Hines Horticulture®

December 1, 2004

VIA EMAIL, FACSIMILE, AND
FIRST CLASS MAIL

Mr. Benjamin Tobler
Water Resource Control Engineer
California Regional Water Quality Control Board,
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92124-1324

Re: October 15, 2004 Rainbow Creek Nutrient TMDLs

Dear Mr. Tobler:

On behalf of Hines Nurseries, I want to thank you for the opportunity to comment on the October 15, 2004 Public Review Draft Basin Plan Amendment and Technical Report for Total Nitrogen and Total Phosphorus Total Maximum Daily Loads (TMDLs) For Rainbow Creek. We also appreciate staff's consideration of our prior comments submitted in connection with previous versions of the TMDL, including those forwarded to the Regional Board in letters dated January 24, 2002 and April 23, 2002, along with the comments provided on behalf of Hines at the workshops on April 11, 2002 and April 23, 2002 and at the public hearing on May 8, 2002. Hines recognizes that in response to our previous comments, certain factual issues have already been addressed and that additional factual information has been included in the Public Review Draft. These changes provide a more accurate explanation of the background area in and around what is now the Hines Nursery. Our prior correspondence also confirmed Hines' commitment to voluntarily cooperate with the Regional Board in achieving its nutrient goals for Rainbow Creek, particularly through Hines' commitment to implement a new recycling system at a cost to Hines of approximately $2.6 million.

The following comments are designed to follow up on our prior suggestions to the Regional Board, including the verbal comments made at the November 17, 2002 staff workshop, and to emphasize some of the more significant concerns that Hines has with the draft TMDL. Hines respectfully requests that the comments that follow be considered in the Regional Board's evaluation and adoption of any TMDL for Rainbow Creek, along with all previous comments submitted on behalf of Hines.

1. Certain Statements Referencing Hines in the TMDL Should Be Revised

Initially, Hines requests that the language beginning on page 10 of the October 15, 2002 Technical Report, in connection with Hines' operation of the existing tailwater recovery system be further revised. Hines has continued to operate the tailwater recovery system that was originally installed by Flynn-Rainbow Nurseries. This recovery system was discussed in the Final Report of the Rainbow Creek Non-Point Source Nitrate Reduction Program dated January 31, 1997 (a Report funded through the Regional Board), as a demonstration of the "potential for reducing nursery runoff with an irrigation system retrofit." In fact, the Report concludes that Flynn-Rainbow Nurseries was one of three major nurseries (along with Hines Irvine Nursery) with "very successful tailwater recovery and recycling programs." (See Report, p. 44)

Since Hines' purchase of the subject property, we have moved ahead with development of an improved recycling system. Hines has now completed three phases of construction and is scheduled to complete the $2.6 million project between May 2005 and October 2005. Attachment A to this letter contains recommended changes to the section of the Technical Report to update the description of Hines continued operation of the existing tailwater recovery system and development of a new recycling system that will not use the creek.

2. Rainbow Creek was Inappropriately Listed as Impaired for Nitrogen and Phosphorus

Rainbow Creek was previously listed on California's 303(d) as impaired for "eutrophication." The draft 2002 TMDL stated that "eutrophic conditions have not been observed in the creek..." The Regional Board voted to not approve the proposed 2002 Nutrient TMDL, and the staff submitted a recommendation to the State Board to change the pollutant designation on the 303(d) list from "eutrophic" to "nitrate" and "phosphorus."

One section of the Fact Sheet for which the listing was based cites the narrative biostimulatory water quality objectives, but goes on to say that, "Additionally, threshold phosphorus levels shall not exceed 0.1 mg/l in flowing surface waters." That was an incorrect statement; the Basin Plan actually provides a threshold for total phosphorus where a stream enters a standing body of water and then states that, "A desired goal in order to prevent a plant nuisance in streams and other flowing waters **appears to be 0.1 mg/l total P**" [emphasis added]. These values are not to be exceeded more than 10% of the time.

In addition to the misstatement from the Basin Plan, the listing was based on erroneous interpretation of Section 303(d)(1)(A) of the Clean Water Act. Both the Regional Board and the State Board appear to have thought that all impaired waters must be included on the 303(d) list. Actually, only waters "for which the effluent limitations required by Section 1311(b)(1)(A) and Section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standards..." are required to be included on the 303(d) list.

USEPA's regulations clearly state that a water quality limited segment is one where water quality standards are not expected to be met "even after the application of technology-based effluent limitations required by sections 301(b) and 306 of the Act." Technology-based solutions had already greatly reduced nitrogen and phosphorus loads by 2002 and continued application of best management practices could be expected to bring Rainbow Creek into compliance with the numeric nitrate water quality objective and the narrative biostimulatory substances water quality objective in the Basin Plan. These improvements are documented in the Regional Board's report entitled, "Total Maximum Daily Loads for Nutrients, Rainbow Creek, San Diego County," dated April 2000. This report concludes that tests conducted in 1998-1999 have shown a reduction in average nitrate concentrations in Rainbow Creek at Willow Glen Road from the 1986 maximum annual average of 215.8 mg/l down to 7.7 mg/l.

3. A Nutrient TMDL is Not Yet Suitable for Calculation

Review of the October 15 Public Review Draft indicates that the proposed TMDLs still do not meet the requirement within the Clean Water Act that only those TMDLs that are "suitable for such calculation" are to be developed. (See 33 U.S.C. Section 1313(d)(1)(c).) In the regulations to the Clean Water Act, EPA defined when TMDLs are "suitable for calculation" by finding that all pollutants are suitable for calculation under "proper technical conditions. (See 43 Fed. Reg. 60662). The phrase "Proper Technical Conditions" was explained by EPA as referring to "the availability of the analytical methods, modeling techniques and a data base necessary to develop a technically defensible TMDL." EPA went on to conclude that "these elements were to vary in their level of sophistication depending on the nature of the pollutant and characteristics of the segment in question. It must be determined on a case-by-case basis."

As further discussed herein, it does not appear that sufficient proper technical conditions exist at this time to develop a TMDL for either total nitrogen or total phosphorus. Accordingly, as sufficient proper technical conditions do not exist, a Nutrient TMDL for Rainbow Creek is not at this time "suitable for such calculation." (33 U.S.C. Section 1313(d)(1)(c).)

4. The Source Assessment Is Deficient

The lead sentence in Section 4 of the October 15, 2004 Technical Report states that, "The source assessment phase of TMDL development identifies all known sources of nutrients that may contribute to both elevated nutrient concentrations and the stimulation of algal growth in Rainbow Creek." Unfortunately, the source assessment for the proposed Total Nitrogen and Total Phosphorus TMDL for Rainbow Creek is incomplete and inadequate. It all but ignores indirect atmospheric deposition. The source assessment does calculate direct atmospheric deposition to the creek, but it ignores 99.9% of the watershed. Section 4.1.3 attempts to justify this approach by asserting that total nitrogen deposition is included in the nutrient export coefficients. However, there is no evidence that this is the case, especially for commercial nurseries.

In the absence of watershed or nursery specific data, the Technical Report uses export coefficients based on Appendix A of a 2000 report entitled "Pollutant Mass Emissions to the Coastal Ocean of California: Initial Estimates and Recommendations to Improve Stormwater Emission Estimates" that was co-authored by the Southern California Coastal Water Research Project (SCCWRP). This "initial" study was admittedly based on a simple model to get rough estimates of mass emissions of various constituents of stormwater runoff to the Ocean. The export coefficients for agriculture were based on mass emissions monitoring of one field in Ventura County. This crude estimate is not an appropriate basis to estimate loads to be used in a regulatory document such as a TMDL. In fact, SCCWRP notes in the Appendix used as a basis for the proposed export coefficients that "the relative contributions of individual sources cannot be used in isolation and many contributions must be taken in context."

The inadequacy of this approach is demonstrated by applying the USEPA atmospheric deposition rates for nitrogen and phosphorus to the entire Rainbow Creek watershed. The resultant calculations indicate that atmospheric deposition contributes 28,670 Kg N/year and 1,720 Kg P/year to the Rainbow Creek watershed. These numbers dwarf the calculated contributions for all other sources combined. Other areas of the county, especially the states draining to Chesapeake Bay, are assigning load allocations to atmospheric deposition. We should do likewise in Southern California. Before proceeding further with this TMDL, Hines recommends that the Regional Board invite researchers from SCCWRP and UCLA to conduct a workshop for Board members, Board staff, and the regulated community on the relationship of atmospheric deposition to water quality, with emphasis on atmospheric deposition of nutrients. The California Air Resources Board and San Diego County Air Quality Management District should also be invited to participate in the workshop. These agencies have greater authority to implement source control for atmospheric pollutants than do water boards.

Attachment B to this letter is a list of additional references related to the development of nutrient criteria, the relationship of atmospheric deposition to water quality, and nutrient concentrations in streams that should be considered in completing the proposed TMDLs. A draft of this list was provided to staff at the close of the 17 November workshop.

5. An Assimilative Capacity Study Must Be Prepared Prior to Establishing Any Nutrient TMDL

As we noted in our April 23, 2002 letter, in developing a TMDL for any impaired water body, an assimilative capacity study should first be conducted in order to determine the pollutant load the water body can assimilate before becoming impaired. That is, the TMDL "load allocations" and "waste load allocations" which may be discharged into a water body without impairing the beneficial uses, can only be developed after the assimilative capacity of the water body has first been identified.

Section 5.0 of the October 15, 2004 Public Review Draft does not describe a true assimilative capacity analysis, which should include a detailed analysis of chlorophyll and dissolved oxygen in relation to nitrogen and phosphorus content of the water. Instead, the apparent goals mentioned in the Basin Plan discussion of the narrative biostimulatory water quality objective were assumed to represent the assimilative capacity of the creek. These numbers are excessively conservative, especially when there was no evidence of actual impairments to beneficial uses in 1998-1999 when the average nitrate concentration was 7.7 mg NO_3/l or 1.7 mg NO_3-N/l and the average organophosphate as phosphorus concentration was 0.6mg PO_4-P/l. Regional Board staff did find two sites susceptible to excessive algal growth, but these could have been mitigated by planting shade trees.

There is thus no basis to determine a load allocation or a waste load allocation (i.e., there is no basis to develop a TMDL) where the assimilative capacity of the water body has not been established. Hines would thus recommend that additional monitoring and a study of the assimilative capacity of the various reaches of the creek be conducted before adopting the subject TMDL, as the assimilative capacity of the water body is the cornerstone of any properly developed TMDL.

Hines agrees with the statement by the County in its April 23, 2002 letter that "The RWQCB must determine how N and P interact to stimulate algal growth in specific parts of the creek." We, too, are prepared to participate, on a pro-rata basis, in such a study, which is needed in order to complete a true assimilative capacity study prior to establishing a nutrient TMDL.

6. The Annual Load Allocation for Commercial Nurseries Is Unsupported and Unobtainable

The TMDL continues to establish annual load allocations for commercial nurseries for both nitrogen and phosphorus (see Tables 6-1 and 6-2) that are both unrealistic and unobtainable. The data and analysis in the TMDL simply do not support the load allocations developed for commercial nurseries. For example, in Table 6.1 of the Technical Report, the TMDL assumes an annual total nitrogen load of 507 kilograms per year for commercial nurseries. The estimate of 507 kilograms per year for both agriculture and commercial nurseries appears to be derived from Table 4-1, which uses 3.7 kilograms per hectare per year as an export coefficient, which, according to the reference, was derived from a 2000 report from the SCCWRP. Yet, a review of the SCCWRP 2000 report shows that it does not contain an export coefficient for nitrogen. Rather, it contains fluxes for nitrate and nitrite for stormwater runoff from various land use types, including agriculture.

Furthermore, SCCWRP staff indicate that the coefficient for agriculture was based on stormwater mass emission monitoring of one agricultural site located in Ventura County. SCCWRP used a simple modeling approach that was determined to be adequate for satisfying the underlying questions of coastal loading for stormwater runoff on an annual basis. For the subject TMDL, coefficients should be developed for inland San Diego County commercial nurseries, field agriculture, and orchards. The coefficients used in the SCCWRP study may have been appropriate for a regional study of coastal waters. However, they are not appropriate for a regulatory document such as a TMDL. Additional research is required to develop appropriate coefficients.

7. The Economic Consideration Section Should Be Revised

Hines is concerned that the Economic Considerations section of the draft TMDL continues to greatly underestimate the costs to nurseries for compliance and needs further revision. We recognize that the Regional Board has acknowledged the magnitude of the Hines expenditure on the new recycling system in Section 2.2 of the draft TMDL. However, we disagree with the comment in the Regional Board Response to Comments that the Hines system is not "typical." (See Appendix M, p. M-12, M-13.) The new Hines Nursery recycling system is costing $2.6 million, which for our 250-acre site amounts to $10,400 per acre. Although this is very costly, it is a reasonable per-acre estimate of what other nurseries might expect to pay for compliance. Our recycling system was designed to make the modifications necessary for Hines Nurseries to comply with regulations; it is reasonable to expect that, in order to achieve compliance, other commercial nurseries will have to make modifications

that, if not identical to our designs, would relate to our recycling system in scope and costs.

8. Staff Has Suggested Significant Changes to Draft TMDL

At the 17 November 2004 workshop, staff made a PowerPoint presentation that indicated that two major changes will be made to the October 15, 2004 Public Review Draft. The first major change was a slide that indicated that the staff now recognizes that there are three point sources in the watershed; the Public Review Draft only recognized one. This change will necessitate a recalculation of current loads and future waste load allocations. The second major change was a slide that acknowledged that the Basin Plan contains only a narrative water quality objective for biostimulatory substances. The Public Review Draft in one or two places does recognize that the only water quality objective for biostimulatory substances is narrative. However, in other locations the draft asserts that there are numeric water quality objectives for biostimulatory substances. This confusion in the current draft must be eliminated.

Furthermore, the County indicated at the workshop that it was in discussions with staff regarding possible changes to the Implementation Plan. Hines agrees that changes are needed. As presented in the Public Review Draft, the Implementation Plan is extremely prescriptive and inflexible. We, and the other members of the regulated community, deserve to see any revised Implementation Plan and have a chance to comment on it before the public hearing on the proposed TMDLs is closed.

Points made on behalf of Hines at the 17 November workshop are included in attachment C to this letter.

9. Alternative Approach to Adopting Nutrient TMDLs for Rainbow Creek

If the Regional Board concludes that it must adopt a TMDL to meet its obligations to EPA Region 9, it should adopt a TMDL based on adaptive management as recommended by the National Research Council. To do this, the Board could adopt a TMDL with the initial numeric target equal to the numeric nitrate water quality objective in the Basin Plan, define interim numeric targets for biostimulatory substances equal to the average water quality conditions in 1998-1999 as specified on page 12 of the Technical Report, and provide for a reopener to adopt final numeric targets for biostimulatory substances after USEPA Region 9 and the State Water Resources Control Board have completed the Development of Nutrient Criteria in California.

The Implementation Plan could either be delayed or revised to be an adaptive management plan to be reassessed periodically based on a monitoring

program to assess progress in achieving the water quality objectives in the Basin Plan.

In conclusion, Hines appreciates the efforts undertaken by the Regional Board so far in developing a Nutrient TMDL for Rainbow Creek. We continue to be committed to working with the Regional Board to reduce discharges to the Creek, and to develop a sound TMDL that is scientifically-based and achievable. We thank the Board for its cooperation, and look forward to continuing to assist staff members in taking meaningful steps toward removing Rainbow Creek from the 303(d) list as a water quality limited water body due to nutrients.

Please contact the undersigned should you have any questions with respect to the above, or need any additional information in connection with the comments provided herein.

Sincerely,

HINES HORTICULTURE

Jesse Westrup

Jesse Westrup
General Manager
Hines Fallbrook

Attachment A
Recommended Changes to Hines Description in Technical Report

Rainbow Creek runs through the middle of Rainbow Valley and the community of Rainbow. Rainbow is the most developed part of the watershed, containing residential units, commercial and private nurseries and other agricultural operations. In Rainbow Valley, the majority of the length of the creek runs through nursery property, currently owned and operated by Hines Nurseries. The creek has been channelized on the nursery property and is currently being used as part of an irrigation water recovery system. Flynn Rainbow Nurseries, a previous owner, originally put in the recovery system as a best management practice (BMP) in 1989 to reduce downstream nursery discharges and to enable recycling of irrigation water.

According to Hines Nurseries, irrigation runoff is currently discharged directly into Rainbow Creek and one of its tributaries at numerous locations within the boundaries of the nursery site. An earthen dam located in the creek near the point of discharge from the site restricts water from leaving the site during normal operations. The runoff water is stored in the creek and in an adjacent storage pond within the boundaries of the nursery site. The stored runoff water is recycled back into the irrigation system. Periodic exceedances of the system capacity, either by increased storm water runoff or by allowing too much water into the system, causes the discharge of irrigation waters downstream of the nursery (Biemacka 2001).

The streambed has been altered over the years (Summers 2002). The creek has been channelized with un-engineered riprap and much of the riparian vegetation has been removed. The County and the U.S. Army Corps. of Engineers modified the creek, in cooperation with Flynn Rainbow Nurseries, to address flooding concerns raised by a severe flood in 1992. An adjacent nursery removed riparian vegetation and made channel modifications in connection with the construction of a greenhouse. Flynn Rainbow Nurseries made modifications in connection with the installation of the irrigation recycle system. Hines Nursery currently maintains the earthen dam, which is prone to occasional wash out during high storm flows, and performs occasional slope stabilization of the walls of the creek as needed to avoid subsidence problems. The current tail water recovery system was designed as part of a 319(h) grant administered by the Regional Board.

Nursery representatives are currently working with the Regional Board to correct the discharge. After the land was successfully acquired on May 24, 2001, Hines began implementation of a new recycling system. The system was initially expected to capture approximately 90% of the runoff through utilization of a system of canals, pipes and lift pumps, and an above ground storage pond. During storm conditions, storm water will be allowed to enter the creek, but only after a "first flush"

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(0.5 inches of rain) has been captured in the reservoir (Summers 2002). Subsequently, the system was redesigned to capture more than 95% of the irrigation runoff, and through additional modifications, Hines is now planning to be a runoff-free facility, except during rainfall events of greater than 0.5 inches. To date, Hines has completed three phases of construction at a cost of $1.5 million. The fourth and final phase is now scheduled for construction between May 2005 and October 2005. The final phase will cost an additional $1.1 million for a total project cost of $2.6 million. The entire project would have been completed by December 2004 if it had not been for delays in environmental clearances for three creek crossings.

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All development in the Rainbow Creek Watershed, except the Oak Crest Mobile Estates and the Rainbow Conservation Camp, use sub-surface sewage disposal systems (e.g., septic tank . leach field disposal systems). Since 1970, the County of San Diego has prohibited the installation of new or replacement septic tank disposal systems in areas of Rainbow Valley impacted by a high ground water table. The prohibition was implemented because the high ground water table prevented systems from being installed in compliance with the requirements at the time (Whitman 1970). In 1989, a ground water evaluation of Rainbow Valley identified that the basin has a historically high ground water table due to the geology, which has been worsened by in-basin use of imported water that provides recharge through irrigation return flows and septic tank disposal tanks, and the lack of ground water production (Peterson 1989). Many of these septic tank disposal systems have leachfields close to or submerged in the ground water table during all or part of the year (Lambert 2001).

The Oak Crest Mobile Estates utilizes a small wastewater treatment plant with two concrete-lined evaporation ponds. The treatment facility is operated by Oak Crest Estates and Rainbow Municipal Water District and serves 112 residential units. The wastewater is discharged by spray irrigation on an area of about 5 acres. It does not appear that this facility is contributing to the nutrient load of Rainbow Creek (Dorsey 2003a)

The Rainbow Conservation Camp utilizes an onsite sewage treatment and disposal system. The Rainbow Conservation Camp is operated by the Department of Forestry and Fire Protection under Waste Discharge Requirements (Order No. 95-20) and is located near the headwaters of Rainbow Creek. The Camp is a correctional facility that houses a maximum of 111 people. The treatment system consists of a 15,000-gallon septic tank and three evaporation/percolation ponds for disposal. The ponds have earthen fill side slopes, bottoms and containment berms. Evaporation and percolation from the ponds is the primary means of effluent disposal; however, for several days during the year, effluent from the ponds may be pumped to a spray irrigation field covering approximately 2 acres of the facility. The ponds are suspected to not have the proper separation from ground water and/or bedrock and the percolated effluent appears to be surfacing downslope of the ponds toward Rainbow Creek. Effluent from the percolation ponds likely contributes recharge to the shallow ground water table in this area, and could be contributing flow, and therefore, nitrates to Rainbow Creek (Dorsey 2003b).

Attachment B

Recommended Additional References for Consideration

- *Summary of the Air-Water Interface Work Plan.* USEPA.
- *Third Report to Congress on Air Pollutants to the Great Waters.* USEPA, June 7, 2000.
- *Work Statement: Development of Nutrient Criteria for Ecoregions within California, Arizona, and Nevada.* TetraTech, Inc. July 11, 2002.
- "Review of Progress on Developing Nutrient Criteria in California." Presentation to RTAG, EPA Region IV, May 25, 2004.
- *Progress Report: Development of Nutrient Criteria in California: 2003-2004.* TetraTech, Inc, October 2004.
- *Nitrogen Pollution: From the Sources to the Sea.* A Science Links Publication of the Hubbard Brook Research Foundation.
- *Total Maximum Daily Loads of Nitrogen and Biochemical Oxygen Demand for Manokin River, Somerset County, Maryland.* Maryland Department of the Environment, July 31, 2000 (Approved by USEPA February 13, 2001).
- *Total Maximum Daily Loads of Nitrogen and Phosphorus for Five Tidal Tributaries in the Northern Coastal Bays System, Worcester County, Maryland.* Maryland Department of the Environment, December 31, 2001 (Approved by USEDP April 17, 2002).
- *Total Maximum Daily Loads for Nutrients: San Diego Creek and Newport Bay, California.* USEPA Region IX.
- *San Lorenzo River Watershed Nitrate Total Maximum Daily Load for Santa Cruz, California.* Central Coast Regional Water Quality Control Board, Draft June 29, 2000.

Articles

- Dodds, W.K., and R.M. Oakes, 2004. *A Technique for Establishing Reference Nutrient Concentrations Across Watersheds Affected By Humans.* Limnology and Oceanography: Methods, Volume 2, pp. 333-341.

- Dodds, W.K., and K. Lohman, and V.H. Smith, 2002. *Nitrogen and Phosphorus Relationships to Benthic Algal Biomass in Temperate Streams.* Canadian Journal of Fishery Aquatic Science, Volume 59, pp. 865-874.

- Paerl, H.W., 2002. *Connecting Atmospheric Nitrogen Deposition to Coastal Eutrophication.* Environmental Science & Technology. August 1, 2002.

- Lu, R., K. Schiff, and K. Stolzenbach. *Nitrogen Deposition on Coastal Watersheds in the Los Angeles Region.* (Submitted for Publication)

Attachment C

Hines Presentation to Regional Board Workshop on Draft Rainbow Creek Nutrient TMDL

by

Richard Watson On Behalf of

Hines Horticultural, Fallbrook Nursery

17 November 2004

- Thank staff for opportunity to comment on draft
- We will provide summary comments today and provide more detailed and specific comments in our written submittal.
- Reaffirm Hines' commitment to water quality
- Thank staff for corrections to description of Hines Facility and recycling system
- Request further corrections to description of Hines facility and status of recycling system and indicate that we will submit suggested wording
- Hines is concerned that the TMDL greatly underestimates the costs to nurseries for compliance. The new recycling system for the Hines nursery is costing $2.6 million, or $10,400 per acre for the 250-acre site. This per acre cost is a reasonable estimate of what other nurseries might expect to pay for compliance.
- Hines is concerned that the Implementation Plan is overly detailed and prescriptive and should instead be based on adaptive management as recommended by the National Research Council.
- Hines is ready to work with the County and requests that they be given the flexibility to develop an effective program and make changes as necessary.

- The Draft TMDL contains two basic factual errors that have had negative impacts on the Technical TMDL and on the Implementation Plan
    1. Caltrans is not the only point source in the watershed; the County is also a point source subject to regulation pursuant to an NPDES permit
    2. The Basin Plan does not contain numeric water quality biostimulatory objectives for nitrogen and phosphorus in streams. It has a narrative objective with apparent desired goals for total phosphorus in streams and other flowing waters
- Although USEPA has found that all pollutants are suitable for calculation under the "proper technical conditions," the draft TMDL is still not suitable for calculation because a database necessary to develop a technically defensible TMDL is not available and appropriate analytical methods and modeling techniques have not been used to develop the TMDL.
- The two page section of the Technical Report entitled "Loading Capacity and Linkage Analysis" is not based on an assimilative capacity study; rather, it is a brief mathematical exercise based on compliance with apparent goals that have never been adopted as water quality objectives.
- The discussions of USEPA's Recommended Nutrient Criteria and the scientific support of Biostimulatory Substances Water Quality Objectives is dated and incomplete.

- In October 2004, TetraTech submitted a Progress Report: Development of Nutrient Criteria in California: 2003-2004 to USEPA Region IX; this report is available on the USEPA Region IX RTAG website.
- Several sound articles and reports have been published by Dodds and others related to biostimulatory substances in water that are not reflected in the References section of the Technical Report (submit a list of recommended additional references).
- The source assessment component continues to virtually ignore one of the most significant sources of nutrients, especially nitrogen, in the Watershed - atmospheric deposition; this impacts both the assessment of existing loads and the proposed load allocations.
- Using EPA's loading factors cited in the technical report, atmospheric deposition contributes 28,670 kg N/year and 1,720 kg P/year to the watershed.
- We recommend that interim biostimulatory numeric targets be specified for the second phase of nutrient load reduction; we will make a specific recommendation in our written submittal.
- The final biostimulatory targets should not be specified until USEPA Region IX and the State Water Resources Control Board have completed the Development of Nutrient Criteria in California.