State of California California Regional Water Quality Control Board, Los Angeles Region

RESOLUTION NO. R4-2008-0XX September 11, 2008

Amendment to the Water Quality Control Plan for the Los Angeles Region through revision of the Waste Load Allocations for the Calleguas Creek Watershed Nitrogen Compounds and Related Effects Total Maximum Daily Load

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region, finds that:

- 1. The Federal Clean Water Act (CWA) requires the California Regional Water Quality Control Board, Los Angles Region (Regional Board) to establish water quality standards for each water body within its region. Water quality standards include beneficial uses, water quality objectives that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. Water bodies that do not meet water quality standards are considered impaired.
- 2. CWA section 303(d)(1) requires each state to identify the waters within its boundaries that do not meet water quality standards. Those waters are placed on the state's "303(d) List" or "Impaired Waters List". For each listed water, the state is required to establish the Total Maximum Daily Load (TMDL) of each pollutant impairing the water quality standards in that waterbody. Both the identification of impaired waters and TMDLs established for those water must be submitted to the United States Environmental Protection Agency (U.S. EPA) for approval pursuant to CWA section 303(d)(2). For all waters that are not identified as impaired, the states are nevertheless required to create TMDLs pursuant to CWA section 303(d)(3), however TMDLs pursuant to subdivision (d)(3) do not require U.S. EPA approval.
- 3. The elements of a TMDL are described in 40 CFR 130.2 and 130.7 and section 303(d) of the CWA, as well as in USEPA guidance documents (e.g., USEPA, 1991). A TMDL is defined as "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR 130.2). Regulations further stipulate that TMDLs must be set at "levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality" (40 CFR 130.7(c)(1)). The regulations in 40 CFR 130.7 also state that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters.

- 4. Upon establishment of TMDLs by the State or USEPA, the State is required to incorporate the TMDLs along with appropriate implementation measures into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). The Basin Plan and applicable statewide plans serve as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board.
- 5. A consent decree between U.S. EPA, Heal the Bay, Inc. and BayKeeper, Inc. was approved on March 22, 1999, which resolved litigation between those parties relating to the pace of TMDL development. The court order directs the U.S. EPA to ensure that TMDLs for all 1998-listed impaired waters be established within 13 years of the consent decree. The consent decree combined water body pollutant combinations in the Los Angeles Region into 92 TMDL analytical units. Waterbodies impaired by eutrophia, algae, ammonia, and odor in Calleguas Creek watershed were scheduled in the Consent Decree as analytical unit 1. The TMDL for eutrophia, algae, ammonia and odor, Resolution No. 02-017, was adopted by the Regional Board on October 24, 2002.
- 6. The Calleguas Creek Watershed is located in southeast Ventura County, California, and in a small portion of western Los Angeles County, and drains an area of approximately 343 square miles from the Santa Susana Pass in the east, to Mugu Lagoon in the southwest. Current land use is approximately 26 percent agriculture, 24 percent urban, and 50 percent open space.
- 7. The Regional Board's goal in establishing the above-mentioned TMDL was to maintain the warm water fish and wildlife habitat (WARM, WILD) and groundwater recharge (GWR) beneficial uses of Calleguas Creek as established in the Basin Plan. Nitrogen compounds at high concentration may stimulate the production of excessive algae mats which has been observed in certain reaches of Calleguas Creek and can result in eutrophic conditions characterized by low dissolved oxygen concentrations which is harmful to aquatic life. Additionally, ammonia is known to cause toxicity to aquatic organisms.
- 8. At a public meeting on October 24, 2002, the Regional Board adopted an amendment to the Basin Plan to include a TMDL for Nitrogen Compounds and Related Effects in the Calleguas Creek watershed. The Calleguas Creek Nutrient and Related Effects TMDL included concentration based maximum daily effluent limits (MDEL), average monthly effluent limits (AMEL), and mass based daily waste load allocations (WLAs) for ammonia for publicly owned treatment works (POTWs) including Hill Canyon Wastewater Treatment Plant (WTP), Simi Valley Water Quality Control Facility (WQCF), Moorpark Wastewater Treatment Plant (WTP), Camarillo Water Reclamation Plant (WRP), and Camrosa Water Reclamation Facility (WRF).
- 9. The Regional Board considered the entire record, including the California Environmental Quality Act (CEQA) documentation, written and oral comments received from the public, and the Regional Board staff's response to the written

comments. The Basin Plan amendment to incorporate the TMDL for Nutrient and Related Effects for Calleguas Creek, Resolution 02-017, was adopted by Regional Board on October 24, 2002. Resolution 02-017 assigned waste load allocations (WLAs) to major publicly owned treatment works (POTWs).

- The TMDL for Nutrient and Related Effects for Calleguas Creek, Resolution No. 02-017 was approved by the State Board on March 19, 2003, the Office of Administrative Law on June 5, 2003, and the U.S. Environmental Protection Agency on June 20, 2003. The TMDL for Nutrient and Related Effects for Calleguas Creek, Resolution No. 02-017 is effective on July 16, 2003.
- 11. The National Pollutant Discharge Elimination System (NPDES) permits for the Hill Canyon WTP, Simi Valley WQCF, Moorpark Wastewater WTP, Camarillo WRP, and Camrosa WRF will be under consideration in the near future for renewal by the Regional Board. The Calleguas Creek Nitrogen Compounds and Related Effects TMDL waste load allocations will be incorporated into the permits in conformance with the Clean Water Act and related federal regulations.
- 12. In preparing the NPDES permit renewals, Regional Board identified a typographical error in the mass based daily WLAs for ammonia in the Calleguas Creek Nitrogen Compounds and Related Effects TMDL. Translating a concentration-based limit into a mass based daily limit requires multiplying the concentration-based limit by the flow rate. The mass based daily WLAs for ammonia, however, were incorrectly calculated as the product of the daily flow rate and the average monthly effluent limits (AMEL), rather than the daily flow rate and the maximum daily effluent limits (MDEL).
- 13. When the original TMDLs were adopted (2002) the practice at that time was to calculate the flow rate of a POTW and include it in the basin plan a static factor. Current practice, however, recognizes that POTW flow rates are dynamic. As a result, current mass-based limits that are incorporated into the basin plan will often be expressed as an equation that includes *Q*, or the flow rate, as one of its factors. The use of the POTW effluent flow rate to calculate mass based WLAs is consistent with other TMDLs recently approved by U.S. EPA.
- 14. This Basin Plan Amendment corrects the mass based daily WLAs for ammonia to be based upon the MDEL, and updates the WLAs to be consistent with the current practice of recognizing that flow is variable. The mass based WLAs for ammonia are corrected to be based on the maximum daily effluent limit, MDEL and the actual POTW effluent flow rate at the time the monitoring is conducted.
- 15. The mass based WLAs for ammonia in the Calleguas Creek Nitrogen and Realted Effects TMDL include a 10% explicit margin of safety to account for uncertainty concerning the relationships between WLAs and attainment of the water quality standards addressing algae and other listed stressors associated with nutrient loads.

- 16. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that the revisions of the WLAs for the Calleguas creek Nutrients and Related Effects TMDL do not include revisions to WQOs, and provide mass reduction to meet water quality objectives. Likewise, the amendment is consistent with the federal Antidegradation Policy (40 CFR 131.12).
- 17. The proposed amendment results does not alter the environmental analysis that was previously completed for the Calleguas Creek Nitrogen Compounds and Related Effects TMDL because correction of the mass based WLAs for ammonia will not result in different implementation actions than those previously analyzed for the Calleguas Creek Nitrogen Compounds and Related Effects TMDL, or different effects upon the environment. The environmentally significant WLA remains the MDEL, which is the technically derived ceiling to the amount of ammonia that can and should be authorized. Correcting the mass-based daily limit to be consistent with the MDEL, as originally intended, has no potential to result in a change in the physical environment. As such, this amendment is both consistent with the prior CEQA documentation, and is itself not a "project" within the meaning of CEQA.
- 18. The public has had a reasonable opportunity to participate in the review of the revision to the Waste Load Allocations of the Basin Plan amendment, Resolution 02-017. A draft of the TMDL revisions was released for public comment on July 1, 2008; a Notice of Hearing was published and circulated 45 days preceding Board action; Regional Board staff responded to oral and written comments received from the public; and the Regional Board held a public hearing on September 11, 2008 to consider adoption of the revision to the Waste Load Allocations of the Basin Plan Amendment, Resolution 02-017. The revised WLAs are proposed in Attachment A to this resolution.
- 19. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b).
- 20. The Basin Plan amendment incorporating a revision for the Waste Load Allocation section in the Calleguas Creek Nutrient and Related Effects TMDL must be submitted for review and approval by the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL), and the U.S. Environmental Protection Agency (U.S. EPA). The Basin Plan amendment will become effective upon approval by OAL and U.S. EPA. A Notice of Decision will be filed following these approvals.

THEREFORE, be it resolved that pursuant to Section 13240 and 13242 of the Water Code, the Regional Board hereby amends the Basin Plan as follows:

- 1. Pursuant to sections 13240 and 13242 of the California Water Code, the Regional Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the amendment to Chapter 7 of the Water Quality Control Plan for the Los Angeles Region to incorporate the revisions of the Waste Load Allocation in the Calleguas Creek Watershed Nitrogen Compounds and Related Effects TMDL, Table 7-7.1 Calleguas Creek Nitrogen Compounds and Related Effects TMDL: Elements, , and the corresponding reference to Chapter 5, as set forth in Attachment A hereto.
- 2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the SWRCB in accordance with the requirements of section 13245 of the California Water Code.
- 3. The Regional Board requests that the SWRCB approve the Basin Plan amendment in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward it to the Office of Administrative Law (OAL) and the United State Environmental Protection Agency (U.S. EPA).
- 4. If during its approval process Regional Board staff, State Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity, or for consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.
- 5. The Executive Officer is authorized to request a "No Effect Determination" from the Department of Fish and Game, or transmit payment of applicable as maybe required to the Department of Fish and Game.

I, Tracy J. Egoscue, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on September 11, 2008.

Tracy J. Egoscue Executive Officer Date

Attachment A to Resolution No. R4-2008-0XX

Revision of the Waste Load Allocation of the

Calleguas Creek Watershed Nitrogen Compounds and Related Effects TMDL

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on September 11, 2008.

Amendments

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Chapter 7. Total Maximum Daily Loads (TMDLs) Calleguas Creek Nitrogen Compounds and Related Effects TMDL

This TMDL was adopted by: The Regional Water Quality Control Board on October 24, 2002. This TMDL was approved by: The State Water Resources Control Board on March 19, 2003. This TMDL was approved by: The Office of Administrative Law on June 5, 2003. This TMDL was approved by: The U.S. Environmental Protection Agency on June 20, 2003. This TMDL was revised and adopted by: The Regional Water Quality Control Board on [Insert date].

This TMDL was re-approved by: The State Water Resources Control Board on [Insert date]. This TMDL was re-approved by: The Office of Administrative Law on [Insert date]. This TMDL was re-approved by: The U.S. Environmental Protection Agency on [Insert date]. This TMDL is effective on July 16, 2003

The elements of the TMDL are presented in Table 7-7.1 and the Implementation Plan in Table 7-7.2

Table 7-7.1.	Calleguas Creek Nitrogen Compounds and Related Effects TMDL:
Elements	

Element	Calleguas Creek Nitrogen Compound	and Relate	ed Effects		
Problem Statement	Elevated nitrogen concentrations (ammonia, nitrite and nitrate) are causing impairments of the warm water fish and wildlife habitat, and groundwater recharge beneficial uses of Calleguas Creek. Nitrite and nitrate contribute to eutrophic effects such as low dissolved oxygen and algae growth. Ammonia contributes to toxicity.				
Numeric Target	Numeric targets for this TMDL are listed	d as follows	s:		
(Interpretation					
of the numeric	1. Total Ammonia as Nitrogen (NH ₃ -N)			
water quality			entration (mg/L)		
objective, used		One-hour	Thirty-day		
to calculate the	Reach	average	average		
load	* Mugu Lagoon	8.1	2.9		
allocations)	* Calleguas Creek, South	5.5	2.4		
,	* Calleguas Creek, North	8.4	3.0		
	* Revlon Slough	5.7	2.9		
	* Beardsley Channel	5.7	2.9		
	* Arroyo Las Posas	8.1	2.6		
	* Arroyo Simi	4.7	2.4		
	* Tapo Canyon	3.9	1.9		
	* Conejo Creek (Confluence with Calleguas Creek to Santa Rosa Rd.)	9.5	3.5		
	 Conejo Creek (Santa Rosa Road to Thousand Oaks City Limit) 	8.4	3.4		
	* Conejo Creek, Hill Canyon Reach	8.4	3.1		
	* Conejo Creek, North Fork	3.2	1.7		
	* Arroyo Conejo (South Fork Conejo Creek)	5.1	3.4		
	* Arroyo Santa Rosa	5.7	2.4		
	2. Nitrate and nitrite as nitrogen (NO ₃ -1 <i>Constituent</i>	N and NO ₂ - Concentration			
	Constituent	Concentration	n (mg/L)		
	* NO3-N	10			
	* NO ₂ -N	1			
	* $NO_3 - N + NO_2 - N$	10			
	Numeric targets to address narrative obj freshwater and wildlife habitat are inten- objectives and may be revised based on studies conducted pursuant to the impler	ded to imple the results of	ement the narrative of monitoring and special		

Source Analysis	The principal sources of nitrogen into Calleguas Creek are discharges from the POTWs in the watershed and runoff from agricultural activities in the watershed.						
Linkage Analysis	Linkage between nitrogen sources and the in-stream water quality was established through a mass continuity model based on an evaluation of recent hydrodynamic and water quality data.						
Waste Load Allocations (for	The waste load al	location	s (WLAs	s) are as foll	lows:		
point sources)	POTWs Hill Canyon WTP ⁴ Simi Valley WQCF ⁵ Moorpark WTP Camarillo WRP ⁶ Camrosa WRF ⁷	MDEL ¹ (mg/L) 5.6 3.3 6.4 7.8 7.2	NH ₃ -N AMEL ² (mg/L) 3.1 2.4 2.6 3.5 3.0	Daily WLA ³ (lbs/day) <u>5.1xQ</u> <u>2.9xQ</u> <u>5.7xQ</u> <u>7.0xQ</u> <u>6.5xQ</u>	NO ₃ -N (mg/L) 9.0 9.0 9.0 9.0 9.0	NO ₂ -N (mg/L) 0.9 0.9 0.9 0.9 0.9 0.9	$ \frac{NO_{3}-N + NO_{2}-N}{(mg/L)} $ 9.0 9.0 9.0 9.0 9.0 9.0
Load Allocation (for non point sources)	The source analysis indicates that agricultural discharge is the major non- point source of oxidized nitrogen to Calleguas Creek and its tributaries. This source is particularly significant in Revolon Slough and other agricultural drains in the lower Calleguas watershed where there are no point sources of ammonia and oxidized nitrogen. Load allocations for non-point sources are: 						
Implementation	 Refer to Table 7-7.2 Several of the POTWs in the Calleguas Creek watershed will require additional time to meet the nitrogen (NO₃-N, NO₂-N, and NO₃-N + NO₂- N) waste load allocations. To allow time to meet the nitrogen waste load allocations, interim limits will be allowed for a period of four years from the effective date of the TMDL during which the POTWs will be required to meet the effluent limit for NO₃-N + NO₂-N only. Effluent limits for the individual compounds NO₃-N and NO₂-N are not required during the interim period. 						

¹ Maximum daily effluent limitation

² Average monthly effluent limitation

³ Q represents the POTW effluent flow at the time the water quality measurement is collected and a conversion factor to lb/day based on the units of measurement for the effluent flow.

⁴ Wastewater Treatment Plant

⁵ Water Quality Control Facility

⁶ Water Reclamation Plant

⁷ Water Reclamation Facility

	Interim Limits [*] for NO ₃ -N + NO ₂ -N Monthly Average Daily Maximum POTWs (mg/L) - Hill Canyon WTP 36.03 38.32				
	Simi Valley WQCF 31.60 32.17				
	• Moorpark WTP 31.5 32.01				
	Camarillo WRP 36.23 37.75 *The monthly average and daily maximum interim limits are based on the 95 th and 99 th percentiles of effluent performance data reported in the Calleguas Creek Characterization Study				
	3. The waste load allocations for ammonia will be applicable on the effective date of the TMDL. Interim limits for ammonia will be applicable for no more than 2 years starting from October 24, 2002 for POTWs that are not able to achieve immediate compliance with the assigned waste load allocations. The interim limits for ammonia may be established at the discretion of the Regional Board when a POTW's NPDES permit is reissued.				
Margin of Safety	In implicit margin of safety is incorporated through conservative model ssumptions and statistical analysis. In addition, an explicit margin of safety incorporated by reserving 10% of the load, calculated on a concentration asis, from allocation to POTW effluent sources.				
Seasonal	A low flow critical condition is identified for this TMDL based on a review				
Variations and	of flow data for the past twenty years. This flow condition was identified				
Critical	because less assimilative capacity is available to dilute effluent discharge.				
Conditions					

Table 7-7.2.	Implementation	Schedule
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IM	IPLEMENTATION TASKS, MILESTONES AND	COMPLETION DATE
	PROVISIONS*	
1.	WLA for ammonia apply to POTWs.	Effective Date of TMDL
2.	Interim Limits for NO_3 -N + NO_2 -N apply to	
	POTWs.	
3.	Formation of Nonpoint Source BMP Evaluation	
	Committee.	
4.	Submittal of Non point Source Monitoring	1 year after Effective Date
	Workplan by Calleguas Creek Watershed	of TMDL
	Management Plan – Water Resources/Water	
	Quality (CCWMP) Subcommittee. This	
	monitoring is to evaluate nutrient loadings	
	associated with agricultural drainage and other	
	nonpoint sources. The monitoring program will	
	include both dry and wet weather discharges from	
	agricultural, urban and open space sources. In	
	addition, groundwater discharge to Calleguas	
	Creek will also be analyzed for nutrients to	
	determine the magnitude of these loading and the	
	need for load allocations. A key objective of these	
	special studies will be to determine the	
	effectiveness of agricultural BMPs in reducing	
	nutrient loadings. Consequently, flow and	
	analytical data for nutrients will be required to	
	estimate loadings from nonpoint sources.	
5.	Submittal of Watershed Monitoring Workplan by	
	CCWMP Subcommittee. In addition to the	
	analytical parameters and flow data requirements,	
	the watershed monitoring program will establish	
	sampling locations from which representative	
	samples can be obtained, including all listed	
	tributaries. Monitoring results will be compared to	
	the numeric instream targets identified in this	
	TMDL to determine the effectiveness of the	
	TMDL. Data on the extent and distribution of	
	algal mats, scum and odors will be included in the	
	watershed monitoring program. The data will be	

* The CCWMP Subcommittee has offered to complete tasks 4 through 9 and 11. In the event the CCWMP Subcommittee fails to timely complete these tasks, the Regional Board will consider whether to amend this Implementation Plan to assign tasks to responsible dischargers in the regulatory approach. The Regional Board also reserves its right to take any other appropriate actions including, but not limited to, exercising its authorities under Water Code section 13267.

IM	PLEMENTATION TASKS, MILESTONES AND PROVISIONS [*]	COMPLETION DATE
6.	used to provide further verification of the model and refine the TMDL to address nutrient effects as appropriate. Submittal of Special Studies Workplan by CCWMP Subcommittee. These special studies include:	
	Monitoring of minor point sources for nutrients to confirm assumptions that the loadings from these sources are minor;	
	Monitoring of greenhouse discharges and runoff to assess loadings from these sources;	
	Monitoring of groundwater extraction and discharges in the Arroyo Santa Rosa subwatershed and other areas that may add significant nutrient loadings to Calleguas Creek; and	
	Additional studies of the type and extent of algae impairment in Calleguas Creek and Mugu Lagoon.	
7.	Complete Special Studies for minor sources, greenhouses, and groundwater loadings.	3 years after Effective Date of TMDL
8.	Completion of ammonia Water Effect Ratio (WER) studies.	
9.	Complete planning and preparation for construction of TMDL remedies to reduce non- point source nitrogen loads.	
10.	Interim Limits for NO_3 -N + NO_2 -N expire and WLAs for NO_3 -N, NO_2 -N, NO_3 -N + NO_2 -N apply to POTWs.	4 years after Effective Date of TMDL
11.	Complete Special Studies for algae impairments of Calleguas Creek, its tributaries and Mugu Lagoon.	5 years after Effective Date of TMDL
12.	Regional Board consideration of revised water quality objectives for nitrogen compounds based on monitoring data, special studies, and ammonia WER, if appropriate.	6 years after Effective Date of TMDL
13.	Final achievement of ammonia and oxidized nitrogen standards.	7 years after Effective Date of TMDL