs, the EPA approval date/year needs to be corrected. EPA requests the State update and rectify the State's 303(d) List – Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs, to reflect the specific information discussed below and provided in Table 3.

The Los Angeles Regional Water Quality Control Board has asked us to clarify relevant listings pertaining to the Los Angeles River and Ballona Creek Metals TMDLs in view of recent litigation challenging these TMDLs. In our approval letter of these TMDLs, dated December 22, 2005, EPA notified the SWRCB that pursuant to 303(d)(2), EPA approved the identification of several additional water body-pollutant combinations for the Los Angeles River and Ballona Creek, therefore these additional water body-pollutant combinations are impaired and should be included on the State's 303(d) List – Water Quality Limited Segments Being Addressed by USEPA-approved TMDLs. We also note the State's 303(d) List includes a proposal to delist Los Angeles River Reach 1 for cadmium based on the State's assessment methodology. The State has provided no new data in support of that delisting proposal, rather the State relied only on data and information available when EPA concurred that it was impaired on December 22, 2005. Since no basis has been submitted to support a change in our 2005 conclusion, the Los Angeles River Reach 1 remains listed as impaired for cadmium.

EPA has not approved TMDLs for certain water body-pollutant combinations that appear on the State's 303(d) List – Water Quality Limited Segments Being Addressed by USEPA-approved TMDLs. For example, Alamo River selenium, Knickerbocker Creek pathogens, Marina del Rey-Back Basins DDT and dieldrin, Mendota Pool selenium, Mud Slough selenium, and Chumash Creek, Dairy Creek, Pennington, San Bernardo, San Luisito Creek, Walters Creek, Watsonville Slough (all for) pathogens have not received EPA TMDL approval. In the Calleguas Creek organochlorine TMDLs submittal, the State did not include Category 2 pesticides (aldrin, aldrin, Chem A, dacthal, endosulfan, endrin, heptachlor, and heptachlor epoxide lindane/hexachlorocyclohexane/HCH,); accordingly EPA did not approve TMDLs for those water body-pollutant combinations. Also, the silt/sedimentation TMDL submitted by the State and approved by EPA applied only to Calleguas Creek Reach 1 (Mugu Lagoon), and no other segments were identified for sedimentation TMDLs within the Calleguas Creek watershed. We request the State return these water body-pollutant combinations to the State's 2004-06 303(d) List - Water Quality Limited Segment Still Needing TMDLs, unless the State has data to support non-impairment for each case, which may occur in future listing assessments.

**Table 3: Waters/Pollutants for addition to California’s §303(d) List—Water Quality Limited Segment Being Addressed by USEPA Approved TMDLs.**

<u>RB</u>	<u>Water body name</u>	<u>Pollutant</u>	<u>TMDL date</u>
1	Shasta River (Klamath HU)	Temperature, Dissolved Oxygen	2007
2	Tomales Bay (4 segments: Tomales Bay, Lagunitas Creek, Olema Creek, Walker Creek)	Pathogens	2007
2	San Francisco Bay Urban Creeks (36 segments: Alameda Creek, Arroyo de la Laguna, Arroyo de las Positas, Arroyo del Valle, Arroyo Mocho, San Leandro Creek, San Lorenzo Creek, Mount Diablo Creek, Pine Creek, Pinole Creek, Rodeo Creek, San Pablo Creek, Walnut Creek, Wildcat Creek, Arroyo Corte Madera del Presidio, Corte Madera Creek, Coyote Creek, Gallinas Creek, Miller Creek, Novato Creek, San Antonio Creek, San Rafael Creek, San Mateo Creek, Calabazas Creek, Coyote Creek, Guadalupe River, Los Gatos Creek, Matadero Creek, Permanente Creek, San Felipe Creek, San Francisquito Creek, Saratoga Creek, Stevens Creek, Laurel Creek, Ledge wood Creek, Suisun Slough)	Diazinon (to address toxicity)	2007
3	Hernandez Reservoir; Clear Creek (San Benito County)	Mercury	2004
3	Los Osos	Nitrate	2005
3	Pajaro River & Llagas Creek	Nitrate	2006
3	San Luis Obispo Creek	Nitrate	2007
3	Pajaro River (4 segments: Llagas Creek, Pajaro River, Rider Creek, San Benito River)	Sediment	2007
4	Calleguas Creek Reach 3 (Potrero Rd.,upstream)	Ammonia	2003
4	Calleguas Creek Reach 4, 5, 9A, 9B, 11, 13	Nitrogen (algae)	2004
4	Burbank Western Channel	Ammonia	2004
4	Rio Hondo Reach 2 (Whittier Narrows)	Ammonia	2004
4	Santa Clara River Reach 5 (Blue Cut Gauging Station to West Pier Highway 99)	Nitrate+nitrite, ammonia	2004
4	Santa Clara River Reach 6 (West Pier Highway 99 to Bouquet Cyn Road Bridge)	Ammonia	2004
4	Aliso Canyon (Creek) Wash	Selenium	2005
4	Ballona Creek	Lead, Selenium, Zinc	2005
4	Ballona Creek Estuary	Cadmium, Silver	2005
4	Burbank Western Channel	Lead	2005
4	LA River Reach 1	Cadmium	2005
4	LA River Reach 2, 3, 4, 5	Copper	2005
4	LA River Reach 3, 5	Lead	2005
4	LA River Reach 6	Selenium	2005
4	Sepulveda Canyon Channel	Copper, Lead, Selenium, Zinc	2005
4	Calleguas Creek Reach 1 (Mugu Lagoon)	dieldrin, toxaphene, sedimentation/siltation	2006
4	Calleguas Ck. R2 (estuary)	dieldrin	2006
4	Calleguas Ck. R3	chlordan, PCBs	2006

<b>RB</b>	<b>Water body name</b>	<b>Pollutant</b>	<b>TMDL date</b>
	(Potrero Rd., upstream)		
4	Calleguas Ck. R4 (Revolon Slough)	diazinon	2006
4	Calleguas Ck. R5 (Beardsley Channel)	diazinon	2006
4	Calleguas Ck. R6 (Arroyo Las Posas)	chlordan, dieldrin, ambient toxicity, chlorpyrifos, diazinon	2006
4	Calleguas Ck. R7 (Arroyo Simi R1 & R2)	ambient toxicity, chlorpyrifos, diazinon	2006
4	Calleguas Ck. R8 (Tapo Cyn. R1 & R2)	chlorpyrifos, diazinon, chlordan, DDT, dieldrin, PCBs, toxaphene	2006
4	Calleguas Ck. R9A (Conejo Ck.)	ambient toxicity, chlorpyrifos, diazinon	2006
4	Calleguas Ck. R9B (Conejo Ck. mainstem)	ambient toxicity, chlorpyrifos, diazinon chlordan, dieldrin, PCBs	2006
4	Calleguas Ck. R10 (Conejo Ck., Hill Canyon)	chlordan, dieldrin, PCBs, chlorpyrifos, diazinon	2006
4	Calleguas Ck. R11 (Arroyo Santa Rosa)	chlordan, dieldrin, PCBs	2006
4	Calleguas Ck. R12 (Conejo Ck, north fork)	dieldrin, PCBs, toxaphene	2006
4	Calleguas Ck. R13 (Conejo Ck., south fork)	chlordan, dieldrin, PCBs	2006
4	Ballona Creek (3 segments: Ballona Creek, Ballona estuary, Sepulveda Channel)	Pathogens	2007
4	Calleguas Creek Reach 2	Copper	2007
4	Calleguas Creek Reach 1 (Mugu Lagoon)	Copper, Mercury, Nickel, Zinc	2007
4	Calleguas Creek Reach 4 (Revolon Slough)	Selenium	2007
5	Salt Slough	Selenium	1999
5	Grasslands Marshes (1 segment)	Selenium	2000
5	Elk Grove Creek	Chlorpyrifos	2004
5	Morrison Creek	Chlorpyrifos	2004
5	Cache Creek (3 segments: Bear Creek, Cache Creek, Harley Gulch)	Mercury	2007
5	San Joaquin River (Merced River to South Delta Boundary)	Electrical Conductivity (Salts), Boron	2007
5	San Joaquin River (6 segments: Mendota Pool to Bear Creek, Bear Creek to Mud Slough, Mud Slough to Merced River, Merced River to Tuolumne River, Tuolumne River to Stanislaus River, Stanislaus River to Delta Boundary)	Diazinon & Chlorpyrifos	2007
5	Stockton Ship Channel/Delta Waterways	Dissolved Oxygen	2007
8	Middle Santa Ana River (6 segments: Cucamonga Ck , Chino Creek Reach 1 & 2, Mill Creek, Prado Park Lakes, Santa Ana River Reach 3)	Pathogens	2007