Proposed Amendment to the Water Quality Control Plan – Los Angeles Region	R
to Incorporate the	E
Total Maximum Daily Load for Metals and Selenium in the Calleguas Creek, its Tributaries and Mugu Lagoon	V
Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on October 13, 2016	I
Amendments	S
Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-19 (Calleguas Creek Watershed Metals and Selenium TMDL)	E
This TMDL was adopted by the Regional Water Quality Control Board on June 8, 2006.	D
This TMDL was approved by:	
The State Water Resources Control Board on October 25, 2006. The Office of Administrative Law on February 2, 2007. The U.S. Environmental Protection Agency on March 26, 2007.	T
This TMDL is effective on March 27, 2007	E
This TMDL was revised by:	N
The Regional Water Quality Control Board on [Insert Date].	
This revised TMDL was approved by:	Ι
The State Water Resources Control Board on [Insert date]. The Office of Administrative Law on [Insert Date].	A
The U.S. Environmental Protection Agency on [Insert Date].	T
The following tables include the elements of this TMDL.	T
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	V
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The elements of the TMDL are presented in Table 7-19.1 and the Implementation Plan in Table 7-19.2

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Table 7-19.1. Calleguas Creek Watershed Metals and Selenium TMDL: Elements

TMDL Element	Calleguas Cree	k Watershed	Metals and S	Selenium TMDL				
Problem								
Statement	Three of fourteen reaches in the Calleguas Creek Watershed (CCW) including Revolon Slough, Lower Calleguas Creek – Reach 2, and							
, tutcincint	Including Revolon Slough, Lower Calleguas Creek – Reach 2, and Mugu Lagoon are identified on the 2002 Clean Water Act Section							
	303(d) list of water-qu							
	elevated levels of met	-	-	-				
	which were approved			• • • • •				
	February 2003, requir	•						
	Loads (TMDLs) to es	-		•				
	body can receive with			-				
	for listed metals and s	_						
	because, as a class of	-	• 1	* *				
	chemical properties th	iat influence ti	ien persistent	e, rate, and transport				
T 4	in the environment.	f	£					
umeric Targets	This TMDL established	• •		• • •				
	Toxics Rule (40 CFR Part 131) (CTR) criteria in dissolved fraction for							
	copper, nickel, and zinc, and in total recoverable form for mercury and							
	selenium; (2) fish tiss							
	mercury and selenium; and (4) sediment quality guidelines for copper,							
	nickel, and zinc for 303(d) listed reaches. Attainment of sediment							
	quality targets will be							
	quality targets will be							
	quality targets will be data, if available.	evaluated in c	combination v	vith sediment toxicity				
	quality targets will be data, if available. Copper Targets	evaluated in o		vith sediment toxicity Sediment Target ³				
	quality targets will be data, if available.	evaluated in o	combination v	Sediment Target ³ (SQuiRTs, ERL)				
	quality targets will be data, if available. Copper Targets	evaluated in o	combination value of the combination value of	vith sediment toxicity Sediment Target ³				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon	Water Qua (ug dissolver Dry Weather CCC 3.1*WER ¹	ality Target d Copper/L) Wet Weather CMC 4.8*WER	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2	Water Qua (ug dissolved Dry Weather CCC 3.1*WER ¹ 3.1*WER ¹	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 34000				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2 Calleguas Creek 3	Water Qua (ug dissolved Dry Weather CCC 3.1*WER ¹ 3.1*WER ¹ 25.9	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹ 26.3	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 34000 NA ²				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2 Calleguas Creek 3 Revolon/Beardsley	Water Qua (ug dissolved Dry Weather CCC 3.1*WER ¹ 25.9 3.1*WER ¹	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹ 26.3 4.8*WER¹	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 34000 NA ² NA ²				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2 Calleguas Creek 3 Revolon/Beardsley Conejo	Water Qua (ug dissolved Dry Weather CCC 3.1*WER ¹ 3.1*WER ¹ 25.9 3.1*WER ¹ 27.9	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹ 26.3 4.8*WER¹ 41.6	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 NA ² NA ² NA ²				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2 Calleguas Creek 3 Revolon/Beardsley	Water Qua (ug dissolved Dry Weather CCC 3.1*WER ¹ 25.9 3.1*WER ¹	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹ 26.3 4.8*WER¹	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 34000 NA ² NA ²				
	quality targets will be data, if available. Copper Targets Subwatershed Mugu Lagoon Calleguas Creek 2 Calleguas Creek 3 Revolon/Beardsley Conejo Arroyo Simi/Las Posas	Water Qua (ug dissolved Dry Weather CCC 3.1*WER¹ 3.1*WER¹ 25.9 3.1*WER¹ 27.9 29.3 copper in the TMDL le (CTR). Those crite VER has a default val t of 1.0, a study must gional Board through (Reach 1); and 3.69 for Reach 5) has been sur and Board approves si	dity Target d Copper/L) Wet Weather CMC 4.8*WER¹ 4.8*WER¹ 41.6 29.8 are expressed as the ria include a numeri use of 1.0 unless a si be conducted consist the state's basin plator lower Calleguas Committed to-were adopte-specific WERs for	Sediment Target ³ (SQuiRTs, ERL) (ppb dry weight) 34000 34000 NA ² NAC Expecific WER is approved. To stent with USEPA's WER an amendment process. A WERS an amendment process. A WERS are the component of the componen				

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Calleguas Creek Watershed Metals and Selenium TMDL Sediment targets are based on screening levels endorsed by the National Oceanic and Atmospheric Administration (NOAA) in their Screening Quick Reference Tables (SQuiRTs) (Buchman, 1999)						
Mercury Targets						
Media		Ta	rget			
Fish Tissue (Human Hea	olth) 0.3	mg methylmercury	•			
Fish Tissue (Wildlife)		<u> </u>	 			
* Trophic Level (TL)	3 ¹ <50 mm 0.03	3 mg methylmercur	v/kg wet weight			
* TL3 50-150 mm		5 mg methylmercur				
* TL3 150-350 mm		mg methylmercury				
Bird Egg (Wildlife)			nercury/kg wet weight			
Water Column		51 ug total mercury				
Subwatershed	(ug disso Dry Weathe	lved Nickel/L) r Wet Weather	Sediment Target ¹ (SQuiRTs, ERL) (ppb dry weight)			
	CCC	CMC	(ppb ary weight)			
Mugu Lagoon	8.2	74	20900			
Calleguas Creek 2	8.2	74	NA ²			
Calleguas Creek 3	149	856	NA ²			
Revolon/Beardsley	8.2	74	NA ²			
	160					
Conejo	160	1292	NA ²			
Arroyo Simi/Las Posas	168	958	NA ² NA ²			
Arroyo Simi/Las Posas 1 Sediment targets are based on s Administration (NOAA) in their 2 Sediment targets were not select	168 screening levels end Screening Quick R ted as alternative t	958 dorsed by the National Ceference Tables (SQuiRarget for this reach as it	NA ² Deceanic and Atmospheric Ts) (Buchman, 1999) is not listed on the 303(d) lis			
Arroyo Simi/Las Posas 1 Sediment targets are based on s Administration (NOAA) in their 2 Sediment targets were not select A study to support a si	168 screening levels encorrection Quick Reted as alternative to	958 dorsed by the National Ceference Tables (SQuiRarget for this reach as it	NA ² Deceanic and Atmospheric Ts) (Buchman, 1999) is not listed on the 303(d) lis For nickel has been			
Arroyo Simi/Las Posas 1 Sediment targets are based on s Administration (NOAA) in their 2 Sediment targets were not select A study to support a si submitted to the Region	168 screening levels ence Screening Quick Reted as alternative to the specific openal Board as	958 dorsed by the National Ceference Tables (SQuiRarget for this reach as it bjective (SSO) to dis currently u	NA ² Deceanic and Atmospheric Ts) (Buchman, 1999) is not listed on the 303(d) lis For nickel has been nder reviewed by the			
Arroyo Simi/Las Posas 1 Sediment targets are based on s Administration (NOAA) in their 2 Sediment targets were not select A study to support a si submitted to the Regional Board and U	acreening levels encerting Quick Reted as alternative to the specific of the s	958 dorsed by the National Ceference Tables (SQuiRarget for this reach as it bjective (SSO) to dis currently uff. If a SSO for the second sec	NA ² Decanic and Atmospheric Ts) (Buchman, 1999) is not listed on the 303(d) listed on the accordance of the control of the c			
Arroyo Simi/Las Posas 1 Sediment targets are based on s Administration (NOAA) in their 2 Sediment targets were not select A study to support a si submitted to the Region	168 screening levels ence Screening Quick Rected as alternative to the specific of the specifi	958 dorsed by the National Conference Tables (SQuiRarget for this reach as it bijective (SSO) for the SSO for the	NA ² Decanic and Atmospheric Ts) (Buchman, 1999) is not listed on the 303(d) listed on the accordance of the control of the c			

TMDL Element	Calleguas Cree	k Watershed	Metals and	Selenium TMDL	
		_	ality Target		
	Subwatershed		selenium/L)	Bird Egg	
	Subwatershed	Dry Weather	Wet Weather	(ug/g)	
		CCC	CMC		
	Mugu Lagoon	71	290	6	
	Calleguas Creek 2	5	290	6	
	Calleguas Creek 3	5	NA¹	6	
	Revolon/Beardsley	5	290	6	
	Conejo	5	NA¹	6	
	Arroyo Simi/Las Posas	5	NA^1	6	
	defined in the CTR. Zinc Targets				
		ality Target	G. 15 (TD 41		
		_	ed Zinc/L)	Sediment Target ¹	
	Subwatershed	Dry Weather	Wet Weather	(SQuiRTs, ERL)	
		CCC	CMC	(ppb dry weight)	
	Mugu Lagoon	81	90	150000	
	Calleguas Creek 2	81	90	NA^2	
	Calleguas Creek 3	338	214	NA^2	
	Revolon/Beardsley	81	90	NA^2	
	Conejo	365	324	NA^2	
	Arroyo Simi/Las Posas	382	240	NA^2	
ource Analysis	Administration (NOAA) in their ² Sediment targets were not selected. Significant sources of agricultural runoff, gramercury, open space wanalyzed as a function delivered during wet was between metals and page of the second selected.	metals and so oundwater se was also a sig n of wet and d weather for al	elenium inclu epage, and PO nificant source lry weather. He I constituents	de urban runoff, OTW effluent. For e. Sources were al	lso
	The source analysis in be a significant source and selenium in soil n occurring selenium in TMDL Implementation natural sources of met	e, and that nat nay be a contr groundwater on Plan includ	turally occurred ributing source may be a sig	ing nickel, copper, e, and that naturall nificant source. Th	zino y ne
Linkage Analysis	Linkage between sour established through a Program – FORTRAN	dynamic wate	er quality Hyo	drologic Simulation	ı

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TMDL Element	Callegua	as Creek \	Watershe	d Metals a	and Seleniu	ım TMDL			
		ns used to outsThe loa	calculate l	oad reduct	ions necess	ns for metals. ary to meet the late the load and			
Waste Load Allocations	In the case of copper, nickel, and selenium, waste load allocations (WLAs) were developed for both wet and dry-weather. The dry-weat WLAs apply to days when flows in the stream are less than the 86 th percentile flow rate for each reach. The wet-weather WLAs apply to days when flows in the stream exceed the 86 th percentile flow rate for each reach. Annual mass loads of mercury in suspended sediment we developed according to low, medium, and high annual flow categories. Publicly Owned Treatment Works (POTWs)								
	Publicly Own	<u>ied Treati</u>	ment Wo	rks (POTV	<u>(VS)</u>				
	POTWs during developed for because current attained. To State Board for selenium to reaches I time for distancessary to maximum a and 95th per	I nickel, in ring both we for mercury rent informed the TMDL data to sugar and are not seen and monthly reentile of the things o	total recovet and dry for POT mation incomplement deliger for POT elenium. The put in plant wasted available TLAs for Total wasted available available to TLAs for Total wasted available to TLAs for TLAs for Total wasted available to TLAs for	werable for y weather. Ws. Zinc licate that in ntation Plan sting of zin TWs becau Interim lim ace impler e load allood interim lindischarge of	Mass-base allocations numeric tarn includes and waste less POTWs nits are includentation in eations. The mits are set data, respective and the control of th	e applied to ed WLAs are are not set gets for zinc are a task to provide load allocations do not discharge uded to allow neasures e daily equal to the 99 th			
		Inte Daily	erim Monthly	Monthly F	inal	4			
	POTW	Maximum (ug/L)	Average (ug/L)	Average (ug/L)	lb/day				
	Hill Canyon WWTP (a)	20.0	16.0	<u>6.0</u>	0.70				
	Simi Valley WQCP	(b)	(b)	30.5	(c)				
	Moorpark WTP	(b)	(b)	30.5	(d)	_			
	Camarillo WRP (a)	57.0	20.0	<u>8.4</u>	<u>0.51</u>	_			
	Camrosa WRP	(b)	(b)	27.0	(d)				

ment	Callegu	as Creek V	Watershe	d Metals	and Selen	ium TMDI
		Inte	rim		Final ¹	
	POTW	Daily Maximum (ug/L)	Monthly Average (ug/L)	Daily Maximum (ug/L) ²	Monthly Average (ug/L) ²	lb/day
	Hill Canyon WWTP	20.0	16.0	(a)	(a) 6.0	0.11*WER - 0.04 0.7
	Simi Valley WQCP	(b)	(b)	31.0	30.5	(c)
	Moorpark WTP	(b)	(b)	31.0	30.5	(d)
	Camarillo WRP	57.0	20.0	(a)	(a) 8.4 9.0	0.12*WER - 0.04 0.51 0.54
	Camrosa WRP	(b)	(b)	27.4	27.0	(d)

If site-specific WERs are approved by the Regional Board, TMDL waste load allocations shall be implemented in accordance with the approved WERs using the equations set forth above. Regardless of the final WERs, total copper loading shall not exceed current loading. In addition, effluent concentrations shall not exceed the performance standards of current treatment technologies.

- Final mass-based WLAs for Hill Canyon WWTP and Camarillo WRP were calculated using current performance concentrations and design capacities applicable to POTWs. Current performance concentrations were calculated based on the 95th percentile of 2010-2015 data. Regardless of the final WERs, total copper loading shall not exceed current loading. In addition, effluent concentrations shall not exceed the performance standards of current treatment technologies. Concentration-based final limits will be included in the permits in accordance with NPDES guidance and requirements, but are not calculated as part of the TMDL.
- (a) Concentration-based final limits will be included in the permits in accordance with NPDES guidance and requirements, but are not calculated as part of the TMDL.
- (b) Interim limits are not required because the discharger is meeting the final limits.
- (c) Discharges from Simi Valley WQCP do not reach lower Calleguas Creek and Mugu lagoon_Lagoon during dry weather. Monitoring will be conducted and mass-based WLAs will be evaluated if targets are not met in Arroyo Simi/Las Posas or downstream reaches.

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(d) Discharger does not contribute loading during dry weather. Concentration-based WLAs apply during wet weather when discharges occur. Monitoring will be conducted and mass-based WLAs will be evaluated if targets are not met in receiving water and/or downstream reaches.

Interim and Final WLAs for Total Recoverable Nickel in Water Column

	Inte	erim		Final	
POTW	Daily Maximum (ug/L)	Monthly Average (ug/L)	Daily Maximum (ug/L)1	Monthly Average (ug/L)2	lb/day
Hill Canyon WWTP	8.3	6.4	(a)	(a)	0.3
Simi Valley WQCP	(b)	(b)	960.0	169.0	(c)
Moorpark WTP	(b)	(b)	960.0	169.0	(d)
Camarillo WRP	16.0	6.2	(a)	(a)	0.2
Camrosa WRP	(b)	(b)	858.0	149.0	(d)

¹ Concentration-based targets have been converted to total recoverable allocations using the CTR default translator of 0.998.

[Insert Date]

² Concentration-based targets have been converted to total recoverable allocations using the CTR default translator of 0.96

nent	~			Selenium TMDL				
	 ² Concentration-based targets have been converted to total recoverable allocations using the CTR default translator of 0.997. (a) Concentration-based final limits will be included in the permits in accordance with NPDES guidance and requirements, but are not calculated as part of the TMDL. (b) Interim limits are not required because the discharger is meeting the final limits. (c) Discharges from Simi Valley WQCP do not reach lower Calleguas Creek and Mugu lagoon during dry weather. Monitoring will be conducted and mass-based WLAs will be evaluated if targets are not met in Arroyo Simi/Las Posas or downstream reaches. (d) Discharger does not contribute loading during dry weather. Concentration-based WLAs apply during wet weather when discharges occur. Monitoring will be conducted and mass-based WLAs will be evaluated if targets are not met in receiving water and/or downstream reaches. 							
	A study to support a							
	Regional Board and							
	Board and U.S. EPA			11				
			ision to the	final WLAs for nickel				
	based on the approv	ved SSO.						
				~				
	Interims and Fina	I WLAs for N	Aercury in S	Suspended Sediment				
		Interim	Final	1				
	POTW	(lb/month)	(lb/month)					
	Hill Canyon WWTP	0.23	0.022					
	Simi Valley WQCP	0.18	0.031					
	Moorpark WTP	N/A	N/A					
	Camarillo WRP							
	Califarillo WKF	0.03	0.015					
	Camrosa WRP	0.03 N/A	0.015 N/A	_				
	Waste load allocation mercury effluent contract the total load in was load. Interim WLA concentration obser design flow, and ap	N/A ons for POTW oncentrations reter is assumed as for mercury rved in effluer oply to all flow	N/A /s are based nultiplied by equal to the are based out discharge are conditions.	on the median monthly y the design flow where e suspended sediment in the 90 th percentile and multiplied by the				
	Waste load allocation mercury effluent content total load in was load. Interim WLA concentration observables	N/A ons for POTW oncentrations reter is assumed as for mercury rved in effluer oply to all flow	N/A /s are based nultiplied by equal to the are based out discharge are conditions.	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appresent the statement of the total load in waste load. Interim WLA concentration obserdesign flow, and appreciated Stormwater PSDs include mass	N/A ons for POTW oncentrations reter is assumed as for mercury rved in effluer oply to all flow er Discharge	N/A Is are based multiplied by equal to the are based out discharge are conditions. It is (PSDs) It is established	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the				
	Waste load allocation mercury effluent contraction observation observation flow, and approximately a	N/A ons for POTW oncentrations inter is assumed as for mercury eved in effluence only to all flow er Discharge s-based WLAs coverable form	N/A Is are based multiplied by equal to the are based out discharge to conditions. Is (PSDs) Is established as . Mass-bases.	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the for copper, nickel, and ased WLAs are				
	Waste load allocation mercury effluent contraction the total load in war load. Interim WLA concentration obser design flow, and appreciated Stormwater PSDs include mass selenium in total redeveloped for merce	N/A ons for POTW oncentrations in ter is assumed as for mercury eved in effluer oply to all flow er Discharge s-based WLAs coverable form ury in suspend	N/A Is are based multiplied by equal to the are based out discharge to conditions. It (PSDs) It (PSDs) It is established as. Mass-baded sedimen	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appearmitted Stormwate PSDs include mass selenium in total redeveloped for mercincluded to allow ti	N/A ons for POTW oncentrations reter is assumed as for mercury rved in effluer oply to all flow er Discharge s-based WLAs coverable for ury in suspendent	N/A Is are based nultiplied by equal to the are based out discharge or conditions. It (PSDs) It is established as Mass-baded sediment rigers to put it is are based on the conditions.	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are in place implementation				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obser design flow, and appearmitted Stormwate PSDs include mass selenium in total redeveloped for mercure included to allow timeasures necessary	n/A ons for POTW oncentrations in ter is assumed as for mercury eved in effluent oply to all flow er Discharge s-based WLAs coverable form ury in suspend to achieve fin	N/A /s are based nultiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put in all waste load.	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are in place implementation and allocations. The daily				
	Waste load allocation mercury effluent contraction observation obs	N/A ons for POTW oncentrations in ter is assumed as for mercury eved in effluer oply to all flow er Discharge s-based WLAs coverable form ury in suspendent in to achieve fin thly average i	N/A /s are based multiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rigers to put in all waste loanterim limits	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are in place implementation and allocations. The daily is are set equal to the 99 th				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obser design flow, and appearmitted Stormwate PSDs include mass selenium in total redeveloped for mercure included to allow timeasures necessary	N/A ons for POTW oncentrations in ter is assumed as for mercury eved in effluer oply to all flow er Discharge s-based WLAs coverable form ury in suspendent in to achieve fin thly average i	N/A /s are based multiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rigers to put in all waste loanterim limits	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are in place implementation and allocations. The daily is are set equal to the 99 th				
	Waste load allocation mercury effluent contraction the total load in ward load. Interim WLA concentration observed design flow, and approximate the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the contraction of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included to allow the measures necessary maximum and monand 95th percentile of the developed for mercure included for mercure included the developed for mercure included the developed for mercure included for mercure in	ons for POTW oncentrations in ter is assumed as for mercury eved in effluence of the ply to all flow the ply to all flow the place of a second with the place of a vailable distribution of a vailable distribution on the place of a vailable distribution of a vailable distribution of a vailable distribution on the place of a vailable distribution	N/A /s are based multiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put in all waste loanterim limits ischarge data	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and ased WLAs are in place implementation and allocations. The daily is are set equal to the 99 th in.				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appearmitted Stormwate. PSDs include mass selenium in total redeveloped for mercure included to allow the measures necessary maximum and monand 95th percentile of the load o	ons for POTW oncentrations in ter is assumed as for mercury eved in effluent oply to all flow er Discharge s-based WLAs coverable formury in suspending to achieve find thly average it of available did Final WLA	N/A /s are based multiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put in all waste loanterim limits ischarge data	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and ased WLAs are it. Interim limits are in place implementation and allocations. The daily is are set equal to the 99 th				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appearmitted Stormwate. PSDs include mass selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel in	ons for POTW oncentrations reter is assumed as for mercury eved in effluer uply to all flow er Discharge s-based WLAs coverable formury in suspending for discharge to achieve fin thly average it of available did Final WLA um	N/A /s are based nultiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put it hal waste loanterim limits is charge data s for Total	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and used WLAs are in place implementation and allocations. The daily is are set equal to the 99 th a. Recoverable Copper,				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appermitted Stormwate PSDs include mass selenium in total redeveloped for mercuriculated to allow timeasures necessary maximum and monand 95th percentile of the Interim Limits and Nickel, and Selenial Interim limits and view of the total redeveloped for mercuriculated to allow the measures necessary maximum and monand 95th percentile of the Interim Limits and view of the total load in waste load.	ons for POTW oncentrations reter is assumed as for mercury eved in effluer uply to all flow er Discharge s-based WLAs coverable formury in suspending for discharge to achieve fin thly average it of available did Final WLA um	N/A /s are based nultiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put it hal waste loanterim limits is charge data s for Total	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and used WLAs are in place implementation and allocations. The daily is are set equal to the 99 th a. Recoverable Copper,				
	Waste load allocation mercury effluent conthe total load in waste load. Interim WLA concentration obserdesign flow, and appearmitted Stormwate. PSDs include mass selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel, and Selenium in total redeveloped for mercure included to allow timeasures necessary maximum and monand 95th percentile of the Nickel in	ons for POTW oncentrations reter is assumed as for mercury eved in effluer uply to all flow er Discharge s-based WLAs coverable formury in suspending for discharge to achieve fin thly average it of available did Final WLA um	N/A /s are based nultiplied by equal to the are based out discharge of conditions. rs (PSDs) s established ms. Mass-baded sediment rgers to put it hal waste loanterim limits is charge data s for Total	y the design flow where e suspended sediment in the 90 th percentile and multiplied by the and multiplied by the for copper, nickel, and used WLAs are in place implementation and allocations. The daily is are set equal to the 99 th a. Recoverable Copper,				

	Calleguas Creek Watershed Metals and Selenium TMDL A. Interim Limits										
	A. Inter										
		Callegu	as and Cone	jo Creek	Re	evolon Sloug	gh				
	Constituents	Dry Daily Maximum	Monthly	Wet Daily Maximum	Dry Daily Maximum	Dry Monthly Average	Wet Daily Maximum				
		(ug/L)	Average (ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)				
	Copper	23	19	204	23	19	204				
	Nickel Selenium	15 (b)	13 (b)	(a) (b)	15 14 (c) (c)	13 13 (c) (c)	(a) (a)				
(c)	O) Selenium allo Attainment of available. Attainment of	cations have no finterim limits 'interim limits h EPA's 2016	ot been develop will be evalua will be evaluat	under wet cond ed for this reach ted in considerated ed in considerated Aquatic Life A	h as it is not on tion of backgro ion of backgro	the 303(d) lissound loading dund loading da	t. lata, if ata, if availabl				
	Seleniu	m		decoverabl ater Colur	••	, i vienei,	unu				
		Callegu	as and Cone	jo Creek	R	evolon Slou	ıgh				
	Flow Range	Low Flow	Average Flow	Elevated Flow	Low Flow	Average Flow	Elevated				
	Copper1	0.04*WER -	0.12*WER -	0.18*WER -	0.03*WER -	0.06*WER					
	(lbs/day)	0.02	0.02	0.03	0.01	0.03	0.02				
	Nickel (lbs/day)	0.100	0.120	0.440	0.050	0.069	0.116				
	Selenium (Ibs/day)	(a)	(a)	(a)	0.004	0.003	0.004				
	for discharges storm water disexception of Repermitted storm demonstrate the specific WER site-specific Wimplemented in the final WERs (a) Selenium a	o Calleguas an chargers may a chargers may a chargers may a chargers may a charger in the WLAs as for Revolon Sloe ERs are approvance of the company of the charge in the	d Conejo Creel apply a WER o to calculate the gers shall be re modified by th ough subwaters red by the Regi ith the approve oading shall no not been deve	f up to 3.69 for a assigned WLA quired to provide WER are prohed was approved and Board, TM d WERs using the exceed current toped for this research.	discharges to uss. If a WER of lea detailed quetective of down to the education set to a detailed the equations set to a discount it is not minimum.	ndard is achie pstream reach f greater than lantitative analastream reache VER value of lallocations shet forth above.	ved. Permitted es, with the 1.51 is applied lysis to es. No site 1 is applied. If nall be —Regardless o list.				
	Copper ¹) - 0.17)*WER	_						
	(lbs/day)	0.06		,	(0.0002*Q2	2+0.0005*Q)*	`WER				
	Nickel ² (lbs/day)		^2+0.82*Q		0.027*Q^2	+0.47*Q					
	Selenium (Ibs/day)	(a)			0.027*Q^2	+0.47*Q					
	WLAs for d	scharges to Ca	lleguas and Co	51 for Mugu La nejo Creek to e ply a WER of u	nsure the down	stream standa	rd is achieved.				

Element	Calleguas Creek Watershed Metals and Selenium TMDL									
	do of	1 is applied. If sit	s. No site e-specific	e specifi WERs	c WER for Rev are approved by	olon Slough w the Regional	as approved so d Board, TMDL w	efault WER value		
	2 (a)	 above. Regardless of the final WERs, total copper loading shall not exceed current loading. Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table (a) Selenium allocations have not been developed for this reach as it is not on the 303(d) list. Q: Daily storm volume (cfs). Interim Limits and Final WLAs for Mercury in Suspended								
	In									
	Sediment									
		Final WLAs are set at 80% reduction of HSPF load estimates. Interim limits for mercury in suspended sediment are set equal to								
		ghest annua		-	_			_		
	ou	tput for the	years	1993-	2003.					
				Calleg	guas Creek	Revolo	n Slough			
		Flow Range		Interim (lbs/yr)	Final	Interim (lbs/yr)	Final (lbs/yr)			
	0-1	5,000 MGY		3.3	0.4	1.7	0.1			
	15,	15,000-25,000 MG		10.5	1.6	4	0.7			
	Ab	ove 25,000 MG	Υ	64.6	9.3	10.2	1.8			
	MG	Y: million gallo	ns per yea	ar.		1				
	<u>Final</u>	WLAs for	Other Total	· NPD		argers	ickel, and			
	<u>Final</u>	WLAs for	Other Total	· NPD		argers opper, Ni	ickel, and	Selenium nium		
	<u>Final</u>	WLAs for Copport Monthly	Other Total Det 1 Wet Do	Reco	verable C Nick Dry Monthly	argers opper, Ni	ckel, and Sele	nium Wet Daily		
	Final	WLAs for WLAs for	Other Total	Reco	verable C	argers opper, Ni	ickel, and Sele	nium		
	Final Reach	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER	Other Total per¹ Wet Do Maxim (ug/L) 5.8*W	Reco	verable C Nick Dry Monthly Average (ug/L) ³ 8.2	argers opper, Ni cel Wet Daily Maximum (ug/L) ³ 74	ckel, and Sele Dry Monthly Average (ug/L)	Wet Daily Maximum (ug/L)		
	Final Reach	WLAs for Copy Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER	Other Total per¹ Wet D. Maxim (ug/L 5.8*W 5.8*W	Reco aily [num _)² [ER	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2	argers copper, Nicel Wet Daily Maximum (ug/L) ³ 74 74	Dry Monthly Average (ug/L) (b) (b)	Wet Daily Maximum (ug/L) (b) (b)		
	Final Reach	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0	Other Total per¹ Wet D Maxim (ug/L 5.8*W 5.8*W	Reco	verable C Nick Nory Monthly Average (ug/L) ³ 8.2 8.2 149	argers opper, Ni cel Wet Daily Maximum (ug/L) ³ 74 74 859	Dry Monthly Average (ug/L) (b) (b)	Wet Daily Maximum (ug/L) (b) (b) (b)		
	Final Reach	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER	Total per¹ Wet Do Maxim (ug/L 5.8*W 27.4 5.8*W	Reco aily Inum L)2 ER ER 4	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 8.2 149 8.3	argers copper, Nicel Wet Daily Maximum (ug/L) ³ 74 74	Dry Monthly Average (ug/L) (b) (b)	Wet Daily Maximum (ug/L) (b) (b)		
	Final Reach	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0	Other Total per¹ Wet D Maxim (ug/L 5.8*W 5.8*W	Reco aily I fer ER 4 ER ER	verable C Nick Nory Monthly Average (ug/L) ³ 8.2 8.2 149	argers copper, Ni cel Wet Daily Maximum (ug/L) ³ 74 74 859 75	Dry Monthly Average (ug/L) (b) (b) (b) 5	Wet Daily Maximum (ug/L) (b) (b) (b) 290		
	Final Reach 1 2 3 4 5	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER 3.7*WER	Total Wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 5.8*W	Reco aily Inum -)² ER ER 4 ER ER	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3	argers opper, Ni tel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75	Ckel, and Selection Select	Wet Daily Maximum (ug/L) (b) (b) (b) 290 290		
	Final Reach 1 2 3 4 5 6	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER 3.7*WER (a)	Total per 1 Wet Do Maxim (ug/L 5.8*W 5.8*W 27.4 5.8*W 31.0	Reco aily I fer	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a)	argers opper, Ni tel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958	Ckel, and Selection Select	Wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b)		
	Final Reach 1 2 3 4 5 6 7 8 9	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 27.0 3.7*WER 27.0 3.7*WER (a) (a) (a) 29.1	Other Total Wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 31.6 31.6 43.3	Reco aily I fer fer	Verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) (a) 160	argers opper, Ni tel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958	Ckel, and Selection Select	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 27.0 3.7*WER 27.0 3.7*WER (a) (a) (a) 29.1 29.1	Other Total wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 31.6 31.6 43.3 43.3	Reco aily I fer fer	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) (a) 160 160	argers opper, Ni tel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296	Ckel, and Sele Dry Monthly Average (ug/L) (b) (b) 5 5 (b)	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER (a) (a) (a) 29.1 29.1 29.1	Other Total wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 31.0 31.0 43.3 43.3	Reco aily Inum L)2 VER VER VER 0 0 0 0 3 3 3 3	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) (a) 160 160	argers opper, Nicel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296 1296	Ckel, and Selection Select	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b) (b) (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11 12	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 27.0 3.7*WER 27.0 3.7*WER (a) (a) (a) 29.1 29.1 29.1	Total per ¹ Wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 31.0 31.0 43.3 43.3 43.3	Reco aily Inum L)2 VER VER VER 0 0 0 0 3 3 3 3 3	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) (a) 160 160 160	argers opper, Ni sel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296 1296 1296	Ckel, and Selection Select	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b) (b) (b) (b) (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11 12 13	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER (a) (a) (a) (a) 29.1 29.1 29.1 29.1	Total per ¹ Wet Do Maxim (ug/L 5.8*W 27.4 5.8*W 31.0 31.0 43.3 43.3 43.3 43.3 43.3	Reco aily Inum L)2 VER VER VER 0 0 0 0 3 3 3 3 3 3 3 3	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) (a) 160 160 160 160 160	argers opper, Nicel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296 1296 1296 1296	(ckel, and selection of the control	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b) (b) (b) (b) (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11 12 13 The a	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 27.0 3.7*WER 27.0 3.7*WER (a) (a) (a) 29.1 29.1 29.1	Total per ¹ Wet Domain (ug/L) 5.8*W 27.4 5.8*W 31.6 31.6 43.3 43.3 43.3 43.3 43.3 43.3	Reco aily I num)² IER IER 0 0 0 3 3 3 3 3 R of 1.51	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) 160 160 160 160 160 160 160 160 160 160	argers opper, Nicel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296 1296 1296 1296 1296 1296 1296	Ckel, and Selection Selection (a) Selection (b) Selection (c) Selection	wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b)		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11 12 13 The a disch	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER (a) (a) (a) (a) 29.1 29.1 29.1 29.1 29.1 29.1 29.1 29.1	Total oer 1 Wet Do Maxim (ug/L) 5.8*W 27.4 5.8*W 31.6 31.6 43.3 43.3 43.3 43.3 43.3 43.3 43.3 43	Reco aily I ium)² ER 4 ER 0 0 0 3 3 3 R of 1.51 nejo Cree a WER of	verable C Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 8.3 (a) (a) 160 160 160 160 160 160 160 16	argers opper, Nicel Wet Daily Maximum (ug/L) ³ 74 74 859 75 75 958 958 958 1296 1296 1296 1296 1296 1296 oon is used to coordinate of the	Ckel, and Selection Select	Wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b) (b) (b) (c) (b) (d) (d) (d) (e) (e) (e) (f) (f) (f) (f) (f) (f) (f) (f) (f) (f		
	Final Reach 1 2 3 4 5 6 7 8 9 10 11 12 13 The a disch	WLAs for Copp Dry Monthly Everage (ug/L)² 3.7*WER 3.7*WER 27.0 3.7*WER (a) (a) (a) (a) 29.1 29.1 29.1 29.1 29.1 29.1 29.1 29.1	Total per 1 Wet Do Maxim (ug/L) 5.8*W 27.4 5.8*W 31.6 31.6 43.3 43.3 43.3 43.3 43.3 43.3 43.3 43	Reco aily I aily I ER ER ER O O O S R of 1.51 nejo Cree a WER o o calcula	Nick Dry Monthly Average (ug/L) ³ 8.2 8.2 149 8.3 (a) (a) (a) 160 160 160 160 160 160 160 160 160 160	argers opper, Nicel Wet Daily Maximum (ug/L)³ 74 74 859 75 958 958 958 1296 129	Ckel, and Selection Select	Wet Daily Maximum (ug/L) (b) (b) (b) 290 290 (b) (b) (b) (b) (b) (b) (c) (b) (d) (d) (d) (e) (e) (e) (f) (f) (f) (f) (f) (f) (f) (f) (f) (f		

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	for Revolon Slough was approved so default WER value of 1 is applied. If site-specific WERs are approved by the Regional Board, TMDL waste load allocations shall be implemented in accordance with the approved WERs using the equations set forth above. Regardless of the final WERs, total copper loading shall not exceed current loading. Regardless of the final WERs, total copper loading shall not exceed current loading. In addition, effluent concentrations shall not exceed the performance standards of current treatment technologies Concentration-based targets have been converted to total recoverable allocations using the CTR default translator of 0.96 for freshwater reaches and 0.83 for saltwater reaches. Concentration-based targets have been converted to total recoverable allocations using the CTR default translator of 0.997 for freshwater reaches and 0.99 for saltwater reaches. Discharges from these reaches do not reach lower Calleguas Creek and Mugu Lagoon during dry weather. Allocations are not required for these reaches. (b) Selenium waste load allocations have not been developed for this reach as it is not on the 303(d) list. Final WLAs for Mercury There is insufficient information to assign mass based WLAs to these
	sources. Therefore concentration-based waste loads allocations are set equal to 0.051 ug/L for other NPDES dischargers based on the CTR water column target for protection of human health from consumption organism only.
Load Allocation	Mass-based load allocations (LAs) for agriculture, and open space are developed for copper, nickel, and selenium in total recoverable forms. Open space represents background loads from ambient sources (i.e. natural soil concentrations, atmospheric deposition, and natural groundwater seepage) discharged from undeveloped open space, but not ambient sources that are discharged from developed land, such as agricultural and urban areas. LAs are developed for both wet and dryweather. The dry-weather LAs apply to days when flows in the stream are less than 86 th percentile flow rate for each reach. The wet-weather LAs apply to days when flows in the stream exceed 86 th percentile flow rate for each reach. Annual mass loads of mercury in suspended sediment were developed according to low, medium, and high annual flow categories.
	Interim and Final Load Allocations for Total Recoverable Copper, Nickel, and Selenium Interim limits are included to allow time for dischargers to put in place implementation measures necessary to achieve final load allocations. The daily maximum and monthly average interim limits are set equal to the 99 th and 95 th percentile of available discharge data. Interim limits and final load allocations are applied in receiving water at the compliance points.
	A. Interim Limits

Calleguas Creek Watershed Metals and Selenium TMI Calleguas and Conejo Creek Revolon Slough Constituen Dry Daily Dry Daily Dry Daily Dry Daily Wet Daily Dry Daily Wet Daily Dry Daily Dry Wet Daily Dry Daily Dry Dry Dry Dry Dry Dry Dry Dry Dry Dr							
					Ť	:1	
Constituen Dry Daily ts Maximum	Monthly		Dry Daily Maximum	Monthly	,	, I	
	Average	Maximum		Average	Maximu		
(ug/L)	(ua/L)	(ug/L)	(ug/L)	(ua/L)	(ug/L)	_	
Copper 24	19	1390	24	19	1390		
Nickel 43	42	(a)	43	42	(a)		
Selenium (b) (a) The current loads do no	(b)	(b)	6.7 (c)	6 (c)	(a)	⊣	
(b) Selenium allocations has Implementation actions (c) Attainment of interim I available consistent with for Selenium in Freshw B. Final Load	ave not been do s includes cons imits will be even th EPA's 2016 vater.	eveloped for sideration of valuated in control Recommend	this reach as i watershed-wid onsideration o	it is not on t de selenium of backgrou	he 303(d) list impacts. and loading d	ata, if	
Dry Weather I	LAs in W	ater Col					
	Callegua	s <u>and Con</u> e	ejo Creek	Re	volon Slo	ugh	
Constituent	Low Flow	Average Flow	Elevated Flow	Low Flow	Average Flow	Elevated Flow	
Copper ¹ Agriculture	0.07* WER-	0.12* WER-		0.07*WER	0.14*WER-	0.35*WER -	
(lbs/day)	<u>0.03</u>	<u>0.02</u>	<u>0.05</u>	<u>- 0.03</u>	<u>0.07</u>	<u>0.07</u>	
Open Space	0.150	0.080	0.130	0.050	0.120	0.110	
Nickel Agriculture		0.260	0.970	0.390	0.690	1.600	
(lbs/day) Open Space	0.450	0.420	0.560	0.010	0.020	0.020	
Selenium Agriculture	(a)	(a)	(a)	0.008	0.007	0.018	
(lbs/day) Open Space	e (a)	(a)	(a)	0.180	0.310	0.490	
	Ca	Illeguas Cre	eek	Re	volon Slo	ugh	
Constituent	Low Flow	Average Flow	Elevated Flow	Low Flow	Average Flow	Elevated Flow	
Copper ¹ Agriculture	0.076	0.161	0.418	0.040	0.070	0.280	
(lbs/day) Open Space	0.150	0.080	0.130	0.050	0.120	0.110	
Nickel Agriculture	0.420	0.260	0.970	0.390	0.690	1.600	
(lbs/day) Open Space	0.450	0.420	0.560	0.010	0.020	0.020	
Selenium Agriculture	(a)	(a)	(a)	0.008	0.007	0.018	
(lbs/day) Open Space	(a)	(a)	(a)	0.180	0.310	0.490	
dischargers may apply a V Reaches 4 and 5, to calcul agricultural dischargers sh WLAs as modified by the Revolon Slough was appr by the Regional Board, TI approved WERs using the shall not exceed current le current loading. If site-sp shall be implemented in a (a) Selenium allocations have Implementation actions in	ate the assigned all be required WER are protoured so default MDL waste loss equations set adding. Regardecific WERs are ecordance with a not been deve	ed WLAs. If a loprovide dective of down twenty value and allocations forth above. Illess of the fire approved land the approved loped for this	a WER of greetailed quantivistream reactof 1 is applied a shall be impressed and WERs, to by the Region of WERs using a reach as it is	ater than 1.: itative analy hes. No sit d. If site spe lemented in f the final V tal copper le ial Board, T g the equati s not on the	sis to demor e specific Wess accordance VERs, total coording shall MDL load a ons set forth 303(d) list.	nstrate that the nstrate that the recopper loading not exceed llocations	

		r A • .	XX7.4	1. 1.				
wetv	veatner	ather LAs in Water Column						
Constituent		Ca	lleguas <u>anc</u>	d Conejo	Creek	Rev	olon Slou	ıgh
Copper ¹		,	017*Q^2*0.			0.00123*0	2^2+0.003	4*Q)*
(lbs/day)	Agriculture		*WER - 0.0			WER		
` ,	Open Space		0537*Q^2+			0.0000432		00765*Q
Nickel ²	Agriculture		*Q^2+0.82 *Q^2+0.82).027*Q^2).027*Q^2		
(lbs/day) Selenium ²	Open Space		Q'2+0.02	· Q).1*Q^2+1		
(lbs/day)	Open Space	` '				0.027*Q^2		
	d site-specific		.51 for Mug	u Lagoon i				As for
	Calleguas ar							
	may apply a Vand of the second							
agricultural	dischargers sl	nall be requ	ired to provi	ide detailed	d quantitati	ve analysis	to demonst	rate that the
	odified by the							
Revolon Slo	ugh was appr onal Board, Ti	oved so del MDL waste	ault WER v	alue of 1 1:	s applied. If be impleme	site-specifi ented in acc	c WERs arc ordance wi	e approved th the
approved W	ERs using the	equations	set forth abo	ve. Regar	rdless of the	final WER	ls, total cop	per loading
	eed current lo							
	ing. <u>If site-sp</u> lemented in a							
	s do not excee				_			
presented in		.1	1 1 1 6	.1. 1		4 202	(1) 1° (
(a) Selenium all Q Daily storm		e not been o	ievelopea fo	r this reaci	n as it is noi	on the 303	(a) list.	
<u>Interim ar</u>	<u>nd Final</u>	LAs for	r Mercu	ırv in S	Juanana	1 - 1 0 - 1		
Interin	As are s	or merc	% reduc ury in st	tion of aspende	HSPF l	oad esti	imates.	
Intering the high		or merc ual load	% reduc ury in su l within	tion of uspende each fle	HSPF l	oad esti	imates.	
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Flow Range 0-15,000 MGY 15,000-25,000 MGY Above 25,000 MGY MGY Above argin of uncertainty in the water	Agric Interim (lbs/yr) 3.9 12.6 77.5 callons per year	Callegua ulture Final (lbs/yr) 0.5 1.9 11.2 ar. (MOS) nalysis to	% reduction within 93-2003 as Creek Open S Interim (lbs/yr) 5.5 17.6 108.4 for the Tethat coulting in the Tethat could in the Tethat coulting in the Tethat co	Space Final (lbs/yr) 0.7 2.7 17.9	HSPF I ed sedir ow cate Agricultu Interim (lbs/yr) 2 4.8 12.2 is design the interior targeticit Means the sedir of th	Revolor Final (lbs/yr) 0.2 0.8 2.2 ned to a gets not OS are in	imates. e set equased on n Slough Open Interim (lbs/yr) 2.9 6.7 17.1	Space Final (lbs/yr) 0.2 1.1 2 any chieved d for
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Flow Range 0-15,000 MGY¹ 15,000-25,000 MGY Above 25,000 MGY MGY: million g afety A margin of uncertainty in the water this TMDI assumption	Agric Interim (lbs/yr) 3.9 12.6 77.5 callons per year of safety of in the are bodies. The image of the proficient profice.	Callegua ulture Final (lbs/yr) 0.5 1.9 11.2 ar. (MOS) nalysis to a policit Muring do tection	% reduction of the Table that could mplicit a MOS sterill within 193-2003 The could be considered as the could be could	Space Final (lbs/yr) 0.7 2.7 17.9 FMDL Id result and expressions from the condition of all conditions of the conditi	HSPF I ed sedir ow cate Agricultu Interim (lbs/yr) 2 4.8 12.2 is design that the multiple itions, a	Revolor Final (lbs/yr) 0.2 0.8 2.2 ned to a gets not OS are in use of e nume and 2) c	imates. e set equased on Slough Open Interim (lbs/yr) 2.9 6.7 17.1 address being a included conserver target onservarie target onservari	Space Final (lbs/yr) 0.2 1.1 2 any chieved d for rative ets to ative

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL	1
	implementation of the TMDL. This results in higher required reductions for the other sources. Calculation of allocations is based on never exceeding numeric target concentrations more than once in three years as specified in the CTR. Calculations of current loads and loading capacity for Mugu Lagoon are based on the combined discharges from Calleguas Creek and Revolon Slough (without any dilution provided by tidal flushing), which over predicts actual concentrations in the Lagoon. A 15% explicit MOS is also included for copper and nickel to account for the uncertainty resulting from the calculation of the allowable load based on the median flow rate and translator of each flow category. The 15% explicit MOS is determined sufficient to address the elevated flow category, but still account for the more conservative nature of low and average category.]
Future Growth	Ventura County accounts for slightly more than 2% of the state's residents with a population of 753,197 (US Census Bureau, 2000). GIS analysis of the 2000 census data yields a population estimate of 334,000 for the CCW, which equals about 44% of the county population. According to the Southern California Association of Governments (SCAG), growth in Ventura County averaged about 51% per decade from 1900-2000; with growth exceeding 70% in the 1920s, 1950s, and 1960s. Significant population growth is expected to occur within and near present city limits until at least 2020. Future growth may initially increase loadings as construction activities expose bare soil and increase erosion-related discharges to receiving water. However, once development has been completed the presence of impermeable land surface and landscaped areas may reduce the amount of natural soils that are eroded and carried to the stream. For copper, future growth could increase loadings from urban areas and POTWs due to increased traffic (i.e., brake pad residues), architectural copper use and corrosion of copper pipes. Selenium loading may increase if increased irrigation raises the groundwater table and increases high selenium groundwater seepage to surface waters. However, if increased growth results in increased water demand and high selenium groundwater is pumped and treated to supply this demand, the selenium could decrease.	
Seasonal Variations and Critical Conditions	Seasonal variations are addressed for copper, nickel, and selenium by developing separate allocations for wet and dry weather. Critical conditions for copper, nickel, and selenium were developed using model results to calculate the maximum observed 4-day average dry weather concentration and the associated flow condition. Wet weather, as a whole, is defined as a critical condition. For mercury, there is no indication that mercury contamination in Mugu Lagoon is consistently exacerbated at any particular time of the year. Since the potential effects of mercury are related to bioaccumulation in the food chain over]

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL	D
	a long period time, any other short term variations in concentration which might occur are not likely to cause significant impacts upon beneficial uses. Therefore, seasonal variations do not affect critical conditions for the Calleguas Creek watershed mercury TMDL.	E
Special Studies	Special Studies	V
and Monitoring Plan	Several special studies are planned to improve understanding of key aspects related to achievement of WLAs and LAs for the Metals and Selenium TMDL	I
	1. Special Study #1 (Optional) – Evaluation and Initiation of Natural Sources Exclusion	E
	The TMDL technical report has identified ambient sources as the primary significant selenium and mercury loadings in the watershed and as potentially significant sources of copper and nickel. The portion of all ambient sources associated with open space runoff and natural groundwater seepage is accounted for in this TMDL as "background load." This special study will evaluate whether or not background loads	D
	for each constituent qualify for natural source exclusion. This study will also consider whether any portion of the ambient source contribution for agricultural or urban runoff loads qualify for natural source exclusions and/or provide a basis for site specific objectives.	T E
	The presence of natural sources makes achievement of selenium and mercury targets during all conditions unlikely. For copper, achievement of the CTR targets or the WER based targets (if approved) in Revolon Slough may not be feasible due to the magnitude of background loads.	N
	Completion of site specific objectives and/or a use attainability analysis shall be required to review any potential change to water quality objectives for these constituents. This special study will be used to	T
	develop the necessary information to revise the water quality objectives for selenium and mercury and possibly for copper and nickel.	A
	2. Special Study #2 – Identification of selenium contaminated Groundwater Sources	T
	The purpose of this special study will be to identify groundwater with high concentrations of selenium that is either being discharged directly	I
	to the stream or used as irrigation water. The investigation will focus on areas where groundwater has a high probability of reaching the stream and identify practical actions to reduce the discharge of the	V
	groundwater to the stream. The analysis will include an assessment of the availability of alternative water supplies for irrigation water, the costs of the alternative water supplies and the costs of reducing	10

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL
	groundwater discharges.
	3. Special Study #3– Investigation of Soil Concentrations and Identification of "Hot Spots"
	The purpose of this special study will be to identify terrestrial areas with high concentrations of metals and/or selenium, either due to anthropogenic sources or resulting from high natural concentrations in soils. Use of detailed soil maps for the watershed in combination with field survey and soil sampling may lead to identification of areas important for reducing overall loads reaching the stream. Identification of any areas with elevated soil concentrations of metals and/or selenium would create an opportunity for efficient and targeted implementation actions, such as remediation or erosion control.
	4. Special Study #4 (Optional) – Determination of Water Effect Ratio for Copper in Revolon Slough
	The purpose of this optional special study would be to calculate a WER for copper that is specific to Revolon Slough. A WER was not previously developed for Revolon Slough because it was not listed for copper. Subsequent monitoring demonstrated that the saltwater copper CTR criterion was exceeded in Revolon Slough. This Study would parallel the developed WER for Mugu Lagoon and Calleguas Creek. This is an optional special study to be conducted if desired by the stakeholders or determined necessary and appropriate by the Executive Officer.
	5. Special Study #5 (Optional) – Determination of Site-Specific Objectives for Mercury and Selenium
	Special Study #1 will evaluate whether a natural source exclusion is appropriate for background loads of mercury and selenium or any portion of the ambient source contributions to non-background loads in the Calleguas Creek watershed. This special study will develop any SSOs deemed necessary to account for the background conditions
	and/or site-specific impacts of mercury and selenium (and possibly for copper and nickel) on wildlife and humans in the watershed. This is an optional special study to be conducted if desired by the stakeholders or determined necessary for establishing a natural source exclusion.
	Monitoring Plan
	The Calleguas Creek Watershed TMDL Monitoring Plan (CCWTMP) is designed to monitor and evaluate the implementation of this TMDL and

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL	
	refine the understanding of metal and selenium loads. CCWTMP is	
	intended to parallel efforts of the Calleguas Creek Watershed Nutrients	
	TMDL, Toxicity TMDL, and OC Pesticide, PCBs, and Sediment	
	TMDL monitoring programs. The proposed CCWTMP shall be made	
	available for public review before approval by the Executive Officer.	
	The goals of the CCWTMP include: (1) to determine compliance with	
	copper, mercury, nickel, and selenium numeric targets at receiving	
	water monitoring stations and at POTWs discharges; (2) to determine	
	compliance with waste load and load allocations for copper, mercury,	
	nickel, and selenium at receiving water monitoring stations and at	
	POTWs discharges; (3) to monitor the effect of implementation action	
	by PSDs, POTW, agricultural dischargers, and other NPDES permittees	
	on in-stream water quality; and (4) to implement the CCWTMP in a	
	manner consistent with other TMDL implementation plans and	
	regulatory actions within the Calleguas Creek watershed.	
	Monitoring conducted through the Conditional Waiver for	
	Disharges Discharges from Irrigated Lands (Conditional Waiver	
	Program) may meet part of the needs of the CCWTMP. To the extent	
	monitoring required by the Metals and Selenium TMDL	
	Implementation Plan parallels monitoring required by the Conditional	
	Waiver Program, monitoring shall be coordinated with monitoring	
	conducted by individuals and groups subject to the term and conditions	
	of the Conditional Waiver Program.	
	Monitoring will begin within one year of the effective date of the	
	TMDL. For the first year, in-stream water column samples will be	
	collected monthly for analysis of general water quality constituents	
	(GWQC), copper, mercury, nickel, selenium, and zinc. After the first	
	year, the Executive Officer will review the monitoring report and revise	
	the monitoring frequency as appropriate. In-stream water column	
	samples will be generally be collected at the base of Revolon Slough	
	and Calleguas Creek, and in Mugu Lagoon (collection of flow-based	
	samples will occur above the tidal prism). Additionally, sediment	
	samples will be collected semi-annually in Mugu Lagoon and analyzed	
	for sediment toxicity resulting from copper, mercury, nickel, selenium,	
	and zinc. At such a time as numeric targets are consistently met at these	
	points, an additional site or sites will be considered for monitoring to	
	ensure numeric targets are met throughout the lower watershed.	
	Additional samples will be collected consumently at stations that are	
	Additional samples will be collected concurrently at stations that are	
	representative of agricultural and urban runoff as well as at POTWs in	
	each of the subwatersheds and analyzed for GWQCs, copper, mercury,	
	nickel, selenium, and zinc. The location of these stations will be]

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL				
	determined before initiation of the CCWTMP. Environmentally				
	relevant detection limits will be used for metals and selenium (i.e.				
	detection limits lower than applicable target), if available at a commercial laboratory. Compliance sampling station locations: Subwatershed Station ID Station Location Constituent Water Column: Cu, Ni, Hg, Se, Zn				
				Bird Egg: Hg, Se	
	Mugu Lagoon	01-11-BR	11th Street Bridge	Fish Tisue: Hg, Se	
				Sediment: Cu, Ni, Hg, Se, Zn	
	Revolon Slough	04-WOOD	Revolon Slough East Side of Wood Road	Water Column: Cu, Ni, Hg, Se, Zn	
			Calleguas Creek at	Fish Tisue: Hg, Se	
		03-CAMAR	University Drive	Water Column: Cu, Ni, Hg, Se, Zn	
	Calleguas Creek	03D-CAMR	Camrosa Water Reclamation Plant	Water Column: Cu, Ni, Hg, Se, Zn	
		9AD-CAMA	Camarillo Water Reclamation Plant	Water Column: Cu, Ni, Hg, Se, Zn	
	Conejo Creek	10D-HILL	Hill Canyon Wastewater Treatment Plant	Water Column: Cu, Ni, Hg, Se, Zn	
	Receiving water	er monitori	ng shall be require	ed for dischargers subject to	
	site-specific W	ERs to eva	luate whether the	assigned allocations, as	
	•		•	beneficial uses as the CTR	
				oon and Calleguas Creek	
				<u>e required through the</u>	
			and reporting progr		
			•	cal characteristics or toxicity	
			•	ch 2, the Regional Board	
T 1 4 . 4	may reconsider	_			
Implementation Plan			ES discharges in ac	tted stormwater discharges,	
riaii	· ·		•	19.2. The Regional Board	
	-	-		l information developed	
				onducted as part of this	
				hedule was developed -with	
				a SSO for nickel will	
				otion and approvals of the	
	_	_	_	lementation actions could be	
		-	tation plan includes		
	-	-	o address these cor		
	Site-specific W	VERs may	be modified or rev	vert back to a default of 1.0	
	_	-		licate that the WERs are not	
	_	_	•	e waterbody to which they	
	-			WER that is incorporated	
			•	ppropriate reopener that	

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL
	authorizes the Regional Board to modify the WER as appropriate to
	accommodate new information.
	WLAs established for Simi Valley WQCP, Camrosa WRP, and Moorpark WTP in this TMDL will be implemented through NPDES permit limits. Compliance will be determined through monitoring of final effluent discharge as defined in the NPDES permit. The Hill Canyon and Camarillo WRPs are working towards discontinuing the discharge of effluent to Conejo Creek. If this plan is implemented, the POTW allocations for the watershed will be achieved by reduction of effluent discharges to the stream. The implementation plan includes sufficient time for this plan to be implemented. However, if this plan is altered, the POTWs will need to meet allocations through other methods such as source control activities. The Regional Board will need to ensure that permit conditions are consistent with the assumptions of the WLAs. Should federal, state, or regional guidance or practice for implementing WLAs into permits be revised, the Regional Board may reevaluate the TMDL to incorporate such guidance.
	In accordance with current practice, a group concentration-based WLA has been developed for all permitted stormwater discharges, including municipal separate storm sewer systems (MS4s), Caltrans, general industrial and construction stormwater permits, and Naval Air Weapons Station Point Mugu. MS4 WLAs will be incorporated into the NPDES permit as receiving water limits measured in-stream at the base of Revolon Slough and Calleguas Creek, and in Mugu Lagoon and will be achieved through the implementation of BMPs as outlined in the implementation plan. The Regional Board will need to ensure that permit conditions are consistent with the assumptions of the WLAs. If BMPs are to be used, the Regional Board will need to detail its findings and conclusions supporting the use of BMPs in the NPDES permit fact sheets. Should federal, state, or regional guidance or practice for implementing WLAs into permits be revised, the Regional Board may reevaluate the TMDL to incorporate such guidance. The Regional Board may revise these WLAs based on the collection of additional information developed through special studies and/or monitoring conducted as part of this TMDL.
	Permit writers may translate applicable waste load allocations into daily maximum and monthly average effluent limits for the major, minor and general NPDES permits by applying the effluent limitation procedures in Section 1.4 of the State Water Resources Control Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005) or other applicable engineering practices authorized under federal regulations.

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL
	LAs will be implemented through the State's Nonpoint Source Pollution Control Program (NPSPCP) and Conditional Waiver for Discharges from Irrigated Lands adopted by the Los Angeles Regional Water Quality Control Board on November 3, 2005. Compliance with LAs will be measured in-stream at the base of Revolon Slough and Calleguas Creek and in Mugu Lagoon and will be achieved through the implementation of BMPs consistent with the NPSPCP and the Conditional Waiver Program.
	The Conditional Waiver Program requires the development of an agricultural water quality management plan (AWQMP) to address pollutants that are exceeding receiving water quality objectives as a result of agricultural discharges. Therefore, implementation of the load allocations will be through the development of an AWQMP for metals and selenium. Implementation of the load allocations will also include the coordination of BMPs being implemented under other required programs to ensure metal discharges are considered in the implementation. Additionally, agricultural dischargers will participate in educational seminars on the implementation of BMPs as required under the Conditional Waiver Program. Studies are currently being conducted to assess the extent of BMP implementation and provide information on the effectiveness of BMPs for agriculture. This information will be integrated into the AWQMP that will guide the implementation of agricultural BMPs in the Calleguas Creek watershed. After implementation of these actions, compliance with the allocations and TMDL will be evaluated and the allocations reconsidered if necessary based on the special studies and monitoring plan section of the implementation plan
	Agricultural and PSDs dischargers will have a required 25%, 50% and 100% reduction in the difference between the current loadings and the load allocations at 5, 10 and 15 years after the effective date, respectively. Achievement of required reductions will be evaluated based on progress towards BMP implementation as outlined in the UWQMPs, AWQMP, Conditional Waiver Program, and in consideration of background loading information, if available. If the interim reductions are not met, the dischargers will submit a report to the Executive Officer detailing why the reductions were not met and the steps that will be taken to meet the required reductions.
	As shown in Table 7-19.2, implementation of LAs will be conducted over a -period of time to allow for implementation of the BMPs, as well as coordination with special -studies and implementation actions resulting from other TMDL Implementation Plans for the Calleguas

TMDL Element	Calleguas Creek Watershed Metals and Selenium TMDL
	Creek watershed. The Regional Board may revise the LAs based on the collection of additional information developed through special studies and/or monitoring conducted as part of this TMDL.

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Table 7-19.2 Calleguas Creek Watershed Metals and Selenium TMDL: Implementation Schedule

•	ementation Schedule		
Item	Implementation Action ¹	Responsible Party	Completion Date
1	Effective date of interim Metals and Selenium TMDL waste load allocation (WLAs), and final WLAs for other NPDES permittees	POTWs, Permitted Stormwater Dischargers ² (PSD), Other NPDES Permittees	Effective date of the amendmentMarch 27, 2007
2	Effective date of interim Metals and Selenium TMDL load allocation (LAs)	Agricultural Dischargers	Effective date of the amendmentMarch 27, 2007
3a	Submit Calleguas Creek Watershed Metals and Selenium Monitoring Program	POTWs, PSD, Agricultural Dischargers	Within 3 months after the effective date of the amendmentJune 27, 2007
3b	Implement Calleguas Creek Watershed Metals and Selenium Monitoring Program	POTWs, PSD, Agricultural Dischargers	Within 3 months of Executive Officer approval of the monitoring programApril 30, 2009
3c	Re-calibrate HSPF water quality model based on first year of monitoring data	POTWs, PSD, Agricultural Dischargers	1 year after submittal of first annual monitoring report
4a	Conduct a source control study, develop and submit an Urban Water Quality Management Program (UWQMP) for copper, mercury, nickel, and selenium	MS4s	Within 2 years after the effective date of the amendment March 27, 2009
4b	Conduct a source control study, develop and submit an UWQMP for copper, mercury, nickel, and selenium	Caltrans	Within 2 years after the effective date of the amendment March 27, 2009
4c	Conduct a source control study, develop and submit an UWQMP for copper, mercury, nickel, and selenium	NAWS point Mugu (US Navy)	Within 2 years after the effective date of the amendment March 27, 2009
5	Implement UWQMP	PSD	Within 1 year of approval of UWQMP by the Executive Officer
6	Develop and submit an Agricultural Water Quality Management Program (AWQMP) as described in the Conditional Waiver Program	Agricultural Dischargers	Within 2 years after the effective date of the amendment March 27, 2009
7	Implement AWQMP	Agricultural Dischargers	Within 1 year of approval of AWQMP by the Executive Officer
8	Develop WLAs and LAs for zinc if impairment for Mugu Lagoon is maintained on the final 2006 303(d) list	Regional Board or USEPA	Within 1 year of the final 2006 303(d) listOctober 25, 2007
9	Submit progress report on salinity management	POTWs	Within 3 years after the

¹ The Regional Board regulatory programs addressing all discharges in effect at the time this implementation task is due may contain requirements substantially similar to the requirements of these implementation tasks. If such requirements are in place in another regulatory program including other TMDLs, the Executive Officer may revise or eliminate this implementation task to coordinate this TMDL implementation plan with other regulatory programs.

² Permitted Stormwater Dischargers (PSD) include MS4s, Caltrans, the Naval Air Weapons Station at Point Mugu, and general industrial and construction permittees.

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Item	Implementation Action ¹	Responsible Party	Completion Date
	plan, including status of reducing WRP effluent discharges to Conejo and Calleguas Creek reaches of the watershed		effective date of the amendmentMarch 27, 2010
10	If progress report identifies the effluent discharges reduction is not progressing, develop and implement source control activities for copper, mercury, nickel, and selenium	POTWs	Within 4 years after the effective date of the amendment March 27, 2011
11	Re-evaluation of POTW interim waste load allocations for copper, mercury, and nickel	POTWs	Within 5 years after the effective date of the amendment March 27, 2012
12a	Evaluate the results of the OCs TMDL, Special Study – Calculation of sediment transport rates in the Calleguas Creek watershed for applicability to the metals and selenium TMDL	Agricultural Dischargers, PSD	Within 6 months of completion of the study
12b	Include monitoring for copper, mercury, nickel, and selenium in the OC pesticides TMDL, special Study – Monitoring of sediment by source and land use type	Agricultural Dischargers, PSD	Within 2 years after the effective date of the amendment March 27, 2009
12c	Expand scope of the OC Pesticide TMDL, Special Study – Examination of food webs and accumulation in the Calleguas Creek watershed to ensure protection of wildlife to include mercury	Interested parties	If necessary, prior to end of the implementation period
12d	Evaluate the results of the OC Pesticides TMDL, Special Study – Effects of BMPs on Sediment and Siltation to determine the impacts on metals and selenium	Agricultural Dischargers, PSD	Within 6 months of completion of the study
13a	Submit work plan for Special Study #1 (Optional) – Identification of Natural Sources Exclusion	Agricultural Dischargers, PSD	Within 1 year after the effective date of the amendment March 27, 2008
13b	Submit results of Special Study #1 (Optional) – Identification of Natural Sources Exclusion	Agricultural Dischargers, PSD	Within 3 years of approval of workplan by Executive Officer
14a	Submit work plan for Special Study #2 – Identification of selenium Contaminated Groundwater Sources	POTWs, PSD, and Agricultural Dischargers	Within 1 year after the effective date of the amendment March 27, 2008
14b	Submit results of Special Study #2 – Identification of selenium Contaminated Groundwater Sources	POTWs, PSD, and Agricultural Dischargers	Within 1 year of approval of workplan by Executive Officer
15a	Submit work plan for Special Study #3 – Investigation of Metals' "Hot Spot" and Natural Soil	PSD and Agricultural Discharger	Within 1 year after the effective date of the amendment March 27, 2008
15b	Submit results of Special Study #3 – Investigation of metals' "Hot Spot" and Natural Soil	PSD and Agricultural Discharger	Within 2 years of approval of workplan by Executive Officer
16	Special Study #4 (Optional) – Determination of WER for copper in Revolon Slough	PSD and Agricultural Dischargers	If necessary, prior to end of the implementation period
17	Special Study #5 (Optional) – Determination of Site Specific Objective for Mercury and Selenium	PSD and Agricultural	If necessary, prior to end of the implementation

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Item	Implementation Action ¹	Responsible Party	Completion Date
		Dischargers	period
18	Evaluate effectiveness of BMPs implemented under the AWQMP and UWQMP in controlling metals and selenium discharges	PSD and Agricultural Dischargers	6 years after the effective date of the amendment March 27, 2013
19	Evaluate the results of implementation actions 14 and 15 (Special Study #2 & #3) and implement actions identified by the studies	POTWs, PSD, and Agricultural Dischargers	Within 1 year after the completion of the studies
20	If needed, implement additional BMPs or revise existing BMPs to address any issues not covered by implementation efforts of related Calleguas Creek watershed TMDLs (Nutrients, Toxicity, OC Pesticides, PCBs, and Siltation) and the Conditional Waiver Program	Agricultural Dischargers	7 years after the effective date of the amendmentMarch 27, 2014
21	Consider nickel SSO proposed by stakeholders	Regional Board	1 years after the effective date of the amendment March 27, 2008
22	Publicly notice tentative copper water effects ratio for Regional Board consideration, if deemed appropriate based on peer review	Regional Board Staff	Within 2 months of receipt of peer review comments
23	Based on the result from items 1-23, Regional Board will consider re-evaluation of the TMDLs, WLAs, and LAs if necessary	Regional Board	2 years from submittal of information necessary for re-evaluation
24	POTWs will be required to reduce loadings by 50%, and 100% of the difference between the current loading and the WLAs at 8 and 10 years after the effective date, respectively.	POTWs	8 and 10 years after the effective date of the amendment March 27, 2015 and March 27, 2017
25	Re-evaluation of Agricultural and Urban load and waste load allocations for copper, mercury, nickel, and selenium based on the evaluation of BMP effectiveness. Agricultural and urban dischargers will have a required 25%, 50%, and 100% reduction in the difference between the current loadings and the load allocations at 5, 10, and 15 years after the effective date, respectively.	Agricultural and PSDs	5, 10, and 15 years after the effective date of the amendmentMarch 27, 2012 March 27, 2017 March 27, 2022
26	Stakeholders and Regional Board staff will provide information items to the Regional Board, including: progress toward meeting TMDL load reductions, water quality data, and a summary of implementation activities completed to date	Regional Board	2 years after the effective dateMarch 27, 2009, and every 2 years following
27	Achievement of Final WLAs and attainment of water quality standards for copper, mercury, nickel, and selenium	POTWs	Within 10 years after the effective date of the amendment March 27, 2017 ³
28	Achievement of Final WLAs and LAs and attainment of water quality standards for copper, nickel, mercury and selenium	Agricultural Dischargers, PSD	Within 15 years after the effective date of the amendment March 27, 2022 ³

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³ Date of achievement of WLAs and LAs based on the estimated timeframe for educational programs, special studies, and implementation of appropriate BMPs and associated monitoring. The Conditional Waiver Program will set timeframes for the BMP management plans.

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