UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Thomas Howard
Executive Director
California State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-0100

Dear Mr. Howard:

Thank you for submitting the Basin Plan Amendment containing the Total Maximum Daily Load (TMDL) for PCBs, DDT, chlordane, dieldrin, and sediment toxicity in McGrath Lake. Based on EPA's review of the TMDL submittal under Clean Water Act (CWA) section 303(d), I have concluded the TMDL adequately addresses the pollutants of concern and, upon implementation, will result in attainment of the applicable water quality standards for McGrath Lake. All required elements are adequately addressed; therefore, the TMDL is hereby approved pursuant to CWA section 303(d)(2).

EPA received the State Water Resources Control Board's complete TMDL package for approval on May 31, 2011. The TMDL includes load allocations as needed, takes into consideration seasonal variations and critical conditions, and provides an adequate margin of safety. The State has provided adequate opportunities for public review and comment on the TMDL, and demonstrated how public comments were considered in the final TMDL.

The TMDL submittal also contains a detailed plan for implementing the TMDL. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plan provided with this TMDL. However, EPA concurs with the State's proposed implementation approaches.

If you have any questions concerning this approval, please call me at (415) 972-3572 or Anna Sofranko at (415) 972-3454.

Sincerely,

Alexis Strauss 30 June 2011
Alexis Strauss
Director, Water Division

Enclosure

cc: Samuel Unger, Executive Officer
California Regional Water Quality Control Board, Los Angeles Region

This Page Intentionally
Left Blank

TMDL Review Checklist

State:	**California, Los Angeles Region**
Water Bodies:	**McGrath Lake**
Pollutant(s):	**PCBs, DDT, Chlordane, Dieldrin, sediment toxicity**
Date of Letter Requesting EPA Approval:	**March 2, 2011**
Date EPA Received Complete Submittal:	**May 31, 2011**
EPA Reviewer:	**Anna Sofranko**

1. Submittal Letter: *Letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by the State and submitted to EPA for approval under 303(d).*

The State Water Resources Control Board's (State Board) submittal letter, dated March 2, 2011 from Elizabeth Haven to Alexis Strauss, describes an amendment to the Los Angeles Regional Water Quality Control Board's (Regional Board) Basin Plan to adopt TMDLs for polychlorinated biphenyls, organochlorine pesticides, and sediment toxicity in McGrath Lake.

The Basin Plan Amendment was adopted by the Regional Board on October 1, 2009. The Amendment was approved by the State Board on December 14, 2010. On May 31, 2011, EPA received a copy of California's Office of Administrative Law (OAL) approval document OAL File No. 2011-0418-02 S, dated May 31, 2011. EPA considers the State's submittal complete as of the date of receipt of the OAL approval document, May 31, 2011.

The submittal letter requests EPA to approve the TMDLs under Clean Water Act (CWA) section 303(d)(2). This 303(d)(2) approval applies only to the PCBs, DDT, chlordane, dieldrin, and sediment toxicity TMDLs. EPA is taking no action regarding the implementation plan in the Regional Board Resolution, which is permitted under State law.

The State submittal package includes: (1) the McGrath Lake PCBs, Organochlorine pesticides, and sediment toxicity Total Maximum Daily Load (TMDL) Final Staff Report (Project Report) dated October 1, 2009; (2) the Proposed Basin Plan Amendment and Final Regional Board Resolution No. R09-006, dated October 1, 2009, adopting the Proposed Basin Plan Amendment; (3) State Board Resolution No. 2010-0065, dated December 14, 2010, approving the Regional Board Basin Plan Amendment; and (4) OAL approval document, File No. 2011-0418-02 S, dated May 31, 2011.

2. TMDLs Included: *The submittal clearly identifies the water segments and pollutants or stressors for which TMDLs were developed. The submittal should distinguish TMDLs adopted for listed water/pollutant combinations from TMDLs adopted for water/pollutant combinations not identified on the current Section 303(d) list. It should also clarify if TMDLs were adopted for new impairment findings (by waterbody-pollutant combinations) that do not exist on the current Section 303(d) list. If appropriate, the submittal should describe any assessment decisions that may have resulted in non-impairment status for water/pollutant combinations that exist on State's most current 303(d) list.*

The State submittal includes TMDLs for PCBs, DDT, chlordane, dieldrin, and sediment toxicity in McGrath Lake. McGrath Lake is listed as impaired for these constituents on California's 2006 303(d) list. They were originally listed in 1998 (Project Report, p.6).

3. Water Quality Standards Attainment: *Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria.*

The TMDL submittal addresses the applicable beneficial uses for McGrath Lake, estuarine (EST), wildlife (WILD), wetland (WET), rare, threatened or endangered species (RARE), commercial and sport fishing (COMM), recreational use for water contact recreation (REC1) and non-contact water recreation (REC2).

Applicable water quality objectives for these TMDLs are narrative water quality objectives for Chemical Constituents, Bioaccumulation, Pesticides, and Toxicity, the numeric water quality objective for PCBs, and the numeric water quality criteria promulgated in California Toxics Rule (CTR). For brackish waters such as McGrath Lake, the more stringent of the freshwater or saltwater criteria applies (Project Report, p. 17-22).

EPA concurs with the State's analysis, and concludes that the numeric targets, TMDLs and associated allocations are set at levels necessary to attain applicable water quality standards.

4. Numeric Target(s): *Numeric water quality target(s) for the TMDL is identified, and/or adequate basis for target(s) as interpretation of water quality standards is provided.*

Water column targets for PCBs, chlordane, DDT, and dieldrin are based on the CTR water quality criteria for protection of human health (organisms only). These criteria are more stringent than those for the protection of aquatic life and thus will protect both aquatic life and fish consumption beneficial uses. The sediment numeric targets are derived from the Effects Range-Low (ERLs) guidelines. The sediment toxicity impairment is addressed by these numeric targets, which are protective of aquatic life in sediment (Project Report, p. 29-30).

EPA concludes the State's use of numeric targets in the TMDL analyses to be reasonable and appropriate, and finds there is an adequate basis for the targets.

5. Source Analysis: *Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. If point sources are present,*

submittal identifies existing NPDES permits by name and number. Submittal demonstrates all sources have been considered.

All of the contaminants in the McGrath Lake TMDLs are legacy pollutants. While these pollutants are no longer legally sold or used, they remain ubiquitous in the environment, bound to fine-grained particles. Irrigation and rainfall in the watershed mobilize these particles towards McGrath Lake. Surface water (stormwater and agricultural drainage) accounts for almost half of the total recharge of the lake, while groundwater accounts for the rest of the recharge. Pesticides and PCBs have been detected in the surface water inlet to the lake (Central Ditch) but not in the groundwater from local monitoring wells. Thus a major source of pesticide and PCB contamination appears to be from contaminated surface water and sediments flushing into McGrath Lake from the Central Ditch, which drains agriculture and other lands. Direct atmospheric deposition is small. In addition to external loading, the in-situ sediments are a source of contaminants to the lake water column due to the high concentrations of contaminants in the sediment.

There are no point sources of organochlorine pesticides or PCBs to McGrath Lake (Project Report, p. 30-43).

EPA finds the State's source analysis to be complete, reasonable and appropriate.

6. Linkage Analysis: *Submittal describes relationship between numeric target(s) and identified pollutant sources.*

A conceptual model identifies the assimilative capacity of McGrath Lake and links the source loading information to the numeric targets. The chemical properties of the pesticides and PCBs result in strong binding to particulate matter, thus most of the incoming contaminants from the Central Ditch to the lake are bound to suspended solids. However, pesticide exceedances are observed in the Central Ditch even in low-flow conditions, indicating that some of the contaminants are transported to the lake in the water fraction. Therefore, there are water column and suspended sediment allocations for the Central Ditch.

Once the suspended sediment settles to the lake bottom, desorption is possible due to the high contaminant concentrations, favorable environmental conditions and extended contact time between the sediment and water. The contaminated lake sediments are toxic to benthic organisms and may also be taken up through bioturbation and feeding processes. Therefore, both external loading sources from the lake subwatershed and internal loading from contaminated lake sediments are assigned load allocations (Project Report, p. 43-46).

EPA finds the State's analysis reasonable and appropriate.

7. TMDL and Allocations: *Submittal identifies the total allowable load, waste load allocations for all point sources and load allocations for non-point sources. The TMDL must be set equal to or less than the loading capacity. If no point sources are present, waste load allocations are zero. If no non-point sources are present, load allocations are zero. TMDLs and allocations should be expressed in terms of daily time steps. If the TMDL and/or allocations are also*

expressed in terms other than mass loads per day, the submittal explains why it is reasonable and appropriate to express the TMDL in those terms.

TMDLs: The TMDLs are set equal to the loading capacities, which are the numeric concentration targets for PCBs, DDT, dieldrin, and chlordane. These numeric targets protect the applicable aquatic life, human health, and recreational beneficial uses (Project Report, p. 47-51).

EPA concurs with the State's analysis and concludes the TMDLs are set at levels necessary to attain applicable water quality standards.

Waste Load and Load Allocations

There are no point source discharges to McGrath Lake so the waste load allocations are set equal to zero.

Load allocations (LAs) addressing non-point sources of organochlorine pesticides and PCBs are assigned to discharges from the Central Ditch to the lake and internal sources from the lake sediments. The lake sediments are defined as bed sediments in the main body of the lake and the riparian corridor west of Harbor Boulevard. Current landowners of the lake and current watershed landowners discharging to the lake are named "cooperative parties".

The in-lake LAs are for concentrations in sediment only. The Central Ditch LAs are for concentrations in both suspended sediment and water. No allocations are explicitly provided for sediment toxicity. The sediment toxicity impairment is addressed by the chlordane, dieldrin, DDT, and PCB allocations, which are protective of aquatic life in sediment.

Pollutant	In-Lake Sediment Load Allocations (ug/dry kg)
Chlordane	0.5
Dieldrin	0.02
4,4'-DDT	1
4,4'-DDE	2.2
4,4'-DDD	2
Total DDT	1.58
Total PCBs	22.7

	Central Ditch Load Allocations	
Pollutant	Water Column (ug/L)	Suspended Sediment (ug/dry kg)
Chlordane	0.00059	0.5
Dieldrin	0.00014	0.02
4,4'-DDT	0.00059	1
4,4'-DDE	0.00059	2.2
4,4'-DDD	0.00084	2
Total DDT	---	1.58
Total PCBs	0.00017	22.7

EPA concludes the TMDL analysis includes load allocations that are consistent with the provisions of the CWA and federal regulations.

8. Margin of Safety (MOS): *Submittal describes explicit and/or implicit margin of safety for each pollutant.*

The uncertainties associated with these TMDLs are due to limited data on the amounts and pathways by which PCBs and pesticides are entering the lake and the extent to which these contaminants are already in the lake. The seasonal and annual variability in the hydrologic budget also creates uncertainty. To address these uncertainties, an implicit margin of safety is applied. Conservative assumptions were used to calculate the loading to the lake. In addition, the selection of ERLs as sediment numeric targets and load allocations are the most protective of the potentially applicable sediment guidelines available (Project Report, p. 51).

EPA finds the State's analysis to be reasonable.

9. Seasonal Variations and Critical Conditions: *Submittal describes method for accounting for seasonal variations and critical conditions in the TMDL(s).*

Since the contaminants of concern for these TMDLs are transported to the lake by the mobilization of sediment, it is expected that the greatest influx of PCBs and pesticides occurs during periods of increased runoff from the watershed. Due to the artificial interference in the watershed hydrologic cycle from agricultural activities, peak runoff may not correspond to the southern California wet season. However, due to the bioaccumulative properties of the pollutants, effects occur over extended time periods, which minimize the importance of seasonal variations. Seasonal variations and critical conditions are addressed by the use of concentration-based load allocations (Project Report, p. 51-52).

EPA finds the State's analysis to be reasonable.

10. Public Participation: *Submittal documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).*

The Regional Board and State Board held several public workshops and hearings and adequately responded to written and oral public comment. On October 1, 2009, the Regional Board held its final public hearing on the TMDLs following a 45-day comment period, and considered all public comments and evidence in the record. The Regional Board's record includes Notices of Opportunity for Public Comment, as well as Scientific Peer Review Comments, and staff responses to comments. The State's submittal includes the State Board's Notice of Opportunity for Public Comment, dated October 21, 2010.

EPA finds the State provided sufficient opportunities for public comment and adequately responded to public comments.

11. Technical Analysis: *Submittal provides appropriate level of technical analysis supporting TMDL elements.*

The TMDL submittal provides an appropriate level of technical analysis supporting all TMDL elements.

12. Reasonable Assurances: *If waste load allocations are made less stringent based on the inclusion of load allocations that reflect non-point source reductions, submittal describes how there are reasonable assurances that necessary non-point source reductions will occur.*

N/A

13. Other: *Table to clarify State TMDL submittal waterbody-pollutant combinations, including new impairment findings and non-impairment findings in comparison to existing 303d list. May include waterbody-pollutant combinations addressed by TMDL(s) which are not clear in submittal.*

Water body	Pollutant	TMDL assessment conclusion	Comment
McGrath Lake	PCBs	Impaired	On 2006 303(d) list
McGrath Lake	DDT	Impaired	On 2006 303(d) list
McGrath Lake	Chlordane	Impaired	On 2006 303(d) list
McGrath Lake	Dieldrin	Impaired	On 2006 303(d) list
McGrath Lake	Sediment toxicity	Impaired	On 2006 303(d) list