COMMENT SUMMARY AND RESPONSES

VENTURA RIVER ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS TMDL

List of Public Review Comment Letters
1. City of Ventura, City of Ojai, County of Ventura, Ventura County Watershed Protection District, Farm Bureau of Ventura County
2. Heal the Bay
3. Las Virgenes Municipal Water District
4. Ojai Valley Sanitary District
5. Santa Barbara ChannelKeeper
6. Ventura County Cattleman's Association (VCCA) – Mike Williams
7. Ventura County Coalition of Labor, Agriculture, and Business
8. Ventura County Resource Conservation District
9. Waste to Energy
10. Al Leydecker
11. Bill O'Brien, Next Gen Engineering
12. Emily Ayala, Friends Ranches Inc.
13. Jim Churchill & Lisa Brenneis, Churchill Orchard
14. Philip Sherman, Hawks Associates
15. California Association of Sanitation Agencies (CASA) Tri-Tac

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	City of Ventura, City of Ojai, County of Ventura, Ventura County Watershed Protection District, Farm Bureau of Ventura County	
1.1	The City of Ventura, City of Ojai, County of Ventura, Ventura County Watershed Protection District (VCWPD), and Farm Bureau of Ventura County representing Ventura County Agricultural Irrigated Lands Group (VCAILG), collectively the listed Ventura Municipal Separate Storm Sewer Systems (MS4) Phase I Permittees and agricultural responsible parties to the TMDL (Responsible Parties), appreciate the opportunity to provide comments on the Draft Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients in the Ventura River Watershed	Comment noted.

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	(Draft Algae TMDL). The Responsible Parties appreciate the time and effort of Regional Board staff to discuss and give consideration to our concerns during the TMDL development. However, we continue to have some concerns with the TMDL. We have met with Regional Board staff to discuss these issues and are working to address several of the major concerns. We look forward to continuing this discussion in response to our comments.	
1.2	We are concerned about the inclusion of the requirement that MS4 allocations be included in NPDES permits as numeric effluent limitations. The inclusion of numeric effluent limitations for MS4 permittees is a controversial issue for which no clear resolution has been determined. However, what is clear is that there is not a requirement to include numeric effluent limitations in MS4 permits and including numeric effluent limitations is precedential and inconsistent with current state practice. The recently released Draft Statewide Toxicity Policy includes discussion about numeric effluent limitations for MS4 dischargers. Although this discussion is specific to toxicity, the information highlights the complexities of assigning numeric effluent limitations to MS4 dischargers. Additionally, since this Draft Policy was released in June 2012, it is clear that the State still considers numeric effluent limitations to be infeasible and is not intending to include them in statewide policies. Finally, neither the need for nor the ability to assign numeric effluent limitations has not been established in the Draft Basin Plan Amendment (BPA) or Draft Staff Report. Legal precedent, including *Defenders of Wildlife vs. Browner*, have clearly established that numeric effluent limitations are not required in MS4 NPDES permits. The 2010 EPA memo, Revision *to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDEs Permit Requirements Based on Those WLAs"* is commonly cited as justification for the use of numeric effluent limitations. However, even though this memorandum recommends	Federal regulation requires that NPDES permits must contain requirements necessary to achieve water quality standards (40 CFR § 122.44(d)(1)). Water quality based effluent limitations are required for point source discharges that have the reasonable potential to cause or contribute to an excursion of water quality standards and technology based effluent limitations or standards are not sufficient to achieve water quality standards. Where a WLA has been assigned to a discharge in a TMDL, it is concluded that there is reasonable potential for the discharge to cause or contribute to an excursion of water quality standards. The 2002 and 2010 EPA Memos state that the use of BMPs to control or abate the discharge of pollutants in stormwater is only supportable under specified circumstances where the permit's administrative record supports that the BMPs are expected to be sufficient to implement the WLA in the TMDL (US EPA 2002, 2010). In its comment letter on the Ventura County MS4 Permit, EPA supported the approach used for incorporating TMDL WLAs as numeric water quality-based effluent limits (WQBELs). EPA stated that this approach ensures

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	numeric effluent limitations, they are only to be included "when feasible." The TMDL documentation has not included information that demonstrates the use of numeric effluent limitations is feasible or necessary to implement the TMDL. Since recent state policy has stated that the development of numeric effluent limitations is infeasible and the Draft Algae TMDL does not include any information to support a different conclusion, we request that the Draft BPA language requiring inclusion of the MS4 allocations as numeric effluent limitations be removed.	that clear compliance determinations may be made, and the effectiveness of stormwater controls on water quality may be assessed. The Regional Board and EPA find that numeric WQBELs are feasible. The TMDL assigns WLAs to MS4 discharges based on empirical relationships and quantitative models. As a result, it is possible to use these numeric WLAs to derive numeric WQBELs for MS4 discharges. The State Water Board, in Order WQ 2006-0012 (Boeing), has made clear that "infeasibility" refers to "the ability or propriety of establishing" numeric limits, as opposed to the feasibility of compliance. EPA also testified before this Board during the hearing on October 4-5, 2012 that the feasibility of numeric effluent limitations refers to the ability to calculate the numeric effluent limitations not to the feasibility of compliance with such limitations. The Draft Toxicity Policy's findings that toxicity effluent limitations for stormwater are infeasible are based on the difficulty associated with numeric effluent limit compliance. This does not impact the Regional Board's ability to calculate water quality based effluent limitations on the basis of WLAs. In addition, the State Board Storm Water Panel recommendations, upon which the Draft Toxicity Policy conclusions are based, made no recommendations with regard to the feasibility of numeric effluent limitations applicable to non-storm water discharges from MS4s, which should be prohibited if they are a source of pollutants per CWA section 402(p)(3)(B)(ii).

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		The dry weather WLAs are attainable. MS4 dischargers can attain them by implementing BMPs with typical nutrient treatment efficiencies of 50% and/or by minimizing or eliminating dry-weather flows. The wet-weather WLAs are also attainable because they are based on existing conditions.
1.3	Additionally, we feel that the methods for determining compliance should reflect the complex nature of regulating algae and nutrients. The TMDL allocations represent the best interpretation of the nutrient loads needed to reduce algal blooms that impair beneficial uses. However, the complexities of the interactions and the range of possible actions that could be taken to address the impairment should be allowed for in the TMDL. The TMDL should include multiple methods of determining compliance that reflect the nature of actions that can be undertaken to address the TMDL and allow dischargers the flexibility to come up with the most cost effective solutions to addressing the impairment. It is requested that the following methods of determining compliance be included with the wasteload and load allocations: • Targets are achieved in the receiving water. • Wasteload and load allocations are met at discharge monitoring locations. • Demonstration of no discharge is provided. • Implementation of Best Management Practices (BMPs) in accordance with an approved Agricultural Water Quality Management Plan (AWQMP) or implementation plan.	In response to this comment, additional language has been added to TMDL Section 7 (Implementation) regarding flexibility and various alternatives to demonstrate compliance with the assigned allocations. For example, MS4 dischargers may demonstrate compliance with WLAs on an area-weighted mass basis. Furthermore, additional options and flexibility in achieving allocations can be provided by the individual regulatory programs, which are the mechanisms for implementing the allocations. For example, load allocations assigned to irrigated agriculture dischargers may be incorporated into the Conditional Waiver for Irrigated Agriculture (R4-2010-0186) as water quality benchmarks and be attained through the use of BMPs. The relationship between nutrient loading and ecological response is complex and that there are many overlapping physical, chemical, and biological co-factors that affect how a waterbody responds to increased nutrient loading. The water quality modeling analysis for this TMDL evaluated the interaction and influence of co-factors and established a technically sound TMDL. Any projects that that modify watershed co-factors (e.g., increase shading due to riparian restoration) and thereby increase the waterbody's loading capacity will be evaluated as part of the TMDL reconsideration.

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1.4	The TMDL is calculated based on required percent reductions from existing loads for all dischargers. However, as acknowledged in the TMDL, there are uncertainties associated with the existing source load calculations. Additionally, there are differing types of BMPs available to the responsible parties with varying costs and there may be watershed activities that could be implemented to remove the impairment. To allow for consideration of cost-effective watershed strategies to address impairments, we request that the TMDL allow the responsible parties to adjust the required reductions amongst the sources by submitting an implementation plan that demonstrates that the total required load reduction from all of the sources included in the plan will be achieved. Should the plan be approved, the responsible parties would be able to adjust their allocations in accordance with the plan.	A TMDL must have waste load allocations for point sources and load allocations for nonpoint sources (40 CFR 130.2 (e-i) and 40 CFR 130.7 (c). Thus, it is not possible to set a combined allocation for all sources and allow responsible parties to make adjustments among themselves as part of implementation. However, the Basin Plan amendment (BPA) states that, at the time of TMDL reconsideration, the allocations may be revised based on changes in the watershed. Additionally, the BPA states that the Ojai WWTP allocation may be revised if the Ojai WWTP has accepted additional flows from other watershed sources. Different BMPs and treatment technologies have varying costs and the TMDL is supportive of cost-effective watershed strategies. The TMDL closely considers both the cost and feasibility of implementation when establishing required load reductions.
1.5	In numerous places, the TMDL describes the critical conditions and time period for impacts from excessive nutrients as being during the period of May 1 to September 30. The information presented in the Draft BPA clearly supports the conclusion that nutrient concentrations during the winter months are not likely to cause exceedances of targets. As a result, it is appropriate to develop dry season and wet season allocations for agricultural and urban discharges. Further justification for this approach is presented in the Draft Staff Report. "While nutrient concentrations present in the river during the winter months are sufficient to support algal growth, cofactors such as, flow and temperature exert greater influence on the river. . . The changes in cofactors and ecology minimize winter season algal growth." (Draft Staff Report p. 32)	The assignment of TMDL allocations for dry weather and wet weather, rather than dry season and wet season is an important part of the TMDL margin of safety. As described throughout the TMDL, the relationship between nutrient loading and ecological response is complex and co-factors may diminish or exacerbate the expected ecological response. Likewise, there are inherent technical challenges and uncertainties when seeking to define this relationship; for example, the interannual variability in algal biomass, dynamic hydrologic conditions, and varying weather cycles all contribute to uncertainty in the TMDL. To account for this, there is both an implicit and explicit margin of safety.

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	Given that there is no evidence presented in the staff report that dry weather loads during winter months are causing impairments and substantial discussion is provided that the dry season is the critical condition during which algal growth occurs (rather than all dry days), the use of dry day allocations does not seem warranted. The numeric targets established to interpret the biostimulatory objective are applied in the Draft Algae TMDL as seasonal averages during the growing season. As a result, the application of nutrient allocations outside of the growing season to address targets that are only applicable during the growing season is not justified. The Draft Staff Report does not provide any additional information to support the need for allocations during all dry weather rather than just the growing season other than that the analysis is conservative.	The TMDL defines the dry season as May 1st – Sept. 30th and most of the data (i.e. algal biomass and DO) used in the TMDL analysis was measured during this time frame. However, in southern California it is quite common to have warm springs (March, April) and/or warm autumns (October, November) and it is possible for algal impairments to be manifested during these times (Photo Record 2001-2012, Al Lydecker). The algal biomass numeric targets are applied as seasonal averages because that is how the indicators were developed in the NNE. The TMDL applies the NNE targets as developed rather than adjust an important technical feature of the NNE. However, algal blooms can occur outside of the strict growing season period. Thus, the dry-weather allocations work to protect the river during warm spring and/or autumn periods and constitute an important part of the TMDL implicit margin of safety.
1.6	Additionally, two of the nutrient TMDLs cited as precedent for this TMDL (Malibu Creek and Chorro Creek) include some form of seasonal allocation. The Malibu Creek TMDL includes separate allocations that apply during the summer (April 15 to November 15) and winter periods (November 16 to April 14), the Chorro Creek TMDL includes orthophosphorus allocations that only apply in May through September. We are unaware of any TMDLs for nutrients that have included dry day and wet day allocations. As a result, the use of seasonal allocations is more consistent with existing precedent.	The Malibu Creek and Chorro Creek Nutrient TMDLs are not cited as precedent for this TMDL nor is it indicated that these TMDLs are models for the Ventura River Algae TMDL. The Malibu Creek and Chorro Creek TMDL are presented in the staff report as examples of TMDLs that also relied upon the narrative water quality objectives and used scientific literature to translate the objectives into numeric targets applied in the TMDL.

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1.7	Implementation of BMPs to control nutrient discharges from MS4s and agricultural dischargers in the Ventura River watershed on dry days as compared to wet days will be challenging for a number of reasons. Firstly, flows associated with rain events do not cease simply because rain stops. Elevated flows can be observed for several days after the rain event. Other TMDLs and MS4 permits recognize this by defining a rain event as the days of rain and the 72 hours after the rain event. Secondly, during the wet season, storm events can raise groundwater levels and cause elevated flows to be transported through storm drains and agricultural discharge channels. These elevated flows could cause exceedances of the allowable load allocations even though the responsible parties could be managing the sources of nutrients over which they have control. Finally, BMPs designed to address nutrient loads during the critical conditions of the growing season may not be as effective during the non-growing season. For example, during dry weather, one of the primary mechanisms for addressing agricultural discharges of nutrient loads is by minimizing or eliminating irrigation runoff and managing fertilizer applications. These implementation actions can virtually eliminate dry weather loading to the Ventura River. However, these BMPs will not be able to reduce nutrients that are transported during storm events and runoff that continues after the storm event that do not have anything to do with irrigation. Urban dry weather diversions are another example of BMPs that are a very effective practice to eliminate all pollutants and dry weather flows to the receiving water during the growing season that cannot efficiently operate during the wet season. Elevated flows that continue for days or weeks after the storm event, combined with the operational difficulties of opening and closing the diversions in anticipation and response to storm events to ensure the wastewater treatment plant receiving the flow is not overwhelmed by the additional flow make it not feasible to keep the diversions operating consistently during the non-growing season.	In response to this comment, the TMDL has been revised to clarify that MS4 and agriculture dischargers may collect dry-weather samples at least 72 hours after a rain event. Both of the existing regulatory mechanisms for stormwater and agriculture have provisions that state dischargers are only responsible for their own discharges which cause or contribute to an exceedance of a water quality standard. The TMDL has been revised to provide flexibility in demonstrating compliance with WLAs that should address this concern for stormwater. For agriculture, the TMDL will be revised to require the monitoring sites to be moved to more accurately isolate and assess runoff from agriculture. Furthermore, agriculture may be partly responsible for elevated levels of nutrients in groundwater if there is over application of fertilizer. The TMDL has been revised to explicitly state the existing requirements in the Agriculture Waiver for the protection of groundwater quality. The TMDL does not require agriculture and MS4 dischargers to manage elevated dry-weather base flow in the river. Instead, the TMDL requires agriculture and MS4 dischargers to manage dry-weather (i.e., non-stormwater) runoff discharged to the river. Agriculture and MS4 dischargers can manage dry-weather runoff by implementing BMPs with typical nutrient treatment efficiencies of 50% and by minimizing or eliminating dry-weather flows. For MS4s, the discharge of non-stormwater flows into the storm drain system has been prohibited since 1987.

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	Given the challenge of identifying BMPs (other than fertilizer management) that will reduce nutrient concentrations, the focus of BMP implementation, particularly for MS4s, will need to be on flow reductions. Consequently, the implementation of BMPs to control dry day discharges throughout the whole year has much different implications due to the elevated flows that occur during the wet season as compared to identifying BMPs just for the relatively more consistent flows during the growing season.	
1.8	As discussed in the TMDL, in order to develop the dry day allocations, a number of dry days must be assumed and loads are calculated based on the assumptions. Since not all years will have the same number of days of rain, some percentage of the years will have more wet days and some percentage of years will have fewer wet days. During years with more dry days, the wasteload and load allocations could be exceeded simply because there are more days that loads are discharged that are added together to determine the total dry day load. However, these additional dry days will almost always occur during the winter months when the TMDL indicates beneficial use impacts do not occur due to algae. On the other hand, if fewer dry days occur during a year, higher loads could potentially be discharged during the growing season because fewer days would be used to calculate the dry weather load. Given the dry day assumptions in the TMDL, it is unclear how the daily load allocations for MS4s and Caltrans are applicable and related to the TMDL analysis. The Draft BPA appears to indicate that the MS4s and Caltrans need to comply with both the daily load and the annual dry day load. Although the daily load reduces some of the concern about the assumption of 331 days discussed above, the application of a daily load given the assumptions of the TMDL is not warranted. The concerns with nutrients manifest themselves over a growing season and as a result a single day of higher loading discharge would not be of concern if overall the load were limited over the growing season. Additionally, the use of a daily load that applies on all dry days, including the day immediately after a rain event, raises significant concern given the elevated flows that will likely be present during the wet season. As a result, we do not feel that	331 days was chosen as the average number of dry-weather days over a 20-year period. This number was used to set the load reduction scenario. However, for compliance purposes, the dry-weather WLAs for stormwater are expressed as a daily load because it would be impractical to sample stormwater on every dry weather day in order to demonstrate compliance with an annual dry-weather load. The implementation section of the TMDL addresses how these load reductions will be translated into workable numbers and included in permits and/or waivers in order to conduct monitoring and evaluate compliance. The TMDL has been revised to clarify the determination of compliance for MS4 and agriculture and to clarify that allocations are expressed on a daily basis. As described previously, dry-weather allocations are an important part of the margin of safety. Instead of revising allocations to be seasonal, changes have been made to the implementation section to address MS4 and agriculture's concerns regarding the potential challenges associated with implementing and determining compliance with the dry-weather allocations.

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	daily loads address the concerns identified in the previous comments. We request that the daily allocations be removed or be used in conjunction with consideration of the seasonal loads for consistency with the impacts of nutrients in the watershed. We request that the Regional Board staff consider our recommended alternative approach to dry day and wet day allocations as follows: 1. Include dry season load based allocations for the growing season (May 1 to September 30). 2. Adjust the wet weather allocations to apply during the wet season (October 1 to April 30). 3. Remove the daily load table for MS4s and Caltrans. We feel this approach will address our primary concerns with the allocations including inconsistency with the targets and science regarding the growth of algae and the challenges associated with implementing and determining compliance with the dry day allocations.	
1.9	The wet weather allocations for the MS4s for the Estuary and Reach 1 are not consistent with the rest of the TMDL or with the Basin Plan. The wet weather Estuary and Reach 1 allocations are set equal to current performance values for discharges from MS4s during wet weather rather than Basin Plan objective of 10 mg/L that applies to all waters. The applicability of this objective to all waters has been validated by the application of the nitrogen objective to Calleguas Creek Reach 2 and Mugu Lagoon in the Calleguas Creek Watershed Nitrogen TMDLs. We request that the 4.6 mg/L nitrate-N+nitrite-N wet weather allocations for MS4s discharging to the Estuary and Reach 1 be replaced with a 10 mg/L nitrate-N+nitrite-N wet season allocation.	The wet-weather allocations for stormwater are based on the site-specific water quality objectives in Table 3-8 of the Basin Plan. These water quality objectives are based on an evaluation of existing water quality, consistent with federal antidegradation requirements. The lack of adequate nitrogen data for all streams precluded the establishment of numerical objectives for all streams. In particular, there are no waterbody specific objectives in Table 3-8 for Reach 1 and the Estuary. Therefore, wet-weather allocations for MS4 discharges to Reach 1 and the Estuary were established based on existing discharge quality to prevent degradation of water quality.

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1.10	The Draft Algae TMDL includes multiple algal targets that are numeric interpretations of the biostimulatory narrative objective in the Basin Plan. The benthic algal biomass target for the Ventura River was obtained from Tetra Tech (2006) and USEPA (2000), which based their recommendations on literature values primarily addressing levels of benthic algae that are presumed to impair recreational use. The macroalgal cover and phytoplankton biomass targets were also obtained from literature values. Our primary concern with the selected targets is the inclusion of two targets in each of the Estuary and River that interpret the same narrative standard. By including two targets for algae, the TMDL creates a situation where the responsible parties could be considered out of compliance or not attaining one target while meeting the other, yet both are supposed to have been designed to interpret the same narrative objective. We request that only one target, i.e., either benthic algal/phytoplankton biomass or macroalgal percent cover is assigned for algae.	As part of the TMDL, is it necessary to have one or more numeric targets that can be used to evaluate water quality conditions and attainment of beneficial uses. US EPA Protocol for Developing Nutrient TMDLs advises the use of one or more targets to quantify the attainment of water quality standards, including situations where narrative objectives are applied. Additionally, the two targets (macroalgal cover and biomass) measure two different endpoints and both provide valuable information on the waterbody response to nutrient loading (e.g. potential changes in dominant primary producer) and the assessment of beneficial use support. For example based on Welch and Jacoby 2004, the algal biomass target of 150 mg/m^2 is expected to minimize the risk of low dissolved oxygen events and protect aquatic life. The percent cover targets are semi-quantitative assessments and are generally considered to protect recreation beneficial uses. It is important to assess algal biomass in a number of ways because each method has respective strengths and weaknesses. The ability to look at a combination of algal measures provides a more robust assessment of algal nuisance. Moreover, because the CA NNE framework is a risk based approach that seeks to minimize the likelihood of beneficial use impairment, it is desirable to have multiple numeric targets that provide a thorough analysis of water quality and provide greater assurance that water quality standards are attained and all beneficial uses are protected.

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1.11	The Draft Algae TMDL has interpreted the dissolved oygen (DO) Basin Plan objectives to mean that an instantaneous minimum of 7 mg/L of DO must be maintained in the Ventura River and Estuary at all times. However, this interpretation does not account for factors that are not related to algae (i.e. water turbulence, water depth, and temperature) and natural conditions that can have an impact on DO concentrations in a waterbody; and that the responsible parties do not have the ability to control all conditions that could reduce DO at any given moment. The assignment of an instantaneous minimum of 7 mg/L as a numeric target could make the responsible parties responsible for addressing DO variations that are due to factors not addressed by this TMDL (i.e. flow), natural conditions or that are not a result of waste discharges. The TMDL should Include daily average 7.0 mg/L DO target for the river and an annual average 7.0 mg/L target for the Estuary (or 5.0 mg/L daily The Basin Plan objective for dissolved oxygen (DO) states: "At a minimum, (see specifics below), the mean annual DO concentration shall be greater than 7 mg/L and no single determination shall be less than 5 mg/L, **except when natural conditions cause lesser concentrations**. " "The DO content of all surface waters designated as both COLD and SPWN shall not be depressed below 7 mg/L **as a result of waste discharges**." The TMDL has interpreted these objectives to mean that an instantaneous minimum of 7 mg/L of DO must be maintained in the Ventura River and Estuary at all times. However, the inclusion of an instantaneous 7 mg/L minimum target as the interpretation of the Basin Plan objective does not account for the two provisions of the objectives emphasized in bold above. Natural conditions can have an impact on DO concentrations in a waterbody and the responsible parties do not have the ability to control all conditions that could reduce DO at a given moment. In addition, DO can be influenced by factors such as water turbulence, flow, and temperature. Reductions in DO concentrations can	It is not protective to use a daily averaging period for the DO numeric target because the photosynthetic and respiration activities of algae can drive significant changes in DO concentrations over a 24-hour period. The daytime activity of photosynthesis produces oxygen and can lead to supersaturated conditions, while the nighttime activity of respiration reduces dissolved oxygen; if a daily average is used, then the nighttime DO impairments can be masked by supersaturated daytime DO concentrations. As presented in the TMDL staff report Section 2.3, DO concentrations below the water quality objective were repeatedly observed in the river and estuary. These DO excursions were recorded as pre-dawn measurements, indicating that there are a number of hours during the early morning when the DO objective is not attained and aquatic life is at risk. Additionally, the staff report clearly documents the linkage between nutrient loading (i.e. discharges) in the watershed and related eutrophic effects such as increased algal biomass and reductions in dissolved oxygen. Furthermore, the data report low dissolved oxygen conditions in spring and early summer (April – June) when winter flows are sustained and temperatures are generally still cool. Based on multiple lines of evidence, staff finds that non-attainment of the DO objective is the result of waste discharges and that the objective is correctly applied as a numeric target in this TMDL.

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	be caused by reductions in flow or higher temperatures that are not related to algal photosynthesis and respiration. The assignment of an instantaneous minimum of 7 mg/L as a numeric target could make the responsible parties responsible for addressing DO variations that are due to natural conditions, are not a result of waste discharges or are caused by factors that are not subject to this TMDL.	
	The Malibu Creek Nutrient TMDL recognized this concern and addressed it by assigning a numeric target of 7 mg/L as a daily average. "Recognizing that diel fluctuations in DO are a natural occurrence, we propose that 7.0 mg/l minimum for waters with uses associated with cold water fisheries and spawning be interpreted as an average daily value." We request that the DO target for the Ventura River be applied as a daily average, consistent with the Malibu Creek Nutrient TMDL.	Since the Malibu Creek Nutrient TMDL was established by US EPA in 2003, the State Board has approved the approach of evaluating DO data based on *daily minimum* measurements. For example, the Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) directs evaluation the 7-day average of *daily minimum* continuous DO measurements. Additionally, the Los Angeles Regional Board supported the application of the Basin Plan DO objective as a single sample minimum in the Machado Lake Nutrient TMDL (adopted May 2008).
	For the Ventura River Estuary, we request the use of 7.0 mg/L as an annual average or 5.0 mg/L as a daily average. The Estuary is not designated as COLD and therefore, the Basin Plan objective that discusses 7.0 mg/L as a minimum value is not applicable. The Basin Plan objective that applies to all waterbodies is outlined above and includes a 7.0 mg/L annual average and a 5.0 mg/L minimum except where natural conditions result in a lower concentration. For the same reasons as discussed above, a minimum value should not be included as a target, but rather as a daily average.	The DO target of 7.0 mg/L is applied to the Ventura River Estuary because the estuary is designated with both SPWN and MIGR beneficial uses. Adequate concentrations of oxygen are critical for the survival of all fish, and cold water fish like the endangered Southern California steelhead trout have even greater oxygen requirements due to greater metabolic activity. Decreased oxygen levels can impact fish growth and development and the swimming, feeding, and reproductive ability of juvenile and adult fish.

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	This conclusion is further supported by work being done as part of the State Water Board's ongoing development of nutrient numeric endpoints (NNE) for California estuaries, and in an effort to resolve regulatory issues arising from inconsistent DO objectives for estuaries among the six RWQCBs. For this effort, the Southern California Coastal Water Research Program (SCCWRP) is developing recommendations for estuarine DO objectives based on physiological effects data for fish and invertebrate indicator species. In 2011, based on fish and invertebrates that spend all or a substantial part of their life histories in estuarine habitats, SCCWRP derived draft acute and chronic DO thresholds for southern California estuaries that are considerably lower than the Basin Plan objective of 7 mg/L that the Regional Board applied to the Ventura River estuary in the Draft Algae TDML as an instantaneous minimum concentration.	Regional Board and EPA staff serve on the statewide committee directing and reviewing the investigations conducted by SCCWRP to develop the NNE for California estuaries. As part of the technical foundation for the Estuary NNE project, State and Regional Board staff directed SCCWRP to evaluate the current scientific basis supporting derivation of DO objectives because there may be a basis for revising DO objectives in the future. However, this work is in very early stages and a draft report summarizing DO tolerance data does not provide grounds for superseding the current Basin Plan DO objective, which is established as protective for aquatic life. Regional Board and EPA staff will continue work on the statewide NNE Estuary project; as this technical work comes to fruition, staff will take the necessary policy steps to revise water quality standards, if appropriate.
1.12	Like DO concentrations, pH levels can vary due to natural conditions and factors other than the discharge of waste. To avoid requiring responsible parties to address natural conditions, the targets for pH should be expressed as daily averages. As with DO, the Basin Plan objectives for pH refer to natural conditions and changes that result from waste dischargers. "The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of waste discharge." Like DO concentrations, pH levels can vary due to natural conditions and factors other than the discharge of waste. To avoid requiring responsible parties to address natural conditions, the targets for pH should be expressed as daily averages.	Algae can alter the pH of water through the uptake or release of CO_2. During photosynthesis CO_2 is consumed and pH increases. During respiration CO_2 is released and dissolved in the water forming carbonic acid (H_2CO_3), which lowers pH. Altered pH conditions are stressful to aquatic life and can even be lethal. Furthermore, the pH objective as written in the Basin Plan (without an averaging period) provides for fluctuations in a natural range and provides ample flexibility because the pH scale is logarithmic. This means that each whole value is 10 times more acidic or alkaline than the next value. For example, a pH of 6.5 is 100 times more acidic than a pH of 8.5 (10 x10). Similar to DO, a daily averaging period for pH can mask diurnal swings and expose aquatic life to dramatic changes in stream

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		acidity/alkalinity.
1.13	The Draft BPA and Draft Staff Report include significant discussion that supports that algal-related impairments are not of concern outside the growing season. As a result the requirement to conduct monthly percent cover monitoring year round appears excessive. Additionally, the requirement to continue the monitoring beyond the final date of the TMDL is unprecedented. Although we recognize that some level of monitoring may be needed to ensure the impairments do not return, the frequency and type of monitoring will likely not need to be maintained. Additionally there are regulatory mechanisms in place to require appropriate monitoring if needed after the conclusion of the TMDL. There is no need to include a requirement in the TMDL at this time to maintain TMDL monitoring at the level required by the TMDL. We request that the requirement to monitor percent cover outside of the growing season be removed and the monitoring for other constituents be reduced to quarterly during October to April. In addition, we request that requirement to continue the monitoring beyond the final date of the TMDL be removed.	Nutrient and flow monitoring cannot be reduced from monthly to quarterly. A robust total nutrient data set will provide important information on nutrient cycling (i.e. how nutrients are bound, assimilated, and released as they move through the watershed) and nutrient loading throughout the watershed. As described in the staff report Problem Identification and Numeric Targets (Sections 2 & 3), the relationship between nutrient loading and nuisance algae growth is the essential technical component for this TMDL. In order to reasonably expect an adjustment of the TMDL at the 5 year reconsideration, it is necessary for the Regional Board to have additional data that will be used to refine the analysis and improve the understanding of the load response relationship in the Ventura River. The requirement to continue monitoring beyond the final date of the TMDL is not unprecedented. It has been implicitly understood that ongoing monitoring is necessary to assess attainment or nonattainment of the TMDL. For example, monitoring is still ongoing for the Callegaus Creek Nitrogen TMDL, even though the final compliance date was in July 2010. In this TMDL, this requirement is explicitly stated. The various regulatory programs will still be the means to implement the ongoing monitoring. Alternatively, the EO retains the option of issuing an order to require this monitoring. However, responsible agencies may request a reduction in monitoring once final WLAs and LAs have been attained. However, in response to other comments, revisions to the monitoring requirements would provide a better

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		assessment of nutrient impacts during the critical condition and improve upon assumptions made during TMDL development. For algal biomass, the monitoring frequency shall be increased to once per month in the growing season (May 1st to September 30th). After two years, this may be reduced to 3 times during the growing season if monthly monitoring does not show a significant difference in algal biomass. So as not to place an undue burden on dischargers, the frequency for monitoring of algal percent cover shall be reduced from year-round to the growing season only.
1.14	The TMDL (section 4.2.3) appears to consider all OWTS in the Ventura River Watershed as contributing to the algae impairment. The TMDL does not provide adequate technical justification for considering all OWTS as contributing to the impairment. OWTS effluent dispersal in this watershed occurs in various soil types and depths, and in some cases, at a significant distance from impaired surface waters. A more in-depth analysis is necessary to determine any potential nitrogen contribution of OWTS to the surface water impairments. The watershed is 227-square miles in size and rises to elevations of over 6,000 feet. There is no analysis to support imposing Tier 3 requirements on OWTS that are located in some cases miles away from and thousands of feet higher than the impaired water bodies. We feel that the designation of all OWTS as Tier 3 could result in the requirement to install supplemental treatment on all OWTS in the watershed regardless of the impact to the impaired waterbody and the OWTS Policy does not require this designation. While we recognize the need to ensure there is sufficient justification in the TMDL to require supplemental treatment, we feel that concern can be addressed through other mechanisms. In addition, the TMDL (Figure 4-2) contains data that appears to overestimate the number of lots that are unsewered within the Ojai City limits.	The TMDL has been revised in response to this comment to allow for a more in depth analysis of potential contributions from existing OWTS before they are required to be upgraded or modified to enhance nitrogen removal. Language has been added clarifying that the TMDL initially establishes the Advanced Protection Management Program for the entire watershed, but that areas found not to be contributing to the overall loading may be removed from the Advanced Protection Management Program as approved in a Local Agency Management Program.

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1.11	We appreciate the inclusion of the option to conduct special studies in the TMDL to adjust the targets and allocations. However, we feel that more time is needed to conduct the studies to ensure that representative conditions in the watershed are captured. As discussed on the Draft Staff Report, the cofactors that impact algal growth can vary significantly in the watershed depending on the rainfall that occurs in the previous year, the temperatures during the growing season and other factors. In order to design special studies that will effectively be able to evaluate the inter year variability of the algal growth cofactors, a multi year study will need to be conducted. Three years is insufficient to design the monitoring study, get approval of the Work Plan, conduct a multi year study over two to three growing seasons at a minimum, and analyze the data and prepare a report to submit to the RWQCB. As a result, at least five years are needed to conduct the special studies.	The implementation schedule will be revised to provide four years to conduct special studies.
	Additionally, given that the monitoring and special studies have the potential to alter the TMDL targets and allocations and therefore also impact the implementation actions required of the Dischargers, the special studies should also consider modifications to the implementation schedule if warranted. We also request that the TMDL reconsiderations consider any applicable studies from areas outside of the Ventura River Watershed. It is our understanding that there are some ongoing studies in the San Diego Region that could provide valuable information on the approach to addressing biostimulatory objectives in Southern California and we feel the reconsideration should be able to utilize that information if appropriate.	The Regional Board and EPA are aware of studies underway in Region 9. If these results are applicable to the Ventura River Watershed they will be considered.
	We are also asking for a modification of the compliance schedule for stormwater and agricultural Dischargers. Given the need for additional time to conduct the special studies and evaluate the results of the analysis, it is not feasible to require compliance within 6 years. The data utilized to develop the MS4 and agricultural allocations were based on limited data or data from outside the watershed. As a result, it will take some time for the responsible parties to gather data specific to the watershed that will allow the identification and implementation of	At this time, there is no evidence that warrants the need to extend the final compliance deadline for stormwater and agriculture dischargers. Regarding stormwater, the very low dry-weather flows (for example, 0.5 cfs from a 6,900 acre drainage area as measured in March 2010) can be addressed within the 6-year time period.

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	appropriate targeted BMPs to achieve the allocations. As a result, we request that agricultural and MS4 Dischargers also have a 10 year compliance schedule to match the other responsible parties in the TMDL. This will allow sufficient time to conduct studies, develop, implement and evaluate the results of BMP implementation and consider the results to modify TMDL requirements. In addition, we request that Stormwater Dischargers receive a 10 year implementation schedule for wet weather discharges as well. It is unclear why wet weather allocations are effective immediately for the MS4 Dischargers and not anyone else. The implementation schedule will allow time to implement BMPs to meet the wet weather allocations.	Moreover, according to the VCAILG annual monitoring reports for agriculture dischargers the dry-weather allocation is already attained in the upper watershed and projects are already underway to address discharges in the lower watershed. The wet-weather allocations for stormwater are effective immediately because they are based on current discharge quality and are currently attainable. It is not expected that stormwater dischargers will need to implement additional BMPs beyond those already in place through permittees' stormwater management programs to meet the wet-weather allocations. Therefore, an implementation time period is not necessary. A review of data demonstrates that the MS4 stormwater quality is usually well below the allocations, which are based on reach-specific water quality objectives or existing stormwater discharge quality (where there are no reach-specific water quality objectives). Furthermore, the WLAs for Reaches with Basin Plan numeric objectives are already incorporated into the MS4 permit as receiving water limitations, since the wet-weather WLAs are equivalent to the Basin Plan water quality objectives.

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	Heal the Bay	
2.1	In general, we support this TMDL, particularly the inclusion of load allocations (LAs) and waste load allocations (WLAs) for both total phosphorus and total nitrogen and the inclusion of targets for dissolved oxygen (DO) and algal cover. Requiring the reduction of *both* nutrients is necessary to ensure successful abatement of the eutrophic conditions in the river. It is well established in the scientific literature that the impacts of nitrogen and phosphorus on algal growth are complex, involve numerous factors, and are often waterbody specific. Often, the impact of excess nitrogen and phosphorus will change with fluctuating conditions in the waterbody, so it is incorrect to make the broad generalization that one nutrient is limiting. Similarly, TMDLs for other waterbodies in the Los Angeles region also require reductions of both nutrients, including the Machado Lake Nutrient TMDL, The Malibu Creek Nutrient TMDL, TMDLs for various Los Angeles area lakes, among others. In addition, we agree with the Staff Report when it states, "Multiple numeric targets may be used when a single target is not sufficient to fully evaluate attainment of water quality standards and protect beneficial uses" (Page 33). Thus, it is appropriate that the TMDL also includes numeric targets for algal and phytoplankton biomass, as well as DO.	Comment noted.
2.2	We also support the inclusion of WLAs and LAs for wet and dry weather and the eight percent explicit margin of safety for the assigned waste load allocations. However, we are concerned that the allocations for wet weather are not as protective as those established for dry weather. We have several other concerns with the TMDL. For instance, the compliance schedule for livestock/horses is too generous and should be abbreviated. Also, dry-weather WLAs and LAs should be expressed as concentrations. These concerns and others are outlined in more detail below.	Comment noted. See response to specific comments.
2.3	Dry-weather WLAs and LAs for Nitrogen and Phosphorus should apply year round. The TMDL includes WLAs and LAs that would result in pollutant load reductions only during the dry-weather growing season, and provides less protective concentration-based WLAs during the wet season based on the objectives in the Basin Plan. It is our understanding from Staff that the	The dry-weather LAs and WLAs are more stringent than the wet-weather LAs and WLAs because the exceedances of the dissolved oxygen and biostimulatory substances water quality objectives caused by increased nutrient loading and eutrophication are a dry-season problem. This is because in the winter months, cofactors such as flow

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	WLAs and LAs for wet weather are not as low as the loadings provided for dry weather. Staff reasons that this is because the dry weather season is the critical condition, and it is the dry-weather loading that results in water quality impairments (Draft Basin Plan Amendment Page 4). However, this approach is inappropriate as the California Clean Water Act Section 303(d) List of Water Quality Limited Segments ("303(d) List") does not distinguish between impairments occurring in dry weather and wet weather. Even if the dry season is the critical condition "[n]utrients are loaded from the watershed to the Ventura River and Estuary in both dry and wet weather" (Draft Basin Plan Amendment Page 4). While we appreciate the Board establishing limits for both wet and dry weather, we do not agree that limits during wet weather should be less stringent than those applied during dry weather. The nitrogen limit in the Basin Plan is not set at levels protective of marine life. In Reach 2 and Canada Larga, for instance, the wet-weather allocation for stormwater, agriculture, and horse/livestock sources are 10 mg/L. This level is consistent with drinking water standards, but is at a level so high it would be dangerous for aquatic life. Plainly, the dry-weather allocations should apply in both wet and dry weather, as discharges occur regardless of weather and flow conditions in their respective reaches and could contribute to impairments throughout the year. If monitoring efforts show that the responsible parties already meet the numeric targets and allocations under certain flow regimes, they will be in compliance with the TMDL. Thus we urge the Los Angeles Regional Water Quality Control Board ("Regional Board") to address this general deficiency by including the more protective dry-weather WLAs as year-round nutrient concentration-based allocations in the TMDL.	and temperature exert a greater influence on algal growth than the level of nutrient concentrations. For example, the first significant rain event of the season will scour algae from the river and higher winter flows make it difficult for algae to recolonize. Additionally, cooler temperatures and reduced light further diminish winter-season algal growth. Thus, even if nutrient concentrations are elevated in the winter, cofactors prevent algae from growing to nuisance levels. Furthermore, wet-weather loading of nutrients from the watershed are generally delivered directly to the ocean (the estuary only closes during the dry season) and thus don't contribute to exceedance of the biostimulatory substances objective in the growing season. It is therefore not necessary to set wet-weather allocations at levels needed to attain biostimulatory substances and DO water quality objectives in the dry season. Instead, the wet-weather allocations are set to ensure that water quality objectives are attained in wet-weather and there is no degradation of existing wet-weather water quality. Note that most of the dry-weather allocations apply year-round. It is quite common to have warm springs (March, April) and/or warm autumns (October, November) and it is possible for algal impairments to be manifested during these times (Photo Record 2001-2012, Al Lydecker). Thus, the dry-weather allocations work to protect the river during warm spring and/or fall periods.

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2.4	The dry-weather allocations should be expressed in terms of concentration and mass-based loadings. The TMDL provides both percent load reductions and mass-based WLAs and LAs for determining compliance in dry weather, and concentration-based allocations during wet weather. All allocations should be expressed in terms of concentration. The expression of these limits solely as mass loads and percent reductions introduces more difficulty in implementation and uncertainty that the TMDL will result in the attainment of beneficial uses than including concentration-based allocations. The California Toxics Rule, the Basin Plan, and NPDES permits and most other TMDLs issued throughout the Los Angeles region have limits expressed as concentrations. Without concentration-based WLAs and LAs, how will the Board be able to tell from monitoring results if the discharge reductions are causing or contributing to water quality standards exceedances? Determining compliance by percent load reduction is harder to implement and fraught with uncertainty. For instance, measuring load reductions in stormwater can be difficult and uncertain. Dischargers could meet the mass-based load reductions, but still discharge at concentrations harmful to aquatic life. For instance, a discharger might still comply with the TMDL by decreasing the mass that they discharge, but discharge at a higher concentration over a shorter timeframe. The Regional Board should add language to the TMDL to close this loophole. We suggest expressing LAs and WLAs as concentrations in addition to the loadings included. If the Board will not include both load reduction allocations and concentration-based allocations, then at a minimum, the Regional Board should include concentration-based allocations in the TMDL. If development or other changes throughout the watershed result in an increase in existing loads, then the mass-based allocations may no longer be appropriate. Further, these mass-based WLAs and LAs will have to be translated into concentration based limits anyway in order to be inserted into discharge permits. Thus, it would be more efficient to express the WLAs and LAs as concentrations in this TMDL.	Mass-based WLAs and LAs are proposed for most sources because the load reduction scenario is mass-based. This approach is best suited to the Ventura River watershed. The load reduction scenario reflects the variable hydrology of the river and the relative locations of the various sources in the watershed. Rather than requiring all sources to discharge at the same concentration, the load reduction scenario accounts for the different discharge types, their location in the watershed, and the available implementation strategies for each discharge type. The mass-based WLAs and LAs also comply with federal regulation According to 40 CFR 130.2(i), TMDLs can be expressed in terms of mass per time, toxicity, or other appropriate measure, depending on the type of waterbody and the sources that contribute to impairment. The comment that mass-based allocations will make implementation difficult is noted. The staff report and proposed Basin Plan amendment will be revised to better explain how allocations will be implemented and how compliance will be determined. However, it is unlikely that dischargers could meet mass-based load reductions, but still discharge concentrations harmful to aquatic life. The threats posed to aquatic life that are addressed by this TMDL are the result of exceedances of objectives for secondary response indicators. It is the overall mass loading of nutrients to the river that determines the in-stream concentration of nutrients and the resulting algal growth and DO response in the river. The existing levels of nutrients in stormwater, in other discharges, and in the river itself, are below levels that would cause direct toxicity to aquatic life (e.g., ammonia).

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2.5	The TMDL should include WLAs and LAs for dissolved oxygen, pH, total algal biomass, phytoplankton biomass, and macroalgal cover. The TMDL sets a clear numeric target for dissolved oxygen, pH, total algal biomass, phytoplankton biomass, and macroalgal cover. However, it is not clear why the TMDL does not translate these targets into WLAs or LAs. These parameters are important indicators of nutrient impacts on beneficial uses. Thus, we urge the Board to include year-round WLAs and LAs for these constituents.	Dissolved oxygen, pH, total algal biomass, phytoplankton biomass, and macroalgal cover are secondary response indicators. They are not discharged to the river and thus a WLA or LA cannot be assigned for them. Instead, the TMDL sets WLAs and LAs for the pollutants causing the eutrophication-related impairments, which are nitrogen and phosphorus.
2.6	The numeric target for chlorophyll *a* in the estuary should be set at a more protective level. We support the inclusion of a chlorophyll *a* target in this TMDL. The TMDL contains a seasonal average numeric target for total algal biomass of 150 mg/m^2 chlorophyll a for the River and its tributaries, which is consistent with EPA guidance for "critical levels for an aesthetic nuisance," as well as targets adopted in other TMDLs such as the Malibu Creek Nutrient TMDL. While the target for total algal biomass appears appropriate, we are concerned that the target for phytoplankton biomass is too high. The Basin Plan Amendment includes a numeric target for the seasonal average of phytoplankton biomass as chlorophyll *a* of 20 µg/L for estuary and shallow subtidal area. It is concerning that "the target of 20 µg/L is positioned on the high end of the medium water quality range," as mentioned in the Staff Report (Page 35). Why did RWQCB staff select 20 µg/L, which is the highest end of this range? It would be more protective and appropriate to use a value toward the lower end of the range. Other river TMDLs have lower chlorophyll *a* targets. For instance, Oregon's Nuisance Phytoplankton Growth Rule established a phytoplankton concentration averaging 15 µg/L in the Tualatin River. Also, EPA's Guide to developing Nutrient TMDLs contains the following	The phytoplankton numeric target of 20 µg/L was selected because it is a protective threshold; 20 µg/L chlorophyll a is identified as a threshold when the estuary's phytoplankton community shifts from a diverse mixture to monoculture (Bricker, 2003). A diverse phytoplankton community is considered the higher water quality condition. The trophic status classification presented in this comment is from an EPA guidance document that is focused primarily on developing TMDLs for lakes, not estuaries. Further, the guidance document states that most of the work conducted on trophic classification systems has focused on northern, temperate lakes and that applying these systems to other waterbodies must be done carefully. EPA recommends that the ranges serve as a starting point only, and that local studies be investigated as well. Annual average chlorophyll *a* concentrations for southern California estuaries ranged from 0.5 to 42

<table>
<tr><th>Comment Number</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td>table which gives a starting range for developing nutrient targets, with 10 µg/L at the high end of the range.

Table 4-3. A trophic status classification based on water quality parameters
<table>
<tr><th>Water Quality</th><th>Oligotrophic</th><th>Mesotrophic</th><th>Eutrophic</th><th>Source</th></tr>
<tr><td>Total P (µg/L)</td><td>< 10</td><td>10-20</td><td>>20</td><td>USEPA (1974)</td></tr>
<tr><td>Chlorophyll a (µg/L)</td><td><4</td><td>4-10</td><td>>10</td><td>USEPA (1974)</td></tr>
<tr><td>Secchi disc depth (m)</td><td>4</td><td>2-4</td><td><2</td><td>USEPA (1974)</td></tr>
<tr><td>Hypolimnetic oxygen (% of saturation)</td><td>>80</td><td>10-80</td><td><10</td><td>USEPA (1974)</td></tr>
</table>
Source: Adapted from Novotny and Olem, 1994.</td><td>µg L^{-1} (Bight 08 Estuary Report) and the few measured samples available for the Ventura River Estuary ranged between 2 -24 µg/L. There is very little measured data available for the Ventura River Estuary. Thus, the evaluation of the Estuary's condition incorporates considerable uncertainty. It is possible that a more conservative Estuary phytoplankton biomass target is warranted.

As more data is collected for the estuary under this TMDL we will be able to improve the assessment of the Estuary's condition and consider revising the numeric targets as part of the TMDL reconsideration.</td></tr>
<tr><td>2.7</td><td>The Regional Board should increase the monitoring frequency and provide guidelines for monitoring locations within the TMDL.

The Basin Plan Amendment currently proposes a minimum monitoring frequency for algal biomass and pre-dawn DO sampling of two times per growing season. This frequency is not adequate for the assessment of nutrient impacts, given the variability of factors contributing to this impairment and the dynamic nature of the Ventura River system. We suggest that the Board increase this frequency to at least once per month in order to adequately assess beneficial use conditions.

In addition, the Regional Board should provide clarity and additional guidelines for monitoring locations required under the TMDL. Responsible parties should be required to establish sampling locations at the discharge points to the River and its tributaries and associated receiving water locations. Such guidance will allow the responsible parties to develop a more effective monitoring scheme for tracing the sources of the nutrient impairments to the Ventura River.</td><td>Increasing the monitoring frequency would provide a better assessment of nutrient impacts and improve upon assumptions made during TMDL development. In response, the receiving water monitoring requirements have been revised as follows:

For algal biomass, the monitoring frequency shall be increased to once per month in the growing season (May 1st to September 30th). This may be reduced to 3 times per season if monthly monitoring demonstrates that there is no significant difference in algal biomass from month to month. So that an undue burden is not placed on dischargers, the frequency for monitoring of algal percent cover shall be reduced from year-round to the growing season only.

For DO, rather than increasing the frequency of monitoring to once per month, it would be useful to conduct continuous monitoring over a longer period of time, as grab samples don't capture much variability. Thus, the TMDL has been revised to</td></tr>
</table>

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		require continuous DO monitoring. Continuous DO monitoring shall be conducted quarterly in two week intervals, and shall be conducted in the months of May and September in the 2nd and 3rd quarters. The TMDL requires that the monitoring plan developed by responsible parties be approved by the Executive Officer. This ensures that Regional Board staff will be able to provide guidance on and final approval of the number and location of sampling stations.
2.8	The implementation schedule for horses and livestock should be shortened and interim milestones should be added. A ten-year deadline for compliance with the WLAs for livestock operations is too lengthy. There is no justification for such a major source of nutrient impairment in the River to receive the greatest time period for compliance. According to the source analysis for the TMDL, horses/livestock and agricultural uses contribute significant loading in dry weather (33.5%) and wet weather (36.1%). In fact, livestock and agriculture constitute the highest contribution of wet-weather nutrient loading, and the second highest in dry weather. We understand the length of time in the compliance schedule is attributed to the need for the Regional Board to create an entirely new regulatory program to implement these load allocations. However, prior to that program being created, there are some major steps than can be taken to reduce this loading throughout the watershed to give a head start on meeting these limits. For instance, the Board could create an outreach program to inform livestock owners of the various BMPs they can install to prevent pollution from livestock from reaching the river, such as placing fences around livestock operations to keep these animals out of the river. The Board could also call for the development of a River Water Quality Management Plan, which would require responsible parties to work collaboratively to address their impacts. The TMDL should incorporate	As the comment notes, the TMDL includes a 10-year implementation schedule for horses and livestock owners because the Regional Board must still develop new regulatory mechanisms to implement the LAs assigned to these sources. It will take several years for development, outreach, and enrollment. Interim milestones are needed; the requirement to submit a monitoring program at Year 5 is an effective interim milestone. In order to prepare and submit this monitoring plan, dischargers will have to either have joined the new regulatory program individually or as a group. This will take a great deal of outreach and coordination, and will ensure that horse and livestock owners are moving toward implementing BMPs and attaining LAs. The outreach program raised in this comment is similar to a program that the Regional Board is currently considering. The Regional Board intends to work with stakeholders on this type of outreach program to help horse and livestock owners implement BMPs as the regulatory programs are developed. However, such a program does not need to be specified in the TMDL.

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	such practices and interim limits as implementation milestones for the TMDL. Such milestones are necessary to ensure that responsible parties are on track for meeting final compliance targets. Thus, the Regional Board should require a six-year implementation schedule and interim milestones for the TMDL.	6 years is not enough time to develop and implement the new regulatory programs and proposes to keep the schedule at 10 years.
2.9	Miscellaneous Concern- The dry-weather WLAs for Ventura County MS4 lack detail on which constituent they describe. The Board should clarify this and correct these allocations to include both nitrogen and phosphorus.	The table in the draft documents incorrectly shows the dry-weather WLAs for TN only. The table has been revised to include the WLAs for TP of 0.26 lb/day for the MS4 and 0.11 lb/day for Caltrans. In addition, there is an error in the table. The WLAa for TN are not 56 lb/day and 2.1 lb/day for the MS4 and Caltrans. The table has been corrected to show the WLAs for TN of 28 lb/day for the MS4 and 1.1 lb/day for Caltrans.
	Las Virgenes Municipal Water District	
3.1	Nutrient limits overlook the presence of nutrient-rich geologic formations in the TMDL area. The impacts of large expanses of Tertiary shales in the Ventura River TMDL area are entirely overlooked in the TMDL. The Monterey Formation, Sisquoc Formation and Rincon Shale are abundant north of the Ojai Valley Sanitation District and south of the City of Ojai. While geological maps show no Miocene marine shales in the Cañada Larga area, they do show that the area is dominated by Quaternary landslide deposits and the Santa Barbara Formation, which is described as containing Monterey Formation locally. TMDL reference sites are upstream of these nutrient rich rocks in terrain dominated by sandstones. The TMDL staff report and the study contracted to the University of California at Santa Barbara (Klose et al. 2009) did not consider geology as a potential explanatory variable, but their investigation to human land use variables and water quality parameters. This is unfortunate, especially since the geologic footprint of the Miocene marine shales is nearly coincident with development. The California Nutrient Numeric Endpoints (NNE) framework (Tetra Tech 2006) acknowledges that "nutrients occur naturally, and vary in relationship to soils, geology and	The TMDL and the allocations do not overlook nutrient-bearing geologic formations in the Ventura River watershed. The staff report states, "Open spaces can contribute background nutrient loading due to…nitrogen- and phosphorus-bearing rocks and soils." The source assessment in staff report then estimates the loading from natural sources as 2.2% of the dry-weather load and 12.5% of the wet-weather load. These sources were treated as background loads in the allocation scenario. Modeling shows that the required in-stream reductions can be achieved if responsible parties meet allocations, even while holding background loads constant. The UCSB study considers geology as a potential explanation for elevated nutrient levels. For example, page 28 of the UCSB report states, "TP levels at our

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	land cover," but does not consider soils or geology in NNE development. The District has learned quite a lot about the Monterey Formation, which dominates the undeveloped northern headwaters of Malibu Creek. The Monterey Formation, a phosphatic marine shale, is California's primary petroleum source rock and has been extensively studied by petroleum geologists (Isaacs and Rullkötter 2001). The U.S. Geological Survey recognizes the potential environmental hazards posed by the Monterey Formation and maintains a website for public information: Hazardous trace elements in petroleum source rocks: the Monterey Formation. National Park Service water quality monitoring data indicate phosphorus is naturally elevated, with one site in the undeveloped northern headwaters averaging 1.0 mg/L PO4-P – ten times the Basin Plan standard and the Malibu Creek Nutrient TMDL numeric target for TP. The County Sanitation Districts of Los Angeles County conducted a study at the Calabasas Landfill to determine potential natural background water quality by crushing local rock and steeping it in deionized water for over a year until concentrations plateaued (CSDLAC 1996). Samples generated as much as 429 mg/L nitrate nitrogen, 500 mg/L total Kjeldahl nitrogen and 5.2 mg/L phosphate as phosphorus.	reference sites during spring were relatively high, likely a consequence of the weathering of phosphorus-bearing geological formations (i.e., Eocene sandstone and shale conglomerates) that underlie the upper Matilija subwatersheds (USGS 2006)." The NNE technical support document does discuss natural sources such as those from particular soils and geology. However, the NNE is a framework based on biological and in situ chemical response indicators, whose values are based on beneficial use protection and are independent of soils and geology. Instead, the NNE specifies that site-specific background conditions should be considered when deriving final nutrient endpoints. For this TMDL, site-specific background conditions were quantified in the source assessment and then used as input into the water quality model to predict nutrient concentrations in the river algal biomass response in order to derive final nutrient endpoints.
3.2	Tertiary marine shales provide natural enrichment that lead to natural algal proliferation. Page 35 of the TMDL reads "The numeric target for attached and unattached macroalgal percent cover in the river is < 30 percent. This value is based on recommendations from Biggs (2000)." Yet Biggs' New Zealand Periphyton Guidelines (2000) warns multiple times that algal proliferation cannot be controlled in watersheds with significant amounts of nutrient-rich Tertiary marine sedimentary rock. The following bulleted list supports this natural phenomenon. • If the local geology is dominated by nutrient-rich Tertiary marine siltstones, filamentous algal blooms are likely to occur naturally (Page 14). • However, if the catchment includes a significant proportion of Tertiary marine siltstones which are rich in nutrients, this would be readily detected in the habitat classification. It would then be	The quotes in the first two bullets are related to the designation of values (what we call beneficial uses) and whether or not they can be attained given natural physical constraints of the system. The beneficial uses of the Ventura River are not in question in this TMDL.

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	clear that filamentous algal growths are a natural product of the catchment conditions and clearly impossible to control. (page 19) • However, it also needs to be clearly understood that a large degree of natural enrichment occurs through leachate from nutrient-rich rocks such as andesitic volcanics, Tertiary marine mudstones/sandstone, and limestone (Close and Davies-Colley, 1990; Biggs and Gerbeaux, 1993; Biggs, 1995). Indeed only small amounts of these rock types in a catchment can cause proliferations during low flows (Figure 20). (page 53) • *Cladophora glomerata* is one of the most common taxa in the world and is usually associated with eutrophic streams (Dodds and Gudder, 1992). It is also the most likely taxon to form proliferations and degrade habitats. However, *Cladophora* … is most common in enriched North Island streams draining limestone and marine Tertiary siltstone/mudstone catchments. (Page 65) • It is clear that moderate concentrations of phosphorus occur naturally in many of our streams as a result of leaching of nutrient-rich rocks such as recent volcanics and marine Tertiary mudstones and sandstones (Biggs, 1990a, 1995; Close and Davies-Colley, 1990). (Page 86) The Ventura River Algae and Nutrients TMDL applies the algal biomass limit of 150 mg/m^2 chlorophyll *a* and the ≤ 30% macroalgal cover recommended in the New Zealand Periphyton Guidelines (Biggs 2000), despite warnings that those limits cannot be reached in areas where the surface geology is dominated by nutrient-rich Tertiary marine sedimentary rock.	The quotes in the remaining bullets all stress the importance of recognizing the contribution of naturally occurring nutrients in rocks containing certain minerals. The proposed TMDL does just that. As stated in response to comment 3.1, the TMDL accounts for natural background loading from nutrient-bearing rocks, and sets an allocation scenario for controllable sources that will achieve required in-stream load allocations, despite the contribution of uncontrollable natural background load. In sum, the requirements in the TMDL can be reached.
3.3	Algal species composition is cited in the TMDL staff report as another line of evidence for evaluating stream nutrient conditions, but may reflect naturally elevated specific conductance rather than cultural eutrophication. One argument given in the TMDL staff report and Klose et al. (2009) is that the greater abundance of *Cladophora* at downstream sites compared with upstream reference sites indicates downstream impairment. But this ignores the findings of Biggs and Price relating shifts	The dominance of one species represents a decrease in diversity, which according to EPA guidance and general scientific consensus, is associated with a higher trophic status. The fact that in the Ventura River there is a shift from one dominant species (*Cladaphora*) to another (diatoms), which in some instances involves diatom

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	in algal species composition and biomass to increases in conductivity. This relationship was also noted by Klose et al. (2009), although they concluded that those algal levels were related to human activities. The summertime seasonal shift in diatom species noted by Klose et al. (2009) at all sites reflects the increase in conductivity as streams become increasingly dominated by higher conductivity groundwater base flow. High conductivity is especially evident in the data (Klose et al. 2009) for Cañada Larga (3220 and 3210 µS/cm) and San Antonio Creek (1213 and 1219 µS/cm). Cañada Larga's conductivity is similar to that in the northern headwaters of Malibu Creek and San Antonio Creek's is similar to that in Malibu Creek's main stem. These areas in Malibu Creek watershed have similar algal abundance and seasonal species changes.	communities establishing on decaying mats of *Cladaphora*, indicates an excessive amount of nutrients and abnormal population diversity. The data presented in the UCSB report demonstrate that this effect is more pronounced in the lower watershed. For example, the June event shows balanced species abundance in the less impacted sites and decreased diversity in the more impacted sites. Increased conductivity is being studied as a surrogate for increased nutrient loading in developed watersheds. However, as pointed out in the next comment, the relationship between conductivity and algal biomass breaks down in areas with geology that contributes high levels of minerals.
3.4	Algal biomass, percent cover and in-stream nutrient targets may be unattainable in high conductivity water draining nutrient rich sedimentary rock. The Ventura River Algae and Nutrients TMDL applies an algal biomass limit of 150 mg/m^2 chlorophyll *a* and ≤30% algal cover threshold from Biggs (2000), ignoring findings by Biggs and Price (1987) correlating conductivity with biomass (Figure 1). Biggs and Price (1987) found highly significant correlations between algal biomass and conductivity in New Zealand streams. They pointed out that while conductivity is generally a good measure of cultural nutrient enrichment in streams, it has limitations "in areas with geology that is very high in certain mineral compounds" and that in these areas "the conductivity-nutrient ratio breaks down and a much higher nutrient supply may be indicated than occurs." Equations used in the TMDL for wet and dry weather nutrient load calculations from open space areas ignore the area's unique geology. TMDL load allocations are based on mean values from the Stein and Yoon (2007) natural loads study, despite the large variation in actual values from reference streams. That study concludes that geology is the most influential factor on variability in water quality with concentrations	The citation from Biggs and Price is correct that conductivity is not as good of a surrogate for nutrients in areas high in certain mineral compounds as it is in urbanized areas. However, this comment is unclear on how this affects the attainability of the numeric targets or required in-stream nutrient concentrations. Conductivity was not used to establish the relationship between in-stream nutrient concentrations and algal biomass in this TMDL. The fact that conductivity can over predict the amount of nutrients in the stream in areas that are high in certain mineral compounds is not relevant in this TMDL. The TMDL correctly chose the mean value from the Stein and Yoon study. Most of the constituents were at higher levels in catchments underlain by sedimentary geologic material than in catchments underlain by igneous geologic material. 10 of the 18 sample sites were underlain by sedimentary rocks.

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	highest in sedimentary environments, and that "to estimate more representative background water quality for a specific watershed of interest, more comprehensive classification of geology at a regional scale is necessary." Since Stein and Yoon (2007) determined the mean algal biomass to be 147 mg/m^2 and mean percent cover to be 32.6% from a study of 5 natural watersheds in southern California, it may be unreasonable to expect attainment of the 150 mg/m^2 algal biomass and ≤30% algal cover targets in the Ventura River watershed. In Malibu Creek watershed, prolific algal blooms are assumed to indicate high nutrient supplies due to cultural enrichment, when prolific algae is actually due to naturally high concentrations of solutes and nutrients. This may also be the case in the Ventura River watershed.	One of the sites was in the Upper Matilija watershed and two were in the Malibu Creek watershed. Thus, it is relevant to the Ventura River watershed to base the natural background loading estimates and load reduction scenario on the Stein and Yoon study. Las Virgenes Municipal Water District has brought similar comments during the development of the Malibu Creek and Lagoon sedimentation and benthic community effects TMDL. In response, EPA has analyzed nutrient concentration data in the Malibu Creek watershed and has concluded that elevated nutrient concentrations appear to correlate more with development that with the location of the Monterey/Modelo formation. For example, results from LVMWD suggest that the median nitrate concentration in the creek is about 1.0 mg/L upstream of the Tapia discharge and 1.90 mg/L downstream. Furthermore, in Las Virgenes Creek, the highest concentrations of nitrate-N are found in the stations in the Modelo formation; however, at stations that drain portions of the Modelo Formation, the nitrate (and also the ammonia) concentrations are near zero. These two stations are upstream of most high density development in the watershed, whereas the other Modelo formation stations are downstream. For Las Virgenes Creek, the station upstream of development had an average nitrate-N concentration of 0.009 mg/L, the station in the midst of the development near highway 101, had an average of 1.262, and the downstream station had an average of 4.252 mg/L. In other words, the nitrate concentrations appear to be influenced by the amount of development upstream. Concentrations in the mainstem represent a mix of concentrations at

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		the upstream stations and appear to be influenced by the high concentrations at the downstream Las Virgenes Creek station. Results from the Malibu Creek Watershed Monitoring Plan provide similar insights. Both stations LV1 and LV2 in the mainstem drain the Modelo formation, but LV2 is downstream of development while LV1 drains open space. Summer median inorganic N concentration is 0.30 at LV1, but increases to 3.01 at LV2, suggesting that the increased N concentrations are more associated with development than with geology. Thus, there is inadequate data supporting the conclusion that prolific algae is due to naturally high concentrations of solutes and nutrients in the Ventura River watershed.
3.5	Symptoms of eutrophication may be natural. If prolific algae can be natural (Biggs 2000), then the secondary effects from algal proliferation can also be natural. Especially in streams with low summer flow and limited shading, large algal mats and their death and decay can cause large swings in dissolved oxygen and pH. It is not surprising that Cañada Larga, with the highest conductivity, lowest flow and least riparian shading experiences low dissolved oxygen concentrations. While some of this may be remediable, some may not.	The TMDL finds that the excessive algae growth and related effects are not natural. This is documented in the Problem Identification section of the staff report.
3.6	In closing, we encourage the Regional Board to take into consideration potential natural sources of impairment when developing regulations, including the major potential effects contributed by geology. Loadings from geologic sources were not calculated or included in the Source Assessment section of the TMDL. Limits on algal biomass and percent cover are unsupportable in this geologic setting. It is equally important to recognize that although comparable geologic conditions exist between the Ventura and Malibu Creek watersheds, rulemaking must account for differences in local conditions to come up with attainable, practical and realistic requirements that ratepayers can support.	The TMDL accounts for natural background loading from nutrient-bearing rocks, and sets an allocation scenario for controllable sources that will achieve required in-stream load allocations, despite the contribution of uncontrollable natural background loading. The limits on algal biomass are supportable and the requirements in the TMDL can be reached.

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4.1	Although the Draft Staff Report defines the "critical condition" in the Ventura River as the "dry-season/algae growing-season extending from May 1 through September 30", the Proposed Amendment assigns WLAs and LAs based upon annual dry-weather days (331 days/year) and annual wet-weather days (34 days/year). The District requests that the Regional Board consider revising the Proposed Amendment to assign WLAs to the Ojai WWTP based on the dry-season/algae growing-season (May 1 – September 30) and wet-season (October 1 – April 30) expressed as a concentration averaged on a seasonal basis for both summer and winter.	In response to this comment, the proposed TMDL has been revised to assign seasonal WLAs for TN to the Ojai WWTP.
	The application of nutrient allocations outside of the algal growing season to address targets that are only applicable during the algal growing season is not justified. First, it likely forces the District to install ultra-filtration ("UF") and reverse osmosis ("RO") treatments. Second, the Proposed Amendment's allocation of loads based on dry-weather and wet-weather days places an undue economic burden on the District as compared to the economic burdens imposed on virtually all other nutrient sources in the Ventura River Watershed. Among those sources, only the District is required to invest millions of dollars in capital improvements to reduce its nutrient load. Other sources can attain similar percentage load reductions through much less costly management practices. Third, the fact that the Proposed Amendment includes an eight percent (8%) explicit margin of safety makes the need to apply conservative loads through the use of annual dry-weather/wet-weather day allocations unjustifiable.	Reverse osmosis treatment is not a reasonably foreseeable implementation option, based on the District's own report, which states the Ojai WWTP can achieve 3 mg/L TN regardless of the season or flow conditions. Nor does the dry-weather/wet-weather allocation scenario place an undue burden on the District. The Ojai WWTP has the infrastructure to treat over 2 MGD of wastewater per day, and in the critical condition, comprises 90% of the flow in the lower watershed. Finally, the explicit margin of safety does not make the need to apply conservative loads through the use of annual dry-weather/wet-weather day allocations unjustifiable (see response to comment No. 1.5).
	The use of annual dry-weather days and annual wet-weather days to assign allocations is not appropriate for wastewater discharges. For a wastewater treatment facility, the concept of wet and dry day allocations does not make much sense. Wastewater treatment facilities are different from the other types of dischargers addressed in the Proposed Amendment in that dry and wet weather discharges from a WWTP are relatively constant. The performance of any biological wastewater	However, based on the comments regarding the temperature-dependent performance of the Ojai WWTP and constant flows, the TMDL has been revised to split the dry-weather WLA for TN into a summer dry-weather allocation and a winter dry-weather allocation. The model was re-run with a new allocation scenario that assumed discharge values

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	treatment system is temperature dependent and performs best under stable operating conditions. The effluent temperature at the Ojai WWTP varies nine degrees (9º) between the winter and summer seasons. It is this seasonal shift in effluent temperature, along with significant increase in flow during major flood events (e.g. 2005 flood), that impacts the WWTP's biological treatment systems, not the rain event itself. (See Exhibit A.) Accordingly, seasonally-based allocations are far more appropriate for the Ojai WWTP than dry-weather day/wet-weather day allocations. In addition, increased influent flows are typically experienced during rainfall events due to inflow/infiltration. This, in turn, leads to decreased nutrient removal by a WWTP. Decreased performance due to increased influent flows may last for an extended period of time during the winter season (the season that does not correspond to the algal growing-season) because multiple rainfall events may occur in succession of one another.	for Ojai WWTP of 4 mg/L in winter dry weather and 3 mg/L in summer dry weather. The model predicted that the in-stream concentration of 1.15 mg/L TN could still be attained with a 7% margin of safety. This change reduces the explicit margin of safety (from 8 % to 7%) and the implicit margin of safety by reducing the protection of the river during warm spring and/or autumn periods. However, there are real seasonal influences on the performance efficiency of the Ojai WWTP that justify a change in the allocation scenario. Similar changes are not needed for other sources because discharges from other sources are rainfall dependent.
4.2	If dry-weather and wet-weather days are used to assign WLAs to the Ojai WWTP, then the District requests that the Proposed Amendment be revised so that those dry-weather and wet-weather days are calculated in a manner that both reflects the operational efficiencies of the Ojai WWTP and attains the Proposed Amendment's numeric targets. Those requested revisions are summarized as follows: • The summer season dry-weather TN WLA shall be incorporated into the Ojai WTTP permit as a numeric effluent limitation equal to 3 mg/L, assessed as a five-month average for the months of May through September; • The winter season dry-weather and winter season wet-weather TN WLAs shall be combined into a single effluent limitation for the entire winter season (October through April). The winter-season TN WLA shall be incorporated into the Ojai WTTP permit as a numeric effluent limitation equal to 4.6 mg/L, assessed as a seven-month average for the months of October through April.	Federal permitting regulations describe how the permit shall be "consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA." See 40 CFR §122.44(d)(vii)(B). Consistent with the conceptual model for algae and scientific information within the linkage analysis section, this TMDL has appropriately defined dry-weather mass-based WLAs. The summer dry-weather mass-based allocations address the critical condition; therefore, to be consistent with the assumptions and requirements of the summer dry-weather WLA, the Ojai WTTP permit must include mass-based effluent limitations for summer dry weather. It is not appropriate to express the summer dry-weather TN effluent limitation as a concentration-based five-month average. However, the requested change to express the winter season dry-weather and winter season wet-weather WLAs as a single concentration based effluent limitation has been

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	• The dry-weather TP WLA shall be incorporated into the Ojai WTTP permit as a numeric effluent limitation expressed as an effluent limitation equal to 1 mg/L, assessed as a five-month average for the months of May through September. • The wet-weather TP WLA shall be incorporated into the Ojai WWTP's permit as a numeric effluent limitation, expressed as an effluent limitation equal to 1 mg/L, assessed as a seven-month average for the months of October through April (to be assessed at minimum with monthly sampling). • The Proposed Amendment's "Implementation Plan" provide for the use of alternative compliance mechanisms such as offsets for additional pollutant loads treated by the Ojai WWTP, pollutant trading or other market programs to achieve the numeric targets, LAs and WLAs established by the TMDL. As discussed in Comment 6 and 7, the revisions requested in Comment 2 will allow the Ojai WWTP to comply with the WLAs established by the TMDL through the use of treatment processes other than the installation of ultra-filtration ("UF") and reverse osmosis ("RO").	made, although it shall be a monthly average. The use of winter season and growing season effluent limitations for TP is not appropriate. The WLA for TP remains as a dry-*weather* allocation. Recent years of discharge data demonstrate that the Ojai WWTP is largely attaining a TP concentration of 1 mg/L as an instantaneous maximum. It is reasonable to expect that the Ojai WWTP can optimize their TP treatment over 10 years to ensure attainment of a mass-based dry-weather allocation. Changes have not been made to the implementation plan to allow for alternative compliance mechanisms and offsets. However, language has been added that the TMDL will be revised to increase the allocation for the Ojai WWTP if the Ojai WWTP takes additional flows from other sources such as septic systems. The TMDL will not require the use of ultra-filtration or reverse osmosis to comply with these WLAs.
4.3	The District supports reconsideration of the TMDL based on optional special studies and monitoring reports submitted by responsible parties. However, the District requests that the Proposed Amendment be revised to provide that: • Responsible parties have five (5) years from the effective date of the TMDL to prepare and submit optional special studies and monitoring reports to the Regional Board; and • The Regional Board is mandated to reconsider the TMDL based on optional special studies and monitoring reports submitted by responsible parties, five and one-half (5.5)	The TMDL has been revised to allow responsible parties 4 years to conduct special studies. To allow five years would not present enough time for the Regional Board to reconsider the TMDL by year five. The reconsideration date has not been revised because the compliance deadlines for other sources occur one year after the existing reconsideration date of 5 years. The TMDL already specifies that the special studies listed in the TMDL are potential studies. Responsible

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	years from the effective date of the TMDL; and • Optional special studies that may be submitted to the Regional Board are not limited to those listed in the Proposed Amendment, and responsible parties may submit studies conducted by persons or entities outside of the Ventura River Watershed; and • The Regional Board may use the optional special studies as a basis for refinements to the TMDL's Implementation Plan and Schedule as well as the TMDL's WLAs, LAs and/or numeric targets, and • Optional special studies may be submitted by responsible parties for the purpose of revising the TMDL's Implementation Plan to include alternative compliance mechanisms (e.g. offsets, pollutant trading, and market programs) to supplement water quality regulation. The use of alternative compliance mechanisms in translating WLAs into effluent limitations shall be consistent with the TMDL.	parties may undertake any special study they chose and are encouraged to submit studies from other entities that might be used in the TMDL reconsideration. Language has been added to the implementation schedule, which states that as part of the TMDL reconsideration, the final compliance deadline may be extended if the TMDL reconsideration results in more stringent allocations for OVSD. Language has been added to the reconsideration that the TMDL will be revised to adjust the allocation scenario and increase the allocation for the Ojai WWTP if the Ojai WWTP takes additional flows from other sources such as septic systems in order to achieve the TMDL.
4.4	In addition to the District's request that the Proposed Amendment's Interim WLAs be revised as requested in Comment 2, the District requests that those Interim WLAs apply for fifteen (15) years. The District requests that the Proposed Amendment be revised to provide that Interim WLAs apply for fifteen (15) years. This extension in time is requested for the following reasons: • To provide adequate time for the District to fully implement, evaluate and modify, as required, the District's current plant optimization program to reduce nutrient loads using the WWTP's existing Biological Nutrient Removal System. (See "Ojai Valley Sanitary District Wastewater Treatment Plant Biological Nutrient Removal Optimization," WL Troxel &	The 10-year implementation schedule for the Ojai WWTP has not been revised. This schedule is based on the MWH report prepared for the District and conversations with District staff regarding the time needed to complete the current optimization program (2-3 years); time needed to plan, design, and build the upgrades discussed in the MWH report (4-5 ½ years); and time needed to optimize the upgrades (1-1 ½ years). Based on these timeframes, the proposed 10-year schedule is reasonable. Furthermore, based on information provided in this comment, Phase Three of the current optimization plan is scheduled for completion in 2013-14, which means that the final phase will begin in 2014. The

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	Associates, January 5, 2012 – submitted to Regional Board staff during the TMDL comment period.) • To provide adequate time for the District and other responsible parties (i) to complete optional special studies, (ii) seek reconsideration of the TMDL by the Regional Board based on optional special studies and (iii) to incorporate into the District's capital improvement program modifications to the TMDL made by the Regional Board based on submitted optional special studies. • To provide adequate time for the District to complete all phases of capital improvement projects required to achieve compliance with the TMDL, including, without limitation, all necessary design studies and evaluations, environmental studies, conditional use permit modifications, CEQA documents and processing and preparation of the final design documents. • To provide adequate time for the District operations staff training and operational configurations required to ensure compliance with the TMDL's lower discharge limits. • To provide adequate time for the District to repay reserve fund loan used to pay for recent plant upgrades, including denitrification and tertiary treatment.	TMDL will not become effective until March 2013. Therefore, much of the work on the current optimization plan will be completed before the TMDL is effective and the entire 2-3 years may not be needed to complete optimization. In response to this comment, the TMDL has been revised to specify at the 5-year reconsideration, if additional time is needed to optimize upgrades, or if additional treatment is required to attain allocations, the implementation schedule may be extended. Responsible parties should not delay implementation until special studies are completed. State Board is on track to adopt the NNE as a statewide policy in 2014, and will certainly do so before this TMDL reconsideration in 2018. Based on draft NNE documents, it is not expected that algal biomass targets would be revised in a way to significantly change the reductions required to meet allocations. Furthermore, the Regional Board recently funded a study to determine the relationship between algal biomass and in-stream nutrient concentrations (UCSB study). The empirical relationship derived in the UCSB study shows a more stringent relationship than in the analysis for this TMDL. This TMDL relies on model-predicted relationships between algal biomass and in-stream nutrient concentrations rather than using the UCSB-established empirical relationship because the UCSB study was only conducted for one year and did not represent enough inter-annual variability. When the TMDL is reconsidered additional algal biomass an in-stream nutrient concentration data will be available to potentially establish an empirical relationship rather

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		than modeled one. The technical analysis so far indicates that if a change to the TMDL is necessary, it would likely result in more stringent required in-stream nutrient concentrations and load reductions. For this reason, the TMDL reconsideration language will be revised to allow more time for implementation if allocations become more stringent.
4.5	The Proposed Amendment does not base the Ojai WWTP's allocations on the plant's maximum design flow of 3.0 mgd. As a result, continuous increases in the levels of nutrient removal will be required as the WWTP expands to its maximum design flow capacity. To comply with the Proposed Amendment as wastewater flows approach maximum design flow, the Ojai WWTP may be forced either place a moratorium on new service or install a costly ultra-filtration/reverse osmosis treatment system (a desalination-like treatment process.) A moratorium would prevent other nutrient discharge sources in the Ventura River Watershed from using the Ojai WWTP treatment facilities as a TMDL compliance alternative. As wastewater flows increase, the use of offsets to transfer loads to the WWTP for any new connections and/or treatment of additional pollutants is critical for the Ojai WWTP to achieve the treatment levels required to comply with the TMDL. The Proposed Amendment sets allocations based on the assumption that the Ojai WWTP's will maintain its existing flow rate. This assumption coupled with the Proposed Amendment's use of annual dry-weather/ wet weather days to assign allocations (See Comment 1 above), creates serious compliance issues for both the District and other responsible parties. The Proposed Amendment's failure to base effluent limitations on design flow may be contrary to federal law, which provides that "[i]n the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow." (40 CFR §122.45(b).) As the District's average daily flows increase towards design capacity	The commenter accurately quotes the federal regulations at 122.45(b)(1) regarding POTWs and design flows. This TMDL defines a mass-based WLA for TN and TP for each nutrient pollutant source. Thus, this TMDL does not preclude the possibility of Ojai WWTP discharging at rates up to its design flow, although it may require decreasing WWTP effluent concentrations and/or decreasing (mass-based) inputs from other pollutant sources. The TMDL Water Quality Data Summary (Section 2.3) and Source Assessment (Section 4) are based on existing watershed conditions, including current flows from Ojai WWTP. The TMDL finds that as result of very slow growth in the watershed, flows discharged from the WWTP have been constant, and have even slightly decreased, over the last 12 years. More specifically, Ojai WWTP records show the historical (2000-2011) mean discharge flow rate at 2.1 MGD, and more recent (2012) flow rate at ~1.7 MGD, whereas the design flow is 3 MGD. As previously described, the proposed mass-based allocation was calculated using effluent concentrations reduced to 3.0 mg/L TN and 1 mg/L TP and an approximate current flow rate of 2 MGD. The commenter's assertion…*the Ojai WWTP may be*

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	(3.0 mgd), additional nutrient reductions will be required to meet the numeric targets established by the Proposed Amendment. As flows approach the District's design capacity of 3.0 mgd, compliance with the TMDL may require the Ojai WWTP to either (i) install reverse osmosis treatment at immense cost to the District's relatively small customer base (See Comment 7 below), or (ii) place a moratorium on new service, unless offsets and transfers of load allocations from other pollutant sources are provided to the Ojai WWTP (See Comment 2). Should a moratorium be placed on new service, other responsible parties (i.e. those responsible for stormwater discharges and those with flows resulting from abandoned septic systems) would be prevented from redirecting their flows to the Ojai WWTP as a means of achieving compliance with the TMDL. The Proposed Amendment should be revised in the manner set forth in Comment 2.	*forced either* [to] *place a moratorium on new service or install a costly ultra-filtration/reverse osmosis treatment system (a desalination-like treatment process…*is incorrect for the following reasons: - Increased influent to Ojai WWTP is most likely to occur from converting septic systems or potential stormwater diversions; each input would yield <u>treatment</u> of those nutrient sources and subsequent decline or removal of TN and TP flowing from those other sources in the watershed into the receiving waters - Such conversions or diversions described immediately above would not contribute significant volumes and therefore would not significantly elevate the Ojai WWTP discharge flow rates up to the design flow - In response to this comment, the water quality model was re-run assuming that Ojai WWTP would discharge at 3 MGD and 3.0 mg/L TN. The resulting peak in-stream concentrations were 1.16 mg/L TN and 0.13 mg/L TP which are very close to the required target in-stream concentrations of 1.15 and 0.115 TP (this is attained because it also eliminates the explicit margin of safety).
4.6	The Proposed Amendment wrongly concludes that the Ojai WWTP can attain compliance with the TMDL's annual dry-weather day and annual wet-weather day allocations through conversion to Modified Bardenpho Process and the addition of denitrification filters. In addition, the Proposed Amendment fails to consider that an ultra-filtration (UF) and reverse osmosis (RO) system may be the only technology available to the Ojai WWTP capable of reducing TN loads assigned for annual dry-weather days and annual wet-weather days.	The current allocation scenario will not require the use of microfiltration and reverse osmosis. The MWH report prepared for the District did not distinguish between wet- and dry-weather or wet-season and dry-season impacts on the quality of discharge. However, based on the District's comment that the performance of the Ojai WWTP depends on temperature and performs best under stable

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		operating conditions, and because flow from the Ojai WWTP flow does not vary with rainfall like other sources, the proposed TMDL has been revised to assign seasonal allocations to the Ojai WWTP.
4.7	The SED fails to consider reasonably foreseeable methods of compliance because it wrongly assumes that the Ojai WWTP can achieve compliance with the TMDL's dry-weather and wet-weather allocations through conversion to a Modified Bardenpho process and addition of denitrification filters. Given the Proposed Amendment's assignment of WLAs to the Ojai WWTP based on dry-weather days and wet-weather days calculated as monthly nutrient concentrations for dry-weather and daily maximum concentrations for wet weather days, a reasonably foreseeable method of compliance would be the District's installation of an ultra-filtration (UF) and reverse osmosis (RO) system.	The installation of reverse osmosis and ultrafiltration is not a reasonably foreseeable method of compliance. See response to comment No. 4.6.
4.8	The Proposed Amendment fails to adequately consider the Ventura River's background reference condition. The natural condition of the Ventura River renders the numeric targets established in the Proposed Amendment unattainable. Moreover, the failure of the Proposed Amendment to adequately consider nutrient loads attributable to groundwater and atmospheric deposition results in the assignment of loads to responsible parties in excess of those required under the Clean Water Act. There are many natural sources of nutrients in the Ventura River Watershed that contribute to the presence of biostimulatory substances in the Ventura River, including, without limitation, certain geologic formations. Given the variability of the Ventura River and the influence of natural conditions on nutrient levels in the river, including the presence of Tertiary marine siltstone, it is not surprising that even the most pristine reaches of the Ventura River are characterized by abundant algae growth even in the absence of anthropogenic activity. Although the Regional Board was presented with evidence of the natural conditions in the Ventura River basin that significantly contribute to	The proposed TMDL adequately considers background conditions and accounts for natural background sources of nutrients. There is not abundant algae growth in the most pristine reaches of the Ventura River and this comment provides no evidence to substantiate that claim. The draft staff report analyzes all available algae data. None of the data show algae growth above 60 mg/m^2 in Upper Matilija Creek or North Fork Matilija Creek, which are the least disturbed sites that have been sampled in the watershed. The proposed TMDL employs the NNE approach to set numeric targets, which is the preferred approach for the State of California. One of the key attributes of the NNE approach is that it takes into account site-specific conditions. There is an in-depth analysis of the physical, chemical, and biological conditions in the watershed. A reference-reach approach would

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	nutrient loads, the Proposed Amendment fails to account for these natural conditions by adopting a reference-reach approach. This failure may result in responsible parties spending millions of dollars in nutrient reduction activities that will not, as a result of natural conditions in the river, remove the impairment the Proposed Amendment seeks to address. The Proposed Amendment establishes numeric targets at levels which cannot implement water quality standards because those standards are regularly exceeded due to natural conditions in the waterbody beyond the control of responsible parties. These natural conditions were not considered in the Draft Staff Report. Related to the Proposed Amendment's failure to address natural conditions in the Watershed that contribute to nutrient loads, the District further comments that the Proposed Amendment fails to adequately consider the impacts of nutrient loads attributable to groundwater and atmospheric deposition.	primarily focus on upper watershed conditions which are not generally reflective of conditions in the entire length of the river (e.g., gradient, sinuosity, shading). A reference-reach approach would apply requirements based on upper watershed conditions to all reaches of the watershed. In contrast, the NNE approach allows for an allocation scenario that equitably allocates responsibility for nutrient reductions throughout the watershed and accounts for background loading from natural areas, groundwater, and atmospheric deposition. If a reference reach approach were pursued, it would likely result in a much lower algal biomass target than the 150 mg/m^2 currently proposed. For example, recent surveys conducted from 2008 to 2010 by the Perennial Stream Assessment, the Reference Condition Management Program, and the Stormwater Monitoring Coalition show that 100% of the reference reaches report algal biomass values of 50 mg/m^2 or less. The proposed TMDL does consider nutrient loads from groundwater and atmospheric deposition (see sections 4.2.5 and 4.2.6 of the draft staff report). These sources were treated as background in the allocation scenario. Modeling shows that the required in-stream reductions can be achieved if responsible parties meet allocations, even while holding loads from groundwater and atmospheric deposition constant.

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4.9	The Proposed Amendment fails to fully incorporate the Basin Plan Objectives for dissolved oxygen and pH into the numeric target interpretation. The District requests that the dissolved oxygen target for the Ventura River be applied as a daily average, consistent with the Malibu Creek Nutrient TMDL. The District further requests the use of 7.0 mg/L as an annual average or 5.0 mg/L as a daily average for the Estuary.	The proposed Basin Plan Amendment does not fail to correctly apply the water quality objectives for DO and pH. See also response to comments 1.11 and 1.12.
4.10	Finally, the District questions whether the Proposed Amendment's use of two numeric targets to interpret the narrative biostimulatory Basin Plan objectives lacks adequate scientific support. The numeric targets included on page 3 of Attachment A to Resolution No. R12-XXX contain multiple values that are numeric interpretations of the narrative biostimulatory objective in the Basin Plan. The benthic algal biomass target for the Ventura River was obtained from Tetra Tech (2006) and USEPA (2000), which base their recommendations on literature values primarily addressing levels of benthic algae that are presumed to impair recreational use. The macroalgal cover and phytoplankton biomass targets were also obtained from literature values. The District's primary concern with the selected targets is the inclusion of two targets in each of the Estuary and River that interpret the same narrative standard. By including two targets for algae, the TMDL creates a situation where the District could be considered to be causing an exceedance of one target while meeting the other, yet both were designed to interpret the same narrative objective. The District requests the removal of the percent cover numeric targets. The *Nutrient Numeric Endpoints for California Report* (CA NNE) does not include recommendations for percent cover targets and only contains chlorophyll *a* biomass thresholds. Percent cover estimates are semi-quantitative at best, tend to be highly variable and uncertain, and were not incorporated by the technical experts into the CA NNE. Therefore, the percent cover numeric targets on page 3 of the TMDL should be removed along with the corresponding monitoring requirements.	The use of two numeric targets to interpret the narrative biostimulatory Basin Plan objectives is supported. It is important to assess algal biomass in a number of ways because each method has respective strengths and weaknesses. The ability to look at a combination of algal measures provides a more robust assessment of algal nuisance. Moreover, because the CA NNE framework is a risk based approach that seeks to minimize the likelihood of beneficial use impairment, it is desirable to have multiple numeric targets that provide a thorough analysis of water quality and provide greater assurance that water quality standards are attained. See also response to comment 1.10

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4.11	Since algal growth in the Ventura River is limited to the dry-season/algae growing season (May 1 – September 30), the District requests that the monitoring requirements be adjusted accordingly.	See response to comment 1.13. The requirement to conduct year round monthly macroalgae percent cover monitoring has been struck from the TMDL. The frequency for monitoring of algal percent cover shall be reduced from year-round to the growing season only. In situ nutrient and flow monitoring cannot be reduced from monthly to quarterly. A robust total nutrient data set will provide important information on nutrient cycling (i.e. how nutrients are bound, assimilated, and released as they move through the watershed) and nutrient loading throughout the watershed. As described in the staff report Problem Identification and Numeric Targets (Sections 2 & 3), the relationship between nutrient loading and nuisance algae growth is the essential technical component for this TMDL. In order to reasonably expect an adjustment of the TMDL at the 5 year reconsideration, it is necessary to have additional data that will be used to refine the analysis and improve understanding of the load response relationship in Ventura River. Without, additional information to improve the TMDL the reconsideration is simply an administrative exercise.

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4.12	The District requests that the Proposed Amendment be revised to include compliance language that specifies that if the numeric targets established by the TMDL are met, the District shall be deemed in compliance with WLAs. In addition, a demonstration by the Ojai WWTP that it is no longer discharging into the Ventura River shall be deemed compliance with the TMDL.	In response to this comment additional language has been added to TMDL Section 7 (Implementation) providing direction on incorporating the District's allocation into their NPDES permit. However, the numeric targets should not be incorporated into the District's NPDES permit as an alternative means of compliance. The WLAs assigned to the District in the TMDL are specific for discharges to the Ventura River and will be incorporated into the District's NPDES permit.
4.13	The stated basis in the Draft Staff Report for adopting a benthic algal biomass target of 150 mg chl.a/m^2 and percent cover target for macroalgae of ≤ 30% are literature recommendations that primarily depend on subjective evaluations of aesthetic impairment and are not based on data sets from California streams, or streams in Mediterranean climates. The applicability of the selected algal targets to the Ventura River is not well established. The Staff Report cites a book (Welch & Jacoby 2004) as support for a premise that algal biomass <150 mg chl.a/m^2 is necessary to avoid low DO in the Ventura River. Relationships between benthic algae (periphyton) and pollutants are discussed in Chapter 11 in Welch & Jacoby (2004). However, this book chapter does not provide a basis for concluding that algal biomass = 150 mg chl.a/m^2 is a threshold above which DO impairment can be expected in streams. The Draft Staff Report is in error regarding the Chorro Creek TMDL, which included a target for macroalgal percent cover (≤ 40%), but did not include a target for benthic algal biomass.	The total algal biomass target of 150 mg/m^2 is based on the CA NNE BURC I/II boundary. The CA NNE was developed by US EPA Region 9 and the State and Regional Water Boards. The BURC thresholds presented in the NNE are based on a review of literature recommendations; however, as part of the NNE development process these thresholds were reviewed by a Technical Advisory Committee which included five prestigious University of California scientists. Thus, the NNE BURC thresholds have been independently reviewed by UC scientists, in addition to US EPA and State and Regional Board scientists, and found applicable to California streams and rivers. The scientific information underlying the CA NNE represents the best available stream ecology research and there is general scientific consensus that at 150 mg/m^2 of algal biomass stream aesthetic and recreational quality will be preserved and other adverse effects (e.g. low DO, taste and odors) on water quality will be minimized. The staff report does not assert that an algal biomass value of 150 mg/m^2 is required to avoid low DO

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		conditions or that above 150 mg/m^2 DO impairments are expected to occur. The staff report states the following: *An algal biomass target of 150 mg/m2 is **expected to minimize the risk of low DO events** in the river and fully protect the aquatic life beneficial use. (emphasis added)* This statement accurately reflects information, analysis, and conclusions by Welch and Jacoby 2004. The comment regarding Chorro Creek is correct. While the Chorro Creek TMDL discusses the threshold of 150 mg/m^2 algal biomass as a level that represents nuisance conditions, it was not actually assigned as a TMDL numeric target. The staff report has been revised.
4.14	The Proposed Amendment fails to provide a scientifically supportable basis for the impairments addressed in the Proposed Amendment. The information presented in the Draft Staff Report does not demonstrate an impairment of the biostimulatory objectives continues to exist in the Watershed that requires significantly more nutrient load reductions. The Draft Staff Report bases the determination of impairment on several years of dissolved oxygen data and very limited algal biomass data. The District notes that the only algal biomass data discussed in the report that exceeds the proposed numeric target was collected in 2008. Almost all of the biomass data that is presented in the Draft Staff Report that was collected after 2008 was below the proposed numeric targets. Although the District recognizes that the monitoring data from after 2008 was not collected to correspond with the dry season/algae growing-season, there are no other data presented that support exceedances of the proposed	The TMDL analysis relies upon all of the available data and verifies the existing impairment in accordance with the SWRCB 303(d) listing policy. The most extensive data analysis documenting impairment of the biostimulatory substances objective is for DO. The photosynthetic and respiration activities of algae can drive significant changes in DO concentrations over a 24-hour period. Low DO conditions measured in the early morning hours are considered a hallmark of an algal impairment. The staff report summarized pre-dawn dissolved oxygen measurements made during the growing season from 2008 – 2011. These measurements report pre-dawn DO concentrations

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	algal biomass target in the River that have been collected since 2008. Since 2008, the average effluent concentration of Total Nitrogen (TN) being discharged from the Ojai Valley WWTP has decreased by about 25% with a corresponding downstream receiving water concentration decrease. Since 1996 when the original listing was made, the TN concentrations have decreased on average by 81% in the effluent and receiving water. In addition to the reductions in the receiving water concentrations of nitrogen, the data presented in the Draft Staff Report indicates a significant improvement in the dissolved oxygen measurements in the past two years. At Foster Park, the graph appears to show that the pre-dawn dissolved oxygen concentrations at Main Street and at Foster Park were above 7 mg/L during most sampling events in 2011. In contrast, in 2009, the majority of the pre-dawn samples were below 7 mg/L. (Draft Staff Report 2.3.1, p. 20.) The lack of recent algal biomass data, the fact that the data supporting the original listing cannot be determined, and the fact that only one year of biomass data was presented (from 2008) to support the continued impairment raises concerns about the justification for significant load reduction requirements in this Proposed Amendment. This is combined with the fact that continued significant reductions in nutrient loads have occurred since the only available biomass measurements were conducted, modeling done for the Proposed Amendment shows that the existing loads are meeting the phytoplankton targets in the Estuary, and recent dissolved oxygen measurements are close to, if not meeting, 7 mg/L the majority of the time in the lower reaches of the River.	below 7.0 mg/L. The analysis of this data, consistent with the SWRCB 303(d) listing policy, clearly indicates impairment. The listing policy states the following: *…if measurements of dissolved oxygen taken over the day show low concentrations in the morning and sufficient concentrations in the afternoon, then it shall be assumed that nutrients are responsible for the observed dissolved oxygen…. If other pertinent factors can be ruled out as controlling dissolved oxygen fluctuations.* See figures 2-4 through 2-10 in the staff report. The low DO conditions observed in Ventura River and tributaries were evaluated in the context of flow, which is the factor – in addition to algae – most likely to influence diurnal DO concentrations observed in the river. Sites in the middle and lower watershed (estuary, main street, Foster Park, San Antonio Creek, Ventura River above San Antonio) expressed low DO concentrations in the spring and early summer when winter base flows are generally sustained, but algal blooms occur. Thus, it is concluded that the river was not attaining the biostimulatory substances objective. An additional line of evidence is the algal biomass data from 2008, which reports biomass in the middle and lower watershed in June 2008 ranging from approximately 300 – 1000 mg/m^2. The commenter is correct that the 2008 data from the UCSB Study is the most comprehensive algal biomass data set for the watershed. Regional Board staff specifically

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		contracted this study in order to assess the watershed's current condition during the growing season and determine impairments. The SMC algal biomass data is presented in the staff report to investigate algal dynamics in the watershed and evaluate the role of other factors on the interannual variation of algal biomass. However, because this data was collected as part of the larger SMC monitoring program, which samples in early spring due to the index period for benthic macroinvertebrates, this data most likely does not capture the seasonal algal biomass maximums. This data should not be construed as lack of evidence supporting the impairment. Furthermore, the staff report includes an analysis of algal species composition which is an additional line of evidence documenting impairment. Shifts in algal species composition to less desirable species can reflect increases in nutrient concentrations. Figure 2-15 and 2-16 in the staff report present dramatic reductions in both the Ojai WWTP effluent and receiving water TIN concentrations since 1996. After three Cease and Desist Orders the WWTP completed an upgrade in order to attain the ammonia objective and protect aquatic life from ammonia toxicity. This upgrade also improved treatment for other forms of nitrogen. While the TMDL acknowledges this upgrade, the goal of this TMDL is to attain the biostimulatory substances objective and further reductions in nutrient loading are warranted.

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4.15	Prior to submitting these comments, the District delivered written documents to the Los Angeles Regional Water Quality control Board ("LARWQCB"), including, without limitation, e-mails and attachments, technical studies, scientific studies, evaluations, memorandum, and commentary related to the methodologies and approaches used by the LARWQCB in developing the Proposed Amendment, Draft Staff Report and Substitute Environmental Document (collectively referred to as "Written Evidence"). The following is a partial list of Written Evidence submitted by the District to the LARWQCB to date: [List of 17 documents] Although copies of the above-listed Written Evidence are in the possession of the LARWQCB, for the convenience of the LARWQCB staff, the District is transmitting additional copies as Exhibit "B" to the District's comments on the Proposed Amendment. The District requests that the Written Evidence be received and accepted by the LARWQCB as written evidence augmenting the administrative record.	The District's comment letter, including all exhibits, will be included in the administrative record for this matter.
	Santa Barbara Channelkeeper	
5.1	Channelkeeper has a long-standing relationship with the Ventura River watershed. Since 2001, our volunteer-based Stream Team program has collected monthly water quality data from the Ventura River and its primary tributaries. Our dataset includes the most long-term, watershed-wide nutrient monitoring dataset in existence. Since 2008, Channelkeeper has also conducted seasonal predawn/afternoon monitoring to assess maximum and minimum dissolved oxygen (DO) and pH concentrations throughout the watershed. We are pleased to find that our data is referenced extensively throughout the Draft TMDL, and we are proud of the contribution that our efforts have provided.	Comment noted.

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5.2	Channelkeeper is particularly pleased to find that Regional Board staff have taken efforts to accurately assess the extent of low DO impairments throughout the watershed based on readily available data. Our Stream Team data, and additional data sources utilized by staff, clearly indicate that the 7 mg/l DO Basin Plan Water Quality Objective (WQO) is frequently not obtained in many reaches of the watershed. We strongly support the use of this WQO as the most appropriate metric with which to measure obtainment of COLD and SPWN beneficial uses.	Comment noted.
5.3	While beneficial uses that support wildlife are critically important, Channelkeeper also notes that human uses that include recreation are fully deserving of protection under the Clean Water Act. For this reason, Channelkeeper is strongly supportive of additional selected numeric targets related to total algal biomass and cover to ensure that all beneficial uses are protected.	Comment noted.
5.4	While Channelkeeper is supportive of the TMDL process to address existing impairments, there are several critical elements of the Draft document that we are troubled by. As currently written, Channelkeeper cannot support the proposed TMDL. We respectfully request that the Regional Board take action to address the following concerns:	Comment noted. See responses to specific comments.
5.5	*Channelkeeper finds that the Draft fails to accurately characterize the extent and significance of groundwater discharges to the river and its tributaries as a nutrient source.* The Draft estimates groundwater contributions by referring only to modeled discharge to surface water for the Lower Ventura River sub-basin according to a 2010 report by Daniel B. Stephens & Associates. It then estimates nitrogen loading by referring only to the average concentration (1.23 mg/l) of surrounding wells in the Lower River. Based on these estimates, Table 4-21 summarizes TN loading for "all sources/land uses" in the watershed. It characterizes the percent contribution of groundwater discharges as 1.3% of total watershed contributions. We believe that these calculations vastly underestimate the true contribution of groundwater discharges. We find these calculations particularly alarming because it appears as though the plentiful data that exist on extraordinary groundwater nitrate concentrations around Ojai and the upper Ventura River was ignored.	The characterization of groundwater discharges to the river is simplified, but this is suitable for a TMDL source assessment. The estimate of groundwater loading in the lower watershed reflects the net contribution of groundwater discharges over the watershed as a whole. The groundwater budget used in the TMDL and referenced in this comment (Daniel B. Stephens & Associates, 2010) is based on estimates of the net gain or loss of groundwater in the Upper and Lower Ventura subbasins. According to this study, there is a net annual gain for the Upper subbasin for the budgeted time period (Water Years 1997 – 2007). In other words, more surface water is discharged to

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	Recent studies also estimate significant quantities of infiltration into groundwater from irrigation as well as a contribution to surface flow downstream (Daniel B. Stephens & Associates, Inc. Groundwater Budget and Approach to a Groundwater Management Plan, Upper and Lower Ventura River Basin. December 30, 2010.)	groundwater then groundwater is discharged to surface water over the entire subbasin. It is thus not possible to calculate loading from groundwater discharges to surface water in the Upper subbasin. There are other studies that document groundwater upwelling in the Upper subbasin, but none that provide a quantitative estimate of the amount of water that is discharged from groundwater to surface water. Thus, for the purposes of the TMDL source assessment, and based on the referenced report, the amount of water that is discharged from groundwater to surface water was assumed to be zero over the entire Upper subbasin. There are higher levels of nitrate in groundwater wells in the Ojai Valley Groundwater Basin and Upper Ventura Basin than in the Lower Ventura Basin. However, the TMDL addresses these inputs of nitrogen in other ways. For example, in the water quality model, San Antonio Creek is treated as a concentrated input to the main stem because there were not enough data for flow, hydraulic conditions, and headwater conditions to run the water quality model specifically for this tributary. Instead, water quality and flow data from the base of San Antonio Creek were used to estimate the loading to the main stem. These data collected at the base of the creek capture all of the discharges upstream. Thus, the contribution of groundwater discharges in San Antonio Creek is accounted for in the model.

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5.6	Channelkeeper believes that *the TMDL needs to rewritten to accurately incorporate groundwater discharges to the upper Ventura River and San Antonio Creek.* The following points support this assertion. 1. San Antonio Creek is impaired by nutrients and is by its own merits a critical component of this TMDL. 2. It is well established that groundwater throughout the Ojai Basin and upper Ventura River Basin is contaminated with high levels of nitrate at both shallow and deep levels (Ojai Basin Groundwater Management Authority, Annual Report, 2010, Ventura County Watershed Protection District groundwater quality data). 3. Groundwater discharges are a critical source of surface flows in San Antonio Creek due to a shallow sub-surface bedrock barrier situated near Camp Comfort, which forces groundwater to rise above the creek bed (Ventura County Watershed Protection District groundwater quality data). 4. Channelkeeper's Stream Team Program has measured nutrient concentrations at Upper San Antonio Creek (Site 10) since 2001. This site consistently exhibits higher nitrate concentrations than any other Stream Team monitoring site in the watershed. 5. San Antonio Creek itself exhibits strong responses to nutrient loading including severe algae blooms, invasive aquatic plant infestations, and depressed dissolved oxygen levels. 6. Studies have concluded that irrigated agriculture is contributing to groundwater outputs from the upper to lower river basin of nearly 2,000 acre-feet/year. For these reasons, we believe it is both reasonable and appropriate to conclude that groundwater discharges are contributing significantly to nutrient and algal impairments throughout the Ventura River and San Antonio Creek. Failure to account for such contributions in the Draft TMDL is a critical flaw.	The TMDL does not need to be rewritten. Groundwater discharges to the upper Ventura River and San Antonio Creek are adequately addressed in the source assessment and in the water quality model. The staff report and proposed Basin Plan amendment clearly state that San Antonio Creek is impaired by nutrients. Regardless of whether or not groundwater discharges to San Antonio Creek and the upper river were estimated and modeled separately, all discharges to San Antonio Creek and the upper watershed are assigned load and waste load allocations.

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5.7	We find the Draft's assessment of agricultural dry-weather and groundwater discharges particularly troublesome. The report states, "*Nutrient concentrations in dry-weather agricultural runoff were obtained from 2007, 2008, 2009, and 2010 VCAILG annual monitoring reports. Concentrations for orchards are zero based on the two VCAILG monitoring sites in the Ventura River*." We note that VCAILG monitoring is not discharge monitoring, but rather receiving water monitoring. Equally important to note, the VCAILG sites are both located in losing reaches of San Antonio Creek, above the point at which groundwater discharges could be expected to be detected. We therefore question how this data can be used solely to determine that dry weather discharges from orchards are zero throughout the entire year. As a result of this assumption, orchard agriculture, the dominant form of agriculture in the watershed, is assumed to make no contribution to dry-weather nitrogen. In comparison, open spaces *are* assigned a dry-weather loading value. This value was essentially calculated by associating SCCWRP geometric means (*0.33 mg/L and 0.05 mg/L for total nitrogen and total phosphorus, respectively)* to flow calculated by North Fork Matilija creek dry-season flows. These flows are almost entirely comprised of groundwater inflow. The Draft justifies these calculations by stating that, "*Open spaces can contribute background nutrient loading due to decay of natural vegetation as well as nitrogen- and phosphorus-bearing rocks and soils. The nutrients are mobilized during wet-weather events or as groundwater discharge to surface waters* The implications of these inequitably assigned assumptions are alarming. Groundwater discharges have been disassociated with calculated dry weather discharges from agriculture. Ironically, groundwater discharges are used as the sole measurement to calculate dry weather discharges from open space. What we are left with is a highly dubious situation whereupon open space is assumed to contribute significant dry-weather nutrients in comparison to orchards, which contribute no nutrients. The resulting conclusion (summarized in table 4-21) is that agriculture contributes only approximately half the nitrogen of urban areas or horses and livestock, and only a marginal amount more than open space.	The two VCAILG monitoring sites are located in receiving waters that are normally dry. However, the TMDL is also based on Regional Board experience overseeing the Agriculture Waiver program and concludes that there is generally no dry-weather runoff from orchard sites due to the common use of drip irrigation for these crops and permeable soils. Acknowledging the fact that there can be orchards with dry-weather runoff, the TMDL still requires agriculture to reduce dry-weather loading by 50%, regardless of the assumptions used in the source assessment. In response to this comment, the TMDL will be revised to clarify that the VCAILG monitoring sites in the upper watershed must be relocated to better assess the quality of water that is discharged from agriculture in those areas. The open space load is considered background load. This means that under the load reduction scenario, no load reductions are expected from open space. Thus, all other discharges must reduce an amount that accommodates the constant background loading in order to achieve the required watershed-wide reductions needed to meet the TMDL. Again, the TMDL still requires all agriculture to reduce dry-weather loading by 50%, regardless of the assumptions used in the source assessment.

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5.8	In similar fashion, we note the Draft TMDL's incongruous assessment of septic systems in comparison to agriculture. To calculate loading from septic systems, the Draft applies literature based nutrient loss rates to the estimated number of septic systems. Were a similar methodology applied to agricultural sources, the total amount of nitrogen and phosphorus applied as fertilizer (minus some reasonable plant uptake ratio) would be assumed to travel through groundwater to the stream, however for no apparent reason, such loading has not been calculated or applied.	A similar methodology is not available for estimating loading to the river from agriculture via groundwater flow. While it might be possible to estimate the nutrient loading to groundwater from over fertilization, it is not possible to estimate the amount of those nutrients that make their way to surface water. For septic systems, the results of a groundwater/surface water interaction study for septic systems near Malibu Lagoon were applied to the Ventura River. The Regional Board and EPA are not aware of any such study for agriculture. Furthermore, because no information is available about the residence time of nitrate in the groundwater, it is not possible to determine who is responsible for the contamination or when it occurred. Thus, a source assessment or load reduction scenario for agriculture discharges to surface water via groundwater flow was not possible. At this time, there are not enough data to characterize this source. Language has been added to the staff report that discusses the potential impact of discharges to land on surface water via groundwater flow.
5.9	These calculated values fail to stand up to simple tests of reason and are not supported by existing data. Despite low assigned loads for agriculture, upper San Antonio Creek (dominated by orchard agriculture) exhibits significantly higher levels of nitrate than other reaches, which are dominated by cattle, horses, and urban land uses. These results also run contrary to regional conditions documented by Channelkeeper and the UCSB Long Term Ecological Research Project for other streams dominated by orchard agriculture such as Carpinteria Creek, Glen Annie Creek, Franklin Creek, or Bell Creek, where we also see exceedingly high nitrate levels. For these reasons, Channelkeeper finds that the dry-weather loading estimates calculated in the draft TMDL are soundly unreasonable and critically flawed. Realistic estimates of dry-weather	The loading estimates provided in the source assessment section are different from the load allocations assigned to agriculture, which require a 50% reduction in load. However, it is recognized that the required reduction is for discharges to surface water. In response to this comment, language has been added to the implementation section of the TMDL, similar to the language in the existing Agriculture Waiver, that agriculture sources in the Ventura River watershed must implement management practices to

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	nutrient loading from agriculture that includes associated groundwater contributions need to be calculated before Channelkeeper can support the TMDL.	reduce nutrient discharges to groundwater. The Water Quality Management Plan (WQMP) that must be submitted in compliance with the Agriculture Waiver (due March 2013) must include management practices for the protection of both surface and groundwater quality. For example, source control management practices, such as improved irrigation efficiency and nutrient management protect both surface water and groundwater.
5.10	Channelkeeper believes the Draft is also inadequate in its failure to identify additional monitoring and implementation measures that shall be implemented by agricultural dischargers. The Draft identifies the existing Agricultural Waiver as the vehicle through which growers shall achieve mandated reductions in nutrient loading. The existing Agricultural Waiver, however, is sorely inadequate in its inclusion of provisions to verify that such reductions are actually occurring, particularly regarding discharges to groundwater. The Draft is inaccurate when it states, in Section 7.2.1, that growers are required to monitor discharges under the existing Agricultural Waiver. The Waiver does not require monitoring of discharges. It requires monitoring of receiving waters. This monitoring does not in any way, shape, or form allow for an assessment of nutrient loading to groundwater. Existing VCAILG monitoring sites are both located where San Antonio Creek runs seasonally dry, upstream of where upwelling is known to occur, and are therefore not at all appropriate as indicators to assess nutrient loading from groundwater discharges. Nitrate concentrations measured from wells throughout the Ojai Basin are exceedingly high. Some noticeable reduction in nitrate may have occurred over the course of decades, but there are currently no provisions in place to ensure that existing Best Management Practice (BMP) implementation methods are adequate to achieve the water quality improvements necessary to address nutrient impairment in San Antonio Creek.	The comment appears to refer to the expired Agriculture Waiver and not the existing Agriculture Waiver adopted by Order No. 2010-0186. It is correct that the waiver requires receiving water monitoring, but the monitoring sites must reflect discharges from irrigated lands and consider such conditions as proximity to agriculture and flow of waterbodies. The staff report will be revised to clarify this. Also, as discussed in response to Comment 6.7, sites in the upper watershed must also be relocated to better assess the quality of water that is discharged from agriculture in those areas.

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	In the absence of such data, *provisions requiring individual reporting and verification of implementation of BMPs to minimize nutrient discharges to groundwater are needed.* Individual implementation of BMPs to minimize nutrient discharges to groundwater are not monitored or reported through the existing Waiver program. Rather, in areas where benchmarks have been exceeded (a condition unable to be determined through the VCAILG monitoring program because existing monitoring sites are located where the stream runs seasonally dry and upstream of where groundwater discharges impact surface flows), only summary and aggregate information regarding implementation of BMPs is required to be reported (Condition H.7.b). The implementation and effectiveness of individual BMPs is not monitored or reported. The TMDL should be rewritten to incorporate specific monitoring and reporting provisions to track nutrient management BMP implementation. Such provisions should include reporting of total units of nitrogen applied per crop, per acre, per year to each farm or ranch. Dischargers should also be required to develop irrigation and nutrient management plans and to report: • Crop nitrogen uptake values for use in nutrient balance calculations; • Annual balance of nitrogen applied per crop compared to typical crop nitrogen uptake for each ranch/farm or nitrate loading risk unit; • Annual estimation of nitrogen loading to groundwater and surface water; and • Annual evaluation of reductions in nitrate loading to groundwater resulting from decreased fertilizer use and/or implementation of nutrient management practices.	This comment is referring to the expired Waiver. The existing Agriculture Waiver adopted by Order No. 2010-0186 requires more than summary and aggregate information regarding implementation of BMPs. There are more stringent requirements for the type and use of BMPs to be proposed in the WQMP. Furthermore, the Waiver requires that dischargers implement the BMPs that have been identified in the WQMP or they will be out of compliance with the Agriculture Waiver. The existing waiver already requires dischargers to report fertilizer application and requires WQMPs to include source control management practices, such as improved irrigation efficiency, which reduces loading to groundwater, and nutrient management, which includes a nitrogen budget.
5.11	Channelkeeper is concerned that the Draft TMDL fails to provide any quantification of loading from cattle grazing, and we are even more concerned that only "indirect" impacts of cattle grazing on dry-weather nutrient loading have been considered. Grazing cattle have extensive access to surface waters throughout the Ventura River watershed, including direct access to Lion Creek, San Antonio Creek, Canada Larga Creek and additional tributaries. These cattle deposit manure and urine directly into surface waters and are responsible for significant dry-weather	The dry-weather loading from cattle ranching activities cannot be quantified at this time. The TMDL considers the impact of direct deposition of manure and urine in creeks due to cattle ranching. According to the staff report, "Manure can also be discharged to receiving waters in dry weather due to poor manure management or grazing activities that disturb stream banks and riparian areas and cause erosion, which

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	loading of nutrients that should be accounted for. Even more alarming is the fact that the Draft assigns a percent reduction of existing TN and TP load of 10% for cattle grazing sources. Proportionally significant reductions in loading from cattle grazing sources can be immediately obtained through basic exclusion of cattle from surface waters through low-tech, straightforward installation of fencing and alternative watering facilities. We see no reason why the bar for required reductions in loading from cattle grazing should be set so low. In fact, given the immediate availability of remedies, and the significant reductions in loading that would result, Channelkeeper recommends that load reductions be set at a level of 90% or higher for this source. Without higher load reduction requirements, owners of cattle grazing facilities will have no incentive to invest in exclusion and alternative watering facilities, and this source will continue to contribute to impairment.	increases the discharge of sediment, animal waste, and nutrients to surface waters." The management of hundreds of cattle grazing over thousands of acres of leased land is more difficult than management for intensive livestock facilities. The load reduction for cattle ranching was assigned accordingly. The regulatory program used to implement these load allocations will require management practices such installation of fencing and alternative watering facilities.
5.12	Finally, Channelkeeper is extremely disappointed by the proposed monitoring and implementation schedule granted to horse and livestock owners. We believe that the allowance of 5 years to develop a monitoring plan and 10 years to achieve waste load allocations (WLAs) is exceedingly generous. We note that this schedule is more generous than any comparable compliance schedule that we are aware of. Channelkeeper recommends that horse and livestock owners be granted 2 – 3 years to develop a monitoring plan and 5 years to achieve WLAs.	10 years is in the middle range of compliance schedules adopted for TMDLs in the Los Angeles Region. The Regional Board must still develop new regulatory mechanisms to implement the LAs assigned to these sources. It will take several years for development, outreach, and enrollment, then additional time for implementation.
5.13	Additionally concerning is the fact that dry-weather loading from intensive livestock/dairy land uses was also not quantified and instead was assumed to be roughly accounted for in the estimate for horse loading in the watershed. Channelkeeper has taken pains to notify Regional Board staff in writing and through site visits of particular intensive livestock facilities that contribute significantly to surface and groundwater nutrient loading. These facilities enclose large quantities of livestock in ephemeral tributaries to Canada Larga Creek and the Ventura River and provide daily direct deposits of significant quantities of manure and urine. Despite the relatively small area that these and similar facilities cover, their direct and regular contribution of animal waste to surface waters is significant and detrimental to overall water quality.	Loading estimates in the source assessment section are different from load allocations assigned to intensive livestock facilities, which require a 99% reduction in load.

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5.14	We are disappointed that the proposed monitoring requirements only provide for two predawn DO monitoring events per year. The current level of monitoring being conducted in the watershed exceeds this level. Additionally, the cost of continuous monitoring equipment is becoming increasingly affordable, and we see no reason why a much higher frequency of monitoring events should not be required. With the incorporation of continuous monitoring devices (estimated at $1,200 per unit), daily monitoring frequency is highly achievable and probably comparable to the cost that will be incurred through consultant fees to conduct measurements in person twice per year.	The TMDL will be revised to add requirements for continuous DO monitoring.
5.15	In conclusion, Santa Barbara Channelkeeper is supportive of the Regional Board's efforts to develop this TMDL to address existing water quality impairments throughout the watershed. We believe that such an approach is necessary to achievement of broadly held long-term watershed goals. We believe that the requirements set forth in the proposed TMDL are no more onerous or set no higher an expectation on Responsible Parties within the watershed compared to other TMDLs and regulatory standards that are in place throughout the State. We find the Draft TMDL as written highly inadequate in several critical areas which we have outlined in detail above. We hope that you incorporate our recommendations and that you work to develop a final TMDL that Channelkeeper can support and that better protects water quality and beneficial uses in the Ventura River watershed.	Comment noted.
	Mike Williams, Ventura County Cattlemen's Association	
6.1	This regulation and its implementation will have a significant negative economic impact on me as well as other cattle ranchers in the watershed. It may even make some of our operations unviable. While I understand that cattle ranchers' economic viability is not the chief concern of the Water Board, it should be given due consideration, especially when most of the data prompting the regulation of cattle grazing is inaccurate, and based on assumptions or very general estimates. I have identified several concerns with the way cattle grazing was implicated as a pollutant in the Staff Report and thus added as a non-point source polluter. I also have concerns about the negative impact these requirements will have on ranching and cattle grazing in the Ventura River watershed.	Comment noted. See answers to specific concerns below.

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6.2	Data used in the Source Assessment of the Staff Report to calculate grazing's wet weather total nutrient load is inaccurate and/or out of date. Cattle Numbers: Many factors including: drought, proximity to dense population centers, economic feasibility, government regulations and liability concerns have caused a significant decrease in cattle numbers in the Ventura River watershed. The staff report places the number of cattle currently in the Ventura River watershed at 1940 "cattle" based on 2007 census data (Staff report pg.49). Based on my knowledge of the area this is nearly twice the number that currently exists in the area and cannot be accurate unless the number includes calves. If calves were included or if the number of cattle is inaccurate, any nutrient load assessment extrapolated from this data would be greatly exaggerated. Acres Grazed: The staff report used map overlays to find areas "suitable for grazing" to estimate the amount of grazed acres (Staff report pg49). As stated in the previous paragraph many areas that once held, and are capable of holding cattle no longer graze cattle. Thus acreage estimates based on map overlays of land suitable for grazing would be greatly exaggerated and therefore the nutrient loading calculations based on this data would be inflated. MANAGE Database: The staff report used the MANAGE database to put the pollutant concentration in runoff for rangeland/pasture at 4.85mg/L total nitrogen and 0.96mg/L total phosphorus. According to the staff report the MANAGE database is a collection of scientific peer reviewed studies on the nitrogen and phosphorus loads from agriculture (Staff report pg49-50). I was unable to locate the MANAGE database. However, I did review a significant number of peer reviewed studies and **EVERY ONE** included language reflecting the lack of understanding, unpredictability and varying impacts region, climate, topography, soil and other factors have on the results. A study done in the Sierra foothills on terrain and climate similar	The TMDL is based on the best information available, in this case the USDA 2007 census data, to evaluate the number of cattle in the watershed. Those numbers were confirmed by the Ventura County Resource Conservation District and local cattle ranchers. The number of cattle were not used to estimate loading from cattle ranching operations. The dry-weather loading from cattle operations was not quantified and the wet-weather loading from cattle operations was based on area suitable for grazing, not number of cattle. Similarly, because no specific information is available regarding the location of grazing pastures in use, staff used map overlays of land suitable for grazing identified by the California Department of Conservation's Farmland Mapping Program as the best estimate available. It should be noted that while this approach was used to develop the wet-weather source assessment, the wet-weather load allocations are not based on the source assessment, but rather water quality objectives and existing conditions. The study by Allen-Diaz et al (2004) does report high nitrate concentrations observed immediately after the removal of livestock grazing, however those rapidly decreased to levels similar to the plots where grazing was not removed within 3 months. It is possible that levels in the plots where grazing was removed would gradually drop to numbers lower than those in plots where grazing was not removed.

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	to that of the Ventura River watershed (Allen-Diaz *et al* 2004) found that *"Removal of livestock grazing resulted in increased levels of nitrate in wetland waters, and thus higher levels of nitrate pollution compared to grazed springs."*. Because of the wildly divergent findings, and scientifically acknowledged variables MANAGE database can be an interesting reference but falls short of being justification for imposing crippling reporting requirements and regulations on cattle producers. Based on the unreliability of the pollution concentration levels and the extreme over estimation of cattle numbers and grazing acres, the wet weather load assessment calculation can and likely are extremely inflated.	The MANAGE database compiles nutrient load and concentration data and sites characteristics from 55 peer-reviewed studies on agricultural land uses (cultivated and pasture/range) in the USA. In answer to this comment, we re-assessed the studies used for this calculation, and included a wider range of land uses. The new numbers are lower than the ones previously obtained, at 3.80mg/L total nitrogen and 0.56mg/L total phosphorus. In any case, these numbers are wet-weather runoff estimates, which in general are found to have little impact on the water quality of the Ventura River and its tributaries. Wet weather allocations are set to 5-10 mg/L in the watershed, above the estimated loads from livestock.
6.3	The staff report indicates that cattle grazing "can have a significant impact on dry weather nutrient loading", but provides no evidence as to what the impact is. <u>Grazing on stream banks:</u> Staff report sites grazing on steam banks to be the chief source of nutrient loading from cattle. It states *"the bank structure can be destabilized, causing soil and associated nutrient loading into the stream. The loss of riparian vegetation also reduces shade and the buffering capacity of the stream. Finally, the loss of riparian vegetation and weakened stream banks decreases the depth and increases the width of the stream, which can increase its temperature"* (Staff report pg 51). This assumption is not necessarily supported by research. While many studies have documented these effects, there is a definite lack of consistency in the results. (Platts1982) (Agouridis *et al* 2005). In fact, the studies I found which were conducted in California, or in similar environments, climate and topography (Lucas *at al* 2008) showed no significant damage to stream banks, vegetation, or channel width and depth as the result of grazing.(Allen-Diaz *et al* 2004) (George *et al* 2004)	As stated in this comment, even though some studies may show little significant damage due to grazing, many other studies have documented theses effects. In fact, in their review, Platts et al (1982) conclude that "when the findings of all studies are considered together, there is evidence indicating that past livestock grazing has degraded riparian stream habitats and decreased fish populations". Similarly, Agouradis et al. (2008) acknowledged alterations of riparian habitats by grazing, and evaluated the efficiency of various BMPs to curtail these effects. Given the weight of evidence, the likely impact of grazing on dry-weather nutrient loading in the Ventura watershed cannot be ignored. The staff report acknowledges that the "the impacts will vary considerably depending on site-specific conditions such as vegetation cover, grazing density, proximity to the stream and period of use (USEPA, 2003)."

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	10% Reduction requirement in TN and TP load with no understanding of current levels: The TMDL requires a 10% reduction in nutrient loads from cattle grazing without any clear understanding of what the existing contribution is. (Attachment A pg. 5). Assigning ranchers a nutrient reduction requirement with no clear evidence of what they actually contribute is problematic in that major expenses may be associated in mitigating non-existent nutrient contributions. As cited elsewhere in this letter (paragraph 2a, 3a) several peer reviewed studies have found no significant increases in nutrients and even some reductions as a result of grazing activities.	As stated in the proposed Basin Plan Amendment, the current TN and TP load will be quantified as part of management plans required to implement the TMDL. As such, the 10% reduction will be based on an accurate assessment of existing nutrient contributions from cattle grazing.
6.4	Cattle grazing and open space are inextricably linked as a source of pollution. Nutrient loads: The staff report acknowledges significant open space nutrient loading, and then goes on to assume an additional loading from cattle grazing. Research is mixed. Recent studies and studies currently being conducted suggest that the high nitrate levels in southern California rangeland ground water may not simply be the result of current cattle grazing activities. One study, conducted in a California oak woodland pasture of similar climate and topography to Ventura, compared nitrogen cycling dynamics in grazed and ungrazed plots, and did not find any evidence of either higher nitrate concentrations or of higher rates of nitrate production in the grazed plots then in the ungrazed plots. (Merenlender, Heaton) Another study, again in oak woodland pasture in California, found nitrogen levels actually increased in some areas when grazing was removed. The study states *"removal of livestock grazing from these wetlands impaired the ability of the springs to retain nitrate. Grazing removal allowed dead plant material to accumulate, thereby inhibiting plant production (hence, plant nitrogen demand), resulting in stream water nitrate concentrations that far exceeded the U.S. Environmental Protection Agency's surface-water maximum standard".* (Allen-Diaz 2004) There appears to be significant	There is no significant demonstration to date that cattle grazing has a similar or even lower impact on nutrient loadings than open space. The research discussed in the web article by Merenlender and Heaton cited in the comment is ongoing, and the authors point out that their "results suggest that the high nitrate levels in rangeland groundwater may not simply be a direct result of current cattle grazing activities", and that natural processes make be partly responsible for the levels observed. The article by Allen-Diaz et al.(2004) presents a study of spring–wetlands systems in Northern California. Although the results point out once again the complexity of the interactions between grazing and nutrient loads, they are not sufficient to dismiss impacts of grazing on nutrient loading in the watershed, as discussed in the response to comment 6.2.

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	evidence that nutrient loads produced through cattle grazing can be compensated for by the effects cattle grazing has in reducing open space nutrient loads. Open Space loads Vs. Grazing loads: Contributions to nutrient loads from open space vs. that of cattle are impossible to separate. As established in the previous paragraph, cattle grazing may not increase nutrient levels, and may even reduce nutrient levels. Monitoring cannot distinguish the source of the nutrients. The effect cattle are having on the nutrient load vs. the contributions of open space they inhabit to the nutrient load cannot be known until the rancher is forced to remove the cattle.	
6.5	Staff report lists several implementation strategies with associated cost. These cost are underestimated and strategies are likely to offer little benefit Prescribed grazing: (Staff report pg87) Prescribed grazing will likely offer little improvement due to the fact that it is already commonly practiced throughout the region. Prescribed grazing and rotational grazing is well known to ranchers as a means to boast forage productivity. Nearly all ranchers have adopted some form of it by now. Therefore, only very minor improvements could be realized. Alternative drinking location: (Staff report pg88)Due to the intermittent flow of water throughout the Ventura River watershed most pastures already have alternate drinking locations because of the unreliability of stream water as a drinking source. Addition water locations are also added to help improve cattle distribution. So again there is only minor room for improvement. Often those areas without an alternate drinking location lack available water from an alternate source. The staff report cites the average cost at $1356 plus $25 maintenance each year. While this seems reasonable these cost can quickly skyrocket when water must be piped or hauled over long distance.	The BMPs discussed in the staff report are presented as reasonably forseeable means of compliance. Stakeholders have the liberty to implement alternative BMPs that they consider would be more cost-efficient. Ranchers will have the opportunity to propose their own BMPs, including the continued use of prescribed grazing, to comply with allocations once they have completed baseline monitoring and developed management plans. If ranches are already using alternative drinking locations, then the TMDL will not place any additional requirements on ranchers to supply alternative drinking locations.

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	Fencing off streams: (Staff report pg87-88) The staff reports estimate of $6.10 per foot to install fencing and $0.10 per foot maintenance is very low given the terrain in the Ventura river watershed and the nature of the vegetation that grows near streams. Fencing in these areas can be extremely difficult and time consuming. Another problem with fencing is permanently removing portions of pasture from production. Actual cost will vary but they can also be significantly more than the staff report estimates.	The staff report has been revised to include revised estimates of the cost of fencing acknowledging the difficulty of the terrain. New numbers for conventional and woven wire fences are for structures built on very rugged, undulating sites with heavy brush and/or with stony, shallow or sand soils. Such evaluation was not available for the cost of electric fencing. The new estimate is $13.0 per foot for installation, and $0.2 per feet per year for maintenance.
6.6	Monitoring and complying with this regulation will cause serious economic difficulties and undue hardships for ranchers while providing minimal gains in water quality: Cost vs. Benefit: The contribution of cattle grazing to the nutrient loads is unclear and likely minimal. The TMDL calls for a 10% reduction. 10% of a small amount would have an insignificant impact on in-stream nutrient levels. The cost to producers to comply with this regulation would be excessive compared to the minimal degree of benefits realized. Leased land: Land values do not reflect cattle grazing production values. Many property owners of the large land tracts necessary for cattle grazing buy the land for future income potential rather than current income potential. As a result most ranchers in Ventura County must lease the land they run cattle on. The income generated through the lease is often inconsequential for the property owner when compared to the value of the land. These property owners, when faced with the added costs and responsibilities of water monitoring as well as the risks of being liable for the hefty fines associated with possible noncompliance with these regulations may forgo the meager income generated through the lease of grazing privileges and terminate the lease and remove the cattle.	The proposed TMDL is written to provide cattle ranching operations flexibility in monitoring and complying. Ranchers will conduct baseline monitoring to determine what reductions are needed to meet allocations, and then propose their own management plans to attain allocations. Cattle ranches will have 10 years to comply with allocations. The TMDL calls for a 10% reduction in nutrient loading from grazing activities and provides a cost estimate based on reasonably foreseeable means of compliance. Once the baseline monitoring is conducted and management plans are developed, the exact cost to comply with the allocations can be determined. It is expected that a waiver program similar to the Agriculture Waiver will be adopted for ranching operations. Such a program will allow ranchers to conduct group monitoring in order to keep costs low. As the comment states, many ranches in the watershed are already practicing BMPs such as prescribed grazing. Ranchers may propose additional BMPs in the most cost efficient manner. In addition, funding is available to ranchers through

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	Costs: Production cost for cattle producers have soared in recent years leaving many ranches barley viable. Significant costs associated with compliance with this TMDL may make some operations unsustainable. Loss of Ranching: Cattle grazing has many benefits, and has been part of the ecosystem in this county for close to three hundred years. The mountain and coastal grasslands of Ventura County produce some of the best cattle pastures in the nation. They have environmental, cultural, and economic benefits to the community. However, ranchers in Ventura County face many challenges, as indicated by the dwindling numbers of cattle running in the hills. Care should be taken to insure and encourage the continued presence of cattle and cattle ranches in Venture County and the Ventura River watershed.	programs such as EQUIP to assist ranchers in preparing management plans and paying for additional BMPs. It is not the intent of the proposed TMDL to make cattle ranching unsustainable. The Regional Board will work with cattle ranchers and other stakeholders to attain TMDL allocations in the most economical way possible and ensure that Ventura cattle ranchers remain good stewards of the land.
7	**Ventura County Coalition of Labor, Agriculture and Business**	
7.1	Ventura County COLAB appreciates the opportunity to comment to the Los Angeles Regional Water Quality Control Board with respect to the Algae, Eutrophic Conditions and Nutrients Total Maximum Daily Loads (TMDLs) for Ventura River and its Tributaries. VC COLAB has 300 members including cattle ranchers, horse owners and irrigated landowners, many within the Ventura River watershed. While we believe there are opportunities for improvement to the watershed with the implementation of Best Management Practices, we do not support the TMDLs with respect to Agriculture, Horse Facilities/Intensive Livestock or Grazing Activities as described by the LARWQCB due to the lack of sufficient science to support the numeric targets, source assessment, linkage analysis, pollution allocations or implementation plans.	Comment noted
7.2	The schedule for development of the TMDLs in the Los Angeles Region was set by a lawsuit against the Environmental Protection Agency in 1999. In the consent decree, the Regional Water Board agreed to provide TMDLs for the Ventura River watershed (analytical unit 88) within 14 years, ending March 24, 2013. With time running out and limited data available, the draft document of July 20, 2012 describes a set of	The summary of watershed land use information in the Source Assessment (Section 4) is based on Geographic Information System (GIS) data provided by the Ventura County Watershed Protections District.

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	unreasonable goals that will likely cause the unnecessary loss of agricultural resources with limited improvement of the watershed. The land use section describes 85% of the 119,000 acres of the watershed as open space including 50% that is designated National Forest. Irrigated agricultural lands are only 4.5% of the area (6387 acres) and horse property is .3% (357 acres). The acreage of land with active cattle ranching and the number of cows in the watershed is undetermined. The reported estimates are simply a guess and Cattlemen's associations were never contacted for verification. It is unclear whether the elimination of all these land uses would cause an appreciable improvement in the amount of algae, nitrogen, phosphorus and/or dissolved oxygen content of the water in the Ventura River.	The watershed acreage used for cattle ranching and the number of cattle in the watershed is not undetermined nor are the numbers a guess. This information is described in Section 4.2.2 of the staff report. Based on information from the US Department of Agriculture, the number of cattle in the watershed were estimated to be 1,940. This number was verified by the Ventura County Resource Conservation District after consultation with the Cattlemen's association. The grazing acreage in the watershed was determined based on information from the California Department of the Conservation Farmland Mapping Program. The TMDL does not establish unreasonable requirements nor seek to eliminate any land use activity in the watershed. In fact, the TMDL specifically considered the feasibility of implementation actions when assigning allocations. As described in the TMDL Staff report at Sections 2, 3,5, and 6, a reduction in watershed nutrient loading will improve water quality and restore beneficial uses
7.3	The federal Clean Water Act section 303(d) requires States to list waterbodies that are impaired and then requires TMDLs to be established. The Porter-Cologne Water Quality Control Act governs water quality in California. The Act defines water quality objectives as: "…the limits or levels of water quality constituents or characteristics which are established for reasonable protection of beneficial uses…" When a Regional Board develops water quality objectives, it must consider: "environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto" and "water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area" and "economic considerations" (Section 13241).	Because the TMDL implements existing narrative and numeric water quality objectives, the Regional Board has determined that adopting a TMDL does not require the Regional Board to consider the factors of California Water Code section 13241. The consideration of the California Water Code section 13241 factors, by section 13241's express terms, only applies "in establishing water quality objectives." Here, the proposed TMDL is not establishing water quality objectives but is implementing previously established objectives that have not been achieved. While the Regional Board is not required to consider the factors of California Water Code section 13241, it

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	In addition, under Section [13300], the state may only regulate water quality "reasonably, considering all demands being made and to be made on those waters." We do not believe that the TMDL document defines water quality targets for agriculture, horse facilities or livestock ranching that can be reasonably achieved.	has nonetheless developed and received significant information pertaining to the California Water Code section 13241 factors and has considered that information in developing and adopting this TMDL. The comment appears to be referring to Water Code section 13000, which is the Legislative Findings. To the extent there is any objective reasonableness requirement in Water Code section 13000, the TMDL is reasonable. However, it is important to recall that this general statement, which appears amongst loft goals such as "waters of the state shall be protected for use and enjoyment by the people of the state," must give way to specific requirements. In this case, the specific requirement is spelled out in superior federal law, which requires that the TMDL implement water quality standards.
7.4	A set of numeric targets were set (p.33) to protect the most sensitive beneficial use in the Ventura River watershed which is cold water aquatic habitat and the associated migration, spawning and early development uses. Low concentrations of dissolved oxygen (DO) can cause negative impacts on cold water fish, including the endangered Southern California Steelhead. However, numeric targets were added for algal biomass, microalgal cover and phytoplankton biomass which are not included in the Basin Plan and are based on studies from other regions of the country. While the DO targets directly relate to the health of aquatic life, the algal targets are related to viewshed and recreational uses. The algal targets were set with no consideration of whether the lower recommended amounts of algae have ever existed or could be reasonably attained in this watershed. There is not enough data to document the likely natural background for algae. There is only one algae biomass sample location above the Matilija Dam in the 2008 UCSB study, which is north of the area of impacts from humanity. The river gradient at	Algal biomass numeric targets should not be struck from the TMDL. These numeric targets are necessary to evaluate attainment of water quality objectives and protection of beneficial uses. The algal biomass targets are established as a *numeric* interpretation of the water quality condition that will demonstrate attainment of the *narrative* water quality objectives for biostimulatory substances. Thus, these targets are necessary to track improvements in water quality and attainment of the TMDL. The total algal biomass target in the TMDL, which is used to establish the load allocations, is based on the CA NNE framework. The NNE has been reviewed and endorsed by a Technical Advisory Committee, which included University of California scientists.

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	this sample location is likely higher than the sample locations in the lower reaches which would make a comparison difficult. To establish a true background algae level would require sampling above the dam in areas of lesser gradients. Given the large variety of algal biomass data values in the study area, limited data collected, and the number of variables that affect the data, it is difficult to make realistic algal numeric targets. Therefore, we recommend that the algal targets be eliminated at this time and the Basin Plan targets for DO and pH remain. Algae sampling is high-cost, irrelevant and has no relationship to the target of the TN and TP loading that drives source assessment and implementation.	See also response to comment 1.10 The proposed TMDL adequately considers background conditions and accounts for natural background sources of nutrients. See also response to comment 4.8
	Ventura County Resource Conservation District	
8.1	The category of "Horses/Livestock" could be more clearly defined, perhaps using a specific density of animals per acre or more specific description of the types of facilities and livestock (i.e., sheep, alpacas, etc.) associated with that designated category of nonpoint source pollution. Page 45, Section 4.2 Nonpoint Sources, states "Nonpoint sources in the Ventura River watershed including inputs from agricultural lands, horses and livestock . . . undeveloped open space . . . This section provides an overview of each source and presents data to characterize each source." From this introductory statement, it is difficult to tell whether low-density livestock grazing operations are in a separate category from higher-density livestock boarding and feeding facilities.	The distinction between low-density livestock grazing operations and higher-density livestock boarding and feeding facilities is made in section 4.2.2, which separately estimates loading from intensive livestock, horse facilities, and grazing activities. A group load allocation is assigned for horses and intensive livestock facilities, while a separate load allocation is assigned to grazing activities. For now, the distinction between intensive livestock and grazing activities is generally based on density. A more specific distinction can be made when the regulatory programs for these sources are developed.
8.2	Per Section 7.5 Implementation Schedule, horse/livestock owners must have a discharge monitoring plan and join a watershed-wide group to conduct monitoring, or submit their own plan within 5 years of the effective date of the TMDL. A Regional Board Order or a Waiver requirement regarding the sampling is discussed in the TMDL, but neither document has been released for public review. Therefore, it seems more reasonable for the implementation schedule to be tied to the release date of the Waiver or Order, instead of the TMDL.	The comment is noted, but it is necessary to have milestones tied to the TMDL to ensure that implementation moves forward. Five years from the effective date of the TMDL will allow ample time to release the waiver or order and initiate development of monitoring plans.

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8.3	Per Section 6.1 Dry-weather Allocations Attachment A to the Resolution states that receiving water targets for in-stream concentrations are N (1.15 mg/L) and P (0.115 mg/L). These require a reverse osmosis level of treatment and are more stringent than concentrations at reference/background sites (Section 4.2.4.2 Dry-weather loading from open space). More reasonable targets would provide a higher chance for water bodies to be de-listed and a potential end to expensive water quality monitoring by the regulated community.	The concentrations of TN and TP are not numeric targets nor are they allocations. They are the numbers used to translate the response indicator numeric targets to the TN and TP load and waste load allocations assigned to the various sources. The sources only need comply with their load and wasteload allocations, none of which require a reverse osmosis level of treatment.
8.4	The response to these proposed regulations will cost the equestrian community substantial time and money. Costs of the proposed sampling requirements are estimated at $100,000 for the first year, and about $80,000 per year thereafter. This does not include the costs and time of forming the monitoring group and managing the water quality sampling program. These costs were developed through consultation from a local water quality consulting firm, and include staff hourly rates, costs to process samples, preparation of monitoring documents and equipment rentals. Rather than setting unobtainable in-stream targets, thereby requiring indefinite, expensive monitoring, it would be more reasonable to use a phased-approach to targets that allows for adaptive management, and eventual de-listing of waterbodies.	In an attempt to keep costs at a minimum, the proposed TMDL encourages responsible parties to work together to submit a join watershed-wide plan. Once horse and livestock owners are enrolled in the regulatory mechanism to implement their LAs, they can participate in the implementation of the watershed-wide monitoring plan or submit their own plan. In addition, existing receiving water monitoring conducted under other programs can be leveraged to assist in meeting these monitoring requirements. Responsible parties may build upon existing monitoring programs in the Ventura River watershed when developing the receiving water quality monitoring plan for this TMDL.
8.5	In addition, it is not clear if the Water Board will dictate how to apportion the responsibility of monitoring costs amongst the regulated community or if that would be up to the horse/livestock community. Would horse/livestock owners be required to pay a fee per animal to contribute to the monitoring costs? Or per acre? In addition, if a facility has manure regularly hauled off-site or storage manure in such a way that there is no dry weather runoff and no manure in contact with storm water, would such a facility be exempt from contributing to monitoring costs.	The details of the monitoring costs will be further elucidated during the development of the regulatory program to implement the horse and livestock allocations. If a facility had no dry-weather discharge of manure, it could be assumed to be complying with its load allocation. However, horse and livestock facilities would still be required to participate in watershed-wide monitoring.
8.6	Section 6.1 Dry-weather Allocations, Table 6-1 and 6-2, requires a 99% reduction of total nitrogen and total phosphorus dry weather loading by Horse/Intensive Livestock sources, when all other sources are given a 28 - 50% reduction. It is not clear why Horse/Intensive Livestock sources were given a substantially higher load reduction target. In addition, the	The load reductions are based on feasibility of implementation. It is feasible for horse/intensive livestock operations to almost completely reduce dry-weather discharges to surface water by preventing animals from directly contacting surface water and by

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	mechanism for dry weather loading of horse/livestock waste into the watershed is not clearly stated in the report. Storm water runoff is generally the mechanism for manure loading the watershed, and storm water runoff does not occur during dry weather. Horse/Livestock operations are not irrigated, like row crops, orchards, and nurseries, therefore there is not dry weather runoff (loading) like one might see from a farm.	properly disposing of manure. In contrast, dry-weather discharges from irrigated agriculture are more difficult to control due to the nature of the discharge and are required to reduce by 50%. The load reductions are also based on the relative source contribution. Based on TMDL estimates, horse/intensive livestock facilities contribute 22% of the existing dry-weather load.
	Waste to Energy	
9.1	There are a number of "data free" analyses, analyses with limited data or non-Ventura County data. This creates resentment within the regulated community, because the responses to the proposed regulations cost money to try to reach targets that do not appear to have a technical basis. We suggest these regulations be revised to take a form of at least a few years of adaptive management and ratcheting basin targets as the monitoring programs show results. The special studies could be used to accomplish this, but specifically without setting targets below current basin standards until the special studies are completed. We advocate for fair regulations, based on local data that are cost effective so that they can be implemented. This is the only way to have real change in the river water quality.	While some of the source analysis is based on limited data, the assumptions have been clearly stated, and the resulting estimates are technically sound. The resulting allocations are feasible, reasonable, and based on site-specific considerations. The lengthy implementation schedule, the special studies, and the scheduled TMDL reconsideration allow for an adaptive management approach.
9.2	Please add to the description of the bio-digester on page 89: "A feasibility study is to be completed by a grant administered by the Ventura County Watershed Protection District in 2012 and should be used for further planning."	The staff report has been revised in response to this comment.
9.3	Horse and Livestock facilities are not defined and need to be… how big, what type? It is implied that a group should be formed to coordinate the monitoring, and possibly treatment. Who needs to be in the group that does the monitoring?	For now, the distinction between intensive livestock and horse facilities and grazing activities is generally based on density. A more specific distinction can be made when the regulatory programs for these sources are developed. The details of the monitoring costs will also be further elucidated during the development of the regulatory programs. The

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		Regional Board will conduct outreach to the horse and livestock community in order to develop a regulatory program with broad stakeholder input.
9.4	A waiver for horse/livestock is discussed but no details are provided. These basic criteria need to be established to know who is going to be regulated and who needs to respond.	The 10-year implementation schedule is intended to allow time to develop a waiver or other regulatory program with input from the regulated community. The details of the program will be established during development. The Regional Board will conduct outreach to the horse and livestock community in order to develop a regulatory program with broad stakeholder input.
9.5	This proposed regulation requires expensive monitoring and treatment practices with little or no supporting data for some of the categories of polluters. See Pg. 52 for Cattle: “Regardless of the fact that there is no quantified source assessment for intensive livestock/dairy land uses and cattle grazing activities, this TMDL assigns both of these sources load allocations”. Or on page 78 "For example, the nitrate and phosphate concentrations used to estimate dry-weather loading from agriculture is based upon measured data from an area more intensely farmed (and having tile drains, which concentrate nutrients) than in the Ventura River watershed."	The proposed TMDL is written to provide cattle ranching operations and intensive livestock/dairy land uses flexibility in monitoring and complying. Operators will conduct baseline monitoring to determine what reductions are needed to meet allocations, and then propose their own management plans to attain allocations.
9.6	The cost of monitoring for the listed constituents on pg 91, assuming monthly sampling and an annual report would be more than $80,000 per year. This cost estimate assumes horse/livestock owners would need 4 monitoring stations. Who will pay for this and who will be coordinating this with other monitoring efforts?	In an attempt to keep costs at a minimum, the proposed TMDL encourages responsible parties to work together to submit a join watershed-wide plan. Once horse and livestock owners are enrolled in the regulatory mechanism to implement their LAs, they can participate in the implementation of the watershed-wide monitoring plan or submit their own plan. In addition, existing receiving water monitoring conducted under other programs can be leveraged to assist in meeting these monitoring requirements. Responsible parties may build upon existing monitoring programs in the Ventura River watershed when developing the receiving water quality monitoring plan for this TMDL.

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		The details of the monitoring costs will be further elucidated during the development of the regulatory program to implement the cattle and horse and livestock allocations.
9.7	A 99% reduction of nutrient loading by Horse and Livestock sources is required in dry weather (dry days), when all other sources have a 28-50% reduction. Page 74, 76. This seems most unfair, especially since there is such a lack of data. It is not clear why the 99% is for the dry days and not the dry-season (May 1-Sept 30). How will regulations be implemented or enforced on a day to day basis?	The load reductions are based on feasibility of implementation. It is feasible for horse/intensive livestock operations to almost completely reduce dry-weather discharges to surface water by preventing animals from directly contacting surface water and by properly disposing of manure. In contrast, dry-weather discharges from irrigated agriculture are more difficult to control due to the nature of the discharge and are required to reduce by 50%. The load reductions are also based on the relative source contribution. Based on TMDL estimates, horse/intensive livestock facilities contribute 22% of the existing dry-weather load. It is expected that a waiver program similar to the Agriculture Waiver will be adopted for horse and livestock sources. Allocations would be incorporated into the waiver as benchmarks. Operators would be responsible for developing their own monitoring plan, which could include group monitoring to reduce costs, and then if monitoring shows exceedances of benchmarks, operators would implement iterative BMPs until benchmarks are attained.
9.8	On page 86 for Agricultural Implementation Alternatives please be explicit and describe how the 99% reduction could be met by the BMPs.	The 99% dry-weather reduction from horse/intensive livestock facilities could be met by eliminating the direct deposition of manure and urine into surface waters by excluding animals from surface waters and proper manure management. Responsible parties will have a variety of ways to achieve these load

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		reductions. The staff report presents some reasonably foreseeable methods of compliance with the allocations.
9.9	Receiving water targets, in-stream concentrations, are N (1.15 mg/L) and P (0.115 mg/L). Page 72. These require a Reverse Osmosis level of treatment from street runoff or sewers, and are more stringent targets then the background levels (open space loading – page 54). Setting such low targets means there is no way to ever clean up the river enough to get it delisted with no end to expensive monitoring. It would seem to be more cost effective and better governance policy to begin to ratchet down the targets from the existing basin plan targets stepwise until the algae problem is in remission. If the targets remain as proposed, the responsible parties will be in an endless and expensive cycle trying to meet a better goal than nature can provide. This point cannot be overstated – setting an impossible target is not acceptable and is oppressive. This TMDL discredits other helpful regulations that have been promulgated and will make your future task to regulate less credible.	The concentrations of TN and TP are not numeric targets nor are they allocations. They are the numbers used to translate the response indicator numeric targets to the TN and TP load and waste load allocations assigned to the various sources. The sources only need comply with their load and wasteload allocations, none of which require a reverse osmosis level of treatment.
9.10	The TMDL states that the most sensitive beneficial use that is impaired by the algae/nutrients is Cold Water Aquatic Habitat for steelhead. This seems to ignore our local flash flooding semi-arid hydrology. 1. In wet years when there are migratory fish flows that connect the estuary to the upper watershed, there is little to no impact of algae because it is ripped out by the high flows. See page 28 for inter-annual variations. Al Lydecker (reference page 28ff) concludes that algae growth occurs in the dry years <u>after</u> a big flow year. The TMDL study needs to show if the Dissolved Oxygen problems and other so called algae/nutrient effects are significant during the wet migratory flow years. Page 10 calls flow a “co-factor” with nutrients for algae growth, it should be a “dominating” factor. The modeling to estimate the loading was based on calibration to one dry year 2008, and did not consider the impact of wet (migratory) flow years, Pg 58 ff. 2. In the dry season (May 1- Sept 30) the summer pools in Reach 4 that allow fish to survive do need as much help as is practicable and these pools will form better chances for survival if the algae	There is an impact due to algae in wet years. The comment refers to page 28 of the staff report, which concludes that conditions after large storm events favor algae growth. The model did consider the impact of wet flow years on the relationship between chl *a* and TN. The measured data were obtained from just two sampling events during one year (2008), which does not capture the variability in algal biomass due to varying hydrological conditions. Therefore, modeled data, which were based on four years of data (2006-2008 and 2010) were used in addition to the 2008 measured data to represent a more complete set of hydrologic conditions. The dry-weather allocations apply throughout the growing season in order to attain algal biomass

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	levels are within certain limits and the dry season is considered (not dry days). This dry day or dry season needs to be clarified. Dry days or dry weather does not make sense for the summer pools.	targets in all reaches.
9.12	Special studies should also include the following: 1. Establish a local standard for the bio-algal biomass target. The 150 mg/L is from the east coast, where rivers flow all year around, and should not be used for the Ventura River. The "Confirming" language on page 92 is suggesting a predetermined result on a highly judgmental subject. Recommend to keep this result open to local data and then set targets based on the local situation. 2. Cost effective monitoring – making best use of existing water quality monitoring, develop cost sharing mechanism for responsible parties, and recommend cost effective indicator testing/sampling methods. 3. Refined source assessment for all the categories with little or no data – before final targets are determined. 4. Effects of wet years (migratory fish flow) on the TMDL, including the inter-annual effect. 5. Revise targets for nutrients based on the special studies. 6. Funding. Locals are being tasked with doing the studies that the regional board needs to be doing before a TMDL is issued.	The total algal biomass target of 150 mg/m^2 is based on the CA NNE BURC I/II boundary. The NNE BURC thresholds have been independently reviewed by University of California scientists, in addition to US EPA and State and Regional Board scientists, and found applicable to California streams and rivers. The TMDL allows for existing monitoring that is conducted under other programs to be leveraged to assist in meeting these monitoring requirements. The TMDL specifies special studies to refine the source assessment. The studies all will be completed prior to the application of numeric targets. The TMDL is based on the best available information and is technically sound. If stakeholders wish to collect additional data to potentially revise the TMDL, they may do so.

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	Al Lydecker	
10.1	I believe the proposed targets are, on the whole, sensible. The *p*H and phytoplankton standards are pretty standard and although they are relatively meaningless in this case they will do no harm. (The phytoplankton limit of "20" has never, to my knowledge, been exceeded on the Ventura River and the upper *p*H limit of 8.5 is almost never reached – values below the lower limit, given the buffering capacity of this region's waters, will, thankfully, probably never be seen).	Comment noted. The phyptoplankton limit is for the Estuary and it has not been observed as being exceeded because there are very few data points for chlorophyll a in the Estuary. The two Estuary modeling approaches predict that the current loading to the Estuary attains the TMDL numeric targets; thus, it is the loading capacity of the river that is driving the TMDL rather than the loading capacity of the Estuary.
	I did notice a conflict in the report: as shown in the table, the 150 mg/sq-m Chl-a standard is a *seasonal average*. Elsewhere however, e.g. on page 35, paragraph 1, there's the implication that this value should not be exceeded. There's a big difference between the two. As a measurement in a particular reach at a specific point in time the 150 limit is often exceeded, as a seasonal average it rarely is. In the work Julie Simpson and I did in 2003 the seasonal average (nine measurements from May through September) was something over 200 mg/sq-m at Foster Park and Shell Road, it was less than 150 at Stanley Drain and Main Street. And 2003 was a big algal year, as big if not bigger than 2008 (especially at Foster Park where two distinct and substantial algal blooms occurred). There's a good chance that a 150 *seasonal* average might rarely be exceeded anywhere on the river. This should be clarified – and the Board should probably insist on the 150 as a not-to-be-exceeded standard.	The target of 150 mg/m^2 is applied as a seasonal average. The averaging period will be examined when the TMDL is reconsidered.
	The fact that the proposed monitoring program only mandates two dry-season surveys, one early and the other late in the season, further complicates the problem – it's impossible to calculate a seasonal average with only two measurements. As an example, what inference can be made if one measured value is above 150 and the other quite a bit below? (I've made earlier comments to the Board that the high degree of inaccuracy in any kind of algal density measurement, much less the statistically flawed current protocol, will always be open to legal question.)	The monitoring has been revised to include monthly monitoring in the growing season, rather than two events. The SWAMP protocol for algal biomass sampling is the best available sampling protocol. Sampling protocols may evolve or change over time and be incorporated into the TMDL monitoring program.

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	The % cover business is also tricky. Does it include both floating algae and benthic algae? And will diatoms also be included in the calculation? Filamentous algae rarely cover over 30% of a reach (we only reach values this high during big algal blooms – perhaps once in every 3-4 years); diatoms are almost always over 30% – except during the peak of big algal blooms. The Board needs to be more explicit on what exactly is to be measured.	The TMDL specifies that the percent cover numeric target is for attached an unattached algae. Based on SWAMP sampling protocol, attached algae refers to diatoms growing on the substrate (i.e., diatoms). The percent cover sampling protocol is a semi-quantitative visual assessment, but it does detect the presence of diatoms.
10.2	I find the way "orchard agriculture" was handled and assessed in the report to be totally inadequate, even perverse. For all other nutrient contributors the report uses either a wide range of available data or values selected from the literature (usually a reasonable selection). But for orchard ag values from the Ventura County Agricultural Irrigated Lands Group (VCAILG) are used without question; there is no comparison of these values with what others might have found, and no examination to see if they might be anomalous in light of current literature is ever made. And, lo and behold, the conclusion is thus: "*Nutrient concentrations in dry-weather agricultural runoff were obtained from 2007, 2008, 2009, and 2010 VCAILG annual monitoring reports. Concentrations for orchards are zero based on the two VCAILG monitoring sites in the Ventura River*." As a result orchard ag, almost the sole form of agriculture in the watershed (and thus almost all ag in the watershed), makes no contribution to dry-season nitrogen. It's also quite odd that wet weather nitrogen from orchards is barely a tenth of that from other agriculture, but since the TMDL totally disregards wet-weather nutrients I'll let that go.	The two VCAILG monitoring sites are located in receiving waters that are normally dry. However, the TMDL is also based on Regional Board experience overseeing the Agriculture Waiver program and concludes that there is generally no dry-weather runoff from orchard sites due to the common use of drip irrigation for these crops and permeable soils. In addition United Water Conservation District conducted studies funded by Proposition 13 in the Calleguas Creek and Santa Clara River watersheds and found that all orchards in the study were equipped with micro sprinklers, and most irrigation events observed at these sites did not result in surface runoff. However, acknowledging the fact that there can be orchards with dry-weather runoff, the TMDL requires agriculture to reduce dry-weather loading by 50%, regardless of the assumptions used in the source assessment. The concentrations of nitrogen in orchards were obtained from four years of local, crop-specific data. The TMDL does not totally disregard wet-weather nutrients, but rather assigns wet-weather allocations for every source in the watershed.

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10.3	In contrast, the report goes on to state "*Open spaces can contribute background nutrient loading due to decay of natural vegetation as well as nitrogen- and phosphorus-bearing rocks and soils. The nutrients are mobilized during wet-weather events or as groundwater discharge to surface waters*." It assigns a dry-weather nutrient contribution for open space taken from a SCCWRP report of "*the geometric means of all of the sampling events were 0.33 mg/L and 0.05 mg/L for total nitrogen and total phosphorus, respectively*." The amount of dry-weather flow calculated as coming from open space is taken from North Fork Matilija dry-season stream flows – which I should point out, consist almost totally of groundwater inflows. (As an aside, dry-weather nitrogen concentrations this high are never seen on the North Fork.) So we have the peculiar situation that open space, i.e. totally undeveloped land, is contributing significant dry-weather nutrients, but orchards contribute nothing. To make it worse, while the open space contribution is directly related to groundwater inflows into the relative pristine North Fork Matilija, the Ojai ag contribution is totally divorced from any groundwater pathway.	The open space load estimate includes contributions from groundwater because the land uses above the open space surface water sampling sites, which contribute to surface water quality via groundwater, are all open space. The surface water samples were collected downstream of un-impacted land uses, such that any other potential sources were excluded. Similar data are not available for estimating nutrient loading to the river from agriculture via groundwater flow. Any groundwater that contributes to surface water flow that is downstream of agricultural land uses is also downstream from other land uses. It is not possible to parse out the contribution from agriculture. Regardless, open space is not assigned a load allocation, while agriculture is. The open space load is considered background load. This means that under the load reduction scenario, no load reductions are expected from open space. Thus, all other discharges must reduce an amount that accommodates the constant background loading in order to achieve the required watershed-wide reductions needed to meet the TMDL. Again, the TMDL requires all agriculture to reduce dry-weather loading to surface water by 50%.
	Groundwater in the report is handled totally separately, and groundwater nutrients are treated as totally divorced from any particular land use. The only groundwater value used in the report is from the lower Ventura basin: "*The estimated groundwater discharge to surface water for the Lower Ventura River sub-basin is 1,254 acre-feet/year or 1.73 cfs (Daniel B. Stephens & Associates, Inc., 2010). The average nitrate-N concentration is about 1.23 mg/L as measured in surrounding wells (VCWPD, 2010)*." This is in spite of the fact that there are plentiful available data on extraordinary groundwater nitrate concentrations around Ojai – groundwater that any reasonably unbiased conclusion must	Agriculture has been in practice in the watershed for hundreds of years and, while there is a likelihood that the nutrient concentrations in the groundwater basins in the Ventura River watershed are due, at least in part, to overlying agriculture land uses, it is not possible to identify a responsible party for the amount of nutrients that are discharged to surface water from agriculture via groundwater. Instead, the TMDL treats this loading as background and assigns responsibility to all other sources for their contribution. Based on

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	suspect comes predominately from agriculture. How perverse a conclusion can it be that ag, which nation-wide is responsible for the vast majority of nutrient pollution in our streams, is having little or no effect to tributary waters in the Ventura basin? The report only gives one summary table as an overall conclusion. Again, we only need to look at the dry-weather part of the table (current wet-weather contributions being deemed acceptable – ignoring any possible contributions to high groundwater nitrate that surely must occur during this season) to note that agriculture contributes only half the nitrogen of urban areas, and half that of horses and livestock. Not to mention that its contribution ends up being only a little above that from open space. What should have been included in the report is this kind of summary table showing the source contributions for each sub-basin. I'd recommend doing such an addition, especially for the San Antonio Creek watershed – which has the highest concentrations of nitrate (by far) in the Ventura basin. It would show how little agriculture – according to the report – contributes to the overall nitrogen problem for that stream. Looking at this question from a different viewpoint, one must ask why then, if livestock, septic systems and urban areas are contributing so much nitrogen to the watershed, and ag so little, is there so much nitrogen in upper San Antonio – where orchard ag is concentrated – and much less nitrogen in Canada Larga or Lion Creek (cattle and horses) or Pirie Creek (urban and horses) or on the Ventura above the San Antonio confluence (urban and horses). And why do other streams tributary to orchard ag – like Carpenteria Creek, Glen Annie, or any of the other creeks monitored by SBCK or the UCSB LTER in neighboring Santa Barbara County – show the same extraordinary high nitrogen values (these creeks being mostly uncomplicated by the urban and horse uses circa Ojai).	the TMDL linkage analysis, required in-stream concentrations will be achieved under this scenario, including an explicit margin of safety to account for uncertainty. The staff report includes subwatershed summaries of nutrient loading from the various sources. See Tables 4-6, 4-7, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-17, 4-19, and 4-20, as well as the text of Section 4 of the Staff Report. In response to this comment, the information in these tables and the text were combined to determine the relative source contribution in the San Antonio Creek subwatershed. The results are as follows: dry-weather urban runoff accounts for 50% of the dry-weather load, dry-weather runoff from agriculture accounts for 36% of the load, dry weather flows from undeveloped areas account for 15% of the load, and dry-weather runoff from horses/livestock accounts for less than 1% of the load. Thus, contrary to this comment's assertion, the existing source assessment does in fact account for the large contribution of dry-weather loading from agriculture in the San Antonio Creek subwatershed. Given the land use percentages in this subwatershed, and the well-documented concentrations of nutrients in runoff from the sources therein, this subwatershed-based estimate of the various sources is reasonable, even without counting the contribution of nutrients due to groundwater upwelling. A similar subwatershed assessment was done for Cañada Larga, and, contrary to the assertions of this comment, agriculture contributed 0% of the total nitrogen load. In sum, the existing source assessment adequately reflects land uses throughout the watershed.

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10.4	I find the part about septic system contributions almost incomprehensible. The report seems to imply that these percentages, "*Nutrient loss rates to surface water of 32% nitrogen and 10% phosphorus were obtained from a nutrient groundwater/surface water interaction study for the Malibu Lagoon (Lai, 2009) and were applied for the calculation of nutrient loads*" were applied to the estimated number of septic systems using a figure of "a daily average effluent flow rate of 200 gallons per household, and effluent nutrient concentrations of 36 mg/L nitrogen and 6 mg/L phosphorus." That 32% of the nitrogen from septic systems reached the river is, of course, pure conjecture – highly suspect conjecture, and most probably wrong at that. Ignoring this, I would note that the totals, howsoever arrived at, are septic tank *nutrients applied to the soil of the watershed* and not any measurement of surfacing seepage from failing leach fields or subsurface seepage measured downslope. In other words, while the nutrient contribution from orchard agriculture is measured by what *might run off* of the land (in a very few measured, perhaps un-typical, selected locations which give an unsurprising answer of nothing), the septic system contribution is measured by what is *applied to* the land. An equitable treatment of orchard ag, using similar principals, would to sum up the total amount of nutrients in applied fertilizer within the watershed and multiplying it by some assumed fair percentage for whatever is not used by plants and trees in the area where applied (I suspect something above 50%, perhaps far above 50%) – this result would then, as in the case with septic systems, be assumed to be orchard agriculture's contribution to the stream. Conversely, if we were to apply the orchard ag methodology to septic systems, we would have to assume, in the absence of any direct evidence of failed systems leaking septage directly into the creek, a zero dry-weather contribution. Really guys, this is nonsense. The same principals of evaluation need to be applied to all contributors.	The assumption that 32% of the nitrogen from septic systems reaches the river is not conjecture. This assumption was based on a groundwater/surface water interaction study for septic systems near Malibu Lagoon and applied to Ventura River. The staff report clearly states assumptions made in the source assessment. This comment has provided no evidence to support the claim that the assumption is "highly suspect and most probably wrong". For septic systems, results from a groundwater/surface water interaction study for septic systems near Malibu Lagoon were applied to Ventura River. The Regional Board is not aware of any such study for agriculture. While it might be possible to estimate the nutrient loading to groundwater from over fertilization, it is not possible at this time to estimate the amount of those nutrients that make their way to surface water. Furthermore, because no information is available about the residence time of nitrate in the groundwater, it is not possible to determine who is responsible for the contamination or when it occurred. Thus, a source assessment or load reduction scenario for agriculture discharges to surface water via groundwater flow was not possible. At this time, there are not enough data to characterize this source. Language has been added to the staff report that discusses the potential impact.of discharges to land on surface water via groundwater flow. Language has also been added to the implementation section of the TMDL, similar to the language in the existing Agriculture Waiver, that agriculture sources in the Ventura River watershed must implement management practices to reduce nutrient discharges to groundwater.

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	The same kind of criticism could, and should, be applied to how horses and livestock in the basin were evaluated. A better way might have been to summarize nutrient values from streams characteristic of particular land uses and to use these values in proportioning land use contributions – as was done in the report when evaluating open space contributions. Rather than using a similar and consistent methodology of evaluating the nutrient contribution from each and every land use, this report uses nearly a different method for each. The result is a totally unfair comparison. The thought that the big nutrient problem – above the WWTP – comes from horses and cattle or from septic systems is ludicrous. Yeah, Ventura County, the wild west of Southern California!	This comment's recommendation for an alternative source assessment for horses and livestock is noted. However, the TMDL source assessment is not required to use the same methodology for all sources. Instead, the proposed TMDL uses the best available data to provide a reasonable assessment of the contribution of nutrients from all sources.
10.5	Figure 5-10. The problem throughout the report is the assumption that there is such a thing as an average year on the Ventura. The report acknowledges significant variation in annual rainfall but fails to note that resulting differences in runoff magnify this variation by nearly an order-of-magnitude. Or that this extreme variation produces major changes in the ecological functioning of the river. In spite of the fact that major algal blooms are almost solely a product of a big rainfall winter, and occur only once every three or four years, a Ventura "average" was used to model the relationship between Chl-a density and total nitrogen. I would note that even if we assume that the model was even remotely reasonable (which I surely wouldn't do) it can only predict 21% of the relationship between Chl-a and TN concentration (the r-square value). In other words nearly 80% of any possible relationship between algal density and TN concentrations remains unpredictable. Also note that model results bear little relationship to the UCSB data – data that I have documented in a number of reports to be flawed in and of itself. To derive the relationship between Chl-a and TN 150 mg/sq-m was simply plugged into the equation to determine that the magic TN number was 1.15 mg/L. It should have been the other way around: using an equation in which TN was the dependent and not the independent variable. Not that it really matters since the number is based on almost nothing to begin with – we already know we often see little to no algae with concentrations much	This comment has provided no evidence that the model is unreasonable. Figure 5-10 is not based on an average year. It is based on a combination of measured and modeled data in order to represent inter-annual variability. The staff report clearly describes the effect of large winter storms on algae growth in the following growing season (see section 2.3 of the staff report). The correlation between chl *a* and TN in Figure 5-10 is based on a combination of both model data and measured data. The modeled data, which were based on four years of data (2006-2008 and 2010) were used in addition to the 2008 measured data to represent a more complete set of hydrologic conditions. As noted in the staff report, the correlation between algal biomass an in-stream nutrient concentrations (r^2 of 0.21) is a significant source of uncertainty in the TMDL. For this reason, the TMDL includes an explicit margin of safety and requires ongoing concurrent algal biomass and nutrient concentration monitoring. In addition, one of the

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	higher, and lots of algae at times when concentrations are much lower. 1 mg/L or something around that value is probably as good as anything else. It is, after all, the upper proposed limit in the UCSB study. It would have been far better to simply use the conclusions of the UCSB report – based in large part on a study of the applicable literature – and simply selected 1 mg/L. Adding insult to injury, in spite of a log-log r-square value of 0.21, the report then makes this statement: "*The resulting explicit margin of safety is 8%. This explicit margin of safety is applied to account for uncertainty in the algal biomass numeric target of 150 mg/L and the relationship between the required in-stream nutrient concentrations necessary to attain this value*."	special studies in the TMDL is designed to strengthen the empirical relationship between algal biomass and nutrient concentrations using measured data. Once a number of years of data have been collected that adequately bracket different hydrologic years, from drought conditions to high-flow years, the TMDL may be revised to adjust the required in-stream nutrient concentrations based on an updated correlation between algal biomass and in-stream nutrient concentrations. The linkage analysis can be revised and improved as more data are collected when the TMDL is reconsidered. In the meantime, the proposed TMDL results in real, on-the-ground progress towards attaining water quality standards and restoring the Ventura River to its full beneficial uses.
10.6	As a second step nitrate is then modeled along the main stem. The problem, again, being that if there is no such thing as an average year there can be no such thing as a typical concentration at various reaches. I assume that any line between the measured annual minimums and maximums would have been deemed acceptable. The range of minimum and maximum nitrate concentrations at particular locations is even wider than shown (practically zero at Main Street and for quite a distance above in years like 2002), thus a reasonable question to ask might be "what kind of modeling result would have been rejected"? I would venture to say only something completely absurd. Someone should have asked me, I'd have been happy to simply sketch in a reasonable line for anyone buying lunch. It would have been far less costly, and far more understandable, to simply plot the mean (or geomean) nitrogen concentrations for all the SBCK and OVSD data collected at the various sampling locations over the more than 12 years of sampling. The fact that such a plot would have looked somewhat similar to the modeling results is no justification for dubious modeling hocus-pocus.	The model was not run based on an average year. Section 5.2.1 of the staff report explains the model inputs and calibration and validation data. It is correct that the 2008 UCSB study data were used to define the upstream boundary conditions for water quality parameters. This is because this was the only full set of data available for water quality parameters. However, eight years of flow data were used to define the upstream boundary conditions for flow. The range of minimum and maximum nitrate concentrations are shown for the calibration and validation data sets. The calibration results show that the model predicts reasonably well for nitrate-nitrogen, total nitrogen, total phosphorus and benthic chlorophyll-a using data from 2008. In addition, the model was validated reasonably well for flow rate and nitrate-nitrogen using data sets from 2006 and 2007.

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	I find it interesting that only the reach from the Ojai WWTP to Canada Larga shows modeled nitrate concentrations higher than the algal 1.15 mg/L TN limit (the left-hand graph). The graph on the right shows TN instead of nitrate. There is no description in the report on how they went from nitrate to TN, but given the similar shapes of the curves I would assume that a percentage was simply added. That allowed them to show a lot of the river below the San Antonio confluence with higher TN than their 1.15 mg/L standard. Thus justifying the regulatory requirements of the TMDL. Note, however, that the river above the San Antonio confluence has TN concentrations below 1.15 – arguably we should then never see algae above this point. But we do. The highest algal densities following big rainfall winters are precisely to be found in this section: the middle part of reach 4 above the San Antonio confluence.	The comment appears to misunderstand how the model was applied. Because Santa Barbara Channelkeeper does not collect TN data (only total dissolved nitrogen, which does not include particulate forms of nitrogen), the model results could only be validated for nitrate and phosphate. Nitrate was not converted to TN by addition or any other means. The "left-hand" graph (Figure 5-8 of the staff report) shows the predicted nitrate concentrations compared against calibration and validation data for nitrate. Based on the model's ability to track the trend of in-stream nitrate concentrations (approximately equal to the median of measured in-stream concentrations), it was found that the model could be used to predict TN. The graph "on the right" (Figure 6-1 of the staff report) shows predicted TN under existing conditions and predicted TN under the load reduction scenario. The comment appears to imply that the model was used to justify a predetermined TMDL. This is not the case. Instead, the TMDL was set based on the results of the model. Limited available algal biomass data show that the lower watershed (and San Antonio Creek) have the highest algal biomass densities. The Regional Board and EPA are not aware of any data for the middle of Reach 4 above San Antonio Creek that show the highest algal biomass.

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10.7	The real problem is that the TMDL was fundamentally flawed. It has been framed as the solution to a filamentous algae problem – and algae where then used to get at the real problem of excessive nutrients. The focus should have been on the nutrient problem and not on algae, which are, after all, only a symptom of the problem. And algae are only one symptom among many, and not the worse symptom (the adverse impacts of algae on the Ventura being mostly esthetic and not environmental). The worse symptom, the excessive growth of aquatic plants, goes totally unmentioned in the report even though the river below the WWTP is choked, not with algae, but with aquatic plants every 2 out of 3, or 3 out of 4, years (as is much of San Antonio Creek). And if the real problem is excessive nutrients a case could surely have been made for a total nitrogen limit of less than 1.15 mg/L.	The proposed TMDL addresses both filamentous algae and benthic algae as well as excessive growth of aquatic plants. Recognizing the inter-annual shift between algae and aquatic plants, the TMDL assigns allocations for nutrients, not just numeric targets for response indicators. The required in-stream TN concentration is based application of the California NNE using the best available data. Once a number of years of data have been collected and studies have been completed to strengthen the empirical relationship between nutrient concentrations and response indicators, while adequately bracketing different hydrologic years, the TMDL may be revised to adjust the required in-stream nutrient concentrations.
10.8	If ag is only given 6 years so should all the others. It has, after all, been 13 years since the consent decree was signed, and this TMDL has already taken an unconscionably long time to complete (a process begun, if I remember correctly, in 2006-07 and still not complete): thus the quicker the implementation the better. Everyone should be given the same 6 years (except in the case of the WWTP where meeting the requirements will necessitate considerable capital expense). I would prefer an even shorter time frame: most of the compliance measures being relatively inexpensive and easily initiated BMPs. Some effort should be undertaken to make up for all this lost time.	The consent decree contained a time schedule. While other TMDLs were required to be completed in a shorter time frame, the Ventura River Algae TMDL was required to be adopted by March 2012. This schedule was then extended to March 2013. The TMDL has been developed in accordance with the consent decree schedule. In addition to agriculture, municipal separate storm sewr system dischargers have six years to attain allocations. Other stormwater and non-stormwater permittees must attain allocations immediately. The only other dischargers (except Ojai WWTP) who have a longer schedule are horse and livestock facilities and onsite wastewater treatment systems, who have a 10-year schedule because of the need to set up new regulatory programs to implement allocations.

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10.9	The monitoring program seems rather skimpy, to say the least: "*At a minimum algal biomass and pre-dawn DO sampling shall be conducted two times per growing season (May 1st to September 30th); once early in the season and once late in the season. All other parameters, including algal percent cover, shall be monitored monthly.*" Really? This requirement, except for the algal biomass sampling, is actually much less that what has been going on for years in the Ventura watershed. Now that relatively inexpensive sensors are available for automatic recording of DO we can surely do better. The best part of the TMDL is the establishment of a minimum daily DO limit of 7 mg/L. I complement the staff on making this recommendation and urge them to hold fast. Measuring DO is relatively inexpensive and fool-proof, and can now be made convenient with the use of these new recording devices. The Board should drastically increase the required monitoring.	The monitoring requirements have been revised. Algal biomass sampling has been increased to monthly in the growing season and continuous DO monitoring is now required.
	Bill O'Brian, NextGen Engineering	
11.1	Thanks much for your efforts to develop and explain this TMDL to many groups in the Ojai Valley. Here are a few comments mainly related to the horse owners and livestock category. The impossible targets continue to be a source of resentment by the regulated community - a more supportable approach is to ratchet down basin targets as local data from the monitoring shows what the target should be.	Responsible parties are not required to meet numeric targets, but rather allocations that take into account feasibility of compliance. In addition, the implementation plan provides flexibility in how dischargers can attain allocations.
	Emily Ayala, Friends Ranches, Inc.	
12.1	My family has been farming in the Ventura watershed since the 1870's and have seen many changes over the years. Agriculture has continually become more efficient in water use. We have also become better stewards of nitrogen and other chemical inputs on our cropland not only because it is good for the environment but because it is cost effective. On properties which erosion can be problematic we have worked with the	Comment noted.

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	local Natural Resources Conservation District to shore-up banks and mulch our orchards to reduce and filter runoff. We were one of the first to join the Ventura County Agricultural Irrigated Lands Group (VCAILG) through the farm bureau wanting to be good stewards of our waterways. Many of the above measures are costly but we have done them as we care for our soils and waterways in the long term.	
12.2	As long time residents of the Ojai Valley we care deeply about the natural and economic environment in which we live and work. Probably more than any other segment of the economy we are deeply aware of the finite resource of water which fuels our homes and orchards. Most farmers in the Ojai Valley and adjacent to waterways are land owners, not absente landowners or leasers of agricultural properties. Most farmers in the watershed are growing tree crops which have up to a 100 year life span. You will find Ojai farmers do care and are interested in agricultural practices for long-term profits. We care about our soil as we plant crops which we hope will bear fruit for many decades.	Comment noted.
12.3	With little time to attend meetings I have read the documents regarding the TDML targets proposed and from them feel that the science is flawed. Is the proposed moss/algae TDML based on a seasonal southern California waterway? From my understanding the data used to develop these TDMLS was from two fairly dry time periods in the past 10 years (interestingly the springs of 2005 and 2011 were wet years and neither of these wet years was included in the studies for this algal TMDL). Why were historical data not included (there are lots of historical data on file in various places)? Why no comparison of the Ventura River water data with other similar rivers (Sespe River)? Why are all data from different seasons lumped; it is obvious that we have wet and dry seasons in this watershed?	The approach for setting the total algal biomass numeric target and establishing the TMDL is based on the Nutrient Numeric Endpoints (NNE) developed especially for California by USEPA and the State and Regional Water Quality Control Boards. In order to establish sound nutrient and algal biomass numeric targets, data is needed for a suite of biological, chemical and physical co-factors that interact and influence each other. A full set of data was only available for 2008 through a UCSB study funded by the Regional Board to determine the relationship between algal biomass and in-stream nutrient concentrations. To account for inter-annual variability, a numerical model was applied in order to represent a more complete set of hydrologic conditions. Complementary hydrological and

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		chemical parameters were included in the model for other years when available. The model also contained estimates of nutrient loading from natural landscapes; that number was derived from a study including data from a selection of open-space sites spread across southern California's coastal watersheds, including Sespe Creek (Stein and Yoon, 2007). Because it is recognized as the critical condition period, the model was run for the dry season only. Once more algal biomass an in-stream nutrient concentration data is available, it may be possible to obtain a more accurate description of the watershed dynamics that would not require the use of modeling. The TMDL may be reconsidered at that time.
12.4	I was raised and we continue to farm along the middle section of the Ventura River, just downstream from the Matilija Dam. Every year that I can recall there has been moss/algae in the Ventura River. I also have memories of moss/algae in the Sespe River during summer months; the section of the Sespe River which I am familiar with has no human residents or agriculture upstream. So could it perhaps be a natural event to have seasonal moss/algal growth in our southern California waterways? We do not typically receive any rain for at least 5 months of the year (sometimes 9 months), I do not have a clue as to how any rational biologist could propose making the river flow enough during the summer and fall months to get moss/algae to not bloom. Less water in the system means slower moving water resulting in warmer water resulting in algae. The Sespe River which has no legal diversions in its upper reaches is currently bone dry – does the EPA propose we make this river flow in the summer and fall months too? Can we use data from the slow-flow sections of the Upper Sespe or other southern California streams with less human impact to learn about non-point natural yearly variations in our streams? Maybe these types of studies are available already. If so they do not seem to be included in the myopic report for	A certain amount of algae in the river is a natural phenomenon; however, the algae growth in the Ventura River is excessive due to nitrogen and phosphorus enrichment from anthropogenic sources. The high levels of algal biomass cause significant increases in diurnal dissolved oxygen and pH swings and result in decreased overall DO. The excessive algae also interfere with recreation and degrade important habitat. Studies are in fact available on levels of algae in natural streams. For example, recent surveys conducted from 2008 to 2010 by the Perennial Stream Assessment, the Reference Condition Management Program, and the Stormwater Monitoring Coalition show that 100% of reference reaches have algal biomass values of 50 mg/m^2 or less. The proposed TMDL sets a algal biomass target of 150 mg/m^2.

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	this algal TMDL. Where did the model for this TMDL come from? Is the EPA using some one-size-fits-all metric designed for a wetter climate?	The proposed TMDL employs the NNE approach to set numeric targets, which is the preferred approach for the State of California. One of the key attributes of the NNE approach is that it takes into account site-specific conditions. There is an in-depth analysis of the physical, chemical, and biological conditions in the watershed.
12.5	Our waterways have some very interesting geological formations; sulfur hot springs, young soils rich in iron and other sediments that become soluble in water and other mineral-rich seasonal springs that contribute to the waterway. How do these formations and springs affect the dissolved nutrients and minerals in the water? Another can of worms are of course the illegal farmers (marijuana) which are continually found farming in the Los Padres National Forest lands and whom use many chemical inputs under absolutely no regulation. Undoubtedly their chemicals will be considered 'agricultural' and us legal farmers will be charged with their contributions to the waterways.	The Ventura watershed does comprise some nutrient-bearing geological formations that contribute to loadings in the river, and those were considered in the TMDL. The staff report indicates that "open spaces can contribute background nutrient loading due to…nitrogen- and phosphorus-bearing rocks and soils." Those natural sources were estimated to account for 2.2% and 12.5% of the dry-weather and wet-weather total nutrient loads, respectively. Natural background was included in the modeling effort, and was taken into account when setting allocations. Under the proposed TMDl and the existing Agriculture Waiver, farmers are only responsible for their discharges and will not be held accountable for other discharges to the river.
12.6	The stated goal of the entire regulatory scheme is to restore fish populations. Focusing on algae in the dry season when large parts of the river don't reach the surface and therefore are not suitable for fish seems silly. Somewhere along the way it has been suggested that the pumping of groundwater is to blame for the low water levels yet the Sespe River currently is not flowing and there is no pumping or diversions on its upper reaches. What part of "seasonal waterway" do the biologists working on this project not understand? Some propose restricting groundwater pumping to increase flows in the river, yet again similar rivers in the area without pumping are not flowing so will restricting wells really help? This saga will get very interesting if the water board is proposing to adjudicate	The goal of the proposed TMDL is to address the algae and nutrient-related impairments in the river in order to protect aquatic life as well as other beneficial uses such as recreational and aesthetic enjoyment of the river.

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	groundwater pumping in the area as it will result in shutting off the main water supply for much of our region's population.	
12.7	Again, farmers and other working folk such as myself are not paid to attend workshops and public meetings. We do tend to be reactive at the last minute when faced with these regulations. It's not that we don't care. It's simply a matter of being paid for our efforts takes priority in our lives. I believe real problem lies in simply having too many people using water and not enough rain falling consistently in our watershed. We cannot control the clouds nor can we move folks out of the area. Before regulations come down on farmers, pumpers or our local sanitation district can we not get some better data? There are reams of historical data out there. Let's compare our streams with like streams with less human inputs, look at seasonal data, use as many years as possible and come up with seasonal solutions. Again, I think you will find that farmers in our valley are spending their time and money to protect our soils and water sources; we rely on them.	The proposed TMDL is based on a sound scientific approach and takes into account the specific characteristics of the Ventura watershed. The TMDL is based on all available data and considers seasonality. The TMDL monitoring program (section 7.4) recommends that further investigation be made in the form of special studies to clarify the relationship between nutrients and algal biomass in the river. Once these studies are completed, the TMDL may be reconsidered and revised allocations may be adopted in light of new findings.
	Jim Churchill and Lisa Brenneis, Churchill Orchard	
13.1	Thank you for considering our comments on the draft TMDL regulations for the Ventura River watershed. We are Casitas agricultural water customers and farm 17 acres of certified organic citrus and avocados in the east end of the Ojai Valley. We've been farming there since the 1970s. We're residents of the Ojai Valley and so we're stakeholders on several fronts. We also care about the natural environment and other species we share this valley with. This is a working watershed - we rely on local water which is shared by Ojai and Ventura residents - human and animal.	Comment noted.
13.2	We believe the TDML targets proposed in this regulation are unrealistically low and based on flawed data. The Ventura River flows seasonally and water levels in the dry season are typically very low. Yes, algae levels will test high in the summer when the water levels are this low. Is the EPA using some one-size-fits-all metric designed for a wetter climate?	The proposed TMDL is not a one-size fits all approach, but is rather a site-specifc approach developed specifically for California by the USEPA and the State and Regional Water Boards. The TMDL includes a thorough evaluation of the biological, chemical and physical parameters of the

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		system, and used local data to accurately describe and resolve the levels and sources of algal biomass in the Ventura watershed.
13.3	We believe the expensive mandated monitoring schemes for agricultural RPs are regulatory handwaving that will not result in cleaner water. The proposed reg does not discuss point-source targets that could be remediated and result in cleaner river water. Rather RPs are assigned reduction targets as a group and are monitored extensively, but as a group. We are already part of the VCAILG group. Even though we use mulch and extensive ground cover and have no measurable runoff we pay along with everybody else. Thus, there is no incentive for an individual water user named as part of an RP group to take any remedial action as our individual behavior is not tracked. In these circumstances, why would noncomplying individual voluntarily spend many thousands of dollars to address runoff?	The TMDL monitoring will be implemented through the Agriculture Waiver or other regulatory order. The proposed TMDL states that existing monitoring under the waiver can be used to comply with the TMDL requirements. Individual grower behavior is tracked as part of the recently renewed Agriculture Waiver. If water quality benchmarks are exceeded, VCAILG develops a water quality management plan that specifies BMPs that must be implemented by individual growers. If growers enrolled in VCAILG do not implement the BMPs identified in the water quality management plan, they are out of compliance with the Waiver and this TMDL. If, after implementation of BMPs, water quality benchmarks are still exceeded, then growers must implement additional BMPs.
13.4	We believe that the stated goal of the entire regulatory scheme is to restore fish populations, and the new regulations focus on the dry season, when large parts of the river don't reach the surface and are thereby groundwater. We have been informed by a member of Santa Barbara Channelkeeper that the proposed TMDL targets for agricultural RPs could only be reached by remediation of ground water and controlling groundwater pumping during the dry season, which is not under the aegis of the regulatory body issuing these regulations. "...Contribution from agriculture is likely not as significantly related to tail water, or surface water discharge, as it is to groundwater. And	The goal of the proposed TMDL is to address the algae and nutrient-related impairments in the river in order to protect aquatic life as well as other beneficial uses such as recreational and aesthetic enjoyment of the river. The Agriculture sources in the watershed must only comply with their load allocations, which call for a 50% reduction in surface water runoff. Based on the TMDL linkage analysis, the required in-stream concentrations will be achieved under this scenario, including an explicit margin of safety to account for uncertainty.

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	groundwater controls and implementation requirements that would actually affect groundwater loading (for example, application ratios), aren't in the TMDL. This may be a significant gap and may make it hard to reach the TMDL targets." We believe the effect of the proposed regulation will not be the restoration of native steelhead populations in our rivers but the slow strangulation of water users in our watershed under a regulatory load we cannot bear.	However, in response to the Channelkeeper comment, the proposed TMDL has been revised to require growers to implement nutrient management and irrigation management to reduce the amount of nutrients that are loaded to the groundwater. These requirements are already included in the recently renewed Agriculture Waiver and many orchards are already employing these BMPs. It is not expected that the TMDL will place an undue burden on agriculture.
	Phillip Sherman, Hawks and Associates	
14.1	I don't have much more to comment on. I just want to make sure that you have taken into account the natural load coming out of the upper watershed	The load reduction scenario takes into account natural background loading.
14.2	Also I hope you can clear up the understanding about the impact on the horse population	Staff has met with horse owners in order to explain the TMDL requirements.
14.3	More on the bio-digester would be helpful.	More information has been added about the proposed biodigester.
	California Association of Sanitation Agencies (CASA) Tri-Tac	
15.1	The California Association of Sanitation Agencies (CASA) and Tri-TAC appreciate the opportunity to provide comments on the proposed Total Maximum Daily Load (TMDL) for algae in the Ventura River. CASA and Tri-TAC are statewide organizations comprised of members representing local public agencies and other professionals responsible for wastewater treatment. Tri-TAC is sponsored jointly by CASA, the California Water Environment Association, and the League of California Cities. The constituency base for CASA and Tri-TAC collects, treats and reclaims more than two billion gallons of wastewater each day and serves most of the sewered population of California.	Comment noted.

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15.2	CASA and Tri-TAC do not routinely comment on individual TMDLs proposed by the various regional water boards. The exception to this practice is when a draft TMDL would establish a precedent or conflict with efforts to ensure consistent statewide approaches to important regulatory and technical issues. While we understand that the Los Angeles Regional Water Board staff has involved local stakeholders in the development of the proposed TMDL and has in many important respects taken into account the site-specific conditions in the watershed, there are several aspects of the draft TMDL that we believe raise potentially precedential issues of statewide importance. These issues, which relate to the calculation and implementation of the proposed waste load allocations (WLAs) for publicly owned treatment works (POTWs), are the focus of our comments.	Comment noted. This TMDL is not precedential nor does it conflict with any efforts to promote statewide consistency regarding the application and translation of narrative nutrient objectives. In fact, this TMDL furthers the efforts of statewide consistency in the area of the nutrients through the use of the CA NNE. The CA NNE framework is expected to be adopted by the SWRCB as part of the upcoming statewide nutrient policy.
15.3	As an initial matter, we note that the Ojai Valley Sanitation District (OVSD) has made a significant investment in reducing its contributions of nutrients to the river, at significant cost to the District's ratepayers. As a result, OVSD's discharge now averages 4.0 mg/L of nitrogen. In order to achieve the proposed WLA of 3.0 mg/L in dry weather, the District will be required to spend an additional $15 to 17 million. This is a significant burden on the District's ratepayers for a minimal environmental benefit, given the lack of information in the staff report supporting an algal impairment. CASA and Tri-TAC believe the TMDL, at least in its initial phase, should focus on reducing inputs that have not been historically regulated, such as horses, and full implementation of actions by stormwater agencies and agriculture as required by their recently renewed NPDES permits and conditional waiver, and then fully evaluating the impacts of the reductions prior to further ratcheting down on the District which has already reduced its contribution of nutrients by 90 percent.	Since 1996, OVSD has improved the quality of its discharge and TN concentrations measured in effluent and the receiving water have markedly decreased. After three Cease and Desist Orders, OVSD completed a treatment upgrade to comply with its NPDES permit requirements. While this upgrade is acknowledged, this TMDL is necessary to attain the biostimulatory substances objective and further reductions in nutrient loading are warranted. Moreover, a small change (i.e. 1 mg/L) in effluent concentration, especially during the critical period of the growing season, has a significant impact on in-stream nutrient concentrations and expected algal biomass response (See reduction scenario model results, Figures 6-1 and 6-2). Additionally, algae communities reproduce and proliferate very quickly and respond to changing environmental conditions over very short time periods.

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		There is sufficient information in the staff report documenting an impairment. The staff report presents considerable data and analysis documenting an impairment and nonattainment of the biostimulatory substances water quality objective. See response to comment 5.14. This TMDL equitably assigns responsibility for load reductions to all sources in the watershed and considered both the feasibility of implementation and relative source contribution when assigning allocations. In order for this TMDL to be successful and restore beneficial uses it is necessary that all responsible parties attain their allocations. This includes the OVSD, especially because during the critical condition, their effluent comprises 90% of the flow in the lower watershed and the majority of the total nitrogen load.
15.4	Existing and Final WLAs Should be Calculated Based on Design Flow The allocation calculations for OVSD are based on the assumption that the wastewater treatment plant will continue to discharge at the existing flow rate. This is directly contrary to federal regulations, which provide that "[in the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow." (40 CFR §122.45(b).) This approach is problematic in that it limits the ability of the plant to accept higher flows in the future. By assigning load-based allocations and not utilizing design flow as the basis for the calculations, the TMDL prevents OVSD from considering actions that bring more flow into the wastewater plant, such as connecting properties now using septic systems or accepting dry weather diversions of urban runoff. Although the wastewater plant might have capacity for the flow, additional reductions to nutrient concentrations would be required to accept additional flow because of the load-based allocation limits.	See response to comment 4.2 and 4.5

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	Additional nutrient reductions beyond the proposed effluent targets of 3 mg/L TN and l mg/L TP would require OVSD to install reverse osmosis treatment at the exorbitant cost of S75 million. Due to the high expense that would be required for such treatment, the proposed WLAs based on actual flows would be equate to a "taking" of 0.9 MGD in treatment plant capacity. In accordance with federal regulations, the allocations for OVSD should be calculated based on the plant's design flow of 3.0 mgd.	
15.5	Seasonal Allocations for POTWs Would be Consistent with the TMDL and Current Practice For POTWs, the use of wet and dry day allocations as proposed in the TMDL is not a good fit. Unlike other categories of sources such as stormwater, dry and wet weather discharges from POTWs are relatively constant. While it is true that a storm event may cause elevated flows for a limited period of time, any modifications to the wastewater treatment plant to address allocations will not be designed to operate differently during dry and wet weather. Therefore, the separation of dry and wet days for the purposes of compliance with the TMDL will not provide any relief for OVSD. We do understand the relevance of dry and wet weather to the impairment the TMDL is designed to address. While using wet days does not make sense, using wet and dry seasons is consistent with the way in which POTWs operate. Dry season WLAs will protect beneficial uses, would be consistent with the numeric targets, and are supported by data and analysis provided in the Draft TMDL Staff Report. Given that the performance of any secondary treatment system is temperature dependent and performs best under stable operating conditions, seasonal allocations are more appropriate than dry-weather/wet-weather allocations. In addition, due to inflow/infiltration, increased influent flows are typically experienced during rainfall events and lead to reduced nutrient removal. The reduced performance due to	In response to comments from OVSD, the TMDL has been revised to provide OVSD with seasonal allocations. See response to comment 4.1

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	increased influent flows may last for an extended period of time during the winter season (the season that does not correspond to the algal growing season) because multiple rainfall events may occur in succession. These multiple rainfall events may not allow for the secondary treatment system to stabilize back to normal operating conditions until the winter season ends and influent flows are allowed to stabilize for an extended period of time. Allocations based upon dry-weather/wet-weather days do not capture the most influential changes in the environment that lead to reduced nutrient removal and do not always coincide with the algal growing/non-growing season. In contrast, seasonal allocations do capture the most influential changes and may be selected to coincide with the algal growing/non-growing season. The numeric targets established to interpret the biostimulatory objective are applied in the Draft TMDL as seasonal averages during the growing season. The application of nutrient allocations outside of the growing season to address targets that are only applicable during the growing season is not supported. The Draft Staff Report does not provide any additional information to support the need for allocations during all dry weather rather than just the growing season. Given that the TMDL already includes an 8% explicit margin of safety, applying conservative loads over half the year is not warranted. The use of seasonal allocations is consistent with existing precedent. Two of the nutrient TMDLs cited as precedent for this TMDL (Malibu Creek and Chorro Creek) include some form of seasonal allocation. The Malibu Creek TMDL includes separate allocations that apply during the summer (April 15 to November 15) and winter (November 16 to April 14) periods, and the Chorro Creek TMDL includes orthophosphorus allocations that only apply in May through September. We are unaware of any TMDLs for nutrients that have included dry day and wet day WLAs. If the Regional Water Board continues to pursue WLAs based on wet and dry weather days notwithstanding these comments and our support of the use of the seasonal allocations, the dry weather WLA should be set to	The TMDL defines the dry season as May 1st – Sept. 30th and most of the data (i.e. algal biomass and DO) used in the TMDL analysis was measured during this time frame. However, in southern California it is quite common to have warm springs (March, April) and/or warm autumns (October, November) and it is possible for algal impairments to be manifested during these times (Photo Record 2001-2012, Al Lydecker). Thus, the dry-weather allocations work to protect the river during warm spring and/or fall periods and constitutes an important part of the TMDL implicit margin of safety. Finally, the explicit margin of safety does not make the need to apply conservative loads through the use of annual dry-weather/wet-weather day allocations unnecessary. Both an implicit and explicit margin of safety are needed to address the uncertainty in this

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	automatically adjust based on the number of dry weather days each year. The currently proposed dry weather WLAs are annual mass-based limits assuming 331 dry weather days per year. No allocations are provided for the OVSD for dry weather beyond 331 days in a given year. If there are, for example, 340 dry weather clays in a particular year, OVSD would have to discharge a zero mass of nutrients on the extra nine days in order to remain in compliance with the TMDL.	TMDL.
15.6	Use of Performance-Based Limits Set at the 90th Percentile is Inappropriate The use of performance-based limits for the wet days allocation in the TMDL is not warranted or consistent with the approach used to set wet day allocations for the other sources. For all other sources, with one exception, the wet day allocation is set to the Basin Plan objective for nitrate-N+nitrite-N. The approach is justified by the fact that wet season discharges of nutrients are not contributing to the impairments of the biostimulatory objective observed during the growing season. As a result, the applicable criterion is the Basin Plan objective. The one exception to this approach (wet day allocations in the Estuary) is due to the fact that there is no Basin Plan objective applicable to the Estuary. This is not the case for the reach to which OVSD discharges. There is a Basin Plan objective of 10 mg/L nitrate-N+nitrite-N that is applicable to the reach downstream of the discharge that has been used historically for the effluent limit for OVSD. For consistency with the other sources, 10 mg/L of nitrate-N+nitrite-N should be utilized as the allocation during the non-growing season for OVSD. No performance-based limits are necessary for OVSD. The treatment process installed for removal of	The approach for setting wet-weather allocations for OVSD is not intended to set a precedent for how performance based limits should be developed in other permits or Regional Board orders. The approach of utilizing the 90th percentile of existing performance was chosen because it results in consistently attainable interim dry-weather WLAs and final wet-weather WLAs. Performance of the Ojai WWTP has improved over the last several years. Because the 90th percentile value is calculated based on the last 12 years of data, it includes older data when the plant had worse performance, and thus underestimates current performance (i.e., results in higher concentrations); this results in regularly attainable WLAs. It is not appropriate to provide direction to or reference future regulations, permits, or orders, which are not related to this TMDL, in the text of this TMDL. Language is not needed regarding the

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	nutrients will continue to operate year round, and OVSD has a consistent track record of improving performance regardless of effluent limitations, as evidenced by the fact that current discharge concentrations are well below the existing effluent limitation of 10 mg/L. Given recent improvements in nutrient removal by the OVSD treatment plant, it appears that OVSD may be able to currently attain the proposed performance-based limits, which are set as daily maximum limits based on the 90th percentile of historical effluent results. However, in addition to the fact that these limits are not needed or appropriate, we are concerned about the precedent set by use of a 90th percentile basis for establishing performance-based limits, particularly when the limits would be applied as daily maximum values. If OVSD had not made these recent improvements, use of the percentile standard would mean that the plant would be out of compliance 10% of the time. We recommend that, at minimum, the Regional Water Board include language in the TMDL stating that use of a 90th percentile to set daily maximum performance-based limits is not appropriate in most situations.	applicability of setting WLAs based on the 90th percentile of existing performance in other situations.
15.7	The TMDL Targets Should be Modified. Numeric targets included on page 3 of Attachment A to Resolution No. R 12-XXX contain percent algal cover thresholds in addition to chlorophyll a biomass thresholds. However, the *Nutrient Numeric Endpoints for California Report* (CA NNE) contains only chlorophyll a biomass thresholds. Percent cover estimates are semi-quantitative at best, tend to be highly variable and uncertain, and were not incorporated by the technical experts into the CA NNE. Therefore, the percent cover numeric targets on page 3 of the TMDL should be removed. Chlorophyll a biomass estimates can be supplemented with ash-free dry weight if Regional Water Board staff wish to confirm or provide additional support to the chlorophyll a estimates. Also included on page 3 of Attachment A to Resolution No. RI 2-	The targets do not need to be modified. See Response to comment 2.7 and 2.8. All of the TMDL special studies are optional. Responsible parties may undertake any special study they chose. It is not necessary to re-word the description of a potential special study.

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	XXX is a numeric target for dissolved oxygen in the estuary. Regional Water Board staff should consider using regional (southern California) estuary dissolved oxygen thresholds developed as part of the State's estuary NNE project. This would correspond to a daily minimum (CMC) of 4.0 mg/L and a minimum monthly average (CCC) of 6.3 mg/L assuming salmonids are present. Additionally, it should be noted in the TMDL that dissolved oxygen measurements in the estuary should be collected at mid-depth to account for the utilized habitat of the species that were used in developing the threshold. Benthic species assumed to be much more tolerant of low dissolved oxygen were intentionally avoided in selecting oxygen sensitivity data used in developing the thresholds. On page 9 of the Attachment A to Resolution No. R12-XXX, Regional Water Board staff proposes a special study to "confirm the conclusion that an algal biomass target of 150 mg/m" is fully protective of aquatic life and minimizes the risk of low DO events". The 150 mg/m^2 chlorophyll a biomass target represents the upper boundary determined through consensus by a panel of experts to be presumptive of unimpaired conditions. Based on the opinions expressed by the panel of experts, it is likely that algal biomass levels at or exceeding 150 mg/m^2 is fully protective of aquatic life. For this reason, the proposed special study should be re-worded to more accurately reflect this expert opinion as suggested below: "Determine if algal biomass targets above 150 mg/m^2 are also fully protective of aquatic life and minimize the risk of low DO events". In summary, we recognize the work that has been done to improve the proposed TMDL. However, we believe additional revisions to address the issues identified above are needed prior to adoption. Thank you for your consideration of our comments.	