Ventura Countywide Stormwater Quality Management Program

2012-2013 Permit Year

Ventura Countywide Stormwater Quality Management Program Annual Report

Attachment E: Total Maximum Daily Load Monitoring Data and Reports

Camarillo
County of Ventura
Fillmore
Moorpark
Ojai
Oxnard
Port Hueneme
Santa Paula
Simi Valley
Thousand Oaks
Ventura
Ventura County Watershed Protection District

December 13, 2013

Attachment E: Total Maximum Daily Load Data and Reports

1. Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring for Ventura County and City of Thousand Oaks. July 2012 - June 2013

2. Calleguas Creek Watershed TMDL Compliance Monitoring 4^{th} Year Annual Monitoring Report

Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring for Ventura County and City of Thousand Oaks. July 2012 - June 2013

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Interim Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Phil Nelson, Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

August 14, 2012

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of July 2012. Sites were sampled weekly on Tuesdays (July 3, 10, 17, 24, and 31). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Acting for Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Interim Director, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Mr. Kangshi Wang
August 14, 2012
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Table 1. Weekly sampling results

					Single Sample		(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	7/3/2012♦			Dry		Dry
MCW-8b	-	7/10/2012♦			Dry		Dry
MCW-8b	-	7/17/2012♦			Dry		Dry
MCW-8b	-	7/24/2012♦			Dry		Dry
MCW-8b	-	7/31/2012♦			Dry		Dry
MCW-9	-	7/3/2012♦			Dry		Dry
MCW-9	-	7/10/2012♦			Dry		Dry
MCW-9	-	7/17/2012♦			Dry		Dry
MCW-9	-	7/24/2012♦			Dry		Dry
MCW-9	-	7/31/2012♦			Dry		Dry
MCW-12	950	7/3/2012♦		=	500	=	1,700
MCW-12	910	7/10/2012♦		=	300	=	300
MCW-12	905	7/17/2012♦		=	340	=	1,300
MCW-12	930	7/24/2012♦		=	230	=	500
MCW-12	910	7/31/2012♦		=	300	=	1,400
MCW-14b	930	7/3/2012♦		=	140	=	140
MCW-14b	850	7/10/2012♦		=	2,200	=	5,000
MCW-14b	845	7/17/2012♦		=	110	=	110
MCW-14b	910	7/24/2012♦		=	110	=	170
MCW-14b	850	7/31/2012♦		=	110	=	110
MCW-15c	845	7/3/2012♦		<	20	=	90
MCW-15c	830	7/10/2012♦		=	130	=	130
MCW-15c	820	7/17/2012♦		=	70	=	110
MCW-15c	845	7/24/2012♦		=	270	=	340
MCW-15c	830	7/31/2012♦		=	80	=	80
MCW-17	-	7/3/2012♦			Dry		Dry
MCW-17	-	7/10/2012♦			Dry		Dry
MCW-17	-	7/17/2012♦			Dry		Dry
MCW-17	-	7/24/2012♦			Dry		Dry
MCW-17	-	7/31/2012♦			Dry		Dry
MCW-18	-	7/3/2012♦			Dry		Dry
MCW-18	-	7/10/2012♦			Dry		Dry
MCW-18	-	7/17/2012♦			Dry		Dry
MCW-18	-	7/24/2012♦			Dry		Dry
MCW-18	-	7/31/2012♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦ Date of sampling

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Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli (235 MPN)		Fecal (400 MPN)	E. coli (126 MPN)	Fecal (200 MPN)
MCW-8b	-	7/1/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/2/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/3/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	7/4/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/5/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/6/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/7/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/8/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/9/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/10/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	7/11/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/12/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/13/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/14/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/15/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/16/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/17/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	7/18/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/19/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/20/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/21/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/22/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/23/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/24/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	7/25/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/26/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/27/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/28/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/29/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/30/2012	Dry	<	10	<	10	10	10
MCW-8b	-	7/31/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	7/1/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/2/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/3/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	7/4/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/5/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/6/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/7/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/8/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/9/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/10/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	7/11/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/12/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/13/2012	Dry	<	10	<	10	10	10

MCW-9	-	7/14/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/15/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/16/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/17/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	7/18/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/19/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/20/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/21/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/22/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/23/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/24/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	7/25/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/26/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/27/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/28/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/29/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/30/2012	Dry	<	10	<	10	10	10
MCW-9	-	7/31/2012♦	Dry	<	10	<	10	10	10
MCW-12	935	7/1/2012		=	170	=	170	129	172
MCW-12	935	7/2/2012		=	170	=	170	133	176
MCW-12	950	7/3/2012♦		=	500	=	1,700	141	195
MCW-12	950	7/4/2012		=	500	=	1,700	150	216
MCW-12	950	7/5/2012		=	500	=	1,700	160	241
MCW-12	950	7/6/2012		=	500	=	1,700	171	268
MCW-12	950	7/7/2012		=	500	=	1,700	182	298
MCW-12	950	7/8/2012		=	500	=	1,700	195	331
MCW-12	950	7/9/2012		=	500	=	1,700	208	368
MCW-12	910	7/10/2012♦		=	300	=	300	218	386
MCW-12	910	7/11/2012		=	300	=	300	229	406
MCW-12	910	7/12/2012		=	300	=	300	225	383
MCW-12	910	7/13/2012		=	300	=	300	221	361
MCW-12	910	7/14/2012		=	300	=	300	218	341
MCW-12	910	7/15/2012		=	300	=	300	214	322
MCW-12	910	7/16/2012		=	300	=	300	210	304
MCW-12	905	7/17/2012♦		=	340	=	1,300	208	301
MCW-12	905	7/18/2012		=	340	=	1,300	205	298
MCW-12	905	7/19/2012		=	340	=	1,300	217	331
MCW-12	905	7/20/2012		=	340	=	1,300	230	366
MCW-12	905	7/21/2012		=	340	=	1,300	244	406
MCW-12	905	7/22/2012		=	340	=	1,300	258	450
MCW-12	905	7/23/2012		=	340	=	1,300	274	498
MCW-12	930	7/24/2012♦		=	230	=	500	286	535
MCW-12	930	7/25/2012		=	230	=	500	299	574
MCW-12	930	7/26/2012		=	230	=	500	302	595
MCW-12	930	7/27/2012		=	230	=	500	306	617
MCW-12	930	7/28/2012		=	230	=	500	309	639
MCW-12	930	7/29/2012		=	230	=	500	312	663
MCW-12	930	7/30/2012		=	230	=	500	315	687
MCW-12	910	7/31/2012♦		=	300	=	1,400	321	737

MCW-14b	910	7/1/2012		=	500	=	500	313	408
MCW-14b	910	7/2/2012		=	500	=	500	319	415
MCW-14b	930	7/3/2012♦		=	140	=	140	311	404
MCW-14b	930	7/4/2012		=	140	=	140	303	394
MCW-14b	930	7/5/2012		=	140	=	140	290	372
MCW-14b	930	7/6/2012		=	140	=	140	278	351
MCW-14b	930	7/7/2012		=	140	=	140	267	331
MCW-14b	930	7/8/2012		=	140	=	140	256	312
MCW-14b	930	7/9/2012		=	140	=	140	245	295
MCW-14b	850	7/10/2012♦		=	2,200	=	5,000	257	313
MCW-14b	850	7/11/2012		=	2,200	=	5,000	270	333
MCW-14b	850	7/12/2012		=	2,200	=	5,000	289	366
MCW-14b	850	7/13/2012		=	2,200	=	5,000	309	402
MCW-14b	850	7/14/2012		=	2,200	=	5,000	330	441
MCW-14b	850	7/15/2012		=	2,200	=	5,000	353	485
MCW-14b	850	7/16/2012		=	2,200	=	5,000	377	532
MCW-14b	845	7/17/2012♦		=	110	=	110	365	515
MCW-14b	845	7/18/2012		=	110	=	110	353	498
MCW-14b	845	7/19/2012		=	110	=	110	350	483
MCW-14b	845	7/20/2012		=	110	=	110	347	469
MCW-14b	845	7/21/2012		=	110	=	110	344	455
MCW-14b	845	7/22/2012		=	110	=	110	341	442
MCW-14b	845	7/23/2012		=	110	=	110	339	429
MCW-14b	910	7/24/2012♦		=	110	=	170	336	422
MCW-14b	910	7/25/2012		=	110	=	170	333	416
MCW-14b	910	7/26/2012		=	110	=	170	317	401
MCW-14b	910	7/27/2012		=	110	=	170	301	387
MCW-14b	910	7/28/2012		=	110	=	170	286	373
MCW-14b	910	7/29/2012		=	110	=	170	272	360
MCW-14b	910	7/30/2012		=	110	=	170	259	347
MCW-14b	850	7/31/2012♦		=	110	=	110	246	330
MCW-15c	850	7/1/2012		<	10	<	10	79	109
MCW-15c	850	7/2/2012		<	10	<	10	72	96
MCW-15c	845	7/3/2012♦		<	10	=	90	65	91
MCW-15c	845	7/4/2012		<	10	=	90	58	86
MCW-15c	845	7/5/2012		<	10	=	90	52	82
MCW-15c	845	7/6/2012		<	10	=	90	47	79
MCW-15c	845	7/7/2012		<	10	=	90	42	76
MCW-15c	845	7/8/2012		<	10	=	90	37	73
MCW-15c	845	7/9/2012		<	10	=	90	33	70
MCW-15c	830	7/10/2012♦		=	130	=	130	32	68
MCW-15c	830	7/11/2012		=	130	=	130	31	66
MCW-15c	830	7/12/2012		=	130	=	130	32	65
MCW-15c	830	7/13/2012		=	130	=	130	32	64
MCW-15c	830	7/14/2012		=	130	=	130	33	63
MCW-15c	830	7/15/2012		=	130	=	130	33	62
MCW-15c	830	7/16/2012		=	130	=	130	34	61
MCW-15c	820	7/17/2012♦		=	70	=	110	34	59
MCW-15c	820	7/18/2012		=	70	=	110	34	58

MCW-15c	820	7/19/2012		=	70	=	110	34	59
MCW-15c	820	7/20/2012		=	70	=	110	33	59
MCW-15c	820	7/21/2012		=	70	=	110	33	60
MCW-15c	820	7/22/2012		=	70	=	110	33	60
MCW-15c	820	7/23/2012		=	70	=	110	33	61
MCW-15c	845	7/24/2012♦		=	270	=	340	34	64
MCW-15c	845	7/25/2012		=	270	=	340	36	67
MCW-15c	845	7/26/2012		=	270	=	340	40	76
MCW-15c	845	7/27/2012		=	270	=	340	44	85
MCW-15c	845	7/28/2012		=	270	=	340	50	96
MCW-15c	845	7/29/2012		=	270	=	340	55	108
MCW-15c	845	7/30/2012		=	270	=	340	62	121
MCW-15c	830	7/31/2012♦		=	80	=	80	66	130
MCW-17	-	7/1/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/2/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/3/2012♦	Dry	<	10	<	10	10	30
MCW-17	-	7/4/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/5/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/6/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/7/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/8/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/9/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/10/2012♦	Dry	<	10	<	10	10	30
MCW-17	-	7/11/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/12/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/13/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/14/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/15/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/16/2012	Dry	<	10	<	10	10	30
MCW-17	-	7/17/2012♦	Dry	<	10	<	10	10	26
MCW-17	-	7/18/2012	Dry	<	10	<	10	10	22
MCW-17	-	7/19/2012	Dry	<	10	<	10	10	19
MCW-17	-	7/20/2012	Dry	<	10	<	10	10	16
MCW-17	-	7/21/2012	Dry	<	10	<	10	10	14
MCW-17	-	7/22/2012	Dry	<	10	<	10	10	12
MCW-17	-	7/23/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/24/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	7/25/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/26/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/27/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/28/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/29/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/30/2012	Dry	<	10	<	10	10	10
MCW-17	-	7/31/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	7/1/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/2/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/3/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	7/4/2012	Dry	<	10	<	10	10	10

MCW-18	-	7/5/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/6/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/7/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/8/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/9/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/10/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	7/11/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/12/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/13/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/14/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/15/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/16/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/17/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	7/18/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/19/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/20/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/21/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/22/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/23/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/24/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	7/25/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/26/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/27/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/28/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/29/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/30/2012	Dry	<	10	<	10	10	10
MCW-18	-	7/31/2012♦	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
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September 20, 2012

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of August 2012. Sites were sampled weekly on Tuesdays (August 7, 14, 21, and 28). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
✓Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

					Single Sample		(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	8/7/2012◆			Dry		Dry
MCW-8b	-	8/14/2012◆			Dry		Dry
MCW-8b	-	8/21/2012◆			Dry		Dry
MCW-8b	-	8/28/2012◆			Dry		Dry
MCW-9	-	8/7/2012◆			Dry		Dry
MCW-9	-	8/14/2012◆			Dry		Dry
MCW-9	-	8/21/2012◆			Dry		Dry
MCW-9	-	8/28/2012◆			Dry		Dry
MCW-12	900	8/7/2012◆		=	150	=	2,200
MCW-12	925	8/14/2012◆		>	16,000	>	16,000
MCW-12	915	8/21/2012◆		=	9,000	=	9,000
MCW-12	910	8/28/2012◆		=	170	=	1,700
MCW-14b	835	8/7/2012◆		=	20	=	70
MCW-14b	840	8/14/2012◆		=	230	=	230
MCW-14b	845	8/21/2012◆		=	2,400	=	2,400
MCW-14b	850	8/28/2012◆		<	20	=	80
MCW-15c	815	8/7/2012◆		=	300	=	500
MCW-15c	825	8/14/2012◆		=	300	=	300
MCW-15c	830	8/21/2012◆		=	220	=	270
MCW-15c	830	8/28/2012◆		=	70	=	220
MCW-17	-	8/7/2012◆			Dry		Dry
MCW-17	-	8/14/2012◆			Dry		Dry
MCW-17	-	8/21/2012◆			Dry		Dry
MCW-17	-	8/28/2012◆			Dry		Dry
MCW-18	-	8/7/2012◆			Dry		Dry
MCW-18	-	8/14/2012◆			Dry		Dry
MCW-18	-	8/21/2012◆			Dry		Dry
MCW-18	-	8/28/2012◆			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

◆Date of sampling

Mr. Kangshi Wang
September 20, 2012
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Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**	**E. coli**	**Fecal**
					(235 MPN)		**(400 MPN)**	**(126 MPN)**	**(200 MPN)**
MCW-8b	-	8/1/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/2/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/3/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/4/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/5/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/6/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/7/2012◆	Dry	<	10	<	10	10	10
MCW-8b	-	8/8/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/9/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/10/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/11/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/12/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/13/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/14/2012◆	Dry	<	10	<	10	10	10
MCW-8b	-	8/15/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/16/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/17/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/18/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/19/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/20/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/21/2012◆	Dry	<	10	<	10	10	10
MCW-8b	-	8/22/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/23/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/24/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/25/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/26/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/27/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/28/2012◆	Dry	<	10	<	10	10	10
MCW-8b	-	8/29/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/30/2012	Dry	<	10	<	10	10	10
MCW-8b	-	8/31/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/1/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/2/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/3/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/4/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/5/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/6/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/7/2012◆	Dry	<	10	<	10	10	10
MCW-9	-	8/8/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/9/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/10/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/11/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/12/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/13/2012	Dry	<	10	<	10	10	10

MCW-9	-	8/14/2012◆	Dry	<	10	<	10	10	10
MCW-9	-	8/15/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/16/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/17/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/18/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/19/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/20/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/21/2012◆	Dry	<	10	<	10	10	10
MCW-9	-	8/22/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/23/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/24/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/25/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/26/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/27/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/28/2012◆	Dry	<	10	<	10	10	10
MCW-9	-	8/29/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/30/2012	Dry	<	10	<	10	10	10
MCW-9	-	8/31/2012	Dry	<	10	<	10	10	10
MCW-12	910	8/1/2012		=	300	=	1,400	327	790
MCW-12	910	8/2/2012		=	300	=	1,400	322	785
MCW-12	910	8/3/2012		=	300	=	1,400	316	780
MCW-12	910	8/4/2012		=	300	=	1,400	311	775
MCW-12	910	8/5/2012		=	300	=	1,400	306	770
MCW-12	910	8/6/2012		=	300	=	1,400	300	765
MCW-12	900	8/7/2012◆		=	150	=	2,200	289	772
MCW-12	900	8/8/2012		=	150	=	2,200	277	779
MCW-12	900	8/9/2012		=	150	=	2,200	271	832
MCW-12	900	8/10/2012		=	150	=	2,200	265	889
MCW-12	900	8/11/2012		=	150	=	2,200	259	950
MCW-12	900	8/12/2012		=	150	=	2,200	253	1,015
MCW-12	900	8/13/2012		=	150	=	2,200	247	1,085
MCW-12	925	8/14/2012◆		>	16,000	>	16,000	282	1,239
MCW-12	925	8/15/2012		>	16,000	>	16,000	322	1,415
MCW-12	925	8/16/2012		>	16,000	>	16,000	366	1,538
MCW-12	925	8/17/2012		>	16,000	>	16,000	416	1,672
MCW-12	925	8/18/2012		>	16,000	>	16,000	473	1,818
MCW-12	925	8/19/2012		>	16,000	>	16,000	538	1,977
MCW-12	925	8/20/2012		>	16,000	>	16,000	612	2,149
MCW-12	915	8/21/2012◆		=	9,000	=	9,000	682	2,293
MCW-12	915	8/22/2012		=	9,000	=	9,000	761	2,445
MCW-12	915	8/23/2012		=	9,000	=	9,000	860	2,693
MCW-12	915	8/24/2012		=	9,000	=	9,000	972	2,965
MCW-12	915	8/25/2012		=	9,000	=	9,000	1,098	3,265
MCW-12	915	8/26/2012		=	9,000	=	9,000	1,241	3,595
MCW-12	915	8/27/2012		=	9,000	=	9,000	1,402	3,959
MCW-12	910	8/28/2012◆		=	170	=	1,700	1,388	4,123
MCW-12	910	8/29/2012		=	170	=	1,700	1,374	4,295
MCW-12	910	8/30/2012		=	170	=	1,700	1,348	4,323
MCW-12	910	8/31/2012		=	170	=	1,700	1,323	4,351

MCW-14b	850	8/1/2012		=	110	=	110	234	314
MCW-14b	850	8/2/2012		=	110	=	110	232	311
MCW-14b	850	8/3/2012		=	110	=	110	230	309
MCW-14b	850	8/4/2012		=	110	=	110	229	306
MCW-14b	850	8/5/2012		=	110	=	110	227	304
MCW-14b	850	8/6/2012		=	110	=	110	225	301
MCW-14b	835	8/7/2012♦		=	20	=	70	211	295
MCW-14b	835	8/8/2012		=	20	=	70	198	288
MCW-14b	835	8/9/2012		=	20	=	70	169	250
MCW-14b	835	8/10/2012		=	20	=	70	144	217
MCW-14b	835	8/11/2012		=	20	=	70	123	188
MCW-14b	835	8/12/2012		=	20	=	70	106	163
MCW-14b	835	8/13/2012		=	20	=	70	90	141
MCW-14b	840	8/14/2012♦		=	230	=	230	84	128
MCW-14b	840	8/15/2012		=	230	=	230	78	115
MCW-14b	840	8/16/2012		=	230	=	230	80	118
MCW-14b	840	8/17/2012		=	230	=	230	82	121
MCW-14b	840	8/18/2012		=	230	=	230	84	124
MCW-14b	840	8/19/2012		=	230	=	230	86	127
MCW-14b	840	8/20/2012		=	230	=	230	88	130
MCW-14b	845	8/21/2012♦		=	2,400	=	2,400	97	144
MCW-14b	845	8/22/2012		=	2,400	=	2,400	108	160
MCW-14b	845	8/23/2012		=	2,400	=	2,400	119	175
MCW-14b	845	8/24/2012		=	2,400	=	2,400	132	191
MCW-14b	845	8/25/2012		=	2,400	=	2,400	147	208
MCW-14b	845	8/26/2012		=	2,400	=	2,400	163	228
MCW-14b	845	8/27/2012		=	2,400	=	2,400	180	249
MCW-14b	850	8/28/2012♦		<	10	=	80	166	242
MCW-14b	850	8/29/2012		<	10	=	80	154	236
MCW-14b	850	8/30/2012		<	10	=	80	142	234
MCW-14b	850	8/31/2012		<	10	=	80	131	231
MCW-15c	830	8/1/2012		=	80	=	80	71	139
MCW-15c	830	8/2/2012		=	80	=	80	76	138
MCW-15c	830	8/3/2012		=	80	=	80	82	138
MCW-15c	830	8/4/2012		=	80	=	80	87	137
MCW-15c	830	8/5/2012		=	80	=	80	94	137
MCW-15c	830	8/6/2012		=	80	=	80	100	136
MCW-15c	815	8/7/2012♦		=	300	=	500	112	144
MCW-15c	815	8/8/2012		=	300	=	500	126	153
MCW-15c	815	8/9/2012		=	300	=	500	130	160
MCW-15c	815	8/10/2012		=	300	=	500	133	167
MCW-15c	815	8/11/2012		=	300	=	500	137	175
MCW-15c	815	8/12/2012		=	300	=	500	141	183
MCW-15c	815	8/13/2012		=	300	=	500	145	191
MCW-15c	825	8/14/2012♦		=	300	=	300	149	197
MCW-15c	825	8/15/2012		=	300	=	300	153	202
MCW-15c	825	8/16/2012		=	300	=	300	161	209
MCW-15c	825	8/17/2012		=	300	=	300	169	216
MCW-15c	825	8/18/2012		=	300	=	300	177	224

MCW-15c	825	8/19/2012		=	300	=	300	186	231
MCW-15c	825	8/20/2012		=	300	=	300	195	239
MCW-15c	830	8/21/2012♦		=	220	=	270	203	246
MCW-15c	830	8/22/2012		=	220	=	270	211	254
MCW-15c	830	8/23/2012		=	220	=	270	209	252
MCW-15c	830	8/24/2012		=	220	=	270	208	250
MCW-15c	830	8/25/2012		=	220	=	270	206	248
MCW-15c	830	8/26/2012		=	220	=	270	205	246
MCW-15c	830	8/27/2012		=	220	=	270	204	244
MCW-15c	830	8/28/2012♦		=	70	=	220	195	241
MCW-15c	830	8/29/2012		=	70	=	220	186	237
MCW-15c	830	8/30/2012		=	70	=	220	185	245
MCW-15c	830	8/31/2012		=	70	=	220	184	254
MCW-17	-	8/1/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/2/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/3/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/4/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/5/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/6/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/7/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	8/8/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/9/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/10/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/11/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/12/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/13/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/14/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	8/15/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/16/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/17/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/18/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/19/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/20/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/21/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	8/22/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/23/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/24/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/25/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/26/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/27/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/28/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	8/29/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/30/2012	Dry	<	10	<	10	10	10
MCW-17	-	8/31/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/1/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/2/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/3/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/4/2012	Dry	<	10	<	10	10	10

MCW-18	-	8/5/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/6/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/7/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	8/8/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/9/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/10/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/11/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/12/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/13/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/14/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	8/15/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/16/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/17/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/18/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/19/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/20/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/21/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	8/22/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/23/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/24/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/25/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/26/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/27/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/28/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	8/29/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/30/2012	Dry	<	10	<	10	10	10
MCW-18	-	8/31/2012	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
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October 22, 2012

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of September 2012. Sites were sampled weekly on Tuesdays (September 4, 11, 18, and 25). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

					Single Sample		(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	9/4/2012♦			Dry		Dry
MCW-8b	-	9/11/2012♦			Dry		Dry
MCW-8b	-	9/18/2012♦			Dry		Dry
MCW-8b	-	9/25/2012♦			Dry		Dry
MCW-9	-	9/4/2012♦			Dry		Dry
MCW-9	-	9/11/2012♦			Dry		Dry
MCW-9	-	9/18/2012♦			Dry		Dry
MCW-9	-	9/25/2012♦			Dry		Dry
MCW-12	930	9/4/2012♦		=	1,700	=	2,800
MCW-12	945	9/11/2012♦		=	20	=	5,000
MCW-12	930	9/18/2012♦		<	20	=	500
MCW-12	950	9/25/2012♦		=	70	=	70
MCW-14b	910	9/4/2012♦		=	16,000	=	16,000
MCW-14b	930	9/11/2012♦		=	270	=	800
MCW-14b	905	9/18/2012♦		=	170	=	800
MCW-14b	920	9/25/2012♦		=	70	=	800
MCW-15c	845	9/4/2012♦		=	80	=	80
MCW-15c	910	9/11/2012♦		=	20	=	230
MCW-15c	845	9/18/2012♦		=	80	=	500
MCW-15c	900	9/25/2012♦		=	800	=	16,000
MCW-17	-	9/4/2012♦			Dry		Dry
MCW-17	-	9/11/2012♦			Dry		Dry
MCW-17	-	9/18/2012♦			Dry		Dry
MCW-17	-	9/25/2012♦			Dry		Dry
MCW-18	-	9/4/2012♦			Dry		Dry
MCW-18	-	9/11/2012♦			Dry		Dry
MCW-18	-	9/18/2012♦			Dry		Dry
MCW-18	-	9/25/2012♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦Date of sampling

Mr. Kangshi Wang
October 22, 2012
Page 3 of 7

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli (235 MPN)		Fecal (400 MPN)	E. coli (126 MPN)	Fecal (200 MPN)
MCW-8b	-	9/1/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/2/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/3/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/4/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	9/5/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/6/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/7/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/8/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/9/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/10/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/11/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	9/12/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/13/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/14/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/15/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/16/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/17/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/18/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	9/19/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/20/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/21/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/22/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/23/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/24/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/25/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	9/26/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/27/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/28/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/29/12	Dry	<	10	<	10	10	10
MCW-8b	-	9/30/12	Dry	<	10	<	10	10	10
MCW-9	-	9/1/12	Dry	<	10	<	10	10	10
MCW-9	-	9/2/12	Dry	<	10	<	10	10	10
MCW-9	-	9/3/12	Dry	<	10	<	10	10	10
MCW-9	-	9/4/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	9/5/12	Dry	<	10	<	10	10	10
MCW-9	-	9/6/12	Dry	<	10	<	10	10	10
MCW-9	-	9/7/12	Dry	<	10	<	10	10	10
MCW-9	-	9/8/12	Dry	<	10	<	10	10	10
MCW-9	-	9/9/12	Dry	<	10	<	10	10	10
MCW-9	-	9/10/12	Dry	<	10	<	10	10	10
MCW-9	-	9/11/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	9/12/12	Dry	<	10	<	10	10	10
MCW-9	-	9/13/12	Dry	<	10	<	10	10	10

MCW-9	-	9/14/12	Dry	<	10	<	10	10	10
MCW-9	-	9/15/12	Dry	<	10	<	10	10	10
MCW-9	-	9/16/12	Dry	<	10	<	10	10	10
MCW-9	-	9/17/12	Dry	<	10	<	10	10	10
MCW-9	-	9/18/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	9/19/12	Dry	<	10	<	10	10	10
MCW-9	-	9/20/12	Dry	<	10	<	10	10	10
MCW-9	-	9/21/12	Dry	<	10	<	10	10	10
MCW-9	-	9/22/12	Dry	<	10	<	10	10	10
MCW-9	-	9/23/12	Dry	<	10	<	10	10	10
MCW-9	-	9/24/12	Dry	<	10	<	10	10	10
MCW-9	-	9/25/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	9/26/12	Dry	<	10	<	10	10	10
MCW-9	-	9/27/12	Dry	<	10	<	10	10	10
MCW-9	-	9/28/12	Dry	<	10	<	10	10	10
MCW-9	-	9/29/12	Dry	<	10	<	10	10	10
MCW-9	-	9/30/12	Dry	<	10	<	10	10	10
MCW-12	910	9/1/12		=	170	=	1,700	1,298	4,379
MCW-12	910	9/2/12		=	170	=	1,700	1,274	4,408
MCW-12	910	9/3/12		=	170	=	1,700	1,250	4,436
MCW-12	930	9/4/2012♦		=	1,700	=	2,800	1,325	4,540
MCW-12	930	9/5/12		=	1,700	=	2,800	1,403	4,646
MCW-12	930	9/6/12		=	1,700	=	2,800	1,522	4,684
MCW-12	930	9/7/12		=	1,700	=	2,800	1,650	4,722
MCW-12	930	9/8/12		=	1,700	=	2,800	1,789	4,760
MCW-12	930	9/9/12		=	1,700	=	2,800	1,940	4,798
MCW-12	930	9/10/12		=	1,700	=	2,800	2,103	4,837
MCW-12	945	9/11/2012♦		=	20	=	5,000	1,967	4,971
MCW-12	945	9/12/12		=	20	=	5,000	1,839	5,109
MCW-12	945	9/13/12		=	20	=	5,000	1,472	4,915
MCW-12	945	9/14/12		=	20	=	5,000	1,178	4,728
MCW-12	945	9/15/12		=	20	=	5,000	942	4,548
MCW-12	945	9/16/12		=	20	=	5,000	754	4,375
MCW-12	945	9/17/12		=	20	=	5,000	604	4,209
MCW-12	930	9/18/2012♦		<	10	=	500	472	3,749
MCW-12	930	9/19/12		<	10	=	500	369	3,340
MCW-12	930	9/20/12		<	10	=	500	294	3,034
MCW-12	930	9/21/12		<	10	=	500	235	2,755
MCW-12	930	9/22/12		<	10	=	500	187	2,502
MCW-12	930	9/23/12		<	10	=	500	149	2,272
MCW-12	930	9/24/12		<	10	=	500	119	2,063
MCW-12	950	9/25/2012♦		=	70	=	70	101	1,755
MCW-12	950	9/26/12		=	70	=	70	86	1,493
MCW-12	950	9/27/12		=	70	=	70	83	1,342
MCW-12	950	9/28/12		=	70	=	70	81	1,207
MCW-12	950	9/29/12		=	70	=	70	79	1,085
MCW-12	950	9/30/12		=	70	=	70	76	976

MCW-14b	850	9/1/12		<	10	=	80	121	229
MCW-14b	850	9/2/12		<	10	=	80	112	226
MCW-14b	850	9/3/12		<	10	=	80	103	224
MCW-14b	910	9/4/2012♦		=	16,000	=	16,000	122	265
MCW-14b	910	9/5/12		=	16,000	=	16,000	144	312
MCW-14b	910	9/6/12		=	16,000	=	16,000	179	374
MCW-14b	910	9/7/12		=	16,000	=	16,000	224	449
MCW-14b	910	9/8/12		=	16,000	=	16,000	280	538
MCW-14b	910	9/9/12		=	16,000	=	16,000	350	644
MCW-14b	910	9/10/12		=	16,000	=	16,000	437	772
MCW-14b	930	9/11/2012♦		=	270	=	800	477	838
MCW-14b	930	9/12/12		=	270	=	800	520	909
MCW-14b	930	9/13/12		=	270	=	800	523	947
MCW-14b	930	9/14/12		=	270	=	800	526	987
MCW-14b	930	9/15/12		=	270	=	800	529	1,029
MCW-14b	930	9/16/12		=	270	=	800	531	1,073
MCW-14b	930	9/17/12		=	270	=	800	534	1,118
MCW-14b	905	9/18/2012♦		=	170	=	800	529	1,166
MCW-14b	905	9/19/12		=	170	=	800	524	1,215
MCW-14b	905	9/20/12		=	170	=	800	479	1,172
MCW-14b	905	9/21/12		=	170	=	800	439	1,129
MCW-14b	905	9/22/12		=	170	=	800	402	1,089
MCW-14b	905	9/23/12		=	170	=	800	368	1,050
MCW-14b	905	9/24/12		=	170	=	800	337	1,012
MCW-14b	920	9/25/2012♦		=	70	=	800	299	976
MCW-14b	920	9/26/12		=	70	=	800	266	940
MCW-14b	920	9/27/12		=	70	=	800	284	1,015
MCW-14b	920	9/28/12		=	70	=	800	303	1,096
MCW-14b	920	9/29/12		=	70	=	800	323	1,184
MCW-14b	920	9/30/12		=	70	=	800	345	1,278
MCW-15c	830	9/1/12		=	70	=	220	184	263
MCW-15c	830	9/2/12		=	70	=	220	183	272
MCW-15c	830	9/3/12		=	70	=	220	182	281
MCW-15c	845	9/4/2012♦		=	80	=	80	182	281
MCW-15c	845	9/5/12		=	80	=	80	182	281
MCW-15c	845	9/6/12		=	80	=	80	174	264
MCW-15c	845	9/7/12		=	80	=	80	167	249
MCW-15c	845	9/8/12		=	80	=	80	159	234
MCW-15c	845	9/9/12		=	80	=	80	153	220
MCW-15c	845	9/10/12		=	80	=	80	146	207
MCW-15c	910	9/11/2012♦		=	20	=	230	133	202
MCW-15c	910	9/12/12		=	20	=	230	122	197
MCW-15c	910	9/13/12		=	20	=	230	111	195
MCW-15c	910	9/14/12		=	20	=	230	102	193
MCW-15c	910	9/15/12		=	20	=	230	93	191
MCW-15c	910	9/16/12		=	20	=	230	85	190
MCW-15c	910	9/17/12		=	20	=	230	78	188
MCW-15c	845	9/18/2012♦		=	80	=	500	74	191

MCW-15c	845	9/19/12		=	80	=	500	71	195
MCW-15c	845	9/20/12		=	80	=	500	69	199
MCW-15c	845	9/21/12		=	80	=	500	66	203
MCW-15c	845	9/22/12		=	80	=	500	64	207
MCW-15c	845	9/23/12		=	80	=	500	62	211
MCW-15c	845	9/24/12		=	80	=	500	60	216
MCW-15c	900	9/25/2012♦		=	800	=	16,000	63	247
MCW-15c	900	9/26/12		=	800	=	16,000	65	283
MCW-15c	900	9/27/12		=	800	=	16,000	71	326
MCW-15c	900	9/28/12		=	800	=	16,000	77	377
MCW-15c	900	9/29/12		=	800	=	16,000	83	434
MCW-15c	900	9/30/12		=	800	=	16,000	91	501
MCW-17	-	9/1/12	Dry	<	10	<	10	10	10
MCW-17	-	9/2/12	Dry	<	10	<	10	10	10
MCW-17	-	9/3/12	Dry	<	10	<	10	10	10
MCW-17	-	9/4/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	9/5/12	Dry	<	10	<	10	10	10
MCW-17	-	9/6/12	Dry	<	10	<	10	10	10
MCW-17	-	9/7/12	Dry	<	10	<	10	10	10
MCW-17	-	9/8/12	Dry	<	10	<	10	10	10
MCW-17	-	9/9/12	Dry	<	10	<	10	10	10
MCW-17	-	9/10/12	Dry	<	10	<	10	10	10
MCW-17	-	9/11/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	9/12/12	Dry	<	10	<	10	10	10
MCW-17	-	9/13/12	Dry	<	10	<	10	10	10
MCW-17	-	9/14/12	Dry	<	10	<	10	10	10
MCW-17	-	9/15/12	Dry	<	10	<	10	10	10
MCW-17	-	9/16/12	Dry	<	10	<	10	10	10
MCW-17	-	9/17/12	Dry	<	10	<	10	10	10
MCW-17	-	9/18/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	9/19/12	Dry	<	10	<	10	10	10
MCW-17	-	9/20/12	Dry	<	10	<	10	10	10
MCW-17	-	9/21/12	Dry	<	10	<	10	10	10
MCW-17	-	9/22/12	Dry	<	10	<	10	10	10
MCW-17	-	9/23/12	Dry	<	10	<	10	10	10
MCW-17	-	9/24/12	Dry	<	10	<	10	10	10
MCW-17	-	9/25/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	9/26/12	Dry	<	10	<	10	10	10
MCW-17	-	9/27/12	Dry	<	10	<	10	10	10
MCW-17	-	9/28/12	Dry	<	10	<	10	10	10
MCW-17	-	9/29/12	Dry	<	10	<	10	10	10
MCW-17	-	9/30/12	Dry	<	10	<	10	10	10
MCW-18	-	9/1/12	Dry	<	10	<	10	10	10
MCW-18	-	9/2/12	Dry	<	10	<	10	10	10
MCW-18	-	9/3/12	Dry	<	10	<	10	10	10
MCW-18	-	9/4/2012♦	Dry	<	10	<	10	10	10

MCW-18	-	9/5/12	Dry	<	10	<	10	10	10
MCW-18	-	9/6/12	Dry	<	10	<	10	10	10
MCW-18	-	9/7/12	Dry	<	10	<	10	10	10
MCW-18	-	9/8/12	Dry	<	10	<	10	10	10
MCW-18	-	9/9/12	Dry	<	10	<	10	10	10
MCW-18	-	9/10/12	Dry	<	10	<	10	10	10
MCW-18	-	9/11/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	9/12/12	Dry	<	10	<	10	10	10
MCW-18	-	9/13/12	Dry	<	10	<	10	10	10
MCW-18	-	9/14/12	Dry	<	10	<	10	10	10
MCW-18	-	9/15/12	Dry	<	10	<	10	10	10
MCW-18	-	9/16/12	Dry	<	10	<	10	10	10
MCW-18	-	9/17/12	Dry	<	10	<	10	10	10
MCW-18	-	9/18/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	9/19/12	Dry	<	10	<	10	10	10
MCW-18	-	9/20/12	Dry	<	10	<	10	10	10
MCW-18	-	9/21/12	Dry	<	10	<	10	10	10
MCW-18	-	9/22/12	Dry	<	10	<	10	10	10
MCW-18	-	9/23/12	Dry	<	10	<	10	10	10
MCW-18	-	9/24/12	Dry	<	10	<	10	10	10
MCW-18	-	9/25/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	9/26/12	Dry	<	10	<	10	10	10
MCW-18	-	9/27/12	Dry	<	10	<	10	10	10
MCW-18	-	9/28/12	Dry	<	10	<	10	10	10
MCW-18	-	9/29/12	Dry	<	10	<	10	10	10
MCW-18	-	9/30/12	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

county of ventura

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Standards & TMDL Unit
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Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of October 2012. Sites were sampled weekly on Tuesdays (October 2, 9, 16, 23, and 30). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
✓ Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

Location	Time	Date	Rain		Single Sample E. coli (235 MPN)		(as sampled) Fecal (400 MPN)
MCW-8b	-	10/2/2012♦			Dry		Dry
MCW-8b	-	10/9/2012♦			Dry		Dry
MCW-8b	-	10/16/2012♦			Dry		Dry
MCW-8b	-	10/23/2012♦			Dry		Dry
MCW-8b	-	10/30/2012♦			Dry		Dry
MCW-9	-	10/2/2012♦			Dry		Dry
MCW-9	-	10/9/2012♦			Dry		Dry
MCW-9	-	10/16/2012♦			Dry		Dry
MCW-9	-	10/23/2012♦			Dry		Dry
MCW-9	-	10/30/2012♦			Dry		Dry
MCW-12	915	10/2/2012♦		=	170	=	220
MCW-12	900	10/9/2012♦		=	70	=	300
MCW-12	1020	10/16/2012♦		=	230	=	230
MCW-12	950	10/23/2012♦		=	220	=	500
MCW-12	1010	10/30/2012♦		=	20	=	300
MCW-14b	900	10/2/2012♦		=	800	=	800
MCW-14b	840	10/9/2012♦		=	310	=	350
MCW-14b	955	10/16/2012♦		=	700	=	1,100
MCW-14b	935	10/23/2012♦		=	700	=	700
MCW-14b	945	10/30/2012♦		=	230	=	230
MCW-15c	845	10/2/2012♦		=	300	=	300
MCW-15c	820	10/9/2012♦		=	1,100	=	9,000
MCW-15c	930	10/16/2012♦		=	1,300	=	1,300
MCW-15c	915	10/23/2012♦		=	500	=	500
MCW-15c	915	10/30/2012♦		=	800	=	800
MCW-17	-	10/2/2012♦			Dry		Dry
MCW-17	-	10/9/2012♦			Dry		Dry
MCW-17	-	10/16/2012♦			Dry		Dry
MCW-17	-	10/23/2012♦			Dry		Dry
MCW-17	-	10/30/2012♦			Dry		Dry
MCW-18	-	10/2/2012♦			Dry		Dry
MCW-18	-	10/9/2012♦			Dry		Dry
MCW-18	-	10/16/2012♦			Dry		Dry
MCW-18	-	10/23/2012♦			Dry		Dry
MCW-18	-	10/30/2012♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦Date of sampling

Mr. Kangshi Wang
November 19, 2012

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli (235 MPN)		Fecal (400 MPN)	E. coli (126 MPN)	Fecal (200 MPN)
MCW-8b	-	10/1/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/2/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	10/3/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/4/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/5/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/6/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/7/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/8/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/9/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	10/10/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/11/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/12/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/13/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/14/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/15/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/16/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	10/17/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/18/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/19/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/20/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/21/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/22/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/23/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	10/24/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/25/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/26/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/27/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/28/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/29/2012	Dry	<	10	<	10	10	10
MCW-8b	-	10/30/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	10/31/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/1/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/2/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	10/3/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/4/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/5/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/6/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/7/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/8/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/9/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	10/10/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/11/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/12/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/13/2012	Dry	<	10	<	10	10	10

MCW-9	-	10/14/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/15/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/16/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	10/17/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/18/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/19/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/20/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/21/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/22/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/23/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	10/24/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/25/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/26/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/27/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/28/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/29/2012	Dry	<	10	<	10	10	10
MCW-9	-	10/30/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	10/31/2012	Dry	<	10	<	10	10	10
MCW-12	950	10/1/2012		=	70	=	70	74	877
MCW-12	915	10/2/2012♦		=	170	=	220	74	819
MCW-12	915	10/3/2012		=	170	=	220	74	765
MCW-12	915	10/4/2012		=	170	=	220	69	703
MCW-12	915	10/5/2012		=	170	=	220	64	646
MCW-12	915	10/6/2012		=	170	=	220	59	593
MCW-12	915	10/7/2012		=	170	=	220	55	545
MCW-12	915	10/8/2012		=	170	=	220	50	501
MCW-12	900	10/9/2012♦		=	70	=	300	45	465
MCW-12	900	10/10/2012		=	70	=	300	41	432
MCW-12	900	10/11/2012		=	70	=	300	43	393
MCW-12	900	10/12/2012		=	70	=	300	44	358
MCW-12	900	10/13/2012		=	70	=	300	46	326
MCW-12	900	10/14/2012		=	70	=	300	48	297
MCW-12	900	10/15/2012		=	70	=	300	50	270
MCW-12	1020	10/16/2012♦		=	230	=	230	55	244
MCW-12	1020	10/17/2012		=	230	=	230	59	220
MCW-12	1020	10/18/2012		=	230	=	230	66	214
MCW-12	1020	10/19/2012		=	230	=	230	73	209
MCW-12	1020	10/20/2012		=	230	=	230	81	204
MCW-12	1020	10/21/2012		=	230	=	230	90	198
MCW-12	1020	10/22/2012		=	230	=	230	100	193
MCW-12	950	10/23/2012♦		=	220	=	500	111	193
MCW-12	950	10/24/2012		=	220	=	500	123	193
MCW-12	950	10/25/2012		=	220	=	500	127	206
MCW-12	950	10/26/2012		=	220	=	500	132	220
MCW-12	950	10/27/2012		=	220	=	500	138	235
MCW-12	950	10/28/2012		=	220	=	500	143	251
MCW-12	950	10/29/2012		=	220	=	500	148	268
MCW-12	1010	10/30/2012♦		=	20	=	300	142	281
MCW-12	1010	10/31/2012		=	20	=	300	137	295

MCW-14b	920	10/1/2012		=	70	=	800	368	1,380
MCW-14b	900	10/2/2012♦		=	800	=	800	426	1,490
MCW-14b	900	10/3/2012		=	800	=	800	493	1,609
MCW-14b	900	10/4/2012		=	800	=	800	446	1,456
MCW-14b	900	10/5/2012		=	800	=	800	404	1,318
MCW-14b	900	10/6/2012		=	800	=	800	365	1,193
MCW-14b	900	10/7/2012		=	800	=	800	331	1,079
MCW-14b	900	10/8/2012		=	800	=	800	299	977
MCW-14b	840	10/9/2012♦		=	310	=	350	262	860
MCW-14b	840	10/10/2012		=	310	=	350	230	757
MCW-14b	840	10/11/2012		=	310	=	350	231	737
MCW-14b	840	10/12/2012		=	310	=	350	232	717
MCW-14b	840	10/13/2012		=	310	=	350	233	697
MCW-14b	840	10/14/2012		=	310	=	350	234	678
MCW-14b	840	10/15/2012		=	310	=	350	235	660
MCW-14b	955	10/16/2012♦		=	700	=	1,100	243	667
MCW-14b	955	10/17/2012		=	700	=	1,100	251	674
MCW-14b	955	10/18/2012		=	700	=	1,100	263	681
MCW-14b	955	10/19/2012		=	700	=	1,100	276	688
MCW-14b	955	10/20/2012		=	700	=	1,100	289	696
MCW-14b	955	10/21/2012		=	700	=	1,100	303	703
MCW-14b	955	10/22/2012		=	700	=	1,100	318	711
MCW-14b	935	10/23/2012♦		=	700	=	700	333	707
MCW-14b	935	10/24/2012		=	700	=	700	349	704
MCW-14b	935	10/25/2012		=	700	=	700	377	701
MCW-14b	935	10/26/2012		=	700	=	700	407	698
MCW-14b	935	10/27/2012		=	700	=	700	439	695
MCW-14b	935	10/28/2012		=	700	=	700	474	692
MCW-14b	935	10/29/2012		=	700	=	700	512	689
MCW-14b	945	10/30/2012♦		=	230	=	230	533	661
MCW-14b	945	10/31/2012		=	230	=	230	554	634
MCW-15c	900	10/1/2012		=	800	=	16,000	98	578
MCW-15c	845	10/2/2012♦		=	300	=	300	103	584
MCW-15c	845	10/3/2012		=	300	=	300	108	590
MCW-15c	845	10/4/2012		=	300	=	300	113	617
MCW-15c	845	10/5/2012		=	300	=	300	118	645
MCW-15c	845	10/6/2012		=	300	=	300	123	674
MCW-15c	845	10/7/2012		=	300	=	300	129	704
MCW-15c	845	10/8/2012		=	300	=	300	135	736
MCW-15c	820	10/9/2012♦		=	1,100	=	9,000	147	861
MCW-15c	820	10/10/2012		=	1,100	=	9,000	161	1,008
MCW-15c	820	10/11/2012		=	1,100	=	9,000	184	1,139
MCW-15c	820	10/12/2012		=	1,100	=	9,000	210	1,287
MCW-15c	820	10/13/2012		=	1,100	=	9,000	240	1,454
MCW-15c	820	10/14/2012		=	1,100	=	9,000	274	1,643
MCW-15c	820	10/15/2012		=	1,100	=	9,000	313	1,857
MCW-15c	930	10/16/2012♦		=	1,300	=	1,300	360	1,967
MCW-15c	930	10/17/2012		=	1,300	=	1,300	414	2,084
MCW-15c	930	10/18/2012		=	1,300	=	1,300	454	2,152

MCW-15c	930	10/19/2012		=	1,300	=	1,300	498	2,221
MCW-15c	930	10/20/2012		=	1,300	=	1,300	547	2,293
MCW-15c	930	10/21/2012		=	1,300	=	1,300	600	2,368
MCW-15c	930	10/22/2012		=	1,300	=	1,300	658	2,444
MCW-15c	915	10/23/2012♦		=	500	=	500	700	2,444
MCW-15c	915	10/24/2012		=	500	=	500	744	2,444
MCW-15c	915	10/25/2012		=	500	=	500	732	2,178
MCW-15c	915	10/26/2012		=	500	=	500	721	1,940
MCW-15c	915	10/27/2012		=	500	=	500	710	1,728
MCW-15c	915	10/28/2012		=	500	=	500	699	1,540
MCW-15c	915	10/29/2012		=	500	=	500	688	1,372
MCW-15c	915	10/30/2012♦		=	800	=	800	688	1,241
MCW-15c	915	10/31/2012		=	800	=	800	688	1,123
MCW-17	-	10/1/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/2/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	10/3/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/4/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/5/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/6/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/7/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/8/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/9/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	10/10/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/11/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/12/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/13/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/14/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/15/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/16/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	10/17/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/18/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/19/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/20/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/21/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/22/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/23/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	10/24/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/25/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/26/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/27/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/28/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/29/2012	Dry	<	10	<	10	10	10
MCW-17	-	10/30/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	10/31/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/1/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/2/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	10/3/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/4/2012	Dry	<	10	<	10	10	10

MCW-18	-	10/5/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/6/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/7/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/8/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/9/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	10/10/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/11/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/12/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/13/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/14/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/15/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/16/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	10/17/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/18/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/19/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/20/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/21/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/22/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/23/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	10/24/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/25/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/26/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/27/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/28/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/29/2012	Dry	<	10	<	10	10	10
MCW-18	-	10/30/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	10/31/2012	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Tully Clifford, Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Phil Nelson, Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

December 17, 2012

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of November 2012. Sites were sampled weekly on Tuesdays (November 6, 13, 20, and 27). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

Location	Time	Date	Rain		Single Sample E. coli (235 MPN)		(as sampled) Fecal (400 MPN)
MCW-8b	-	11/6/2012♦			Dry		Dry
MCW-8b	-	11/13/2012♦			Dry		Dry
MCW-8b	-	11/20/2012♦			Dry		Dry
MCW-8b	-	11/27/2012♦			Dry		Dry
MCW-9	-	11/6/2012♦			Dry		Dry
MCW-9	-	11/13/2012♦			Dry		Dry
MCW-9	-	11/20/2012♦			Dry		Dry
MCW-9	-	11/27/2012♦			Dry		Dry
MCW-12	1310	11/6/2012♦		=	20	=	110
MCW-12	1115	11/13/2012♦		<	20	<	20
MCW-12	950	11/20/2012♦	Rain	=	270	=	270
MCW-12	845	11/27/2012♦		<	20	=	20
MCW-14b	1157	11/6/2012♦		=	1,700	=	1,700
MCW-14b	950	11/13/2012♦		=	1,700	=	5,000
MCW-14b	925	11/20/2012♦	Rain	=	300	=	300
MCW-14b	820	11/27/2012♦		=	110	=	170
MCW-15c	1130	11/6/2012♦		=	140	=	500
MCW-15c	930	11/13/2012♦		=	110	=	300
MCW-15c	910	11/20/2012♦	Rain	=	110	=	80
MCW-15c	800	11/27/2012♦		=	230	=	230
MCW-17	-	11/6/2012♦			Dry		Dry
MCW-17	-	11/13/2012♦			Dry		Dry
MCW-17	-	11/20/2012♦			Dry		Dry
MCW-17	-	11/27/2012♦			Dry		Dry
MCW-18	-	11/6/2012♦			Dry		Dry
MCW-18	-	11/13/2012♦			Dry		Dry
MCW-18	-	11/20/2012♦			Dry		Dry
MCW-18	-	11/27/2012♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦Date of sampling

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli (235 MPN)		Fecal (400 MPN)	E. coli (126 MPN)	Fecal (200 MPN)
MCW-8b	-	11/1/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/2/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/3/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/4/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/5/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/6/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	11/7/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/8/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/9/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/10/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/11/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/12/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/13/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	11/14/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/15/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/16/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/17/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/18/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/19/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/20/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	11/21/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/22/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/23/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/24/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/25/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/26/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/27/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	11/28/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/29/2012	Dry	<	10	<	10	10	10
MCW-8b	-	11/30/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/1/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/2/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/3/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/4/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/5/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/6/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	11/7/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/8/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/9/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/10/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/11/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/12/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/13/2012♦	Dry	<	10	<	10	10	10

MCW-9	-	11/14/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/15/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/16/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/17/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/18/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/19/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/20/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	11/21/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/22/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/23/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/24/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/25/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/26/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/27/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	11/28/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/29/2012	Dry	<	10	<	10	10	10
MCW-9	-	11/30/2012	Dry	<	10	<	10	10	10
MCW-12	1010	11/1/2012		=	20	=	300	127	299
MCW-12	1010	11/2/2012		=	20	=	300	118	302
MCW-12	1010	11/3/2012		=	20	=	300	110	305
MCW-12	1010	11/4/2012		=	20	=	300	103	308
MCW-12	1010	11/5/2012		=	20	=	300	96	311
MCW-12	1310	11/6/2012♦		=	20	=	110	89	304
MCW-12	1310	11/7/2012		=	20	=	110	83	297
MCW-12	1310	11/8/2012		=	20	=	110	79	287
MCW-12	1310	11/9/2012		=	20	=	110	76	278
MCW-12	1310	11/10/2012		=	20	=	110	73	269
MCW-12	1310	11/11/2012		=	20	=	110	70	260
MCW-12	1310	11/12/2012		=	20	=	110	67	251
MCW-12	1115	11/13/2012♦		<	10	<	10	63	224
MCW-12	1115	11/14/2012		<	10	<	10	59	200
MCW-12	1115	11/15/2012		<	10	<	10	53	180
MCW-12	1115	11/16/2012		<	10	<	10	48	163
MCW-12	1115	11/17/2012		<	10	<	10	43	146
MCW-12	1115	11/18/2012		<	10	<	10	39	132
MCW-12	1115	11/19/2012		<	10	<	10	35	119
MCW-12	950	11/20/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	11/26/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	845	11/27/2012♦		<	10	=	20	32	110
MCW-12	845	11/28/2012		<	10	=	20	28	101
MCW-12	845	11/29/2012		<	10	=	20	26	91
MCW-12	845	11/30/2012		<	10	=	20	23	81

MCW-14b	945	11/1/2012		=	230	=	230	532	608
MCW-14b	945	11/2/2012		=	230	=	230	510	583
MCW-14b	945	11/3/2012		=	230	=	230	489	560
MCW-14b	945	11/4/2012		=	230	=	230	470	537
MCW-14b	945	11/5/2012		=	230	=	230	450	515
MCW-14b	1157	11/6/2012♦		=	1,700	=	1,700	462	528
MCW-14b	1157	11/7/2012		=	1,700	=	1,700	474	541
MCW-14b	1157	11/8/2012		=	1,700	=	1,700	501	571
MCW-14b	1157	11/9/2012		=	1,700	=	1,700	531	602
MCW-14b	1157	11/10/2012		=	1,700	=	1,700	562	634
MCW-14b	1157	11/11/2012		=	1,700	=	1,700	594	668
MCW-14b	1157	11/12/2012		=	1,700	=	1,700	629	705
MCW-14b	950	11/13/2012♦		=	1,700	=	5,000	666	770
MCW-14b	950	11/14/2012		=	1,700	=	5,000	705	841
MCW-14b	950	11/15/2012		=	1,700	=	5,000	726	885
MCW-14b	950	11/16/2012		=	1,700	=	5,000	747	931
MCW-14b	950	11/17/2012		=	1,700	=	5,000	770	979
MCW-14b	950	11/18/2012		=	1,700	=	5,000	793	1,030
MCW-14b	950	11/19/2012		=	1,700	=	5,000	817	1,083
MCW-14b	925	11/20/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	925	11/26/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	820	11/27/2012♦		=	110	=	170	768	1,017
MCW-14b	820	11/28/2012		=	110	=	170	722	956
MCW-14b	820	11/29/2012		=	110	=	170	679	912
MCW-14b	820	11/30/2012		=	110	=	170	638	870
MCW-15c	915	11/1/2012		=	800	=	800	711	1,161
MCW-15c	915	11/2/2012		=	800	=	800	734	1,199
MCW-15c	915	11/3/2012		=	800	=	800	759	1,239
MCW-15c	915	11/4/2012		=	800	=	800	784	1,280
MCW-15c	915	11/5/2012		=	800	=	800	810	1,323
MCW-15c	1130	11/6/2012♦		=	140	=	500	790	1,346
MCW-15c	1130	11/7/2012		=	140	=	500	770	1,369
MCW-15c	1130	11/8/2012		=	140	=	500	719	1,243
MCW-15c	1130	11/9/2012		=	140	=	500	671	1,129
MCW-15c	1130	11/10/2012		=	140	=	500	627	1,025
MCW-15c	1130	11/11/2012		=	140	=	500	585	931
MCW-15c	1130	11/12/2012		=	140	=	500	546	845
MCW-15c	930	11/13/2012♦		=	110	=	300	506	755
MCW-15c	930	11/14/2012		=	110	=	300	468	674
MCW-15c	930	11/15/2012		=	110	=	300	431	642
MCW-15c	930	11/16/2012		=	110	=	300	397	611
MCW-15c	930	11/17/2012		=	110	=	300	366	582
MCW-15c	930	11/18/2012		=	110	=	300	337	554

MCW-15c	930	11/19/2012		=	110	=	300	310	528
MCW-15c	910	11/20/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	11/26/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	800	11/27/2012♦		=	230	=	230	293	498
MCW-15c	800	11/28/2012		=	230	=	230	276	470
MCW-15c	800	11/29/2012		=	230	=	230	269	458
MCW-15c	800	11/30/2012		=	230	=	230	263	447
MCW-17	-	11/1/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/2/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/3/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/4/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/5/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/6/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	11/7/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/8/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/9/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/10/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/11/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/12/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/13/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	11/14/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/15/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/16/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/17/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/18/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/19/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/20/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	11/21/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/22/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/23/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/24/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/25/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/26/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/27/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	11/28/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/29/2012	Dry	<	10	<	10	10	10
MCW-17	-	11/30/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/1/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/2/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/3/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/4/2012	Dry	<	10	<	10	10	10

MCW-18	-	11/5/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/6/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	11/7/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/8/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/9/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/10/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/11/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/12/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/13/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	11/14/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/15/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/16/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/17/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/18/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/19/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/20/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	11/21/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/22/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/23/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/24/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/25/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/26/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/27/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	11/28/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/29/2012	Dry	<	10	<	10	10	10
MCW-18	-	11/30/2012	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Tully Clifford, Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Phil Nelson, Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

January 22, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of December 2012. Sites were sampled weekly on Tuesdays (December 4, 11, and 18) except for the last week of December, which was sampled on a Wednesday (12/26) due to the Christmas holiday. Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

				Single Sample			(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	12/4/2012♦			Dry		Dry
MCW-8b	-	12/11/2012♦			Dry		Dry
MCW-8b	-	12/18/2012♦			Dry		Dry
MCW-8b	-	12/26/2012♦			Dry		Dry
MCW-9	-	12/4/2012♦			Dry		Dry
MCW-9	-	12/11/2012♦			Dry		Dry
MCW-9	-	12/18/2012♦			Dry		Dry
MCW-9	-	12/26/2012♦			Dry		Dry
MCW-12	950	12/4/2012♦	Rain	=	70	=	110
MCW-12	1015	12/11/2012♦		=	80	=	80
MCW-12	1025	12/18/2012♦	Rain	=	1,300	=	1,300
MCW-12	1010	12/26/2012♦	Rain	=	1,300	=	1,300
MCW-14b	930	12/4/2012♦	Rain	=	700	=	1,100
MCW-14b	955	12/11/2012♦		=	800	=	800
MCW-14b	1000	12/18/2012♦	Rain	=	16,000	=	16,000
MCW-14b	947	12/26/2012♦	Rain	=	300	=	300
MCW-15c	910	12/4/2012♦	Rain	=	20	=	20
MCW-15c	930	12/11/2012♦		=	220	=	220
MCW-15c	940	12/18/2012♦	Rain	=	70	=	600
MCW-15c	920	12/26/2012♦	Rain	=	300	=	300
MCW-17	-	12/4/2012♦			Dry		Dry
MCW-17	-	12/11/2012♦			Dry		Dry
MCW-17	-	12/18/2012♦			Dry		Dry
MCW-17	-	12/26/2012♦			Dry		Dry
MCW-18	-	12/4/2012♦			Dry		Dry
MCW-18	-	12/11/2012♦			Dry		Dry
MCW-18	-	12/18/2012♦			Dry		Dry
MCW-18	-	12/26/2012♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli		Fecal	E. coli	Fecal
					(235 MPN)		(400 MPN)	(126 MPN)	(200 MPN)
MCW-8b	-	12/1/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/2/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/3/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/4/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	12/5/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/6/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/7/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/8/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/9/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/10/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/11/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	12/12/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/13/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/14/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/15/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/16/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/17/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/18/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	12/19/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/20/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/21/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/22/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/23/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/24/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/25/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/26/2012♦	Dry	<	10	<	10	10	10
MCW-8b	-	12/27/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/28/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/29/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/30/2012	Dry	<	10	<	10	10	10
MCW-8b	-	12/31/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/1/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/2/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/3/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/4/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	12/5/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/6/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/7/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/8/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/9/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/10/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/11/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	12/12/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/13/2012	Dry	<	10	<	10	10	10

MCW-9	-	12/14/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/15/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/16/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/17/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/18/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	12/19/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/20/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/21/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/22/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/23/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/24/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/25/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/26/2012♦	Dry	<	10	<	10	10	10
MCW-9	-	12/27/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/28/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/29/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/30/2012	Dry	<	10	<	10	10	10
MCW-9	-	12/31/2012	Dry	<	10	<	10	10	10
MCW-12	845	12/1/2012		<	10	=	20	21	73
MCW-12	845	12/2/2012		<	10	=	20	19	66
MCW-12	845	12/3/2012		<	10	=	20	17	59
MCW-12	950	12/4/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/5/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/6/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/7/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/8/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/9/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	950	12/10/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1015	12/11/2012♦		=	80	=	80	16	56
MCW-12	1015	12/12/2012		=	80	=	80	16	52
MCW-12	1015	12/13/2012		=	80	=	80	17	50
MCW-12	1015	12/14/2012		=	80	=	80	17	48
MCW-12	1015	12/15/2012		=	80	=	80	18	46
MCW-12	1015	12/16/2012		=	80	=	80	19	44
MCW-12	1015	12/17/2012		=	80	=	80	20	42
MCW-12	1025	12/18/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/19/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/20/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	12/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/26/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/27/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/28/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/29/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/30/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1010	12/31/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**

MCW-14b	820	12/1/2012		=	110	=	170	600	830
MCW-14b	820	12/2/2012		=	110	=	170	564	792
MCW-14b	820	12/3/2012		=	110	=	170	530	755
MCW-14b	930	12/4/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/5/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/6/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/7/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/8/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/9/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	930	12/10/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	955	12/11/2012♦		=	800	=	800	533	759
MCW-14b	955	12/12/2012		=	800	=	800	535	762
MCW-14b	955	12/13/2012		=	800	=	800	558	794
MCW-14b	955	12/14/2012		=	800	=	800	582	828
MCW-14b	955	12/15/2012		=	800	=	800	606	863
MCW-14b	955	12/16/2012		=	800	=	800	632	900
MCW-14b	955	12/17/2012		=	800	=	800	659	938
MCW-14b	1000	12/18/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/19/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/20/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1000	12/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/26/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/27/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/28/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/29/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/30/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	947	12/31/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	800	12/1/2012		=	230	=	230	256	435
MCW-15c	800	12/2/2012		=	230	=	230	249	424
MCW-15c	800	12/3/2012		=	230	=	230	243	413
MCW-15c	910	12/4/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/5/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/6/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/7/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/8/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/9/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	910	12/10/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	930	12/11/2012♦		=	220	=	220	236	402
MCW-15c	930	12/12/2012		=	220	=	220	230	391
MCW-15c	930	12/13/2012		=	220	=	220	220	375
MCW-15c	930	12/14/2012		=	220	=	220	211	359
MCW-15c	930	12/15/2012		=	220	=	220	202	344
MCW-15c	930	12/16/2012		=	220	=	220	194	329
MCW-15c	930	12/17/2012		=	220	=	220	185	315
MCW-15c	940	12/18/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**

MCW-15c	940	12/19/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/20/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/21/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/22/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/23/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/24/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	12/25/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/26/2012♦	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/27/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/28/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/29/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/30/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	920	12/31/2012	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-17	-	12/1/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/2/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/3/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/4/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	12/5/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/6/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/7/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/8/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/9/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/10/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/11/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	12/12/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/13/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/14/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/15/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/16/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/17/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/18/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	12/19/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/20/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/21/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/22/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/23/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/24/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/25/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/26/2012♦	Dry	<	10	<	10	10	10
MCW-17	-	12/27/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/28/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/29/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/30/2012	Dry	<	10	<	10	10	10
MCW-17	-	12/31/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/1/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/2/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/3/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/4/2012♦	Dry	<	10	<	10	10	10

MCW-18	-	12/5/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/6/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/7/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/8/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/9/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/10/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/11/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	12/12/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/13/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/14/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/15/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/16/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/17/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/18/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	12/19/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/20/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/21/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/22/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/23/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/24/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/25/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/26/2012♦	Dry	<	10	<	10	10	10
MCW-18	-	12/27/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/28/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/29/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/30/2012	Dry	<	10	<	10	10	10
MCW-18	-	12/31/2012	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Tully Clifford, Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Phil Nelson, Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

February 19, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of December 2012. Sites were sampled weekly on Tuesdays (January 8, 15, 22, and 29) except for the first week of January, which was sampled on a Wednesday (1/2) due to the New Year's Day holiday. Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Mr. Rangshi Wang
February 19, 2013

Table 1. Weekly sampling results

				Single Sample			(as sampled)
Location	Time	Date	Rain		E. coli		Fecal
					(235 MPN)		(400 MPN)
MCW-8b	-	1/2/2013♦			Dry		Dry
MCW-8b	-	1/8/2013♦			Dry		Dry
MCW-8b	-	1/15/2013♦			Dry		Dry
MCW-8b	-	1/22/2013♦			Dry		Dry
MCW-8b	-	1/29/2013♦			Dry		Dry
MCW-9	-	1/2/2013♦			Dry		Dry
MCW-9	-	1/8/2013♦			Dry		Dry
MCW-9	-	1/15/2013♦			Dry		Dry
MCW-9	-	1/22/2013♦			Dry		Dry
MCW-9	-	1/29/2013♦			Dry		Dry
MCW-12	1025	1/2/2013♦		=	130	=	130
MCW-12	1035	1/8/2013♦		=	40	=	40
MCW-12	1025	1/15/2013♦		=	40	=	80
MCW-12	1045	1/22/2013♦		<	20	<	20
MCW-12	1135	1/29/2013♦		=	130	=	130
MCW-14b	1010	1/2/2013♦		=	170	=	170
MCW-14b	1010	1/8/2013♦		=	40	=	80
MCW-14b	1010	1/15/2013♦		=	40	=	40
MCW-14b	1010	1/22/2013♦		<	20	=	20
MCW-14b	1115	1/29/2013♦		=	70	=	70
MCW-15c	940	1/2/2013♦		=	20	=	20
MCW-15c	950	1/8/2013♦		<	20	<	20
MCW-15c	940	1/15/2013♦		<	20	<	20
MCW-15c	940	1/22/2013♦		=	130	=	130
MCW-15c	1045	1/29/2013♦		<	20	=	20
MCW-17	-	1/2/2013♦			Dry		Dry
MCW-17	-	1/8/2013♦			Dry		Dry
MCW-17	-	1/15/2013♦			Dry		Dry
MCW-17	-	1/22/2013♦			Dry		Dry
MCW-17	-	1/29/2013♦			Dry		Dry
MCW-18	-	1/2/2013♦			Dry		Dry
MCW-18	-	1/8/2013♦			Dry		Dry
MCW-18	-	1/15/2013♦			Dry		Dry
MCW-18	-	1/22/2013♦			Dry		Dry
MCW-18	-	1/29/2013♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦Date of sampling

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli (235 MPN)		Fecal (400 MPN)	E. coli (126 MPN)	Fecal (200 MPN)
MCW-8b	-	1/1/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/2/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	1/3/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/4/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/5/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/6/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/7/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/8/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	1/9/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/10/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/11/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/12/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/13/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/14/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/15/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	1/16/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/17/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/18/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/19/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/20/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/21/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/22/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	1/23/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/24/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/25/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/26/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/27/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/28/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/29/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	1/30/2013	Dry	<	10	<	10	10	10
MCW-8b	-	1/31/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/1/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/2/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	1/3/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/4/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/5/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/6/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/7/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/8/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	1/9/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/10/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/11/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/12/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/13/2013	Dry	<	10	<	10	10	10

MCW-9	-	1/14/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/15/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	1/16/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/17/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/18/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/19/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/20/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/21/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/22/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	1/23/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/24/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/25/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/26/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/27/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/28/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/29/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	1/30/2013	Dry	<	10	<	10	10	10
MCW-9	-	1/31/2013	Dry	<	10	<	10	10	10
MCW-12	1010	1/1/2013	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-12	1025	1/2/2013♦		=	130	=	130	21	41
MCW-12	1025	1/3/2013		=	130	=	130	23	40
MCW-12	1025	1/4/2013		=	130	=	130	24	40
MCW-12	1025	1/5/2013		=	130	=	130	26	40
MCW-12	1025	1/6/2013		=	130	=	130	27	40
MCW-12	1025	1/7/2013		=	130	=	130	29	41
MCW-12	1035	1/8/2013♦		=	40	=	40	30	39
MCW-12	1035	1/9/2013		=	40	=	40	30	38
MCW-12	1035	1/10/2013		=	40	=	40	31	37
MCW-12	1035	1/11/2013		=	40	=	40	33	38
MCW-12	1035	1/12/2013		=	40	=	40	34	40
MCW-12	1035	1/13/2013		=	40	=	40	36	42
MCW-12	1035	1/14/2013		=	40	=	40	37	44
MCW-12	1025	1/15/2013♦		=	40	=	80	39	47
MCW-12	1025	1/16/2013		=	40	=	80	41	51
MCW-12	1025	1/17/2013		=	40	=	80	43	54
MCW-12	1025	1/18/2013		=	40	=	80	45	57
MCW-12	1025	1/19/2013		=	40	=	80	47	60
MCW-12	1025	1/20/2013		=	40	=	80	49	62
MCW-12	1025	1/21/2013		=	40	=	80	52	65
MCW-12	1045	1/22/2013♦		<	10	<	10	52	64
MCW-12	1045	1/23/2013		<	10	<	10	52	62
MCW-12	1045	1/24/2013		<	10	<	10	52	61
MCW-12	1045	1/25/2013		<	10	<	10	48	57
MCW-12	1045	1/26/2013		<	10	<	10	45	53
MCW-12	1045	1/27/2013		<	10	<	10	42	49
MCW-12	1045	1/28/2013		<	10	<	10	39	46
MCW-12	1135	1/29/2013♦		=	130	=	130	40	47
MCW-12	1135	1/30/2013		=	130	=	130	41	48
MCW-12	1135	1/31/2013		=	130	=	130	41	48

MCW-14b	947	1/1/2013	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-14b	1010	1/2/2013♦		=	170	=	170	652	928
MCW-14b	1010	1/3/2013		=	170	=	170	646	919
MCW-14b	1010	1/4/2013		=	170	=	170	598	851
MCW-14b	1010	1/5/2013		=	170	=	170	554	788
MCW-14b	1010	1/6/2013		=	170	=	170	513	730
MCW-14b	1010	1/7/2013		=	170	=	170	475	676
MCW-14b	1010	1/8/2013♦		=	40	=	80	419	611
MCW-14b	1010	1/9/2013		=	40	=	80	370	552
MCW-14b	1010	1/10/2013		=	40	=	80	326	498
MCW-14b	1010	1/11/2013		=	40	=	80	288	434
MCW-14b	1010	1/12/2013		=	40	=	80	254	378
MCW-14b	1010	1/13/2013		=	40	=	80	224	329
MCW-14b	1010	1/14/2013		=	40	=	80	198	287
MCW-14b	1010	1/15/2013♦		=	40	=	40	175	244
MCW-14b	1010	1/16/2013		=	40	=	40	154	208
MCW-14b	1010	1/17/2013		=	40	=	40	136	177
MCW-14b	1010	1/18/2013		=	40	=	40	132	169
MCW-14b	1010	1/19/2013		=	40	=	40	127	161
MCW-14b	1010	1/20/2013		=	40	=	40	123	153
MCW-14b	1010	1/21/2013		=	40	=	40	119	146
MCW-14b	1010	1/22/2013♦		<	10	=	20	110	136
MCW-14b	1010	1/23/2013		<	10	=	20	101	127
MCW-14b	1010	1/24/2013		<	10	=	20	94	118
MCW-14b	1010	1/25/2013		<	10	=	20	81	104
MCW-14b	1010	1/26/2013		<	10	=	20	70	92
MCW-14b	1010	1/27/2013		<	10	=	20	60	82
MCW-14b	1010	1/28/2013		<	10	=	20	52	72
MCW-14b	1115	1/29/2013♦		=	70	=	70	48	66
MCW-14b	1115	1/30/2013		=	70	=	70	44	61
MCW-14b	1115	1/31/2013		=	70	=	70	41	56
MCW-15c	920	1/1/2013	Rain		**Rain**		**Rain**	**Rain**	**Rain**
MCW-15c	940	1/2/2013♦		=	20	=	20	164	279
MCW-15c	940	1/3/2013		=	20	=	20	145	247
MCW-15c	940	1/4/2013		=	20	=	20	136	222
MCW-15c	940	1/5/2013		=	20	=	20	127	199
MCW-15c	940	1/6/2013		=	20	=	20	119	179
MCW-15c	940	1/7/2013		=	20	=	20	112	161
MCW-15c	950	1/8/2013♦		<	10	<	10	102	141
MCW-15c	950	1/9/2013		<	10	<	10	94	124
MCW-15c	950	1/10/2013		<	10	<	10	86	109
MCW-15c	950	1/11/2013		<	10	<	10	79	97
MCW-15c	950	1/12/2013		<	10	<	10	73	87
MCW-15c	950	1/13/2013		<	10	<	10	68	77
MCW-15c	950	1/14/2013		<	10	<	10	62	69
MCW-15c	940	1/15/2013♦		<	10	<	10	58	62
MCW-15c	940	1/16/2013		<	10	<	10	53	55
MCW-15c	940	1/17/2013		<	10	<	10	49	49
MCW-15c	940	1/18/2013		<	10	<	10	44	44

MCW-15c	940	1/19/2013		<	10	<	10	40	40
MCW-15c	940	1/20/2013		<	10	<	10	36	36
MCW-15c	940	1/21/2013		<	10	<	10	32	32
MCW-15c	940	1/22/2013♦		=	130	=	130	32	32
MCW-15c	940	1/23/2013		=	130	=	130	31	31
MCW-15c	940	1/24/2013		=	130	=	130	31	31
MCW-15c	940	1/25/2013		=	130	=	130	30	30
MCW-15c	940	1/26/2013		=	130	=	130	29	29
MCW-15c	940	1/27/2013		=	130	=	130	29	29
MCW-15c	940	1/28/2013		=	130	=	130	28	28
MCW-15c	1045	1/29/2013♦		<	10	=	20	26	26
MCW-15c	1045	1/30/2013		<	10	=	20	23	24
MCW-15c	1045	1/31/2013		<	10	=	20	21	22
MCW-17	-	1/1/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/2/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	1/3/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/4/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/5/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/6/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/7/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/8/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	1/9/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/10/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/11/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/12/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/13/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/14/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/15/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	1/16/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/17/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/18/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/19/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/20/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/21/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/22/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	1/23/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/24/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/25/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/26/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/27/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/28/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/29/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	1/30/2013	Dry	<	10	<	10	10	10
MCW-17	-	1/31/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/1/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/2/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	1/3/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/4/2013	Dry	<	10	<	10	10	10

MCW-18	-	1/5/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/6/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/7/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/8/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	1/9/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/10/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/11/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/12/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/13/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/14/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/15/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	1/16/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/17/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/18/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/19/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/20/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/21/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/22/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	1/23/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/24/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/25/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/26/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/27/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/28/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/29/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	1/30/2013	Dry	<	10	<	10	10	10
MCW-18	-	1/31/2013	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Tully Clifford, Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Chris Cooper, Interim Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

March 18, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of February 2013. Sites were sampled weekly on Tuesdays (February 5, 12, 19, and 26). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Mr. Kangshi Wang
March 18, 2013
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Table 1. Weekly sampling results

				Single Sample			(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	2/5/2013♦			Dry		Dry
MCW-8b	-	2/12/2013♦			Dry		Dry
MCW-8b	-	2/19/2013♦			Dry		Dry
MCW-8b	-	2/26/2013♦			Dry		Dry
MCW-9	-	2/5/2013♦			Dry		Dry
MCW-9	-	2/12/2013♦			Dry		Dry
MCW-9	-	2/19/2013♦			Dry		Dry
MCW-9	-	2/26/2013♦			Dry		Dry
MCW-12	1025	2/5/2013♦		=	220	=	220
MCW-12	1025	2/12/2013♦		=	80	=	300
MCW-12	1055	2/19/2013♦		=	40	=	40
MCW-12	1025	2/26/2013♦		=	40	=	80
MCW-14b	1000	2/5/2013♦		=	170	=	170
MCW-14b	1005	2/12/2013♦		=	230	=	230
MCW-14b	1030	2/19/2013♦		=	70	=	110
MCW-14b	1000	2/26/2013♦		=	40	=	40
MCW-15c	940	2/5/2013♦		=	40	=	40
MCW-15c	945	2/12/2013♦		=	130	=	130
MCW-15c	945	2/19/2013♦		=	500	=	500
MCW-15c	935	2/26/2013♦		=	80	=	80
MCW-17	-	2/5/2013♦			Dry		Dry
MCW-17	-	2/12/2013♦			Dry		Dry
MCW-17	-	2/19/2013♦			Dry		Dry
MCW-17	-	2/26/2013♦			Dry		Dry
MCW-18	-	2/5/2013♦			Dry		Dry
MCW-18	-	2/12/2013♦			Dry		Dry
MCW-18	-	2/19/2013♦			Dry		Dry
MCW-18	-	2/26/2013♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

Mr. Kangshi Wang
March 18, 2013

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli		Fecal	E. coli	Fecal
					(235 MPN)		(400 MPN)	(126 MPN)	(200 MPN)
MCW-8b	-	2/1/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/2/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/3/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/4/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/5/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	2/6/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/7/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/8/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/9/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/10/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/11/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/12/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	2/13/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/14/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/15/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/16/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/17/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/18/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/19/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	2/20/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/21/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/22/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/23/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/24/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/25/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/26/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	2/27/2013	Dry	<	10	<	10	10	10
MCW-8b	-	2/28/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/1/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/2/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/3/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/4/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/5/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	2/6/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/7/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/8/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/9/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/10/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/11/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/12/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	2/13/2013	Dry	<	10	<	10	10	10

MCW-9	-	2/14/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/15/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/16/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/17/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/18/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/19/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	2/20/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/21/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/22/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/23/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/24/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/25/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/26/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	2/27/2013	Dry	<	10	<	10	10	10
MCW-9	-	2/28/2013	Dry	<	10	<	10	10	10
MCW-12	1135	2/1/2013		=	130	=	130	41	48
MCW-12	1135	2/2/2013		=	130	=	130	41	48
MCW-12	1135	2/3/2013		=	130	=	130	41	48
MCW-12	1135	2/4/2013		=	130	=	130	41	48
MCW-12	1025	2/5/2013♦		=	220	=	220	42	49
MCW-12	1025	2/6/2013		=	220	=	220	43	50
MCW-12	1025	2/7/2013		=	220	=	220	45	53
MCW-12	1025	2/8/2013		=	220	=	220	48	56
MCW-12	1025	2/9/2013		=	220	=	220	51	60
MCW-12	1025	2/10/2013		=	220	=	220	54	63
MCW-12	1025	2/11/2013		=	220	=	220	57	67
MCW-12	1025	2/12/2013♦		=	80	=	300	58	71
MCW-12	1025	2/13/2013		=	80	=	300	59	76
MCW-12	1025	2/14/2013		=	80	=	300	61	80
MCW-12	1025	2/15/2013		=	80	=	300	62	83
MCW-12	1025	2/16/2013		=	80	=	300	64	87
MCW-12	1025	2/17/2013		=	80	=	300	65	91
MCW-12	1025	2/18/2013		=	80	=	300	67	95
MCW-12	1055	2/19/2013♦		=	40	=	40	67	93
MCW-12	1055	2/20/2013		=	40	=	40	67	91
MCW-12	1055	2/21/2013		=	40	=	40	70	95
MCW-12	1055	2/22/2013		=	40	=	40	73	100
MCW-12	1055	2/23/2013		=	40	=	40	77	104
MCW-12	1055	2/24/2013		=	40	=	40	80	109
MCW-12	1055	2/25/2013		=	40	=	40	84	114
MCW-12	1025	2/26/2013♦		=	40	=	80	88	123
MCW-12	1025	2/27/2013		=	40	=	80	92	131
MCW-12	1025	2/28/2013		=	40	=	80	89	129

MCW-14b	1115	2/1/2013		=	70	=	70	40	55
MCW-14b	1115	2/2/2013		=	70	=	70	39	53
MCW-14b	1115	2/3/2013		=	70	=	70	37	52
MCW-14b	1115	2/4/2013		=	70	=	70	36	50
MCW-14b	1000	2/5/2013♦		=	170	=	170	36	50
MCW-14b	1000	2/6/2013		=	170	=	170	36	50
MCW-14b	1000	2/7/2013		=	170	=	170	38	51
MCW-14b	1000	2/8/2013		=	170	=	170	40	53
MCW-14b	1000	2/9/2013		=	170	=	170	42	54
MCW-14b	1000	2/10/2013		=	170	=	170	44	56
MCW-14b	1000	2/11/2013		=	170	=	170	46	57
MCW-14b	1005	2/12/2013♦		=	230	=	230	49	59
MCW-14b	1005	2/13/2013		=	230	=	230	52	61
MCW-14b	1005	2/14/2013		=	230	=	230	55	65
MCW-14b	1005	2/15/2013		=	230	=	230	58	69
MCW-14b	1005	2/16/2013		=	230	=	230	62	73
MCW-14b	1005	2/17/2013		=	230	=	230	66	77
MCW-14b	1005	2/18/2013		=	230	=	230	70	82
MCW-14b	1030	2/19/2013♦		=	70	=	110	71	85
MCW-14b	1030	2/20/2013		=	70	=	110	72	87
MCW-14b	1030	2/21/2013		=	70	=	110	77	93
MCW-14b	1030	2/22/2013		=	70	=	110	82	98
MCW-14b	1030	2/23/2013		=	70	=	110	88	104
MCW-14b	1030	2/24/2013		=	70	=	110	94	110
MCW-14b	1030	2/25/2013		=	70	=	110	100	116
MCW-14b	1000	2/26/2013♦		=	40	=	40	105	119
MCW-14b	1000	2/27/2013		=	40	=	40	109	122
MCW-14b	1000	2/28/2013		=	40	=	40	107	119
MCW-15c	1045	2/1/2013		<	10	=	20	20	22
MCW-15c	1045	2/2/2013		<	10	=	20	20	22
MCW-15c	1045	2/3/2013		<	10	=	20	19	22
MCW-15c	1045	2/4/2013		<	10	=	20	19	22
MCW-15c	940	2/5/2013♦		=	40	=	40	19	23
MCW-15c	940	2/6/2013		=	40	=	40	20	23
MCW-15c	940	2/7/2013		=	40	=	40	21	25
MCW-15c	940	2/8/2013		=	40	=	40	22	26
MCW-15c	940	2/9/2013		=	40	=	40	23	27
MCW-15c	940	2/10/2013		=	40	=	40	24	28
MCW-15c	940	2/11/2013		=	40	=	40	25	30
MCW-15c	945	2/12/2013♦		=	130	=	130	27	32
MCW-15c	945	2/13/2013		=	130	=	130	30	35
MCW-15c	945	2/14/2013		=	130	=	130	32	38
MCW-15c	945	2/15/2013		=	130	=	130	35	42
MCW-15c	945	2/16/2013		=	130	=	130	39	45
MCW-15c	945	2/17/2013		=	130	=	130	42	49
MCW-15c	945	2/18/2013		=	130	=	130	46	54

MCW-15c	945	2/19/2013♦		=	500	=	500	52	61
MCW-15c	945	2/20/2013		=	500	=	500	59	70
MCW-15c	945	2/21/2013		=	500	=	500	62	73
MCW-15c	945	2/22/2013		=	500	=	500	65	76
MCW-15c	945	2/23/2013		=	500	=	500	68	80
MCW-15c	945	2/24/2013		=	500	=	500	71	84
MCW-15c	945	2/25/2013		=	500	=	500	74	87
MCW-15c	935	2/26/2013♦		=	80	=	80	73	86
MCW-15c	935	2/27/2013		=	80	=	80	72	85
MCW-15c	935	2/28/2013		=	80	=	80	77	89
MCW-17	-	2/1/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/2/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/3/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/4/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/5/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	2/6/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/7/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/8/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/9/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/10/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/11/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/12/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	2/13/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/14/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/15/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/16/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/17/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/18/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/19/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	2/20/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/21/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/22/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/23/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/24/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/25/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/26/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	2/27/2013	Dry	<	10	<	10	10	10
MCW-17	-	2/28/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/1/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/2/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/3/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/4/2013	Dry	<	10	<	10	10	10

Mr. Kangshi Wang

MCW-18	-	2/5/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	2/6/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/7/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/8/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/9/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/10/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/11/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/12/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	2/13/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/14/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/15/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/16/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/17/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/18/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/19/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	2/20/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/21/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/22/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/23/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/24/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/25/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/26/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	2/27/2013	Dry	<	10	<	10	10	10
MCW-18	-	2/28/2013	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
JEFF PRATT
Agency Director

Watershed Protection District
Tully Clifford, Director

Transportation Department
David Fleisch, Director

Engineering Services Department
Herbert L. Schwind, Director

Water & Sanitation Department
R. Reddy Pakala, Director

Central Services Department
Janice Turner, Director

April 24, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of March 2013. Sites were sampled weekly on Tuesdays (March 5, 12, 19, and 26). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
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Mr. Kangshi Wang
April 24, 2013

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				Single Sample			(as sampled)
Location	**Time**	**Date**	**Rain**		**E. coli**		**Fecal**
					(235 MPN)		**(400 MPN)**
MCW-8b	-	3/5/2013♦			Dry		Dry
MCW-8b	-	3/12/2013♦			Dry		Dry
MCW-8b	-	3/19/2013♦			Dry		Dry
MCW-8b	-	3/26/2013♦			Dry		Dry
MCW-9	-	3/5/2013♦			Dry		Dry
MCW-9	-	3/12/2013♦			Dry		Dry
MCW-9	-	3/19/2013♦			Dry		Dry
MCW-9	-	3/26/2013♦			Dry		Dry
MCW-12	1010	3/5/2013♦		=	40	=	130
MCW-12	1025	3/12/2013♦		=	330	=	330
MCW-12	850	3/19/2013♦		=	110	=	110
MCW-12	1040	3/26/2013♦		=	130	=	130
MCW-14b	955	3/5/2013♦		=	230	=	230
MCW-14b	1000	3/12/2013♦		=	500	=	500
MCW-14b	830	3/19/2013♦		=	130	=	130
MCW-14b	1015	3/26/2013♦		=	800	=	800
MCW-15c	935	3/5/2013♦		=	80	=	80
MCW-15c	930	3/12/2013♦		=	80	=	80
MCW-15c	800	3/19/2013♦		=	20	=	20
MCW-15c	945	3/26/2013♦		<	20	<	20
MCW-17	-	3/5/2013♦			Dry		Dry
MCW-17	-	3/12/2013♦			Dry		Dry
MCW-17	-	3/19/2013♦			Dry		Dry
MCW-17	-	3/26/2013♦			Dry		Dry
MCW-18	-	3/5/2013♦			Dry		Dry
MCW-18	-	3/12/2013♦			Dry		Dry
MCW-18	-	3/19/2013♦			Dry		Dry
MCW-18	-	3/26/2013♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

Mr. Kangshi Wang
April 24, 2013
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Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli		Fecal	E. coli	Fecal
					(235 MPN)		(400 MPN)	(126 MPN)	(200 MPN)
MCW-8b	-	3/1/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/2/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/3/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/4/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/5/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	3/6/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/7/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/8/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/9/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/10/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/11/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/12/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	3/13/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/14/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/15/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/16/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/17/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/18/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/19/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	3/20/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/21/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/22/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/23/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/24/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/25/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/26/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	3/27/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/28/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/29/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/30/2013	Dry	<	10	<	10	10	10
MCW-8b	-	3/31/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/1/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/2/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/3/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/4/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/5/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	3/6/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/7/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/8/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/9/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/10/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/11/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/12/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	3/13/2013	Dry	<	10	<	10	10	10

MCW-9	-	3/14/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/15/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/16/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/17/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/18/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/19/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	3/20/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/21/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/22/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/23/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/24/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/25/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/26/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	3/27/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/28/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/29/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/30/2013	Dry	<	10	<	10	10	10
MCW-9	-	3/31/2013	Dry	<	10	<	10	10	10
MCW-12	1025	3/1/2013		=	40	=	80	85	127
MCW-12	1025	3/2/2013		=	40	=	80	82	125
MCW-12	1025	3/3/2013		=	40	=	80	79	123
MCW-12	1025	3/4/2013		=	40	=	80	76	121
MCW-12	1010	3/5/2013♦		=	40	=	130	73	121
MCW-12	1010	3/6/2013		=	40	=	130	70	121
MCW-12	1010	3/7/2013		=	40	=	130	66	119
MCW-12	1010	3/8/2013		=	40	=	130	62	117
MCW-12	1010	3/9/2013		=	40	=	130	59	115
MCW-12	1010	3/10/2013		=	40	=	130	56	113
MCW-12	1010	3/11/2013		=	40	=	130	53	111
MCW-12	1025	3/12/2013♦		=	330	=	330	53	112
MCW-12	1025	3/13/2013		=	330	=	330	54	114
MCW-12	1025	3/14/2013		=	330	=	330	57	114
MCW-12	1025	3/15/2013		=	330	=	330	59	115
MCW-12	1025	3/16/2013		=	330	=	330	62	115
MCW-12	1025	3/17/2013		=	330	=	330	65	115
MCW-12	1025	3/18/2013		=	330	=	330	69	116
MCW-12	850	3/19/2013♦		=	110	=	110	69	112
MCW-12	850	3/20/2013		=	110	=	110	70	108
MCW-12	850	3/21/2013		=	110	=	110	72	112
MCW-12	850	3/22/2013		=	110	=	110	75	116
MCW-12	850	3/23/2013		=	110	=	110	77	120
MCW-12	850	3/24/2013		=	110	=	110	80	124
MCW-12	850	3/25/2013		=	110	=	110	83	128
MCW-12	1040	3/26/2013♦		=	130	=	130	86	133
MCW-12	1040	3/27/2013		=	130	=	130	90	139
MCW-12	1040	3/28/2013		=	130	=	130	93	141
MCW-12	1040	3/29/2013		=	130	=	130	97	143
MCW-12	1040	3/30/2013		=	130	=	130	101	146
MCW-12	1040	3/31/2013		=	130	=	130	105	148

MCW-14b	1000	3/1/2013		=	40	=	40	105	117
MCW-14b	1000	3/2/2013		=	40	=	40	104	115
MCW-14b	1000	3/3/2013		=	40	=	40	102	113
MCW-14b	1000	3/4/2013		=	40	=	40	100	111
MCW-14b	955	3/5/2013♦		=	230	=	230	104	115
MCW-14b	955	3/6/2013		=	230	=	230	108	120
MCW-14b	955	3/7/2013		=	230	=	230	109	121
MCW-14b	955	3/8/2013		=	230	=	230	110	122
MCW-14b	955	3/9/2013		=	230	=	230	111	124
MCW-14b	955	3/10/2013		=	230	=	230	112	125
MCW-14b	955	3/11/2013		=	230	=	230	114	126
MCW-14b	1000	3/12/2013♦		=	500	=	500	118	131
MCW-14b	1000	3/13/2013		=	500	=	500	122	136
MCW-14b	1000	3/14/2013		=	500	=	500	125	139
MCW-14b	1000	3/15/2013		=	500	=	500	128	143
MCW-14b	1000	3/16/2013		=	500	=	500	132	147
MCW-14b	1000	3/17/2013		=	500	=	500	135	150
MCW-14b	1000	3/18/2013		=	500	=	500	139	154
MCW-14b	830	3/19/2013♦		=	130	=	130	136	151
MCW-14b	830	3/20/2013		=	130	=	130	134	149
MCW-14b	830	3/21/2013		=	130	=	130	136	149
MCW-14b	830	3/22/2013		=	130	=	130	139	150
MCW-14b	830	3/23/2013		=	130	=	130	142	151
MCW-14b	830	3/24/2013		=	130	=	130	145	152
MCW-14b	830	3/25/2013		=	130	=	130	148	153
MCW-14b	1015	3/26/2013♦		=	800	=	800	161	163
MCW-14b	1015	3/27/2013		=	800	=	800	174	174
MCW-14b	1015	3/28/2013		=	800	=	800	193	193
MCW-14b	1015	3/29/2013		=	800	=	800	213	213
MCW-14b	1015	3/30/2013		=	800	=	800	235	235
MCW-14b	1015	3/31/2013		=	800	=	800	260	260
MCW-15c	935	3/1/2013		=	80	=	80	83	93
MCW-15c	935	3/2/2013		=	80	=	80	89	97
MCW-15c	935	3/3/2013		=	80	=	80	95	102
MCW-15c	935	3/4/2013		=	80	=	80	102	107
MCW-15c	935	3/5/2013♦		=	80	=	80	109	112
MCW-15c	935	3/6/2013		=	80	=	80	117	117
MCW-15c	935	3/7/2013		=	80	=	80	120	120
MCW-15c	935	3/8/2013		=	80	=	80	122	122
MCW-15c	935	3/9/2013		=	80	=	80	125	125
MCW-15c	935	3/10/2013		=	80	=	80	128	128
MCW-15c	935	3/11/2013		=	80	=	80	131	131
MCW-15c	930	3/12/2013♦		=	80	=	80	134	134
MCW-15c	930	3/13/2013		=	80	=	80	137	137
MCW-15c	930	3/14/2013		=	80	=	80	135	135
MCW-15c	930	3/15/2013		=	80	=	80	133	133
MCW-15c	930	3/16/2013		=	80	=	80	131	131
MCW-15c	930	3/17/2013		=	80	=	80	129	129
MCW-15c	930	3/18/2013		=	80	=	80	127	127

MCW-15c	800	3/19/2013♦		=	20	=	20	119	119
MCW-15c	800	3/20/2013		=	20	=	20	112	112
MCW-15c	800	3/21/2013		=	20	=	20	100	100
MCW-15c	800	3/22/2013		=	20	=	20	90	90
MCW-15c	800	3/23/2013		=	20	=	20	81	81
MCW-15c	800	3/24/2013		=	20	=	20	73	73
MCW-15c	800	3/25/2013		=	20	=	20	65	65
MCW-15c	945	3/26/2013♦		<	10	<	10	57	57
MCW-15c	945	3/27/2013		<	10	<	10	50	50
MCW-15c	945	3/28/2013		<	10	<	10	47	47
MCW-15c	945	3/29/2013		<	10	<	10	44	44
MCW-15c	945	3/30/2013		<	10	<	10	41	41
MCW-15c	945	3/31/2013		<	10	<	10	38	38
MCW-17	-	3/1/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/2/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/3/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/4/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/5/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	3/6/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/7/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/8/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/9/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/10/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/11/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/12/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	3/13/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/14/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/15/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/16/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/17/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/18/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/19/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	3/20/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/21/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/22/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/23/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/24/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/25/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/26/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	3/27/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/28/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/29/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/30/2013	Dry	<	10	<	10	10	10
MCW-17	-	3/31/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/1/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/2/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/3/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/4/2013	Dry	<	10	<	10	10	10

MCW-18	-	3/5/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	3/6/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/7/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/8/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/9/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/10/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/11/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/12/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	3/13/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/14/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/15/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/16/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/17/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/18/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/19/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	3/20/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/21/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/22/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/23/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/24/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/25/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/26/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	3/27/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/28/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/29/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/30/2013	Dry	<	10	<	10	10	10
MCW-18	-	3/31/2013	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
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Agency Director

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Engineering Services Department
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Central Services Department
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May 20, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of April 2013. Sites were sampled weekly on Tuesdays (April 2, 9, 16, 23, and 30). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

				Single Sample			(as sampled)
Location	Time	Date	Rain		E. coli		Fecal
					(235 MPN)		(400 MPN)
MCW-8b	-	4/2/2013♦			Dry		Dry
MCW-8b	-	4/9/2013♦			Dry		Dry
MCW-8b	-	4/16/2013♦			Dry		Dry
MCW-8b	-	4/23/2013♦			Dry		Dry
MCW-8b	-	4/30/2013♦			Dry		Dry
MCW-9	-	4/2/2013♦			Dry		Dry
MCW-9	-	4/9/2013♦			Dry		Dry
MCW-9	-	4/16/2013♦			Dry		Dry
MCW-9	-	4/23/2013♦			Dry		Dry
MCW-9	-	4/30/2013♦			Dry		Dry
MCW-12	1005	4/2/2013♦		<	20	<	20
MCW-12	1100	4/9/2013♦		=	230	=	500
MCW-12	1045	4/16/2013♦		<	20	=	20
MCW-12	1035	4/23/2013♦		=	40	=	40
MCW-12	1045	4/30/2013♦		=	40	=	40
MCW-14b	940	4/2/2013♦		=	3,000	=	3,000
MCW-14b	1040	4/9/2013♦		=	800	=	800
MCW-14b	1015	4/16/2013♦		=	170	=	170
MCW-14b	1015	4/23/2013♦		=	800	=	800
MCW-14b	1025	4/30/2013♦		=	1,300	=	1,300
MCW-15c	905	4/2/2013♦		=	40	=	40
MCW-15c	1015	4/9/2013♦		=	80	=	80
MCW-15c	945	4/16/2013♦		<	20	<	20
MCW-15c	945	4/23/2013♦		<	20	=	20
MCW-15c	1005	4/30/2013♦		=	80	=	80
MCW-17	-	4/2/2013♦			Dry		Dry
MCW-17	-	4/9/2013♦			Dry		Dry
MCW-17	-	4/16/2013♦			Dry		Dry
MCW-17	-	4/23/2013♦			Dry		Dry
MCW-17	-	4/30/2013♦			Dry		Dry
MCW-18	-	4/2/2013♦			Dry		Dry
MCW-18	-	4/9/2013♦			Dry		Dry
MCW-18	-	4/16/2013♦			Dry		Dry
MCW-18	-	4/23/2013♦			Dry		Dry
MCW-18	-	4/30/2013♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦Date of sampling

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli		Fecal	E. coli	Fecal
					(235 MPN)		(400 MPN)	(126 MPN)	(200 MPN)
MCW-8b	-	4/1/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/2/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	4/3/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/4/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/5/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/6/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/7/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/8/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/9/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	4/10/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/11/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/12/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/13/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/14/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/15/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/16/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	4/17/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/18/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/19/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/20/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/21/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/22/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/23/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	4/24/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/25/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/26/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/27/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/28/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/29/2013	Dry	<	10	<	10	10	10
MCW-8b	-	4/30/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	4/1/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/2/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	4/3/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/4/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/5/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/6/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/7/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/8/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/9/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	4/10/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/11/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/12/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/13/2013	Dry	<	10	<	10	10	10

MCW-9	-	4/14/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/15/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/16/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	4/17/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/18/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/19/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/20/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/21/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/22/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/23/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	4/24/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/25/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/26/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/27/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/28/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/29/2013	Dry	<	10	<	10	10	10
MCW-9	-	4/30/2013♦	Dry	<	10	<	10	10	10
MCW-12	1040	4/1/2013		=	130	=	130	109	150
MCW-12	1005	4/2/2013♦		<	10	<	10	104	140
MCW-12	1005	4/3/2013		<	10	<	10	99	131
MCW-12	1005	4/4/2013		<	10	<	10	95	120
MCW-12	1005	4/5/2013		<	10	<	10	91	110
MCW-12	1005	4/6/2013		<	10	<	10	87	101
MCW-12	1005	4/7/2013		<	10	<	10	83	93
MCW-12	1005	4/8/2013		<	10	<	10	79	85
MCW-12	1100	4/9/2013♦		=	230	=	500	84	89
MCW-12	1100	4/10/2013		=	230	=	500	89	93
MCW-12	1100	4/11/2013		=	230	=	500	88	95
MCW-12	1100	4/12/2013		=	230	=	500	87	96
MCW-12	1100	4/13/2013		=	230	=	500	86	97
MCW-12	1100	4/14/2013		=	230	=	500	85	99
MCW-12	1100	4/15/2013		=	230	=	500	84	100
MCW-12	1045	4/16/2013♦		<	10	=	20	74	91
MCW-12	1045	4/17/2013		<	10	=	20	66	83
MCW-12	1045	4/18/2013		<	10	=	20	61	78
MCW-12	1045	4/19/2013		<	10	=	20	56	74
MCW-12	1045	4/20/2013		<	10	=	20	52	70
MCW-12	1045	4/21/2013		<	10	=	20	48	66
MCW-12	1045	4/22/2013		<	10	=	20	44	63
MCW-12	1035	4/23/2013♦		=	40	=	40	43	60
MCW-12	1035	4/24/2013		=	40	=	40	41	58
MCW-12	1035	4/25/2013		=	40	=	40	40	56
MCW-12	1035	4/26/2013		=	40	=	40	38	54
MCW-12	1035	4/27/2013		=	40	=	40	37	52
MCW-12	1035	4/28/2013		=	40	=	40	35	50
MCW-12	1035	4/29/2013		=	40	=	40	34	48
MCW-12	1045	4/30/2013♦		=	40	=	40	33	46

MCW-14b	1015	4/1/2013		=	800	=	800	287	287
MCW-14b	940	4/2/2013♦		=	3,000	=	3,000	332	332
MCW-14b	940	4/3/2013		=	3,000	=	3,000	383	383
MCW-14b	940	4/4/2013		=	3,000	=	3,000	417	417
MCW-14b	940	4/5/2013		=	3,000	=	3,000	455	455
MCW-14b	940	4/6/2013		=	3,000	=	3,000	495	495
MCW-14b	940	4/7/2013		=	3,000	=	3,000	540	540
MCW-14b	940	4/8/2013		=	3,000	=	3,000	588	588
MCW-14b	1040	4/9/2013♦		=	800	=	800	613	613
MCW-14b	1040	4/10/2013		=	800	=	800	639	639
MCW-14b	1040	4/11/2013		=	800	=	800	649	649
MCW-14b	1040	4/12/2013		=	800	=	800	659	659
MCW-14b	1040	4/13/2013		=	800	=	800	669	669
MCW-14b	1040	4/14/2013		=	800	=	800	680	680
MCW-14b	1040	4/15/2013		=	800	=	800	691	691
MCW-14b	1015	4/16/2013♦		=	170	=	170	666	666
MCW-14b	1015	4/17/2013		=	170	=	170	643	643
MCW-14b	1015	4/18/2013		=	170	=	170	649	649
MCW-14b	1015	4/19/2013		=	170	=	170	654	654
MCW-14b	1015	4/20/2013		=	170	=	170	660	660
MCW-14b	1015	4/21/2013		=	170	=	170	666	666
MCW-14b	1015	4/22/2013		=	170	=	170	672	672
MCW-14b	1015	4/23/2013♦		=	800	=	800	714	714
MCW-14b	1015	4/24/2013		=	800	=	800	759	759
MCW-14b	1015	4/25/2013		=	800	=	800	759	759
MCW-14b	1015	4/26/2013		=	800	=	800	759	759
MCW-14b	1015	4/27/2013		=	800	=	800	759	759
MCW-14b	1015	4/28/2013		=	800	=	800	759	759
MCW-14b	1015	4/29/2013		=	800	=	800	759	759
MCW-14b	1025	4/30/2013♦		=	1,300	=	1,300	771	771
MCW-15c	945	4/1/2013		<	10	<	10	36	36
MCW-15c	905	4/2/2013♦		=	40	=	40	35	35
MCW-15c	905	4/3/2013		=	40	=	40	34	34
MCW-15c	905	4/4/2013		=	40	=	40	33	33
MCW-15c	905	4/5/2013		=	40	=	40	32	32
MCW-15c	905	4/6/2013		=	40	=	40	32	32
MCW-15c	905	4/7/2013		=	40	=	40	31	31
MCW-15c	905	4/8/2013		=	40	=	40	30	30
MCW-15c	1015	4/9/2013♦		=	80	=	80	30	30
MCW-15c	1015	4/10/2013		=	80	=	80	30	30
MCW-15c	1015	4/11/2013		=	80	=	80	30	30
MCW-15c	1015	4/12/2013		=	80	=	80	30	30
MCW-15c	1015	4/13/2013		=	80	=	80	30	30
MCW-15c	1015	4/14/2013		=	80	=	80	30	30
MCW-15c	1015	4/15/2013		=	80	=	80	30	30
MCW-15c	945	4/16/2013♦		<	10	<	10	28	28
MCW-15c	945	4/17/2013		<	10	<	10	26	26
MCW-15c	945	4/18/2013		<	10	<	10	26	26

MCW-15c	945	4/19/2013		<	10	<	10	25	25
MCW-15c	945	4/20/2013		<	10	<	10	25	25
MCW-15c	945	4/21/2013		<	10	<	10	24	24
MCW-15c	945	4/22/2013		<	10	<	10	24	24
MCW-15c	945	4/23/2013♦		<	10	=	20	23	24
MCW-15c	945	4/24/2013		<	10	=	20	22	24
MCW-15c	945	4/25/2013		<	10	=	20	22	24
MCW-15c	945	4/26/2013		<	10	=	20	22	25
MCW-15c	945	4/27/2013		<	10	=	20	22	25
MCW-15c	945	4/28/2013		<	10	=	20	22	26
MCW-15c	945	4/29/2013		<	10	=	20	22	26
MCW-15c	1005	4/30/2013♦		=	80	=	80	24	28
MCW-17	-	4/1/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/2/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	4/3/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/4/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/5/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/6/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/7/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/8/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/9/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	4/10/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/11/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/12/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/13/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/14/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/15/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/16/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	4/17/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/18/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/19/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/20/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/21/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/22/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/23/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	4/24/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/25/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/26/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/27/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/28/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/29/2013	Dry	<	10	<	10	10	10
MCW-17	-	4/30/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	4/1/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/2/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	4/3/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/4/2013	Dry	<	10	<	10	10	10

MCW-18	-	4/5/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/6/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/7/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/8/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/9/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	4/10/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/11/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/12/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/13/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/14/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/15/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/16/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	4/17/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/18/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/19/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/20/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/21/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/22/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/23/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	4/24/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/25/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/26/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/27/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/28/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/29/2013	Dry	<	10	<	10	10	10
MCW-18	-	4/30/2013♦	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

county of ventura

PUBLIC WORKS AGENCY
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June 17, 2013

Kangshi Wang, Ph.D.
California Regional Water Quality Control Board
Los Angeles Region
Standards & TMDL Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013
(213) 576-6780

Subject: **MALIBU CREEK AND LAGOON BACTERIA TMDL COMPLIANCE MONITORING FOR VENTURA COUNTY AND CITY OF THOUSAND OAKS**

Dear Dr. Wang:

The table below summarizes the results of the weekly monitoring effort required by the Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan (CMP) for the month of May 2013. Sites were sampled weekly on Tuesdays (May 7, 14, 21, and 28). Sites without results reported were not sampled due to insufficient flow and are labeled "Dry." Daily geomeans were calculated using results from the previous 30 days (actual sampling date marked with♦). Weeks with wet weather samples (collected less than 72 hours after a day with > 0.1" rain) use the previous non-rain single sample value to calculate the geomean. Half the detection limit was used for the purpose of calculating the daily geomean for sites with results reported as < 20 MPN/100ml or for dry weather when no sample was taken.

If you have any questions regarding this matter, please contact Ewelina Mutkowska at (805) 645-1382.

Sincerely,

Gerhardt Hubner
Deputy Director, Watershed Protection District

CC: Tully Clifford, Watershed Protection District
Ewelina Mutkowska, County of Ventura
Bob Carson, City of Thousand Oaks
Joe Bellomo, Wildan Associates
Fred Gonzales, County of Los Angeles

Table 1. Weekly sampling results

Location	Time	Date	Rain		Single Sample E. coli (235 MPN)		(as sampled) Fecal (400 MPN)
MCW-8b	-	5/7/2013♦			Dry		Dry
MCW-8b	-	5/14/2013♦			Dry		Dry
MCW-8b	-	5/21/2013♦			Dry		Dry
MCW-8b	-	5/28/2013♦			Dry		Dry
MCW-9	-	5/7/2013♦			Dry		Dry
MCW-9	-	5/14/2013♦			Dry		Dry
MCW-9	-	5/21/2013♦			Dry		Dry
MCW-9	-	5/28/2013♦			Dry		Dry
MCW-12	1025	5/7/2013♦		=	1,300	=	3,000
MCW-12	855	5/14/2013♦		=	20	=	20
MCW-12	820	5/21/2013♦		<	20	=	40
MCW-12	1045	5/28/2013♦		=	20	=	20
MCW-14b	1000	5/7/2013♦		>	16,000	>	16,000
MCW-14b	820	5/14/2013♦		=	1,300	=	1,300
MCW-14b	755	5/21/2013♦		=	240	=	1,300
MCW-14b	1020	5/28/2013♦		=	2,400	=	2,400
MCW-15c	940	5/7/2013♦		=	300	=	300
MCW-15c	755	5/14/2013♦		=	220	=	500
MCW-15c	730	5/21/2013♦		<	20	<	20
MCW-15c	950	5/28/2013♦		=	20	=	20
MCW-17	-	5/7/2013♦			Dry		Dry
MCW-17	-	5/14/2013♦			Dry		Dry
MCW-17	-	5/21/2013♦			Dry		Dry
MCW-17	-	5/28/2013♦			Dry		Dry
MCW-18	-	5/7/2013♦			Dry		Dry
MCW-18	-	5/14/2013♦			Dry		Dry
MCW-18	-	5/21/2013♦			Dry		Dry
MCW-18	-	5/28/2013♦			Dry		Dry

Notes:
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.

♦Date of sampling

Mr. Kangshi Wang
June 17, 2013

Table 2. Computation of daily geomean

				Single Sample (adjusted for rain, dry and NDs)				Geomean	
Location	Time	Date	Rain		E. coli		Fecal	E. coli	Fecal
					(235 MPN)		(400 MPN)	(126 MPN)	(200 MPN)
MCW-8b	-	5/1/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/2/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/3/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/4/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/5/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/6/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/7/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	5/8/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/9/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/10/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/11/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/12/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/13/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/14/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	5/15/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/16/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/17/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/18/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/19/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/20/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/21/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	5/22/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/23/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/24/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/25/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/26/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/27/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/28/2013♦	Dry	<	10	<	10	10	10
MCW-8b	-	5/29/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/30/2013	Dry	<	10	<	10	10	10
MCW-8b	-	5/31/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/1/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/2/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/3/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/4/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/5/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/6/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/7/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	5/8/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/9/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/10/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/11/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/12/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/13/2013	Dry	<	10	<	10	10	10

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MCW-9	-	5/14/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	5/15/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/16/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/17/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/18/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/19/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/20/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/21/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	5/22/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/23/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/24/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/25/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/26/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/27/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/28/2013♦	Dry	<	10	<	10	10	10
MCW-9	-	5/29/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/30/2013	Dry	<	10	<	10	10	10
MCW-9	-	5/31/2013	Dry	<	10	<	10	10	10
MCW-12	1045	5/1/2013		=	40	=	40	32	44
MCW-12	1045	5/2/2013		=	40	=	40	33	46
MCW-12	1045	5/3/2013		=	40	=	40	35	49
MCW-12	1045	5/4/2013		=	40	=	40	36	51
MCW-12	1045	5/5/2013		=	40	=	40	38	53
MCW-12	1045	5/6/2013		=	40	=	40	40	56
MCW-12	1025	5/7/2013♦		=	1,300	=	3,000	47	68
MCW-12	1025	5/8/2013		=	1,300	=	3,000	55	82
MCW-12	1025	5/9/2013		=	1,300	=	3,000	58	87
MCW-12	1025	5/10/2013		=	1,300	=	3,000	62	92
MCW-12	1025	5/11/2013		=	1,300	=	3,000	65	98
MCW-12	1025	5/12/2013		=	1,300	=	3,000	69	104
MCW-12	1025	5/13/2013		=	1,300	=	3,000	73	110
MCW-12	855	5/14/2013♦		=	20	=	20	68	99
MCW-12	855	5/15/2013		=	20	=	20	62	89
MCW-12	855	5/16/2013		=	20	=	20	64	89
MCW-12	855	5/17/2013		=	20	=	20	65	89
MCW-12	855	5/18/2013		=	20	=	20	67	89
MCW-12	855	5/19/2013		=	20	=	20	68	89
MCW-12	855	5/20/2013		=	20	=	20	70	89
MCW-12	820	5/21/2013♦		<	10	=	40	70	91
MCW-12	820	5/22/2013		<	10	=	40	70	93
MCW-12	820	5/23/2013		<	10	=	40	67	93
MCW-12	820	5/24/2013		<	10	=	40	64	93
MCW-12	820	5/25/2013		<	10	=	40	61	93
MCW-12	820	5/26/2013		<	10	=	40	58	93
MCW-12	820	5/27/2013		<	10	=	40	55	93
MCW-12	1045	5/28/2013♦		=	20	=	20	54	91
MCW-12	1045	5/29/2013		=	20	=	20	53	89
MCW-12	1045	5/30/2013		=	20	=	20	52	87
MCW-12	1045	5/31/2013		=	20	=	20	51	85

MCW-14b	1025	5/1/2013		=	1,300	=	1,300	784	784
MCW-14b	1025	5/2/2013		=	1,300	=	1,300	762	762
MCW-14b	1025	5/3/2013		=	1,300	=	1,300	741	741
MCW-14b	1025	5/4/2013		=	1,300	=	1,300	721	721
MCW-14b	1025	5/5/2013		=	1,300	=	1,300	701	701
MCW-14b	1025	5/6/2013		=	1,300	=	1,300	682	682
MCW-14b	1000	5/7/2013♦		>	16,000	>	16,000	721	721
MCW-14b	1000	5/8/2013		>	16,000	>	16,000	762	762
MCW-14b	1000	5/9/2013		>	16,000	>	16,000	842	842
MCW-14b	1000	5/10/2013		>	16,000	>	16,000	931	931
MCW-14b	1000	5/11/2013		>	16,000	>	16,000	1,028	1,028
MCW-14b	1000	5/12/2013		>	16,000	>	16,000	1,136	1,136
MCW-14b	1000	5/13/2013		>	16,000	>	16,000	1,256	1,256
MCW-14b	820	5/14/2013♦		=	1,300	=	1,300	1,276	1,276
MCW-14b	820	5/15/2013		=	1,300	=	1,300	1,297	1,297
MCW-14b	820	5/16/2013		=	1,300	=	1,300	1,388	1,388
MCW-14b	820	5/17/2013		=	1,300	=	1,300	1,485	1,485
MCW-14b	820	5/18/2013		=	1,300	=	1,300	1,590	1,590
MCW-14b	820	5/19/2013		=	1,300	=	1,300	1,701	1,701
MCW-14b	820	5/20/2013		=	1,300	=	1,300	1,821	1,821
MCW-14b	755	5/21/2013♦		=	240	=	1,300	1,842	1,948
MCW-14b	755	5/22/2013		=	240	=	1,300	1,863	2,085
MCW-14b	755	5/23/2013		=	240	=	1,300	1,790	2,119
MCW-14b	755	5/24/2013		=	240	=	1,300	1,719	2,154
MCW-14b	755	5/25/2013		=	240	=	1,300	1,652	2,189
MCW-14b	755	5/26/2013		=	240	=	1,300	1,587	2,225
MCW-14b	755	5/27/2013		=	240	=	1,300	1,524	2,261
MCW-14b	1020	5/28/2013♦		=	2,400	=	2,400	1,581	2,345
MCW-14b	1020	5/29/2013		=	2,400	=	2,400	1,640	2,433
MCW-14b	1020	5/30/2013		=	2,400	=	2,400	1,674	2,483
MCW-14b	1020	5/31/2013		=	2,400	=	2,400	1,709	2,534
MCW-15c	1005	5/1/2013		=	80	=	80	26	30
MCW-15c	1005	5/2/2013		=	80	=	80	26	31
MCW-15c	1005	5/3/2013		=	80	=	80	27	32
MCW-15c	1005	5/4/2013		=	80	=	80	28	32
MCW-15c	1005	5/5/2013		=	80	=	80	28	33
MCW-15c	1005	5/6/2013		=	80	=	80	29	34
MCW-15c	940	5/7/2013♦		=	300	=	300	31	36
MCW-15c	940	5/8/2013		=	300	=	300	33	39
MCW-15c	940	5/9/2013		=	300	=	300	35	41
MCW-15c	940	5/10/2013		=	300	=	300	36	43
MCW-15c	940	5/11/2013		=	300	=	300	38	44
MCW-15c	940	5/12/2013		=	300	=	300	39	46
MCW-15c	940	5/13/2013		=	300	=	300	41	49
MCW-15c	755	5/14/2013♦		=	220	=	500	43	52
MCW-15c	755	5/15/2013		=	220	=	500	44	55
MCW-15c	755	5/16/2013		=	220	=	500	49	62
MCW-15c	755	5/17/2013		=	220	=	500	54	71
MCW-15c	755	5/18/2013		=	220	=	500	60	81

Mr. Kenneth Wang
June 17, 2013

MCW-15c	755	5/19/2013		=	220	=	500	67	92
MCW-15c	755	5/20/2013		=	220	=	500	74	105
MCW-15c	730	5/21/2013♦		<	10	<	10	74	105
MCW-15c	730	5/22/2013		<	10	<	10	74	105
MCW-15c	730	5/23/2013		<	10	<	10	74	103
MCW-15c	730	5/24/2013		<	10	<	10	74	100
MCW-15c	730	5/25/2013		<	10	<	10	74	98
MCW-15c	730	5/26/2013		<	10	<	10	74	96
MCW-15c	730	5/27/2013		<	10	<	10	74	94
MCW-15c	950	5/28/2013♦		=	20	=	20	76	94
MCW-15c	950	5/29/2013		=	20	=	20	77	94
MCW-15c	950	5/30/2013		=	20	=	20	74	89
MCW-15c	950	5/31/2013		=	20	=	20	71	85
MCW-17	-	5/1/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/2/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/3/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/4/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/5/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/6/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/7/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	5/8/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/9/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/10/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/11/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/12/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/13/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/14/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	5/15/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/16/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/17/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/18/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/19/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/20/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/21/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	5/22/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/23/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/24/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/25/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/26/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/27/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/28/2013♦	Dry	<	10	<	10	10	10
MCW-17	-	5/29/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/30/2013	Dry	<	10	<	10	10	10
MCW-17	-	5/31/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/1/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/2/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/3/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/4/2013	Dry	<	10	<	10	10	10

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MCW-18	-	5/5/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/6/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/7/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	5/8/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/9/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/10/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/11/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/12/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/13/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/14/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	5/15/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/16/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/17/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/18/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/19/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/20/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/21/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	5/22/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/23/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/24/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/25/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/26/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/27/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/28/2013♦	Dry	<	10	<	10	10	10
MCW-18	-	5/29/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/30/2013	Dry	<	10	<	10	10	10
MCW-18	-	5/31/2013	Dry	<	10	<	10	10	10

Notes:
Weeks with wet weather samples (collected less than 72 hours after a day with >0.1" rain) use the previous non-rain single sample value to calculate the geomean.
Results of <20 are adjusted to use half the MDL (=10) in the calculation of the geomean.
* The RWQCB granted permission to replace site MCW-15b with site Special-05 (renamed MCW-15c) on August 11th, 2010.
♦ Date of sampling

Calleguas Creek Watershed TMDL Compliance Monitoring 4th Year Annual Monitoring Report

CALLEGUAS CREEK

Watershed Management Plan

A COOPERATIVE STRATEGY FOR
RESOURCE MANAGEMENT & PROTECTION

February 26, 2013

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013
Attn: Renee Purdy

Subject: Calleguas Creek Watershed TMDL Compliance Monitoring Program 4th Year Annual Monitoring Report Submittal

Dear Ms. Purdy:

Please find the enclosed for your review and consideration the Calleguas Creek Watershed TMDL Compliance Monitoring Program (CCWTMP) 4th Year Annual Monitoring Report and Appendices. The CCWTMP Annual Report is intended to fulfill the monitoring requirements for only those parties which are part of the MOA group, which includes:

- POTWs – Camrosa Water District, Camarillo Sanitary District, Ventura County Waterworks District No. 1, and the Cities of Simi Valley and Thousand Oaks;

- Urban Dischargers – Cities of Simi Valley, Thousand Oaks, Camarillo, Moorpark, and Oxnard, Ventura County Watershed Protection District, and the County of Ventura Public Works Agency;

- Agricultural Dischargers consisting of the entities represented by the Ventura County Agricultural Irrigated Lands Group (VCAILG) within the Calleguas Creek Watershed, a subdivision of the Farm Bureau of Ventura County; and

- Other dischargers consisting of U.S. Department of Navy and Caltrans.

This draft report covers all monitoring and reporting requirements for the Nitrogen TMDL, OCs TMDL, Toxicity TMDL, Metals TMDL, and Salts TMDL. Compliance monitoring for salts was not yet required during this reporting period, however preliminary monitoring is included in this report. The Revolon Slough/Beardsley Wash Trash TMDL reporting requirements are included in a separate report submitted by the appropriate responsible parties.

The draft report summarizes required monitoring efforts (as outlined in the Regional Board approved QAPP) from August 2011 to July 2012. The following information is included in this submittal:

- Introduction and Program Background
- Summary of Monitoring Events
- Summary of Toxicity Monitoring and Compliance
- Data Summary Tables
- Compliance Summary Tables and Discussion
- Revisions/Recommendations to the CCWTMP

The corresponding appendices include the following:

- Chain of Custody (COC) Forms
- Laboratory QA/QC Results and Discussion
- Annual Progress Report
- Mugu Lagoon Benthic Infauna Report

All information listed above is included in this submittal. Due to the sheer size of the report, appendices, and SWAMP data files the Draft CCWTMP Annual Report and accompanying files are being submitted on CD.

Please contact Amy Storm (Larry Walker Asssociates) at 805-585-1835, if you have any comments or questions regarding the information provided in this report submittal.

Very truly yours,

Lucia McGovern
Chair, Stakeholders Implementing TMDLs in the Calleguas Creek Watershed

FEBRUARY 26, 2013

Calleguas Creek Watershed TMDL Compliance Monitoring Program

Fourth Year Annual Monitoring Report

submitted to

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

prepared by

LARRY WALKER ASSOCIATES

on behalf of the:

STAKEHOLDERS IMPLEMENTING TMDLS IN THE CALLEGUAS CREEK WATERSHED

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Executive Summary

INTRODUCTION

There are six Total Maximum Daily Loads (TMDLs) currently effective and implemented in the Calleguas Creek Watershed. They include:

- Nitrogen Compounds and Related Effects in Calleguas Creek (Nitrogen or Nutrients TMDL)
- Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs) and Siltation in Calleguas Creek, its Tributaries, and Mugu Lagoon (OC Pesticides TMDL)
- Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries and Mugu Lagoon (Toxicity TMDL)
- Metals and Selenium in Calleguas Creek, its Tributaries, and Mugu Lagoon (Metals TMDL)
- Revolon Slough and Beardsley Wash Trash TMDL (Trash TMDL)
- Boron, Chloride, Sulfate and TDS (Salts) in the Calleguas Creek, its Tributaries and Mugu Lagoon (Salts TMDL)

To address the monitoring requirements of the TMDLs, the Calleguas Creek Watershed TMDL Compliance Monitoring Program (CCWTMP) was established and a Quality Assurance Project Plan (QAPP) developed and approved by the Los Angeles Regional Water Quality Control Board (Regional Water Board) Executive Officer. The QAPP currently addresses monitoring requirements for the Nitrogen, OC Pesticides, Toxicity, and Metals TMDLs only. The Trash TMDL is addressed through a separate monitoring plan. The primary purpose of this report is to document the fourth year monitoring efforts and results of the CCWTMP for the four TMDLs currently included in the QAPP. Although not yet required by the Salts TMDL, a subset of the preliminary monitoring data is included in this report. Specifically, monthly averages are provided for sites where pilot testing occurred between July 2011 and June 2012. Results from grab samples taken at compliance sites and land use sites are also provided.

PROJECT ORGANIZATION

The CCWTMP is a coordinated effort with the various responsible parties that make up the Stakeholders Implementing TMDLs in the Calleguas Creek Watershed (Stakeholders). Stakeholders identified in the TMDL have developed a Memorandum of Agreement (MOA) that outlines an agreement to implement the CCWTMP.

The stakeholders to the MOA for which this report fulfills the TMDL monitoring requirements are as follows:

- **POTWs**: consisting of Camrosa Water District, Camarillo Sanitary District, Ventura County Waterworks District No. 1, and the Cities of Simi Valley and Thousand Oaks;
- **Urban Dischargers**: consisting of the Cities of Simi Valley, Thousand Oaks, Camarillo, Moorpark and Oxnard, Ventura County Watershed Protection District, and the County of Ventura Public Works Agency;

- **Agricultural Dischargers**: consisting of the entities represented by the Ventura County Agricultural Irrigated Lands Group (VCAILG) within the Calleguas Creek Watershed, a subdivision of the Farm Bureau of Ventura County; and
- **Other Dischargers**: consisting of the U.S. Department of Navy and Caltrans.

WATERSHED BACKGROUND

Calleguas Creek drains an area of approximately 343 square miles from the Santa Susana Pass in the east to Mugu Lagoon in the southwest. The main surface water system drains from the mountains in the northeast part of the watershed toward the southwest where it flows through the Oxnard Plain before emptying into the Pacific Ocean through Mugu Lagoon. The watershed, which is elongated along an east-west axis, is approximately thirty miles long and fourteen miles wide. The main reaches covered by the TMDLs are: Mugu Lagoon, Revolon Slough and Beardsley Channel; Arroyo Las Posas, Arroyo Simi, and Tapo Canyon; Calleguas Creek, Arroyo Santa Rosa and the lower and upper reaches of Conejo Creek.

MONITORING ELEMENTS IN THE CCWTMP QAPP

The following environmental monitoring elements are required by the Basin Plans and are included in the CCWTMP:

- General water and sediment quality constituents;
- Water column and sediment toxicity;
- Metals and selenium in water, sediment, fish tissue, and bird eggs;
- Organic compounds in water, sediment, and fish tissue; and,
- Nitrogen and phosphorus compounds in water.

MONITORING EVENT SUMMARIES

Sampling events required during the fourth year of TMDL monitoring included four dry-weather events (Events 28, 29, 31, and 33), two wet-weather events (Event 30 and 32), a special bird egg monitoring event at Mugu Lagoon, as well as a survey of benthic invertebrates at Mugu Lagoon. A summary of events 28 through 33 is included in Table ES-1.

Table ES - 1. Summary of Year 4 monitoring events

Event	Type	Date	Mugu Lagoon			Freshwater Sites		
			Water Quality	Sediment	Tissue	Water Quality	Sediment	Tissue
28	Dry	Aug 2011	X	X	X	X	X	X
29	Dry	Nov 2011	X			X		
31	Dry	Feb 2012	X			X		
33	Dry	May 2012	X			X		
30	Wet	Jan 2012	X			X		
32	Wet	Mar 2012	X			X		

TOXICITY TESTING AND TOXICITY IDENTIFICATION EVALUATIONS (TIE) SUMMARY

For the CCWTMP toxicity measures, standard test species were utilized for toxicity testing. Per TMDL and QAPP requirements, when significant toxicity is found a targeted Phase 1 TIE is used to determine the general class of constituent (*i.e.*, non-polar organics) causing toxicity. The targeted TIE focuses on classes of constituents anticipated to be observed in drainages dominated by urban and agricultural discharges and those previously observed to cause toxicity. Phase 2 TIEs may also be utilized to identify specific constituents causing toxicity if warranted.

To address toxicity of unknown causes in sediment, sediment porewater was extracted and tested for toxicity when significant toxicity was observed in the bulk sediment sample. If the subsequent sediment porewater also showed significant toxicity, a Phase 1 TIE was initiated on the sediment porewater.

In Monitoring Year 4, toxicity samples were collected as follows:

- Sediment Toxicity
    - 5 Mugu Lagoon sites
    - 4 freshwater sites
- Water Column Toxicity
    - 8 freshwater sites

Toxicity Results Summary

Toxicity has been identified in the Revolon Slough (site 04_WOOD) during the first two monitoring years in water column samples and in each of the four sediment samples. The stakeholders have chosen to invest resources into source control efforts to address sources potentially contributing to the toxicity issue. This is being accomplished through the implementation of the Agricultural Water Quality Management Plan (AWQMP) developed by the Ventura County Agricultural Irrigated Lands Group (VCAILG) as part of the Conditional Waiver for Irrigated Agricultural Lands.

Throughout the four years of monitoring, four additional monitoring sites have been identified as having significant mortality in dry weather events (03_UNIV, 9B_ADOLF, 10_GATE, and 06_SOMIS for one event each). Toxicity has been identified during wet weather monitoring at all sites, except for 10_GATE and 13_BELT.

Both water column and sediment TIE efforts were conducted and outcomes of these efforts have had limited success in identifying the true cause of toxicity. While not identifying the specific constituents causing toxicity, the TIEs have identified:

- Most initial TIE analysis has identified non-polar organic compounds as contributing to the observed toxicity.
- Compounds similar to organophosphorus (OP) pesticides are continually being identified as possible contributors to the observed toxicity.
- Pyrethroids may also be contributing to the observed toxicity conditions.

From a compliance standpoint, although toxicity was noted at several locations in the watershed, TIEs were initiated for all samples meeting the requirements in the QAPP. As a result, the Stakeholders are in compliance with the toxicity WLAs and LAs per the Toxicity TMDL.

BENTHIC MACRO-INVERTEBRATE COMMUNITY ASSESSMENT AND ANALYSIS

As part of the CCWTMP, the benthic infaunal community of Mugu Lagoon, the estuarine embayment at the mouth of Calleguas Creek, was sampled in August 2011. The optional benthic sampling was included in the monitoring program to assess infaunal community condition, a potential indicator of exposure to contaminants in the sediments and in conjunction with toxicity testing and chemical analysis, form a triad of standardized tools to determine sediment quality in potentially impacted habitats.[1]

The infauna communities in the study area were composed predominantly of nematodes, small arthropods, annelid worms, and gastropods. Community composition was most similar between the two sites in the western arm of the lagoon, and between the stations in the eastern arm and central lagoon, respectively. The 2011 infaunal community parameters at most stations were reduced compared to the results found during the 2008 survey. The Benthic Community Index Integration indicated that the stations in the western arm of Mugu Lagoon were Moderately Disturbed in 2011 compared to the Low Disturbance found in 2008. In the main lagoon, the benthic communities at the stations in the eastern arm indicated High Disturbance this year, which was also a reduction in condition compared to 2008. In the central lagoon, which is influenced by inputs from both the creek and a nearby storm drain, indices suggested that conditions had improved and are now considered Moderately Disturbed compared to the High Disturbance previously found. While higher levels of disturbance to the infauna community were indicated in 2011 as compared to 2008, the source of the disturbance is likely related to the effects of an unusually wet year previous to the 2011 survey. In assessing sediment quality and the protection of sediment dependent biota, the benthic community condition is only one of three lines of evidence considered by the Sediment Quality Objectives. To fully evaluate sediment quality relative to the narrative objective, sediment toxicity and chemistry must also be considered.

COMPLIANCE ANALYSIS

For the most part, the CCW is in compliance with the applicable interim or final WLAs and LAs currently in effect for the Nutrients, OC Pesticides, Toxicity, and Metals TMDLs addressed in the QAPP. The following observations summarize the compliance status with these allocations:

- No exceedances of any interim WLA or LAs for OC Pesticides or PCBs were observed at any location in the watershed.
- Although toxicity was observed at some locations in the watershed, TIEs were initiated for all samples meeting the requirements in the QAPP. As a result, the Stakeholders are in compliance with the toxicity WLAs and LAs per the requirements of the TMDL.

[1] Since the first year of CCWTMP monitoring, the three lines of evidence related to benthic community condition have been formalized into the state adopted sediment quality objectives (SQOs) as detailed in the, “Water Quality Control Plan for Enclosed Bays and Estuaries of California, Part 1 Sediment Quality,” September 2008.

- Exceedances of numeric targets for Nitrate-N were observed at several sites in Mugu Lagoon, Revolon Slough, Arroyo Simi, Arroyo Las Posas, and Calleguas Creek. Most exceedances occurred during dry events; wet-weather exceedances were observed only within three subwatersheds: Revolon Slough, Mugu Lagoon, and Arroyo Las Posas.
- One site (04_WOOD) exceeded the interim dry weather WLA and LA for selenium. However, per the Basin Plan Amendment, the attainment of the interim allocation will be evaluated in consideration of background loading if available. As noted in previous annual reports, Revolon Slough, where this site is located, has been shown to have rising groundwater, a large background source of selenium. No exceedances of other interim WLA or LAs for any other metals were observed at any location in the watershed.
- Exceedances of the final WLAs for chlorpyrifos and diazinon were observed at several locations in the watershed; most of them were for chlorpyrifos during wet weather events. No exceedances of the chlorpyrifos and diazinon interim LAs were observed.

Nutrients

Exceedances of numeric targets for Nitrate-N and Nitrate-N + Nitrite-N were observed at sites in Mugu Lagoon, Revolon Slough, Arroyo Simi, Arroyo Las Posas, and Calleguas Creek (02_PCH). Nitrate-N exceedances are summarized in Table 114 below. The table focuses on Nitrate-N results since Nitrate-N + Nitrite-N exceedances were generally caused by high Nitrate-N values. With one exception, 05_CENTR during wet-weather Event 32, Nitrite-N was below the 1 mg/L target at all sites and events.

Table ES - 2. Exceedances of Nitrate-N Numeric TMDL Target of 10 mg/L

Nitrogen TMDL Compliance Sites	Event 28 Aug-2011 Dry	Event 29 Nov-2011 Dry	Event 31 Feb-2011 Dry	Event 33 May-2011 Dry	Event 30 Jan-2012 Wet	Event 32 Mar-2012 Wet
01_RR_BR	**yes**	**yes**	no	no	**yes**	no
04_WOOD	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
05_CENTR	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
02_PCH	**yes**	**yes**	**yes**	**yes**	NM	NM
03_UNIV	no	no	no	no	no	no
9A_HOWAR	no	no	no	no	NM	NM
9B_ADOLF	no	no	no	no	no	no
10_GATE	no	no	no	no	no	no
12_PARK	no	no	no	no	NM	NM
13_BELT	no	no	no	no	NM	NM
06_SOMIS	no	no	**yes**	no	no	**yes**
07_HITCH	no	no	**yes**	**yes**	no	no
07_MADER	no	no	no	no	no	no

no signifies that monitoring results were below the Nitrate-N target during the monitoring event.
yes signifies that monitoring results were below the Nitrate-N target during the monitoring event.
NM – not monitored

Nitrogen exceedances occurred primarily in areas of the watershed with agricultural inputs. Reaches downstream of POTW discharges are generally in compliance with the TMDL requirements and urban discharges were determined to be negligible during the TMDL analysis and therefore do not have TMDL allocations. The final nitrogen allocations for agriculture became effective in July 2010. The exceedances of the nitrogen load allocations since that time have triggered the inclusion of nitrogen in the Agricultural Water Quality Management Plan (AWQMP) required under the Conditional Waiver of Irrigated Lands that is currently being implemented in the Calleguas Creek Watershed. The past two years of agricultural education courses have included various classes focused on nitrogen management; AWQMP implementation will continue to target nitrogen and include BMPs to address these exceedances. Compliance with the load allocations is determined through implementation of the AWQMP.

Chlorpyrifos and Diazinon

Further examination of the chlorpyrifos and diazinon exceedances at receiving water sites was needed to assess whether urban dischargers caused the exceedance of the receiving water allocations. The WLAs for urban dischargers are assessed in the receiving water, while agricultural dischargers are not yet required to be in compliance with the chlorpyrifos and diazinon final load allocations. Monitoring data at land use sites from each subwatershed for which an exceedance was observed was compared to the WLA to determine if MS4 discharges exceeded the allocation during the monitoring event where elevated receiving water concentrations were observed. If the MS4 land use data were below the WLA, the MS4 dischargers were considered to be in compliance with the WLAs. If the MS4 land use data were above the WLA, the MS4 could be contributing to the exceedance in the receiving water.

As shown in Table ES - 3, there were only two exceedances of diazinon targets at the receiving water sites and, in both cases, the upstream diazinon levels in MS4 discharges were less the WLA for diazinon.

There were also fourteen exceedances of chlorpyrifos targets at the receiving water sites and, in all but three instances, the exceedances were in reaches to which MS4 discharges were not occurring or the land use data was less than the WLA for chlorpyrifos. The receiving water exceeded the chlorpyrifos target at sites 09B_ADOLF and 07_HITCH during the second storm sampled (Event 32) and at site 04_WOOD during a dry event in February 2012 (Event 31). In all three instances, both MS4 and agricultural upstream sites exceeded the targets for chlorpyrifos. As a result, it is possible that the either the MS4 or agricultural discharges, or both, contributed to the receiving water exceedances. In the case of wet weather events, it is likely these discharges represent legacy applications of chlorpyrifos that were flushed into the stream with sediment during the storm.

Table ES - 3. Compliance and Land Use Sites Comparison to Determine MS4 Chlorpyrifos and Diazinon WLA Compliance

Sites Exceeding WLAs	Constituent	Event 28 Aug-2011 Dry	Event 29 Nov-2011 Dry	Event 31 Feb-2011 Dry	Event 33 May-2012 Dry	Event 30 Jan-2012 Wet	Event 32 Mar-2012 Wet
01_RR_BR	Chlorpyrifos		no[1]			no[1]	no[1]
04_WOOD	Chlorpyrifos		no	**yes**			no
03_UNIV	Chlorpyrifos			no[1]		no[1]	no[1]
	Diazinon						no[1]
06_SOMIS	Chlorpyrifos						no[1]
09B_ADOLF	Chlorpyrifos						**yes**
	Diazinon				no		
07_HITCH	Chlorpyrifos			no		no	**yes**

no signifies that none of the MS4 land use site for the subwatershed exceeded the WLA during the monitoring event.
yes signifies that at least one the MS4 land use site for the subwatershed exceeded the WLA during the monitoring event.
1. There are no urban discharges to these subwatersheds above the sampling location.
Blank cells indicate that a WLA exceedance did not occur at the compliance monitoring site during a particular event.

Selenium

Selenium concentrations in Revolon Slough at 04_WOOD exceeded the urban dischargers interim WLA and the agricultural dischargers interim LA during all four dry weather monitoring events. A summary of monitoring results for total selenium at sites in the Revolon Slough subwatershed is shown in Table 116 below. For discussion purposes both dry weather and wet weather monitoring results are included in the table.

Table ES - 4. Selenium Monitoring Data in the Revolon Slough Subwatershed

		Dry Weather Events & Dates						Wet Weather Events & Dates		
		Interim		28	29	31	33		30	32
Site ID	Use	WLA[1]	LA[1]	Aug-11	Nov-11	Feb-12	May-12	Target[2]	Jan-12	Mar-12
04_WOOD	RW	13	6	23.06	30.4	25.71	22.13	290	19.1	11.54
04D_WOOD	Ag		6	NS	8.4	6.88	NS	290	4.18	2.54
05D_SANT_VCWPD	Ag		6	**62.11**	**72.1**	**53.25**	**63.34**	290	52.45	39.7
04D_VENTURA	Urban	13		0.51	3.2	DNQ	0.6	290	DNQ	DNQ

1. Interim WLAs for stormwater permittees and interim LAs for agricultural dischargers are effective until March 2022 (R4-2006-012).
2. No wet weather exceedances were observed in the TMDL analysis so no interim limits were assigned for the TMDL. For comparison purposes, the wet weather targets were included in this table.

RW – Receiving water compliance site; Ag – Agricultural
NS – Not sampled; DNQ – Detected not quantified; ND – Not detected
Results in **bold type** exceed applicable interim WLA or interim LA.

As noted in the table above, high levels of selenium were also observed at 05D_SANT_VCWPD, an agricultural land use site in the upper reach of the subwatershed. Selenium levels at the 04_WOOD receiving water site and at the upstream 05D_SANT_VCWPD site are generally higher during dry weather events as the concentrations are being diluted during wet weather events. As discussed in the TMDL, a primary source of selenium in Revolon

Slough is considered to be rising groundwater levels and the interim allocations were to be considered in this context. These exceedances were likely caused by rising groundwater. Further investigation of selenium sources will be conducted through special studies as required by the TMDL.

TRENDS DISCUSSION

Nitrogen Compounds

Ammonia and Nitrite-N are consistently below TMDL allocations at all Nitrogen TMDL compliance sites. Nitrate-N is occasionally above the 10 mg/L objective in the Mugu Lagoon (01_RR_BR), the lower reaches of Calleguas Creek (02_PCH and 03_UNIV), in Revolon Slough (04_WOOD and 05_CENTR), and in the Las Posas and Simi Arroyos (06_SOMIS and 07_HITCH). Exceedances in Conejo Creek and in the upper reaches of Calleguas Creek are seldom observed. Levels in the Mugu Lagoon and in freshwater immediately upstream (02_PCH) appear to be decreasing from year to year. Nevertheless, statistically-significant trends have not been observed at any of the sites.

OC Pesticides, PCBs, and Siltation

No exceedances of interim WLA or LAs for OC Pesticides or PCBs were observed at any location in the watershed during the previous four monitoring years. Because most constituents are below method detection or quantification levels, meaningful trends in the data cannot be assessed at this time.

Toxicity, Chlorpyrifos, and Diazinon

Chlorpyrifos and diazinon levels are low and often non-detect at compliance sites in Mugu Lagoon and in upstream freshwater sites with occasional spikes in concentrations observed during storm events, especially at sites with agricultural inputs. This is expected as rain washes out sediment particles which may contain these constituents. There are no clear trends observed at this time.

Metals and Selenium

For the most part, metals and selenium levels at receiving water sites have been low and in compliance with the interim LAs and WLAs and TMDL targets. Concentrations of total metals, such as copper and nickel, tend to be higher during rainstorms, but are generally below the final wet-weather allocations.

The TMDL numeric targets are now being met for all constituents at the terminus of the watershed, Mugu Lagoon. Upstream there are ongoing exceedances of the selenium target in Revolon Slough. Even with the upstream exceedances, bird eggs from Mugu Lagoon meet the numeric targets for mercury and selenium. As discussed in the TMDL, a primary source of selenium in Revolon Slough is considered to be rising groundwater levels and the interim allocations were to be considered in this context. In other listed reaches of the watershed, most numeric targets are currently being met. Constituents that exceed the final targets above the allowable number are few and infrequent, giving confidence that the TMDL should be achieved within the implementation schedule. The final targets for the Metals and Selenium TMDL are not required to be achieved until March 26, 2022 for agricultural and point source dischargers;

POTWs have until 2017. Sufficient samples are available to suggest that delisting from the 303(d) list is possible for most metals in most reaches.[2]

REVISIONS AND RECOMMENDATIONS

The QAPP specifies that during the completion of each CCWTMP annual report, revisions to the standard procedures will be made, including: site relocation, ceasing monitoring efforts and/or deleting certain constituents from sample collection. Some revisions were recommended in the previous annual reports; however no response from the Regional Water Board has been received to date. In order to continue implementing the CCWTMP in an adaptive and cost effective manner, some of the previously requested revisions have been carried out.

Fourth Year Annual Report Recommendations and Actions:

- Cease quarterly monitoring in Mugu Lagoon. Metals and general chemistry are the only constituents being monitored during these events, and sufficient data is available to support delisting in the lagoon.

In addition to the recommendations presented above, the QAPP needs to be updated to incorporate the Salts TMDL monitoring approach. At that time, it is also recommended that the QAPP be updated for all constituents to reflect the recommendations identified above and in years prior and reflect monitoring adjustments that have been implemented due to field conditions.

[2] State of California State Water Resources Control Board. "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List." Adopted September 2004. Resolution No. 2004-0063.

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Introduction and Program Background

INTRODUCTION

The Clean Water Act requires Total Maximum Daily Loads (TMDLs) be developed to restore 303(d) listed waterbodies, and the State of California Porter-Cologne Water Quality Act requires that an Implementation Plan be developed to achieve water quality objectives. States must develop water quality management plans to implement the TMDLs (40 CFR 130.6). The United States Environmental Protection Agency (USEPA) has oversight authority for the 303(d) program and is required to review and either approve or disapprove the TMDLs submitted by states. If the USEPA disapproves a TMDL submitted by a state, USEPA is required to establish a TMDL for that waterbody.

In the Calleguas Creek Watershed, the following six TMDLs are currently effective and include monitoring requirements in the implementation plans:

- Nitrogen Compounds and Related Effects in Calleguas Creek (Nitrogen or Nutrients TMDL)
- Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs) and Siltation in Calleguas Creek, its Tributaries, and Mugu Lagoon (OC Pesticides TMDL)
- Toxicity, Chlorpyrifos, and Diazinon in the Calleguas Creek, its Tributaries and Mugu Lagoon (Toxicity TMDL)
- Metals and Selenium in Calleguas Creek, Its Tributaries, and Mugu Lagoon (Metals TMDL)
- Revolon Slough and Beardsley Wash Trash TMDL (Trash TMDL)
- Boron, Chloride, Sulfate and TDS (Salts) in the Calleguas Creek, its Tributaries and Mugu Lagoon (Salts TMDL)

To address the monitoring requirements of the TMDLs, the Calleguas Creek Watershed TMDL Compliance Monitoring Program (CCWTMP) was established and a Quality Assurance Project Plan (QAPP) developed and approved by the Los Angeles Regional Water Quality Control Board (Regional Water Board) Executive Officer. The QAPP currently addresses monitoring requirements for the Nitrogen, OC Pesticides, Toxicity, and Metals TMDLs only. The Trash TMDL is addressed through a separate monitoring plan.

The QAPP does not currently address monitoring requirements for the Salts TMDL, and compliance monitoring for the Salts TMDL was not required during the period covered by this report. A monitoring approach (Salts Plan) for the Calleguas Creek Watershed Salts TMDL was submitted by the Stakeholders Implementing TMDLs in the Calleguas Creek Watershed (Stakeholders) to the Los Angeles Regional Water Board in June 2009, which was conditionally approved in September 2011. Although compliance monitoring for the Salts TMDL was not required until September 9, 2012, a year of preliminary monitoring (including pilot testing of continuous monitoring equipment at five compliance sites) was performed from January to December 2011, and continued at two sites during April to June 2012. The September 2011 conditional approval from the Regional Board required the establishment of a final monitoring approach for salts based on the results of the preliminary monitoring. The final salt monitoring approach was submitted by the Stakeholders on June 29, 2012, and vetted with Regional Board staff shortly afterward. In accordance with the Salts TMDL and the final approach, compliance monitoring for salts began September 9, 2012. The necessary descriptions of monitoring locations, schedules, and methods for salts monitoring will be incorporated into the CCWTMP QAPP when it undergoes revision in 2013, and are not repeated herein.

Although not required for TMDL compliance, a subset of the preliminary monitoring data is included in this report. Specifically, monthly averages from time series of continuous salt concentrations (5-min data interval) are provided for months/sites where pilot testing occurred between July 2011 and June 2012. In addition, results are provided from grab samples taken at compliance sites and land use sites during the same period.

The primary purpose of this report is to document the fourth year monitoring efforts and results of the CCWTMP for the four TMDLs currently included in the QAPP. Results for six events sampled from July 2011 to June 2012 are presented for the TMDLs included in the QAPP. The report includes summaries for specific sampling events, data summaries and compliance assessment, as outlined in the QAPP. The report is divided into the following sections:

- Introduction and Program Background
- Summary of Monitoring Events
- Summary of Toxicity Monitoring and Compliance
- Data Summary Tables
- Compliance Summary Tables and Discussion
- Revisions/Recommendations to the CCWTMP
- Appendices

PROJECT ORGANIZATION

The CCWTMP is a coordinated effort with the various responsible parties that make up the Stakeholders Implementing TMDLs in the Calleguas Creek Watershed (Stakeholders). Stakeholders identified in the TMDL have developed a Memorandum of Agreement (MOA) that outlines an agreement to implement the CCWTMP. The responsible parties identified in the organizational structure have formally joined together to fulfill their monitoring requirements as outlined in the Basin Plan Amendments (BPAs) for the following five effective TMDLs[3]:

- Nitrogen TMDL
- OC Pesticides TMDL
- Toxicity TMDL
- Metals TMDL

[3] Although the CCWTMP QAPP does not currently cover monitoring for salts, preliminary salt monitoring started in 2011 to provide information used to comply with the Year 3 interim milestone in the TMDL requiring demonstration of a 20% improvement in the watershed balance for chloride, sulfate, TDS, and boron. The Trash TMDL is addressed through a separate Regional Water Board approved monitoring plan.

- Salts TMDL

The CCWTMP is intended to fulfill the monitoring requirements for only those stakeholders that are part of the MOA and/or identified by the participants of the MOA. The stakeholders to the MOA for which this report fulfills the TMDL monitoring requirements are as follows:

- **POTWs**: consisting of Camrosa Water District, Camarillo Sanitary District, Ventura County Waterworks District No. 1, and the Cities of Simi Valley and Thousand Oaks;
- **Urban Dischargers**: consisting of the Cities of Simi Valley, Thousand Oaks, Camarillo, Moorpark and Oxnard, Ventura County Watershed Protection District, and the County of Ventura Public Works Agency;
- **Agricultural Dischargers**: consisting of the entities represented by the Ventura County Agricultural Irrigated Lands Group (VCAILG) within the Calleguas Creek Watershed, a subdivision of the Farm Bureau of Ventura County; and
- **Other Dischargers**: consisting of the U.S. Department of Navy and Caltrans.

Per the MOA, a Management Committee, consisting of one representative each from the POTWs, Urban Dischargers and Other Dischargers groups and two representatives from the Agricultural Dischargers group, oversees the CCWTMP and makes decisions to assure the CCWTMP is carried out in a timely, accountable fashion.

Prior to the initiation of the first required sampling event in 2008, the Stakeholders contracted the day to day management of the CCWTMP activities and field sampling activities. The following contractors performed the following tasks during the fourth year monitoring effort:

- **General Project Management** - Larry Walker Associates, Inc. (LWA)
- **Field Monitoring Activities**
  - **Mugu Lagoon Water Quality Sampling** - MBC Applied Environmental Sciences (MBC)
  - **Freshwater Water Quality/Sediment Sampling** - Kinnetic Laboratories, Inc. (KLI), Fugro West, Inc. (Fugro), LWA
  - **Freshwater Fish Tissue –** Cardno ENTRIX
  - **Bird Egg Collection –** Naval Base Ventura County, Environmental Planning and Conservation Branch (TMDL Implementing Party)
- **Water, Sediment, and Tissue Chemistry Analysis** - Physis Environmental Laboratories, Inc. (Physis)
- **Toxicity Analysis** - Pacific Eco Risk Laboratories (PacEco)

The aforementioned contractors performed all the management activities and sampling efforts covered by this annual report. All field contractors are the same as used in last year's sampling efforts. Cardno ENTRIX became involved starting with year 2; they replaced the California Department of Fish and Game for freshwater fish tissue collection. In year 3, Physis replaced CRG Marine Laboratories as the chemistry analytical laboratory for the CCWTMP. As the monitoring program moves forward this list of contractors may continue to be amended to reflect new contractors hired on to perform required or new duties per the decision of the Stakeholders Implementing TMDLs in the Calleguas Creek Watershed.

WATERSHED BACKGROUND

Calleguas Creek drains an area of approximately 343 square miles from the Santa Susana Pass in the east to Mugu Lagoon in the southwest. The main surface water system drains from the mountains in the northeast part of the watershed toward the southwest where it flows through the Oxnard Plain before emptying into the Pacific Ocean through Mugu Lagoon. The watershed, which is elongated along an east-west axis, is approximately thirty miles long and fourteen miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Figure 1 depicts the CCW and Table 1 presents the reaches of the CCW as identified in the TMDLs covered by the CCWTMP.

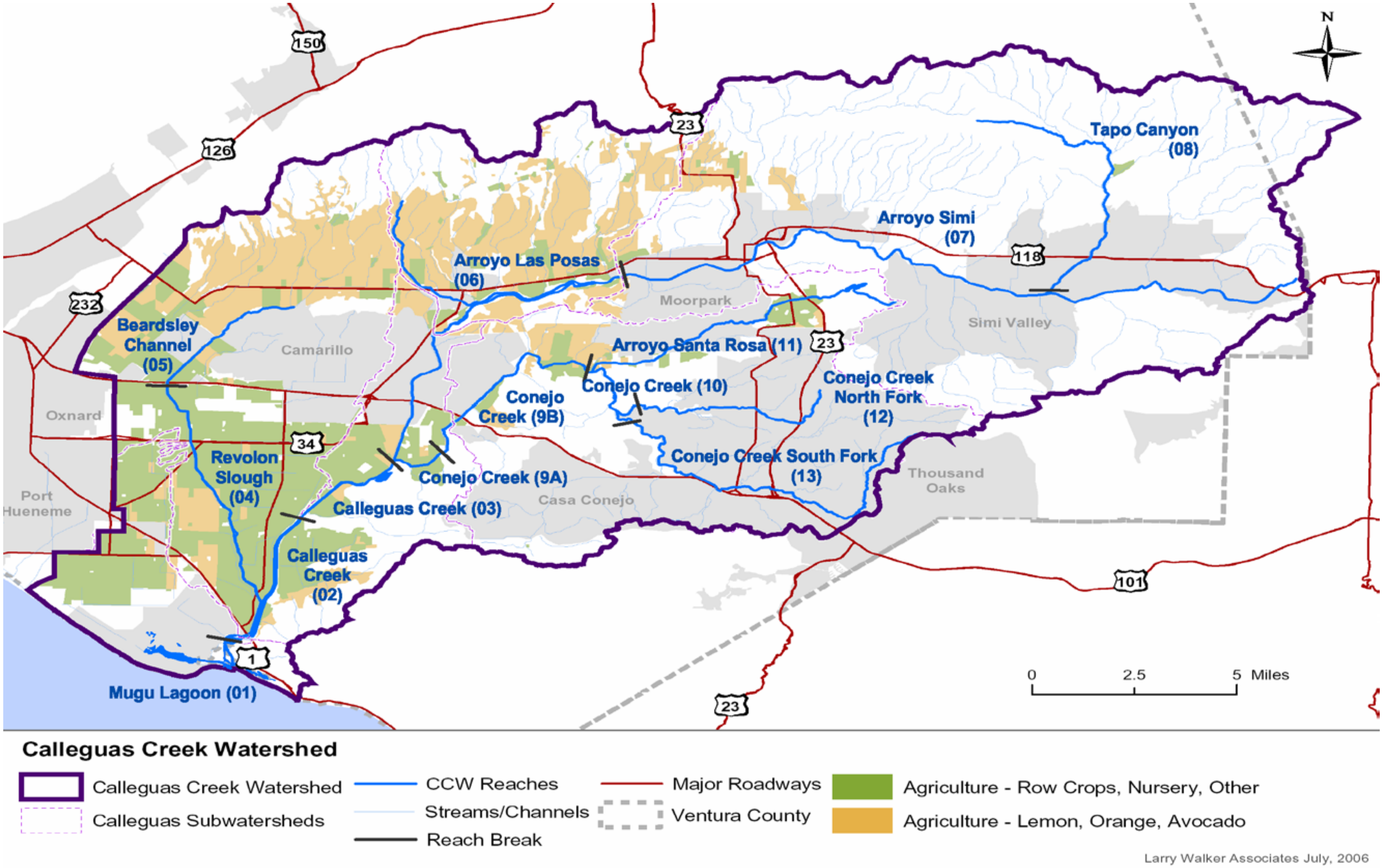

Figure 1. Calleguas Creek Watershed

Table 1. Description of CCW Reaches Based on 2002 303(d) List

Reach No.	Reach Name	OC Pesticides and Toxicity TMDLs Subwatershed	Reach Name Reach as Listed in the 1999 Consent Decree	Geographic Description
1	Mugu Lagoon	Mugu	Mugu Lagoon	Lagoon fed by Calleguas Creek
2	Calleguas Creek South	Calleguas	Calleguas Creek Reach 1 and Reach 2 (Estuary to Potrero Rd.)	Downstream (south) of Potrero Rd
3	Calleguas Creek North	Calleguas	Calleguas Creek Reach 3 (Potrero to Somis Rd.)	Potrero Rd. upstream to confluence Conejo Creek
4	Revolon Slough	Revolon	Revolon Slough Main Branch	Revolon Slough from confluence with Calleguas Creek to Central Ave
5	Beardsley Channel	Revolon	Beardsley Channel	Revolon Slough upstream of Central Ave.
6	Arroyo Las Posas	Las Posas	Arroyo Las Posas Reach 1 and Reach 2 (Lewis Somis Rd. to Moorpark Fwy (23))	Confluence with Calleguas Creek to Hitch Road
7	Arroyo Simi	Arroyo Simi	Arroyo Simi Reach 1 and Reach 2 (Moorpark Fwy (23) to Headwaters)	End of Arroyo Las Posas (Hitch Rd) to headwaters in Simi Valley.
8	Tapo Canyon	Arroyo Simi	Tapo Canyon Reach 1 and Reach 2	Confluence w/ Arroyo Simi up Tapo Cyn to headwaters
9A	Conejo Creek	Conejo	Conejo Creek Reach 1 (Confl with Calleguas Creek to Santa Rosa Rd.)	Extends from the confluence with Arroyo Santa Rosa downstream to the Camrosa Diversion.
9B	Conejo Creek	Conejo	Conejo Creek Reach 1 and Reach2 (Confl with Calleguas Creek to Tho. Oaks city limit)	Extends from Camrosa Diversion to confluence with Calleguas Creek.
10	Hill Canyon reach of Conejo Creek	Conejo	Conejo Creek Reach 2 and Reach 3 (Santa Rosa Rd. to Lynn Rd.)	Confluence w/ Arroyo Santa Rosa to confluence w/ N. Fork; and N. Fork to just above Hill Canyon WTP
11	Arroyo Santa Rosa	Conejo	Arroyo Santa Rosa	Confluence w/ Conejo Creek to headwaters
12	North Fork Conejo Creek	Conejo	Conejo Creek Reach 3 (Tho. Oaks city limit to Lynn Rd.)	Confluence w/Conejo Creek to headwaters
13	Arroyo Conejo (South Fork Conejo Creek)	Conejo	Conejo Creek Reach 4 (Above Lynn Rd.)	Confluence w/ N. Fork to headwaters —two channels

MONITORING QUESTIONS

The CCWTMP was developed to meet the monitoring requirements for the five aforementioned TMDLs. The goals of the CCWTMP include:

- To determine compliance with numeric targets, waste load and load allocations, and interim load reduction milestones.
- To test for sediment toxicity at sediment monitoring stations.
- To identify causes of unknown toxicity.
- To generate additional land use runoff data to better understand pollutant sources and proportional contributions from various land use types.
- To monitor the effect of implementation actions by urban, POTW, and agricultural dischargers on in-stream water, sediment, fish tissue quality, and watershed balances (salts).
- To implement the program consistent with other regulatory actions within the CCW.

The CCWTMP is intended to answer the following monitoring questions to meet the goals of the program:

- Are numeric targets and allocations met at the locations indicated in the TMDLs?
- Are conditions improving?
- What is the contribution of constituents of concern from various land use types?

Water, sediment, and fish tissue samples were collected and analyzed to determine whether targets and allocations are being met. Data collected through the CCWTMP will be used in conjunction with historical data to evaluate whether conditions are improving as this program moves forward. Samples collected at land use sites provide data to evaluate the contribution of constituents of concern from each type of land use to receiving waterbodies. The data collected by this program will be the basis for recommendations and/or revisions to current activities as outlined in the QAPP, and may include site relocations to more accessible/appropriate locations and modifications to constituents monitored. Lastly, data will be used to evaluate the CCWTMP's effectiveness at answering the monitoring questions and provide guidance for modifications as the implementation of the aforementioned TMDLs progress. Given this is the fourth year of the CCWTMP, not all monitoring questions can be fully addressed. As this program continues and subsequent data is collected, further information may assist in fully answering all of the monitoring questions and may be reported upon in future reports with more detailed, long-term analyses.

MONITORING PROGRAM DESCRIPTION

The CCWTMP was developed to address all necessary TMDL monitoring requirements and answer the monitoring questions mentioned previously using the following monitoring elements.

Required Monitoring Elements in the CCWTMP QAPP

The following environmental monitoring elements are required by the BPAs and are included in the CCWTMP:

- General water and sediment quality constituents;
- Water column and sediment toxicity;
- Metals and selenium in water, sediment, fish tissue, and bird eggs;
- Organic compounds in water, sediment, and fish tissue; and,
- Nitrogen and phosphorus compounds in water.

Table 2 lists the constituents for which analyses are conducted. Table 2 also provides a summary of sampled constituent groups and sampling frequency. The QAPP outlines in detail the justification of the process design, specific methodologies (both field and analytical), and QA/QC procedures.

Table 2. Constituents and Monitoring Frequency for CCWTMP (varies by site)

Constituent	Frequency
Chronic Aquatic Toxicity	Quarterly + Two wet events
General Water Quality Constituents (GWQC)	Quarterly based on location + Two wet events
Flow, pH, Temperature, Dissolved Oxygen, Conductivity, Total Suspended Solids (TSS), Hardness (at freshwater sites where metals samples are collected), and Dissolved Organic Carbon (at saltwater sites where metals samples are collected)	
Nutrients	Quarterly
Ammonia Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, Organic Nitrogen, Total Kjehdahl Nitrogen (TKN), Total Phosphorus, Orthophosphate-P	
Organic Constituents In Water	Quarterly + Two wet events
OC Pesticides[1] and PCBs[2], OP[3], Triazine[4], and Pyrethroid[5] Pesticides	
Metals and Selenium In Water[6]	Quarterly + Two wet events [7]
Copper, Mercury, Nickel, Zinc, and Selenium	
Chronic Sediment Toxicity	Annually (Every three years in Lagoon)
General Sediment Quality Constituents (GSQC)	Annually (Every three years in Lagoon)
Total Ammonia, Percent Moisture, Grain Size Analysis, Total Organic Carbon (TOC)	
Organic Constituents In Sediment	Annually (Every three years in Lagoon)
OC Pesticides[1] and PCBs[2], OP Pesticides[3], and Pyrethroids[5]	
Additional Constituents For Mugu Lagoon Sediment	Every three years
Metals[8]	
Tissue	Annually (Every three years in Lagoon)
Percent Lipids, OC Pesticides[1] and PCBs[9], OP Pesticides[3], and Metals[10]	

1. OC Pesticides considered: aldrin, alpha-BHC, beta-BHC, gamma-BHC (lindane), delta-BHC, chlordane-alpha, chlordane-gamma, 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, endosulfan I and II, endosulfan sulfate, endrin, endrin aldehyde, endrin ketone, and toxaphene
2. PCBs in water and sediment considered: Aroclors identified in the CTR (1016, 1221, 1232, 1242, 1248, 1254, and 1260).
3. OP Pesticides considered: chlorpyrifos, diazinon, and malathion. Chlorpyrifos is the only OP pesticide that will be measured in tissue, as it is the only OP listed in tissue.
4. Triazine Pesticides considered: atrazine, prometryn, and simazine. Analysis of triazines ceased during year 3 following the recommendation being included in the Revisions and Recommendations section of both the year 1 and year 2 annual reports.
5. Pyrethroid Pesticides considered: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, and permethrin
6. Copper, mercury, nickel, selenium and zinc will be measured as dissolved and total recoverable.
7. Per the Metals TMDL BPA requires that "In-stream water column samples will be collected monthly for analysis of general water quality constituents (GWQC) and, copper, mercury, nickel, selenium, and zinc for the first year. After the first year, the Executive Officer will review the monitoring report and revise the monitoring frequency as appropriate." Monthly monitoring will be suspended until such time as the Executive Officer has reviewed the monitoring report and considered revisions to the monitoring frequency. Until the Executive Officer has considered the frequency, metals will be collected quarterly in conjunction with the other TMDLs.
8. Includes arsenic, cadmium, copper, lead, mercury, nickel, selenium and zinc. Arsenic, lead, and cadmium are included in addition to constituents required in the Metals TMDL as they have been found in previous sediment studies conducted in Mugu Lagoon to exceed guideline values used to interpret the relationship between sediment chemistry and biological impacts.
9. PCBs in tissue considered: individual congers.
10. Mercury and Selenium will be measured in fish tissue and bird eggs.

Optional Monitoring Elements

The QAPP outlines the optional monitoring efforts, all of which are considered above and beyond what is necessary to meet the requirements of the BPAs and answer the monitoring questions, again, described in detail in the QAPP.

Table 3 lists the constituents and analyses that are considered optional for the CCWTMP. These constituents and analyses are not considered critical and are not a BPA requirement but are important to meeting general program goals and answering program questions. Table 3 also provides a general sampling frequency for each constituent group.

Table 3. Optional Constituents and Monitoring Frequency for CCWTMP (varies by site)

Constituent	Frequency
Organic Constituents in Water – Grain Size Fractions [1]	One wet event annually
OC Pesticides and PCBs, OP, Triazine [2], and Pyrethroid Pesticides	
Organic Constituents in Sediment – Grain Size Fractions [1]	Annually (Every three years in Mugu Lagoon)
OC Pesticides and PCBs, OP, Triazine [2], and Pyrethroid Pesticides	
Additional Constituents for Mugu Lagoon Sediment	Every three years [3]
Macrobenthic community assessment	
Sediment Toxicity – Embryo Mytilus edulis or Crassostrea gigas	

1. Please see Table 2 for a list of individual constituents in each suite.
2. Analysis of triazines ceased during year 3 following the recommendation being included in the Revisions and Recommendations section of both the year 1 and year 2 annual reports.
3. Mugu Lagoon assessments were conducted during the first year of monitoring and will be conducted again during year four.

Special Studies

The Nitrogen, Toxicity, OC Pesticides, and Metals TMDL Implementation Plans identify required and optional special studies to investigate a range of issues. No specific special studies results are incorporated into this annual report summary at this time as the results of all special studies conducted to date have been submitted as separate reports. As work plans are reviewed and efforts are made to complete each study, the results may be incorporated into the relevant annual report. Data may also be utilized to further answer not only the special studies questions, but also be applied to the overall CCWTMP goals and questions identified previously in this report. Special study and work plan status updates are provided in the Annual Progress Report, included as Appendix C.

Preliminary Salt Monitoring

The preliminary monitoring data for salts included in this report was obtained as follows:

- Continuous sensors for EC, installed in January 2011, were maintained at the five Salts TMDL compliance sites from July-December 2011, and at two sites from April-June 2012. The sensors produced time series of raw data at 5-min intervals.

- Frequent grab samples for EC, chloride, sulfate, TDS, and boron were taken at sensor sites. The EC grab data were used to calibrate the continuous EC sensors. EC and salt concentrations were used to develop site-specific regression equations from which EC (as the independent variable) can be used to predict concentrations of chloride, sulfate, TDS, and boron. The regression equations were used to convert the time series of 5-min EC data into times series of 5-min salt concentrations.

- Grab samples for salts were taken at pertinent land use sites once per month (during July-December 2011) and additionally during the Quarterly Dry and Wet Events that occurred during the monitoring year as defined in the CCWTMP QAPP.

- Concentrations of chloride, sulfate, TDS, and boron were measured once per month in effluent of the POTWs in the watershed.

Monitoring Program Structure

As outlined previously, the CCWTMP covers a broad range of TMDL monitoring requirements, including both required and optional efforts. The overall structure of these requirements per each event can be broken down into two categories, compliance monitoring and investigation monitoring. Compliance monitoring sites are typically located in receiving water bodies where 303(d) listings occur, and are considered points of compliance measurements. The investigational sites are located throughout the watershed, and include monitoring of drain outfalls. The purpose of these sites is not to measure compliance but to assist with evaluating land use specific contributions of various constituents to the watershed.

The CCWTMP effort is also divided into two monitoring efforts, required dry weather monitoring and wet weather storm water monitoring. The following sections describe in detail the basis for each monitoring effort, starting with the definitions of the compliance and investigation monitoring sites. Specific monitoring efforts associated with each sample site are included, including the frequency of sampling by site for both dry weather and wet weather events. The sites sampled by the CCWTMP are not sampled at a similar frequency, nor are all constituents monitored at each site. A more detailed description of each topic covered can be found in the appropriate element of the QAPP, including standard operating procedures (SOPs) for field collection and sample handing techniques and analytical procedures and protocols including minimum detection limit (MDLs) and reporting limit (RLs) requirements.

COMPLIANCE MONITORING

Compliance Monitoring for Toxicity, OC Pesticides, Metals, and Nitrogen TMDLs

For compliance monitoring to address the Toxicity, OC Pesticides, and Nitrogen TMDLs, dry weather in-stream water column samples were collected quarterly for water column toxicity, general water quality constituents (GWQC), target organic constituents, and nutrients. Target organic constituents for the OC Pesticides TMDL include the OC Pesticides and PCBs listed as a footnote in Table 2. Target organic constituents for the Toxicity TMDL include the OP and pyrethroid pesticides listed as a footnote in Table 2.

For compliance monitoring to address the Metals TMDL, dry weather in-stream water column samples were collected quarterly during Year 4 of the CCWTMP for analysis of GWQC and target metals listed as a footnote in Table 2. The Metals TMDL became effective after the other TMDLs and monitoring was not required to begin until the Metals TMDL monitoring was incorporated into the QAPP for the CCWTMP. As a result, for quarterly events prior to the Metals TMDL QAPP approval, metals sampling was collected quarterly in conjunction with the other three TMDLs monitoring efforts. However, the Metals TMDL BPA required that instream water column samples be collected monthly for the first year once the QAPP is approved. In May 2009, after approval of the Metals monitoring additions to the QAPP, monthly metals monitoring began and continued through June 2010. The first year annual monitoring report recommended ceasing monthly metals monitoring after one year to allow time for data evaluation. Upon not receiving a response from the Regional Water Board, monthly metals monitoring ended as per the previously mentioned recommendation. Metals water column samples in Mugu Lagoon were collected quarterly. The BPA did not contain any requirements to collect samples within the lagoon except at the Ronald Reagan St Bridge (formally 11th St) and collection of metals samples within the lagoon is an optional element.

In-stream water column samples to measure compliance for the Toxicity, OC Pesticides, and Metals TMDLs are generally collected at the base of each of the subwatersheds used to assign waste load and load allocations, per the BPAs. In-stream water column samples to measure compliance for the Nitrogen TMDL are generally collected at the base of each listed reach. Toxicity Identification Evaluations (TIEs) are conducted on toxic samples as outlined in the Toxicity Testing and TIE section of the QAPP and results of these are discussed in the Toxicity Testing and TIE Evaluations Summary section of this report.

Additionally, POTW effluent was monitored for compliance with the effluent limits presented in the Toxicity, OC Pesticides, and Metals TMDL BPAs. Currently, POTWs collect data required by each of their individual monitoring requirements. For additional TMDL constituents not currently sampled by the plants, CCWTMP crews perform sampling as necessary (efforts vary by plant and constituent group). All BPA- required data for POTWs are compiled in this report.

All efforts were made to include two additional wet weather water sampling events for compliance monitoring for the OC Pesticides, Toxicity, and Metals TMDLs during targeted storm events between October and April. This effort was successful and results, including a brief summary of the storm events sampled are included in the Event Summary and Data Summary sections of this report.

Streambed sediment samples, collected annually in the freshwater portion of the watershed, were collected during the first event of this monitoring year and analyzed for sediment toxicity, general sediment quality constituents (GSQC), and target organics. Sediment samples in Mugu Lagoon are only to be collected every three years per the approved QAPP. Samples were collected and reported in year one, therefore, sediment sampling was repeated and included in this year four report.

Similar to the sediment sampling frequency, fish tissue samples were collected in the freshwater portions of the watershed in September 2010, and will continue to be collected annually for the CCWTMP. Fish tissue and mussel samples were collected in Mugu Lagoon during the first year of monitoring and will be collected every three years. Therefore, fish tissue and mussel samples were collected during this fourth year reporting period. The justification and rationale used for establishing sediments and fish/mussel tissue sampling frequency can be found in the QAPP.

INVESTIGATION MONITORING

Investigation monitoring focuses on identifying the contribution of constituents of concern from various land uses in the watershed and areas where toxicity has been observed to occur in the past that are not addressed by compliance monitoring. These sites are meant to compliment compliance monitoring efforts, fill data gaps where identified, and assist in identification of sources of constituents that may be leading to non-compliant conditions. The following describes the various types of sites sampled during this reporting period.

Land Use Discharge Investigation

Land use discharge samples are generally collected concurrently (on the same day when possible) with compliance monitoring at representative agricultural and urban discharge sites generally located in each of the subwatersheds and analyzed for selected GWQC, metals, and target organic constituents (constituents monitored per site varies based upon sub-watershed).

Toxicity Investigation

For water toxicity investigation monitoring, in-stream water column samples were collected at two sites where the cause(s) of water toxicity has not been identified. The CCWTMP was successful in collecting two additional samples via the wet weather water sampling events. For sediment toxicity investigation monitoring, streambed sediment samples were collected in two reaches of the CCW where the cause(s) of sediment toxicity have not been identified.

SAMPLING SITES

The QAPP details the justification and rationale for each of the sites sampled via the CCWTMP. Information on compliance monitoring sites and sample collection frequency is presented in Table 4. The general locations of the receiving water compliance monitoring sites (excluding Mugu Lagoon) for water, sediment, and fish tissue are presented in Figure 2 through Figure 4. The POTW effluent discharge sites are presented in Figure 5. The sampling locations within Mugu Lagoon for sediment and fish tissue are presented in Figure 6 and Figure 7, respectively. The sampling sites in each figure are separated by sampled constituent group.

The water and sediment toxicity investigation sampling sites coincide with current and previous sampling programs in the CCW. Water and sediment toxicity investigation sampling sites and sampling frequency are presented in Table 5, while the general locations of the water and sediment toxicity investigation sampling sites in the CCW are presented in Figure 8.

The salt monitoring sites correspond with compliance sites or land use sites already included in the QAPP for monitoring related to other TMDLs (Figure 2) with two exceptions;

1. One of the salt compliance points is only used for salt monitoring (Conejo Creek at Baron Brothers Nursery), and thus is not currently described in the QAPP.
2. The continuous monitoring equipment (and the location of salt grab samples) for the Simi subwatershed was installed approximately 0.9 miles upstream of the 07_HITCH site specified in the QAPP. The site used for salts monitoring is referred to herein as “07_HITCH-S” to distinguish it from the site specified in the QAPP for sampling for other TMDLs.

The CCWTMP efforts reviewed in the annual report correspond to the sites and locations listed below. As this program progresses, the number and location of sites may be revised if existing sites become inaccessible, if it is determined that alternative locations are needed, or if the number of land use stations needed to appropriately characterize discharges needs modification. A recommendation to revise the location of one site to better allow for a more coordinated effort with new requirements of the Ventura County Stormwater Program was included in the Revisions and Recommendations section of the previous annual report and is in the process of being evaluated by the Stakeholders.

Table 4. CCWTMP Compliance Monitoring and Nutrient Investigation Sites and Annual Sampling Frequency

				GPS Coordinates		Water					Sediment			Tissue[2]	
Sub watershed	**Site ID[1]**	**Reach**	**Site Location**	**Lat**	**Long**	**Tox[2]**	**Pests/ PCBs[3]**	**Nut[3]**	**Metal[3]**	**Gen Chem[3]**	**Tox**	**Pests /PCBs**	**Metal**	**Pests/ PCBs**	**Metal[4]**
Mugu Lagoon	**01_RR_BR**	1	Ronald Reagan St Bridge	34.109	-119.0916	6	6	6	6	6	NA	NA	NA	NA	NA
	01_BPT_3	1	Located In Eastern Arm	General site locations are provided as each site represents a generalized sample collection zone In which a sample will be collected.		NA	NA	NA	4	4	Once Every Three Years			Once Every Three Years	
	01_BPT_6	1	Located In Eastern Part Of Western Arm			NA	NA	NA	4	4					
	01_BPT_14	1	Located In The Central Part Of The Western Arm			NA	NA	NA	4	4					
	01_BPT_15	1	Located In Central Lagoon			NA	NA	NA	4	4					
	01_SG_74	1	Located In Central Lagoon, South Of Drain #7			NA	NA	NA	4	4					
	Central Lagoon	1	Sampled In Central Lagoon			NA	NA	NA	NA	NA					
	Western Arm	1	Sampled In Western Arm Of The Lagoon			NA	NA	NA	NA	NA					
Revolon Slough	**04_WOOD**	4	Revolon Slough East Side Of Wood Road	34.1703	-119.0953	6	6	6	6	6	1	1	NA	1	1
	05_CENTR	5	Beardsley Wash At Central Avenue	34.2300	-119.1128	NA	NA	6	NA	6	NA	NA	NA	NA	NA
Calleguas	02_PCH	2	Calleguas Creek Northeast Side Of Hwy 1 Bridge	34.1119	-119.0818	NA	NA	4	NA	4	NA	NA	NA	NA	NA
	03_UNIV	3	Calleguas Creek At University Drive	34.1793	-119.0394	6	6	6	6	6	1	1	NA	1	NA
	03D_CAMR	3	Camrosa Water Reclamation Plant	34.1679	-119.053	4	4	NA	4	4	NA	NA	NA	NA	NA
	9A_HOWAR	9A	Conejo Creek At Howard Road Bridge	34.1931	-119.0025	NA	NA	4	NA	4	NA	NA	NA	NA	NA
	9AD_CAMA	9A	Camarillo Water Reclamation Plant	34.1938	-119.0017	4	4	NA	4	4	NA	NA	NA	NA	NA
Conejo	**9B_ADOLF**	9B	Conejo Creek At Adolfo Road	34.2125	-118.9894	6	6	6	NA	6	NA	1	NA	1	NA
	10_GATE	10	Conejo Creek Hill Canyon Below N Fork	34.2178	-118.9281	NA	NA	6	NA	6	NA	NA	NA	NA	NA
	10D_HILL	10	Hill Canyon Wastewater Treatment Plant	34.2131	-118.925	4	4	NA	4	4	NA	NA	NA	NA	NA

Table 4. CCWTMP Compliance Monitoring and Nutrient Investigation Sites and Annual Sampling Frequency (continued)

Sub watershed	Site ID[1]	Reach	Site Location	GPS Coordinates		Water					Sediment			Tissue[2]	
				Lat	Long	Tox[3]	Pests/ PCBs[3]	Nut[3]	Metal[3]	Gen Chem[3]	Tox	Pests /PCBs	Metal	Pests/ PCBs	Metal[4]
Conejo	12_PARK	12	Conejo Creek North Fork Above Hill Canyon	34.2144	-118.915	NA	NA	4	NA	4	NA	NA	NA	NA	NA
	13_BELT	13	Conejo Creek S Fork Behind Belt Press Building	34.2078	-118.9194	NA	NA	4	NA	4	NA	NA	NA	NA	NA
Las Posas	**06_SOMIS**	6	Arroyo Las Posas Off Somis Road	34.254	-118.9927	6	6	6	NA	6	NA	1	NA	1	NA
	06D_MOOR	6	Ventura County Wastewater Treatment Plant	34.269	-118.933	4	4	NA	NA	4	NA	NA	NA	NA	NA
Arroyo Simi	**07_HITCH**	7	Arroyo Simi East Of Hitch Boulevard	34.2717	-118.9228	6	6	6	NA	6	NA	1	NA	1	NA
	07_MADER	7	Arroyo Simi At Madera Avenue	34.2778	-118.7958	NA	NA	6	NA	6	NA	NA	NA	NA	NA
	07D_SIMI	7	Simi Valley Water Quality Control Plant	34.2814	-118.815	4	4	NA	NA	4	NA	NA	NA	NA	NA

1. Site IDs in **bold type** indicate the sites selected for the nutrient investigation monitoring conducted during the first two years of the monitoring program.
2. Tissue samples will be collected in the same location as water and sediment samples. Samples may be collected elsewhere if no fish are found at pre-established sample stations.
3. Includes two wet events per site except for POTWs.
4. Bird egg samples will be collected and analyzed for mercury and selenium in the Mugu Lagoon subwatershed.

NA – Not Analyzed
Tox – Samples will be analyzed for toxicity and OP, triazine, and pyrethroid pesticides as listed in Table 2. Toxicity in water will not be analyzed at 01_RR_BR or at the POTWs.
Pests/PCBs – Samples will be analyzed for OC pesticides and PCBs as listed in Table 2. Chlorpyrifos will be analyzed in tissue at 04_WOOD as it is listed in this reach.
Nutrients – Samples will be analyzed for Nutrients as listed in Table 2.
Metals – Samples will be analyzed for Metals as listed in Table 2.
Gen Chem – Samples will be analyzed for General Parameters as listed in Table 2.

Table 5. Toxicity Investigation Monitoring Sites and Sampling Frequency

Subwatershed	Site ID	Reach	Site Location	GPS Coordinates		Tox	Pests/PCBs	Gen Chem
				Lat	Long			
Sediment Toxicity Investigation								
Calleguas	02_PCH	2	Calleguas Creek Northeast Side Of Highway 1 Bridge	34.1119	-119.0818	1	1	1
	9A_HOWAR	9A	Conejo Creek At Howard Road Bridge	34.1931	-119.0025	1	1	1
Water Toxicity Investigation[1]								
Conejo	10_GATE	10	Conejo Creek Hill Canyon Below North Fork Of Conejo Creek	34.2178	-118.9281	5	5	5
	13_BELT	13	Conejo Creek South Fork Behind Hill Canyon Belt Press Building	34.2078	-118.9194	4	4	4

1. Includes two wet events per site.

Tox – Samples will be analyzed for toxicity, OP, triazine, and pyrethroid pesticides in water and toxicity, OP, and pyrethroid pesticides in sediment as listed in Table 2.
Pests/PCBs – Samples will be analyzed for OC pesticides and PCBs as listed in Table 2.
Gen Chem – Samples will be analyzed for General Parameters as listed in Table 2.

Table 6. CCWTMP Land Use Monitoring Sites and Sample Frequency

Sub watershed	Site ID[1]	Reach	Site Type	Site Location	GPS Coordinates Lat	GPS Coordinates Long	Pests/ PCBs[2]	Nutrients	Metals	Gen Chem[2]
Mugu Lagoon	**01T_ODD2_DCH**	1	Ag	Duck Pond/Mugu/Oxnard Drain #2 S. of Hueneme Rd	34.1395	-119.1183	6	6	6	6
Revolon Slough	04D_WOOD	4	Ag	Agricultural Drain on E. Side of Wood Rd N. of Revolon	34.1707	-119.0960	6	6	6	6
	05D_SANT_ VCWPD	5	Ag	Santa Clara Drain at VCWPD Gage 781 prior to confluence with Beardsley Channel	34.2425	-119.1114	6	6	NA	6
	04D_VENTURA	4	Urban	Camarilo Hills Drain at Ventura Blvd and Las Posas Rd at VCWPD Gage 835	34.2161	-119.0675	6	6	6	6
Calleguas	**02D_BROOM**	2	Ag	Discharge to Calleguas Creek at Broome Ranch Rd.	34.1434	-119.0711	NA	NA	6	NA
Conejo	**9BD_GERRY**	9B	Ag	Drainage ditch crossing Santa Rosa Rd at Gerry Rd	34.2369	-118.9473	6	6	6	6
	9BD_ADOLF	9B	Urban	Urban storm drain passing under N. side of Adolfo Rd approximately 300 meters from Reach 9B	34.2148	-118.9951	6	6	6	6
	13_SB_HILL	13	Urban	South Branch Arroyo Conejo on S. Side of W Hillcrest	34.1852	-118.9074	6	6	NA	6
Las Posas	**06T_FC_BR**	6	Ag	Fox Canyon at Bradley Rd - just north of Hwy 118	34.2646	-119.0115	6	6	NA	6
Arroyo Simi	07D_HITCH_ LEVEE_2	7	Ag	2nd corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd just beyond 1st power pole.	34.2714	-118.9205	6	6	NA	6
	07D_CTP	7	Urban	Flood control channel in Country Trail Park	34.2646	-118.9072	6	6	NA	6
	07T_DC_H	7	Urban	Dry Canyon at Heywood Street	34.2682	-118.7599	6	6	NA	6

Ag = Agricultural Land Use Site Urban = Urban Land Use Site Open = Open Space Land Use Site (Established for the nutrients investigation monitoring)
NA – Not Analyzed
1. Site IDs in **bold type** represent CCWTMP sites that correspond to sites identified in the Ventura County Agricultural Irrigated Lands Group QAPP (LWA 2006).
2. Includes two wet events per site.
Pests/PCBs – Samples will be analyzed for Organochlorine Pesticides and PCBs, OP, triazine, and pyrethroid pesticides as listed in Table 2.
Nutrients – Samples will be analyzed for Nutrients as listed in Table 2.
Metals – Samples will be analyzed for Metals as listed in Table 2.
Gen Chem – Samples will be analyzed for General Parameters as listed in Table 2.

Table 7. Salts TMDL Monitoring Sites and Number of Grab Samples Collected during the Year 4 Monitoring Period

					GPS Coordinates		Number of Samples Collected			
Sub watershed	**Site ID**	**Reach**	**Site Type(1)**	**Site Location**	**Lat**	**Long**	**Chloride**	**Sulfate**	**TDS**	**Boron**
Compliance Points										
Pleasant Valley- Reaches 4 and 5	**04_WOOD**	4		Revolon Slough East Side Of Wood Road	34.1703	-119.0953	16	16	16	16
Pleasant Valley – Calleguas Creek Reach 3	**03_UNIV**	3		Calleguas Creek At University Drive	34.1793	-119.0394	16	16	16	6
Camarillo	**9A_HOWAR**	9A		Conejo Creek At Howard Road Bridge	34.1931	-119.0025	11	11	11	6
Conejo	**9B_BARON**	9B		Conejo Creek At Baron Brothers Nursery	34.2365	-118.9643	11	11	11	6
Simi	**07_HITCH-S**	7		Arroyo Simi above Hitch Blvd. (about 0.9 miles upstream of 07_Hitch from the QAPP)	34.2695	-118.9083	11	11	11	11
Land Use Sites										
Pleasant Valley - Reaches 4 and 5	04D_WOOD	4	Ag	Agricultural Drain on E. Side of Wood Rd N. of Revolon	34.1707	-119.0960	6	6	7	4
	04D_VENTURA	4	Urban	Camarilo Hills Drain at Ventura Blvd and Las Posas Rd at VCWPD Gage 835	34.2161	-119.0675	11	11	11	6
Camarillo	9BD_ADOLF	9B	Urban	Urban storm drain passing under N. side of Adolfo Rd approximately 300 meters from Reach 9B	34.2148	-118.9951	11	11	11	6
Conejo	13_SB_HILL	13	Urban	South Branch Arroyo Conejo on S. Side of W Hillcrest	34.1852	-118.9074	11	11	11	6
	9BD_GERRY	9B	Ag	Drainage ditch crossing Santa Rosa Rd at Gerry Rd	34.2369	-118.9473	2	2	2	2
Simi	07D_HITCH_ LEVEE_2	7	Ag	2nd corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd just beyond 1st power pole.	34.2714	-118.9205	5	5	5	4
	07D_CTP	7	Urban	Flood control channel in Country Trail Park	34.2646	-118.9072	11	11	11	6

Table 7. Salts TMDL Monitoring Sites and Number of Grab Samples Collected during the Year 4 Monitoring Period (continued)

					GPS Coordinates		Number of Samples Collected			
Sub watershed	Site ID	Reach	Site Type(1)	Site Location	Lat	Long	Chloride	Sulfate	TDS	Boron
POTW Effluent Sites										
	9AD_CAMA	9A		Camarillo Water Reclamation Plant	34.1938	-119.0017	12	12	12	12
	07D_SIMI	7		Simi Valley Water Quality Control Plant	34.2814	-118.815	12	12	12	12
	10D_HILL	10		Hill Canyon Wastewater Treatment Plant	34.2131	-118.925	12	12	12	12

(1) Ag = Agricultural Land Use Site; Urban = Urban Land Use Site

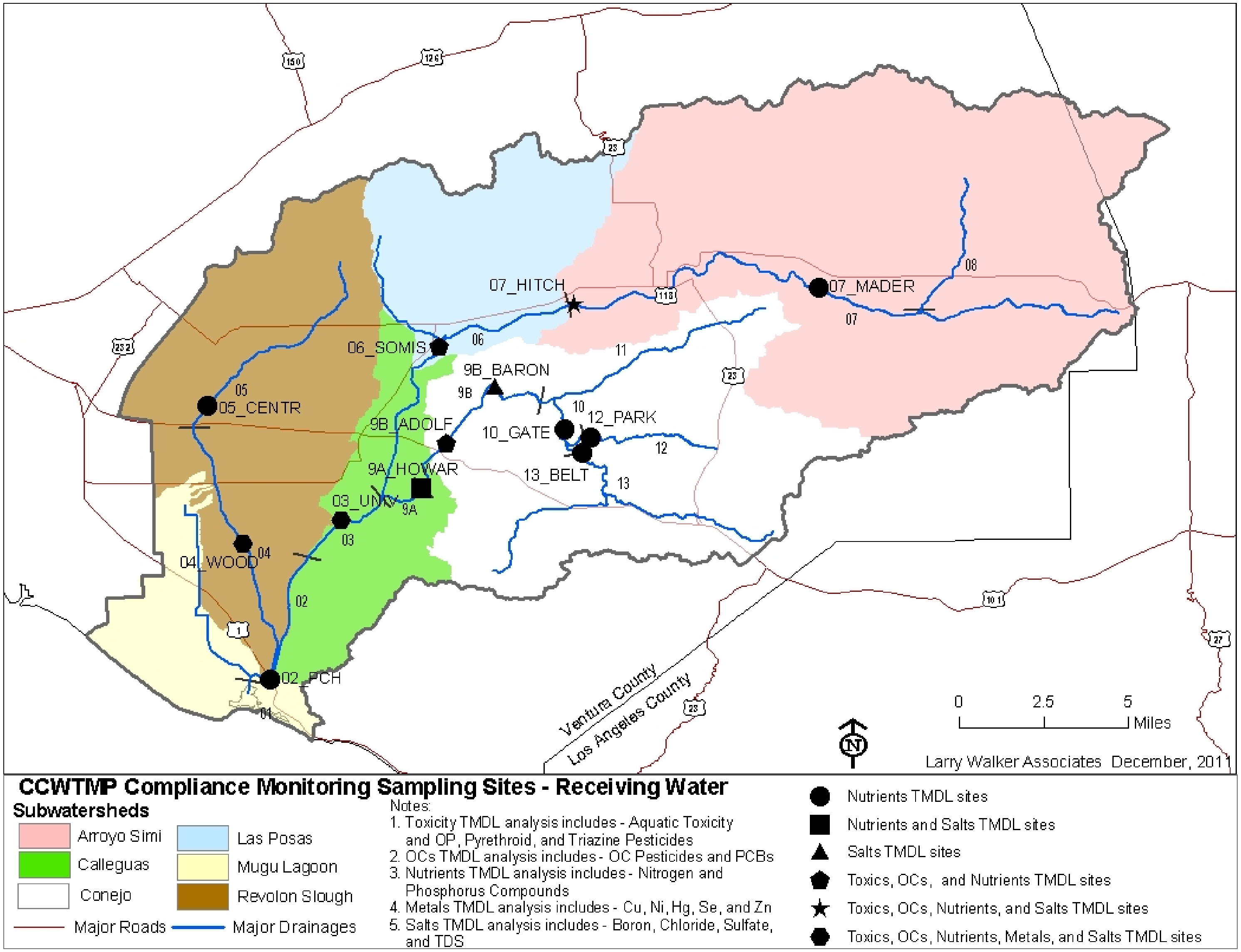

Figure 2. CCWTMP Compliance Monitoring Sampling Sites – Receiving Water

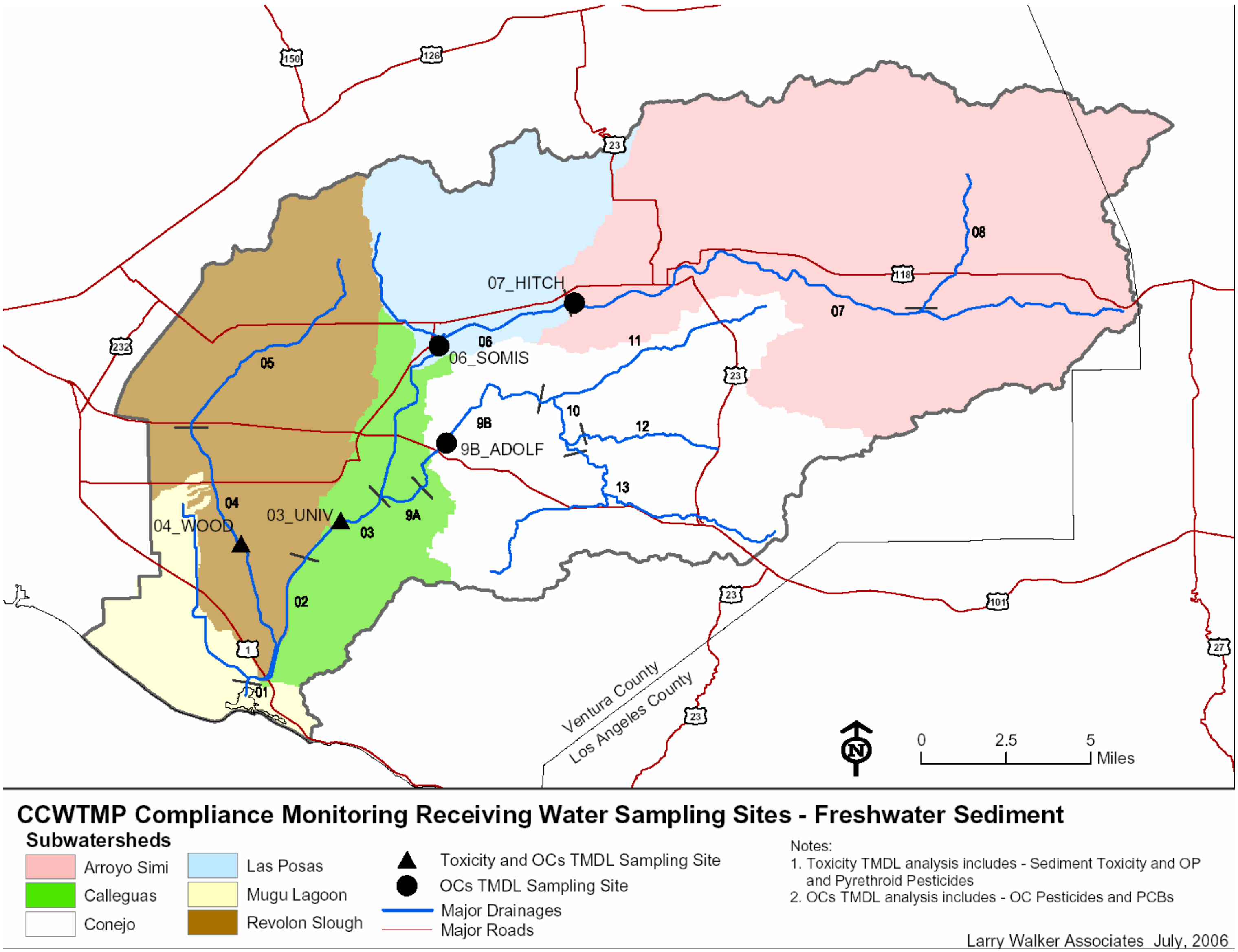

Figure 3. CCWMTP Compliance Monitoring Receiving Water Sampling Sites – Freshwater Sediment

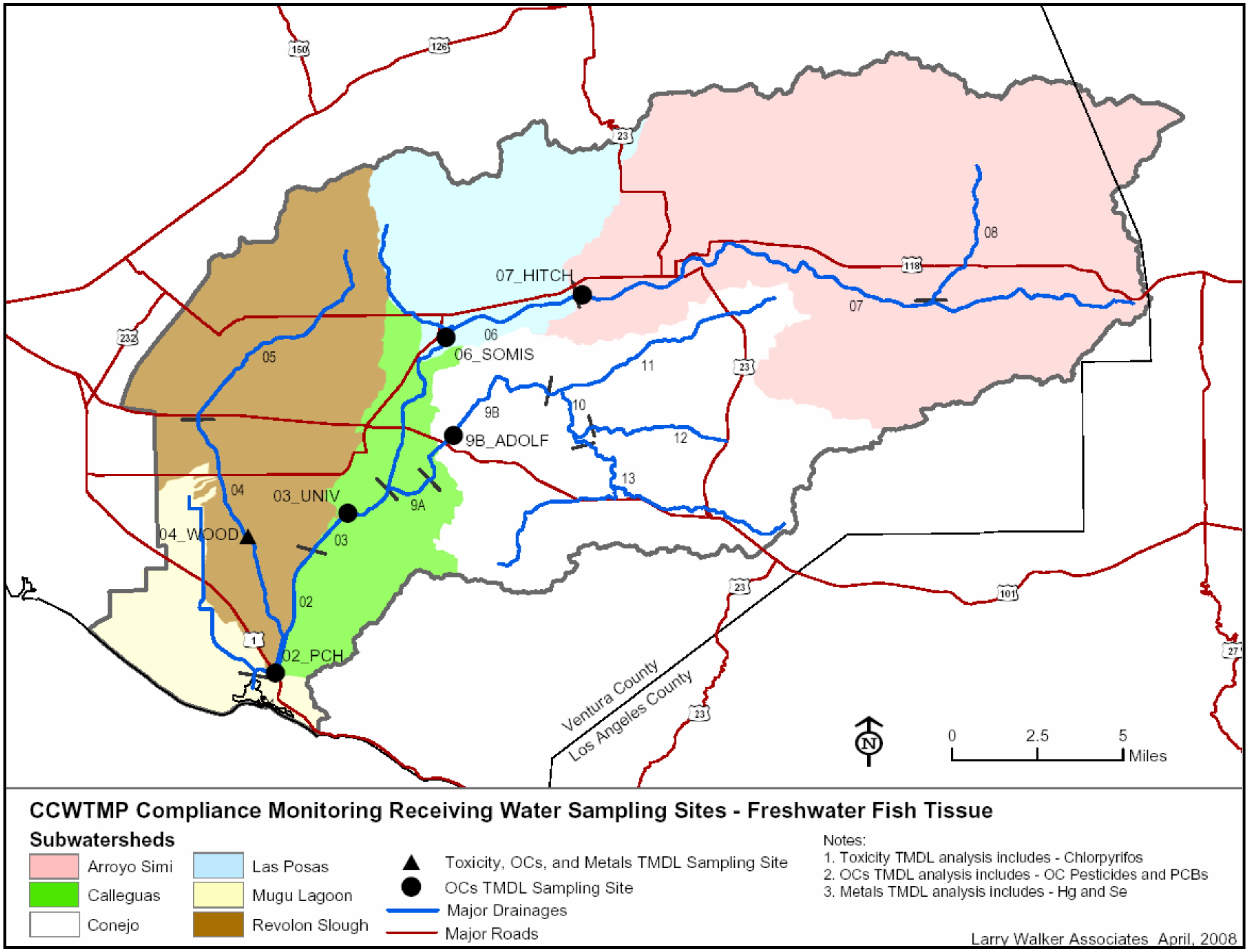

Figure 4. CCWMTP Compliance Monitoring Receiving Water Sampling Sites – Freshwater Fish Tissue

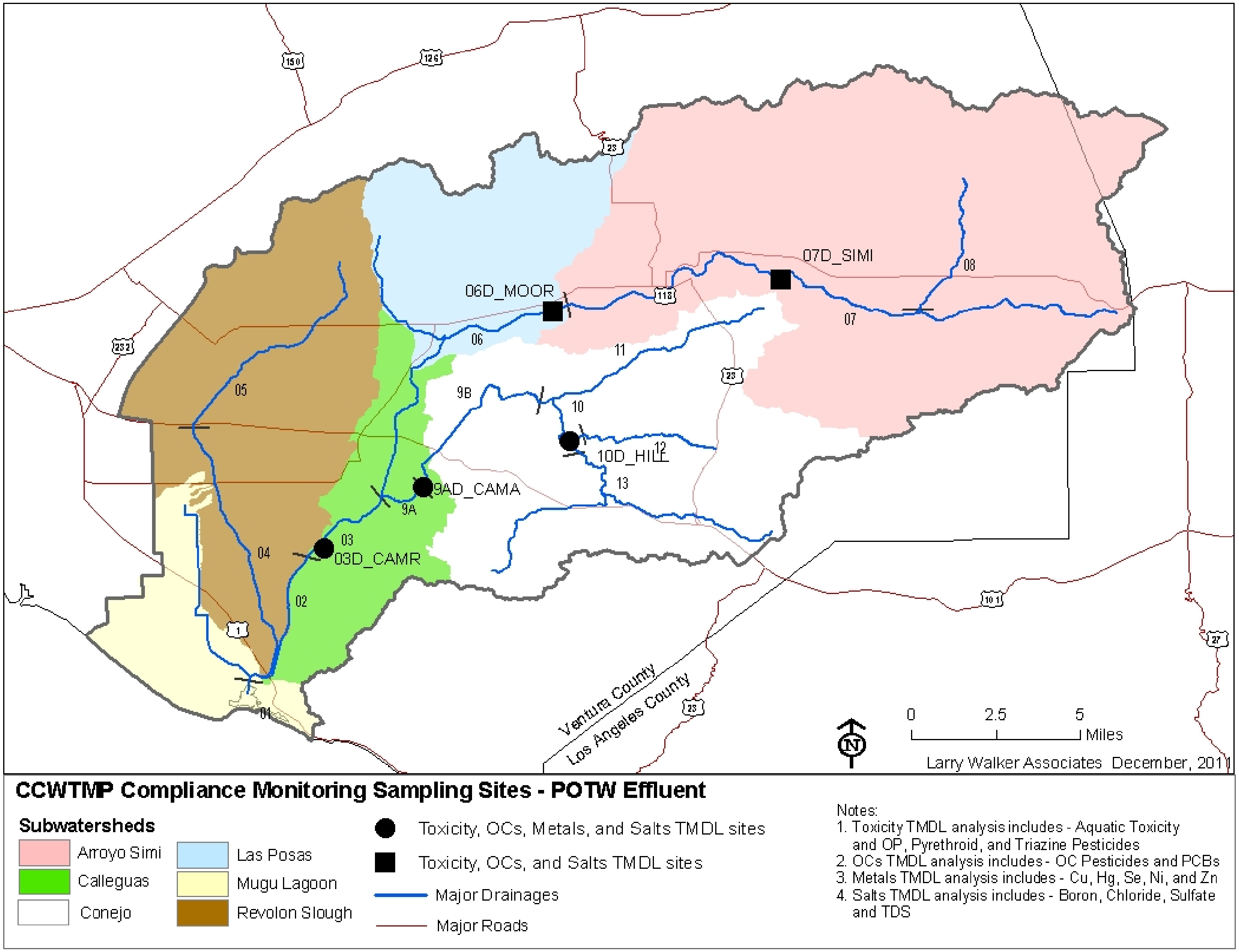

Figure 5. CCWMTP Compliance Monitoring Sampling Sites – POTW Effluent

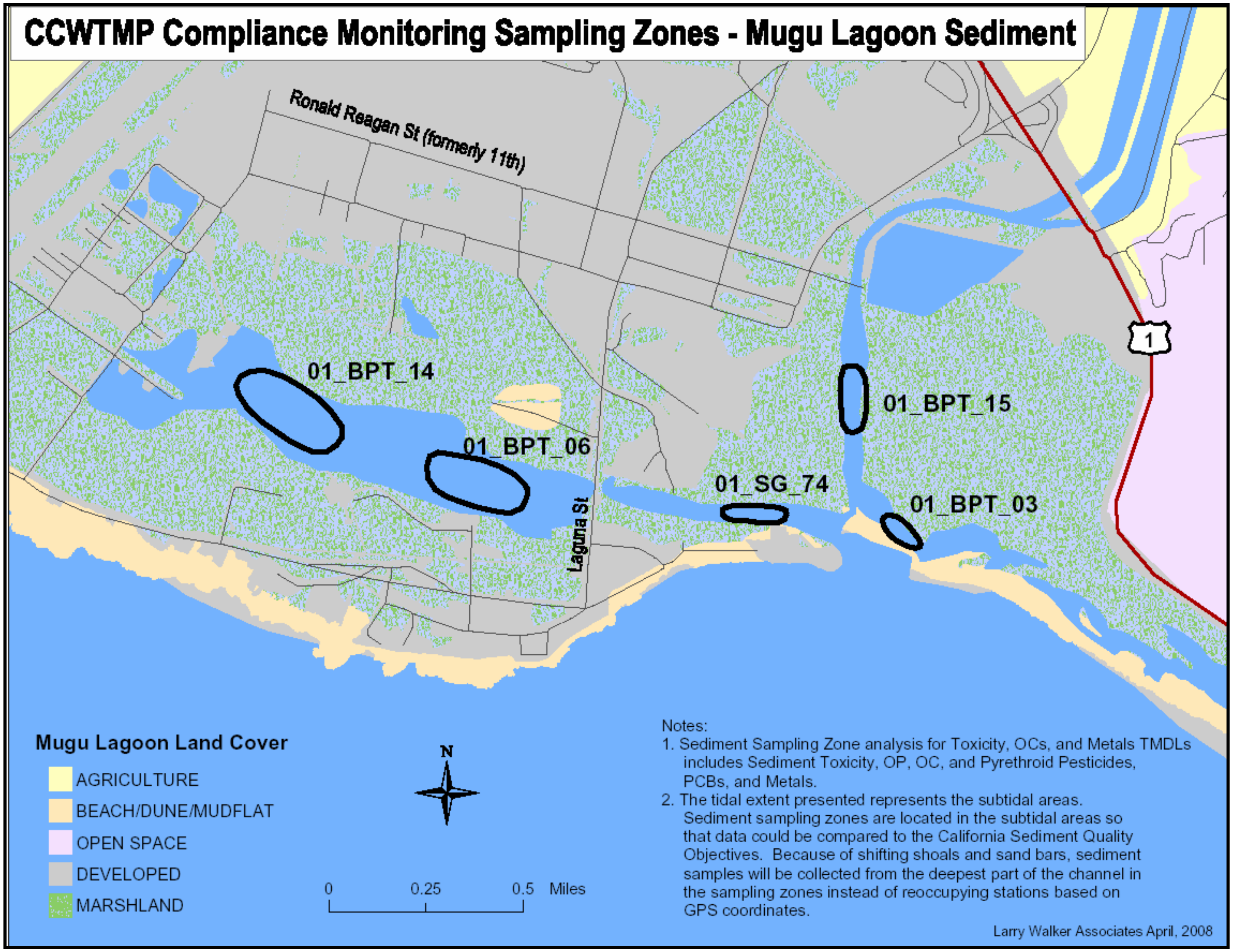

Figure 6. CCWMTP Compliance Monitoring Sampling Zones – Mugu Lagoon Sediment

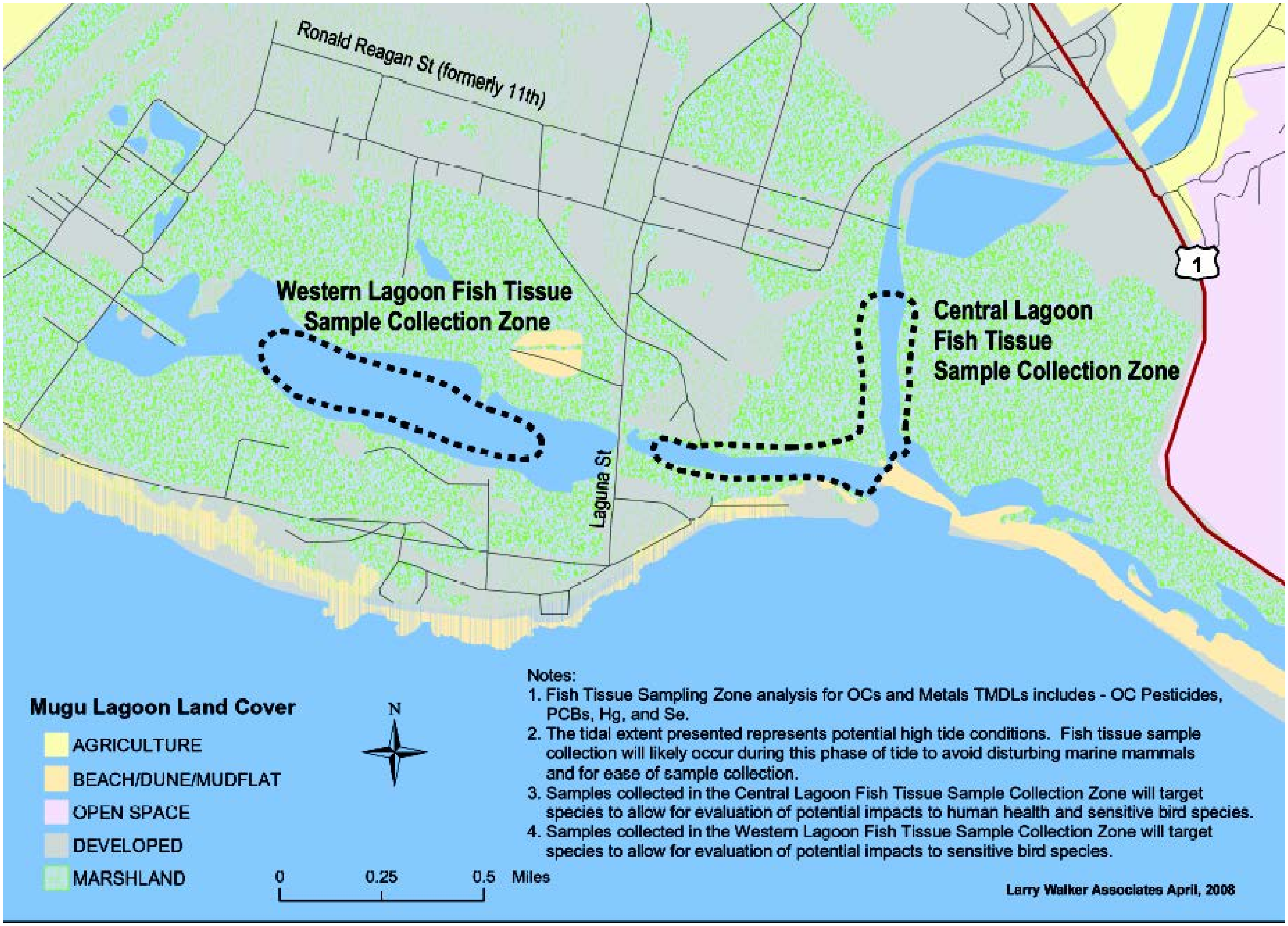

Figure 7. CCWTMP Compliance Monitoring Sampling Zones – Mugu Lagoon Tissue

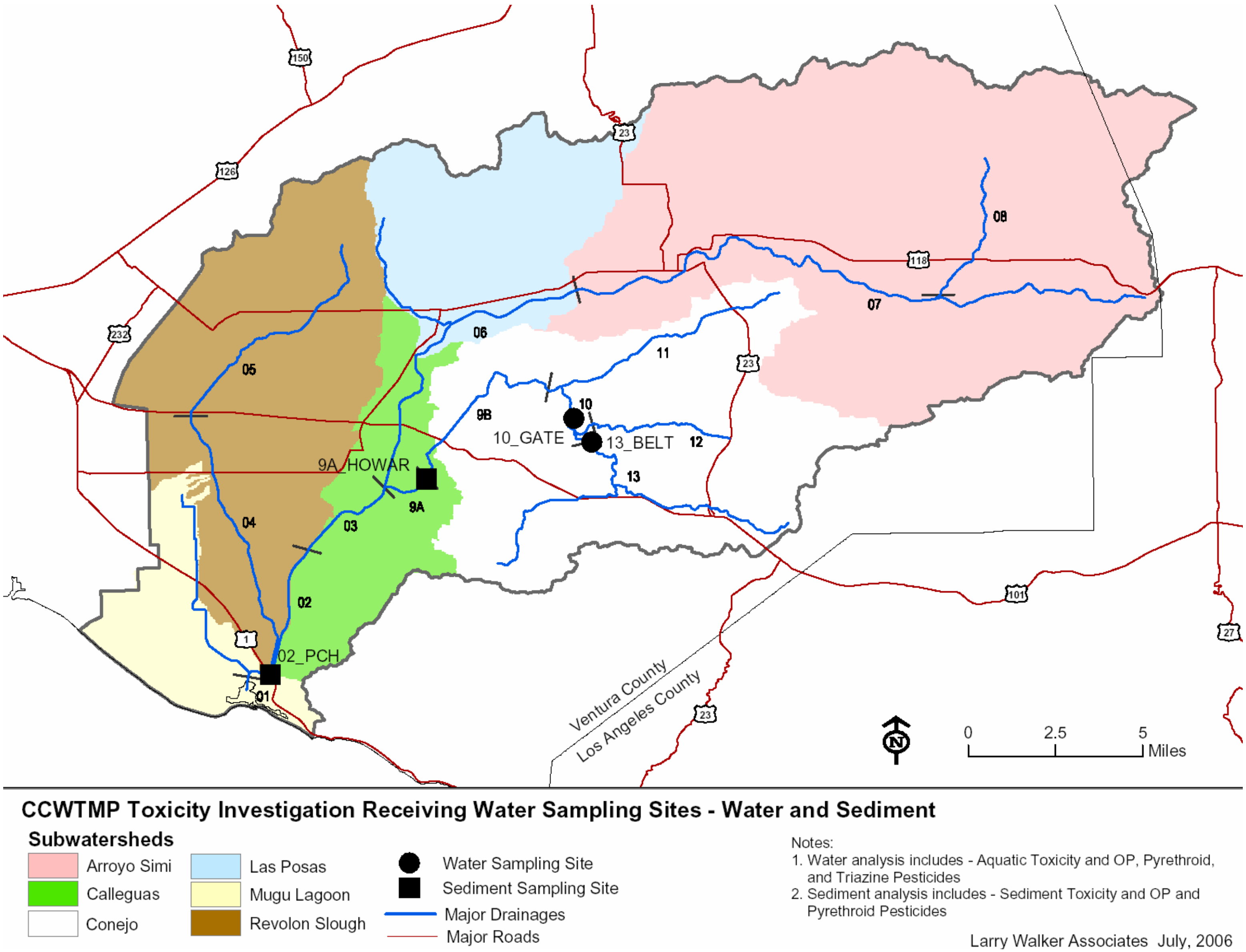

Figure 8. CCWTMP Toxicity Investigation Receiving Water Sampling Sites – Water and Sediment

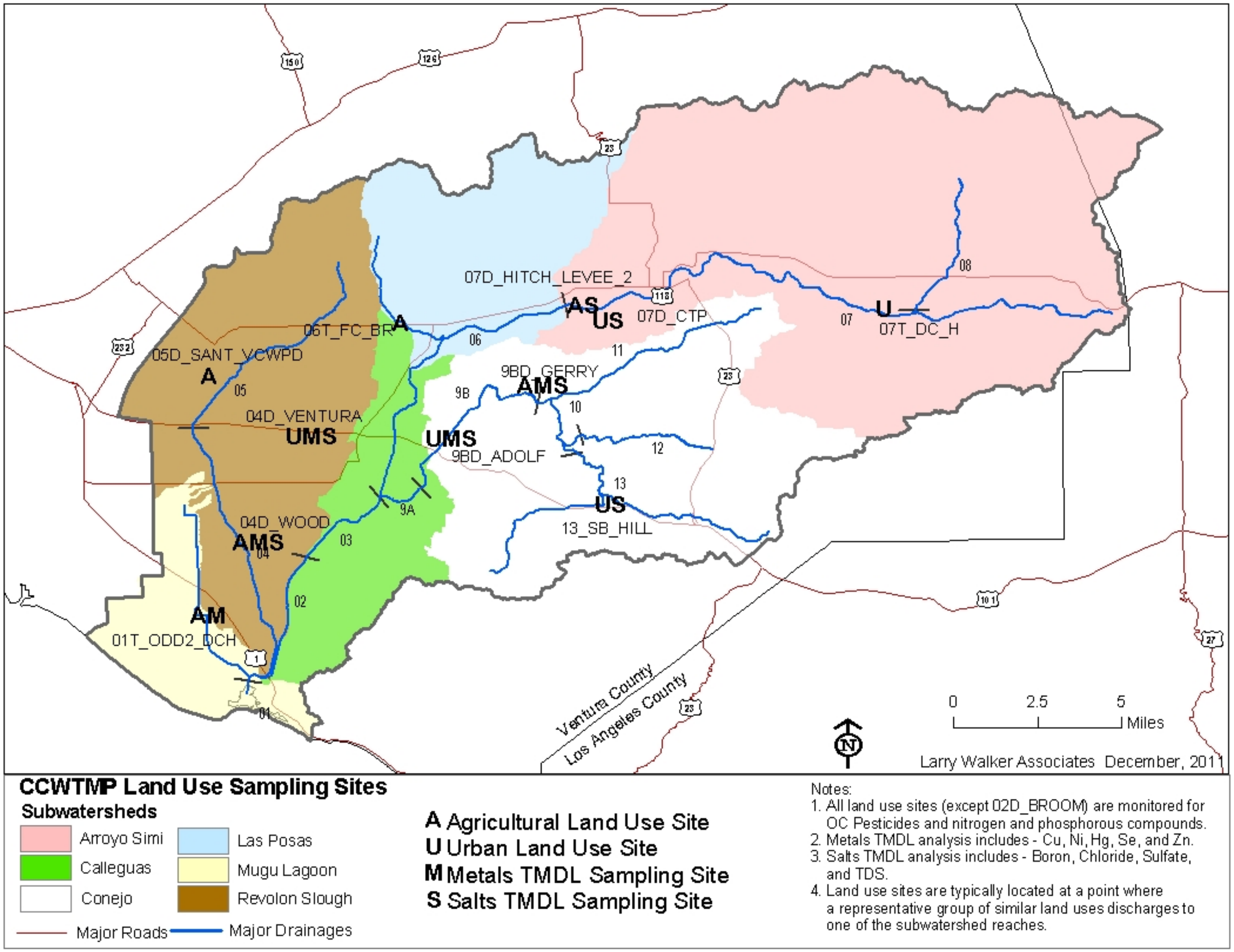

Figure 9. CCWTMP Land Use Sampling Sites

Monitoring Event Summaries for Toxicity, OC Pesticides, Nutrients, Metals, and Salts TMDLs

The following section provides a summary of both dry weather and wet weather monitoring events completed during the fourth year of monitoring for Toxicity, OC Pesticides, Nutrients, Salts, and Metals. Each event summary includes general data on the date of sampling, sites completed and/or not sampled, specific deviations from standard SOPs as outlined in the QAPP, and a general narrative of post event follow-up activities. The Data Summary section of this report includes field measurements and analytical results for each event.

DRY WEATHER EVENTS

Dry weather sampling events required during the fourth year of TMDL monitoring included quarterly sampling events (Events 28, 29, 31, and 33). The following section details each dry weather event.

Events 30 and 32 were wet weather storm monitoring efforts and are covered following the dry weather section.

Event 28

Event 28 included sampling of Mugu Lagoon for water quality, sediment, and fish tissue as well as freshwater for its quality, sediment, and fish tissue. Mugu Lagoon benthic invertebrate monitoring also took place during this event (Appendix D). A summary of each monitoring effort is included below.

Mugu Lagoon Water Quality

Sampled – August 16, 2011

Table 8. Event 28 Mugu Lagoon Water Quality Sites Sampled

Site ID	Constituents					
	General WQ Parameters	DOC	TSS	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals w/ Hg
01_BPT_14 Central Western Arm	X	X	X			X
01_BPT_15 Central Lagoon	X	X	X			X
01_BPT_3 Eastern Arm	X	X	X			X
1_BPT_6 East Western Arm	X	X	X			X
01_RR_BR Ronald Reagan Bridge	X	X	X	X	X	X
01_SG_74 Central Lagoon S. of Drain #7	X	X	X			X

Table 9. Event 28 Mugu Lagoon Water Quality Deviations from QAPP

Site ID	Deviation
01_SG_74 Central Lagoon S. of Drain #7	In order to avoid harassment of harbor seals and comply with a NBVC biologist's request, site was accessed by land.

Mugu Lagoon Sediment Quality

Sampled – August 16-18, 2011

Table 10. Event 28 Mugu Lagoon Sediment Sites Sampled

Site ID	Sediment Chemistry Constituents				
	General Parameters	PCBs, OC, OP, and Pyrethroid Pesticides	Metals	Sediment Toxicity Mortality / Growth	Macroinvertebrate Community Assessment
01_BPT_14 Central Western Arm	X	X	X	X	X
01_BPT_15 Central Lagoon	X	X	X	X	X
01_BPT_3 Eastern Arm	X	X	X	X	X
1_BPT_6 East Western Arm	X	X	X	X	X
01_SG_74 Central Lagoon S. of Drain #7	X	X	X	X	X

Mugu Lagoon Fish Tissue and Bird Eggs

Mussels Collected – August 16-18, 2011

Bird Eggs Collected – July 25-29, 2011

Table 11. Event 28 Mugu Lagoon Fish Tissue and Bird Eggs Sites Sampled

Site ID	Tissue Constituents		
	% Lipids	PCBs and OC Pesticides	Mercury and Selenium
01_Central Lagoon Tissue	X	X	
01_Central Arm Tissue	X	X	
Mugu Lagoon composite egg sample			X

Table 12. Event 28 Mugu Lagoon Fish Tissue Deviations from the QAPP

Site ID	Deviation
All	At the request of the NBVC biologist, the field team was not allowed to trawl in the lagoon to avoid potential harassment to harbor seals. Beach seine sampling from shore was also excluded due to the recent discovery of tidewater goby (another protected species) in the Calleguas Creek watershed. The crew attempted to catch fish on hook and line during all three field days. Angling was not successful. As a last resort the crew collected Mytilus mussels for tissue analysis at both locations.
All	Mercury testing was not performed on the Mugu Lagoon sediment samples.

Freshwater Water Quality

Sampled – August 2 and 3, 2011

Table 13. Event 28 Freshwater Water Quality Sites Sampled

	Water Chemistry Constituents					
Site ID	General WQ Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
01T_ODD2_DCH	X		X		X	
02_PCH	X			X		
02D_BROOM	X		X		X	
03_UNIV	X	X	X	X	X	X
04_WOOD	X	X	X	X	X	X
04D_VENTURA	X		X		X	X
05_CENTR	X			X		
05D_SANT_VCWPD	X		X		X	
06_SOMIS	X	X	X	X		
07_MADER	X			X		
07_HITCH	X	X	X	X	X	
07D_HITCH_LEVEE_2	X		X			X
07D_SIMI [1]	X		X	X	X	X
07D_CTP	X		X			X
07T_DC_H	X		X			
9A_HOWAR	X			X		X
9AD_CAMA [2]	X		X	X	X	X
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
9B_BARON						X
10_GATE	X	X	X	X		
10D_HILL [3]	X		X	X	X	X
12_PARK	X			X		
13_BELT	X	X	X	X		
13_SB_HILL	X		X			X

1. Samples collected on August 2 by treatment plant staff.
2. Samples collected on August 2 by treatment plant staff.
3. Samples collected on August 4 by treatment plant staff.

Table 14. Event 28 Freshwater Water Quality Sites Not Sampled

Site ID	Reason for Omission
03D_CAMR	Treatment plant not discharging, no sample taken
04D_WOOD	Site dry, no samples taken
06D_MOOR	Treatment plant not discharging, no sample taken
06T_FC_BR	Site dry, no samples taken
9BD_GERRY	Site dry, no samples taken

Table 15. Event 28 Freshwater Water Quality Deviations from QAPP

Site ID	Deviation
02_PCH	Flow was not measured due to strong tidal influence.
02D_BROOM	Flow measurement was taken with flow meter and pipe diameter.
04_WOOD	The conductivity at the site (>3000 µS/cm) was greater than the accepted range for the designated test species (Ceriodaphnia dubia). The QAPP requires the use of Americamysis bahia. However, Hylella azteca is identified by SWAMP as an appropriate water test species when conductivity is greater than 3,000 us/cm and is currently utilized by the Ventura County Irrigated Lands Group which conducts monitoring in the watershed. To maintain consistency with an existing watershed program, the toxicity testing lab (Pacific EcoRisk) utilized Hylella azteca in place of Americamysis bahia.
04D_VENTURA	Intermediate container (Ziploc bag) used to fill sample bottles.
9BD_ADOLF	Intermediate container (Ziploc bag) used to fill sample bottles.
9B_BARON	Weir created just upstream of driving bridge; water too high to take flow readings. Flow taken downstream of weir and upstream of bridge.
07D_CTP	Intermediate container (Ziploc bag) used to fill sample bottles.
07D HITCH LEVEE	Turbidity exceeded the capabilities of the Quanta; it was requested by the lab to perform.
10_GATE	Flow was not measured due to flume and rocks.
13_BELT	Flow was not measured due to flume and rocks.

Freshwater Sediment

Sampled – August 3 and 4, 2011

Table 16. Event 28 Freshwater Sediment Sites

	Sediment Constituents		
Site ID	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides
04_WOOD	X	X	X
02_PCH	X	X	X
03_UNIV	X	X	X
9B_ADOLF	X		X
9A_HOWAR	X	X	X
06_SOMIS	X		X
07_HITCH	X		X

Freshwater Tissue

Sampled – August 25, 2011

Table 17. Event 28 Freshwater Tissue Sites Sampled

		Tissue Constituents			
Site ID	Fish collected at Site?	% Lipids	PCBs and OC Pesticides	Mercury and Selenium	Chlorpyrifos
04_WOOD	Yes		X	X	
03_UNIV	Yes	X	X		
9B_ADOLF	Yes	X	X		
06_SOMIS	No				
07_HITCH	No				

Table 18. Event 28 Freshwater Tissue Sites Not Sampled

Site ID	Deviation
06_SOMIS and 07_HITCH	Field crew was unable to catch fish for analysis.

Table 19. Event 28 Freshwater Tissue Deviations from QAPP

Site ID	Deviation
04_WOOD	Chlorpyrifos was mistakenly not requested for analysis.

Event 29

Event 29 required sampling included Mugu Lagoon and freshwater quality sampling. A summary of each monitoring effort is described below.

Mugu Lagoon Water Quality

Sampled – November 15, 2011

Table 20. Event 12 Mugu Lagoon Water Quality Sites Sampled

Site ID	Constituents					
	General WQ Parameters	DOC	TSS	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals w/ Hg
01_BPT_14 Central Western Arm	X	X	X			X
01_BPT_15 Central Lagoon	X	X	X			X
01_BPT_3 Eastern Arm	X	X	X			X
1_BPT_6 East Western Arm	X	X	X			X
01_RR_BR Ronald Reagan Bridge	X	X	X	X	X	X
01_SG_74 Central Lagoon S. of Drain #7	X	X	X			X

Table 21. Mugu Lagoon Water Quality Deviations from QAPP

Site ID	Deviation
01_SG_74 Central Lagoon S. of Drain #7	In order to avoid harassment of harbor seals and comply with a NBVC biologist's request, site was accessed by land.

Freshwater Water Quality

Sampled – November 9 and 10, 2011

Table 22. Event 29 Freshwater Water Quality Sites Sampled

Site ID	Constituents					
	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
01T_ODD2_DCH	X		X		X	
02_PCH	X			X		
02D_BROOM	X		X		X	
03_UNIV	X	X	X	X	X	X
04_WOOD	X	X	X	X	X	X
04D_WOOD	X		X		X	X
04D_VENTURA	X		X		X	X
05_CENTR	X			X		
05D_SANT_VCWPD	X		X		X	
06_SOMIS	X	X	X	X		
07_HITCH	X	X	X	X		X
07_MADER	X			X		
07D_CTP	X		X			X
07D_SIMI[1]	X		X			
07T_DC_H	X		X			
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
9B_BARON						X
9A_HOWAR	X			X		X
9AD_CAMA[2]	X		X		X	X
10D_HILL[3]	X		X	X	X	X
13_SB_HILL	X		X			X
10_GATE	X	X	X	X		
12_PARK	X			X		
13_BELT	X			X		

1. Samples collected on November 9 by treatment plant staff.
2. Samples collected on November 1 by treatment plant staff.
3. Samples collected on November 10 by treatment plant staff.

Table 23. Event 29 Freshwater Water Quality Sites Not Sampled

Site ID	Reason for Omission
9BD_GERRY	Site dry, no samples taken
06T_FC_BR	Site dry, no samples taken
07_HITCH_LEVEE	Site dry, no samples taken
03D_CAMR	Treatment plant not discharging during sampling event.
06D_MOOR	Treatment plant not discharging during sampling event.

Table 24. Event 29 Freshwater Water Quality Deviations from QAPP

Site ID	Deviation
02_PCH	Flow was not measured due to strong tidal influence.
02D_BROOM	Flow measurement was taken with flow meter and pipe diameter.
04_WOOD	The conductivity at the site (>3000 µS/cm) was greater than the accepted range for the designated test species (*Ceriodaphnia dubia*). The QAPP requires the use of *Americamysis bahia*. However, *Hylella azteca* is identified by SWAMP as an appropriate water test species when conductivity is greater than 3,000 us/cm and is currently utilized by the Ventura County Irrigated Lands Group which conducts monitoring in the watershed. To maintain consistency with an existing watershed program, the toxicity testing lab (Pacific EcoRisk) utilized *Hylella azteca* in place of *Americamysis bahia*.
04D_VENTURA	Intermediate container (Ziploc bag) used to fill sample bottles.
9BD_ADOLF	Intermediate container (Ziploc bag) used to fill sample bottles.
9B_BARON	Weir created just upstream of driving bridge; water too high to take flow readings. Flow taken downstream of weir and upstream of bridge.
07D_CTP	Intermediate container (Ziploc bag) used to fill sample bottles.
07T_DC_H	Intermediate container (Ziploc bag) used to fill sample bottles.

Event 31

Event 31 required sampling included Mugu Lagoon and freshwater quality sampling. A summary of each monitoring effort is described below.

Mugu Lagoon Water Quality

Sampled – February 23, 2012

Table 25. Event 31 Mugu Lagoon Water Quality Sites Sampled

Site ID	Constituents					
	General WQ Parameters	DOC	TSS	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals w/ Hg
01_BPT_14 Central Western Arm	X	X	X			X
01_BPT_15 Central Lagoon	X	X	X			X
01_BPT_3 Eastern Arm	X	X	X			X
1_BPT_6 East Western Arm	X	X	X			X
01_RR_BR Ronald Reagan Bridge	X	X	X	X	X	X
01_SG_74 Central Lagoon S. of Drain #7	X	X	X			X

Table 26. Event 31 Mugu Lagoon Water Quality Deviations from QAPP

Site ID	Deviation
01_SG_74 Central Lagoon S. of Drain #7	In order to avoid harassment of harbor seals and comply with a NBVC biologist's request, site was accessed by land. For this event, the sampling site was located slightly south of the usual access point to ensure seals were not disturbed.

Freshwater Water Quality

Sampled – February 1 and 2, 2012

Table 27. Event 31 Freshwater Water Quality Sites Sampled

Site ID	Constituents					
	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
04D_WOOD	X		X	X	X	X
04_WOOD	X	X	X	X	X	X
04D_VENTURA	X		X		X	X
01T_ODD2_DCH	X		X	X	X	
02_PCH	X			X		
02D_BROOM	X		X	X	X	
03_UNIV	X	X	X	X	X	X
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
9B_BARON						X
9A_HOWAR	X			X		X
05D_SANT_VCWPD	X		X	X	X	
05_CENTR	X			X		
9AD_CAMA [1]	X		X	X	X	X
10D_HILL [2]	X		X	X	X	X
13_SB_HILL	X		X			X
10_GATE	X	X	X	X		
12_PARK	X			X		
13_BELT	X			X		X
06_SOMIS	X	X	X	X		
07_HITCH	X	X	X	X		X
07_MADER	X			X		
07D_SIMI [3]	X		X	X	X	X
07D_CTP	X		X			X
07T_DC_H	X		X			

1. Samples collected on February 7, by treatment plant staff.
2. Samples collected on February 1, by treatment plant staff.
3. Samples collected on February 9, by treatment plant staff.

Table 28. Event 31 Freshwater Water Quality Sites Not Sampled

Site ID	Reason for Omission
9BD_GERRY	Site dry, no samples taken.
07D_HITCH_LEVEE_2	Site dry, no samples taken.
06T_FC_BR	Site dry, no samples taken.
03D_CAMR	Treatment plant not discharging during sampling event.
06D_MOOR	Treatment plant not discharging during sampling event.

Table 29. Event 31 Freshwater Water Quality Deviations from QAPP

Site ID	Deviation
02_PCH	Flow was not measured due to strong tidal influence.
04_WOOD	The conductivity at the site (4,330 µS/cm) was greater than the accepted range for the designated test species (*Ceriodaphnia dubia*). The QAPP requires the use of *Americamysis bahia*. However, *Hylella azteca* is identified by SWAMP as an appropriate water test species when conductivity is greater than 3,000 us/cm and is currently utilized by the Ventura County Irrigated Lands Group which conducts monitoring in the watershed. To maintain consistency with an existing watershed program, the toxicity testing lab (Pacific EcoRisk) utilized *Hylella azteca* in place of *Americamysis bahia*.
04D_VENTURA	Intermediate container (Ziploc bag) used to fill sample bottles.
07D_CTP	Intermediate container (Ziploc bag) used to fill sample bottles.
07T_DC_H	Intermediate container (Ziploc bag) used to fill sample bottles.
9BD_ADOLF	Intermediate container (Ziploc bag) used to fill sample bottles.

Event 33

Event 33 required sampling included Mugu Lagoon and freshwater water quality sampling. A summary of each monitoring effort is described below.

Mugu Lagoon Water Quality

Sampled – May 3, 2012

Table 30. Event 33 Mugu Lagoon Water Quality Sites Sampled

Site ID	Constituents					
	General WQ Parameters	DOC	TSS	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals w/ Hg
01_BPT_14 Central Western Arm	X	X	X			X
01_BPT_15 Central Lagoon	X	X	X			X
01_BPT_3 Eastern Arm	X	X	X			X
1_BPT_6 East Western Arm	X	X	X			X
01_RR_BR Ronald Reagan Bridge	X	X	X	X	X	X
01_SG_74 Central Lagoon S. of Drain #7	X	X	X			X

Table 31. Event 33 Mugu Lagoon Water Quality Deviations from QAPP

Site ID	Deviation
01_SG_74 Central Lagoon S. of Drain #7	In order to avoid harassment of harbor seals and comply with a NBVC biologist's request, site was accessed by land. For this event, the sampling site was located slightly north of the usual access point to ensure seals were not disturbed.

Freshwater Water Quality

Sampled – May 23 and 24, 2012

Table 32. Event 33 Freshwater Water Quality Sites Sampled

	Constituents					
Site ID	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
04_WOOD	X	X	X	X	X	X
04D_VENTURA	X		X		X	X
01T_ODD2_DCH	X		X	X	X	
02_PCH	X			X		
02D_BROOM	X		X	X	X	
03_UNIV	X	X	X	X	X	X
9B_BARON						X
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
9A_HOWAR	X			X		X
05D_SANT_VCWPD	X		X	X	X	
05_CENTR	X			X		
9AD_CAMA [1]	X		X	X	X	X
10D_HILL [2]	X		X	X	X	X
13_SB_HILL	X		X			X
10_GATE	X			X		
12_PARK	X			X		
13_BELT	X	X	X	X		
06T_FC_BR	X		X	X		
06_SOMIS	X	X	X	X		
07_HITCH	X	X	X	X		X
07D_HITCH_LEVEE_2	X		X	X		X
07_MADER	X			X		
07D_SIMI [3]	X		X	X	X	X
07D_CTP	X		X			X
07T_DC_H	X		X			

1. Samples were collected on May 8, by treatment plant staff.
2. Samples were collected on May 2, by treatment plant staff.
3. Samples were collected on May 10, by treatment plant staff.

Table 33. Event 33 Freshwater Water Quality Sites Not Sampled

Site ID	Reason for Omission
04D_WOOD	Site was dry.
9BD_GERRY	Site was dry.
03D_CAMR	Treatment plant not discharging during sampling event.
06D_MOOR	Treatment plant not discharging during sampling event.

Table 34. Event 33 Freshwater Water Quality Deviations from QAPP

Site ID	Deviation
02_PCH	Flow was not measured due to strong tidal influence. Intermediate container (TSS bottle) used to fill sample bottles.
04_WOOD	The conductivity at the site (3,640 µS/cm) was greater than the accepted range for the designated test species (*Ceriodaphnia dubia*). The QAPP requires the use of *Americamysis bahia*. However, *Hylella azteca* is identified by SWAMP as an appropriate water test species when conductivity is greater than 3,000 µs/cm and is currently utilized by the Ventura County Irrigated Lands Group which conducts monitoring in the watershed. To maintain consistency with an existing watershed program, the toxicity testing lab (Pacific EcoRisk) utilized *Hylella azteca* in place of *Americamysis bahia*.
07D_HITCH_LEVEE	Intermediate container (Ziploc bag) used to fill sample bottles.
07D_CTP	Intermediate container (Ziploc bag) used to fill sample bottles.
9BD_ADOLF	Intermediate container (Ziploc bag) used to fill sample bottles.
07T_DC_H	Intermediate container (Ziploc bag) used to fill sample bottles.
04D_VENTURA	Intermediate container (Ziploc bag) used to fill sample bottles.
06T_FC_BR	Intermediate container (Ziploc bag) used to fill sample bottles. Flow too low to quantify, field crew estimated the rate to be 1-2 gpm.

WET WEATHER EVENTS

As outlined in the QAPP, beyond the required dry weather quarterly sampling events, efforts were made to include two wet weather water sampling events for compliance monitoring for the OC Pesticides, Toxicity, Nutrients and Metals TMDLs during targeted storm events. Wet weather sampling efforts only covered water column monitoring and POTW sampling was not a requirement.

The monitoring effort for the 2011-2012 period covered by this report was successful in targeting and sampling two storms (Event 30 and Event 32). The following section includes a brief summary of each storm event and a description of the sampling effort.

Event 30

Storm Summary

A short period of wet weather started in the area on January 21, 2012 and lasted through the 24th, with a break in rainfall on the 22nd. It had been quite dry in the region for over a month; the beginning of rainfall on the 21st saturated local soils. With the start of additional rainfall on the 23rd, the sampling teams mobilized.

Total rainfall during this event was fairly evenly spread across the watershed ranging from approximately 0.8 inches in the upper watershed (VCWPD Rain Gauge 246A, Simi Valley Sanitation Plant, 1/21/12 – 1/23/12 48 hour rainfall) to 0.98 inches in the lower area of the watershed (VCWPD Gauge 194A, Camarillo Sanitation Plant, 1/21/12 – 1/23/12 48 hour rainfall). There were some areas with slightly lower rainfall totals around 0.7 inches, but all areas met the requirements for classification as a wet weather sampling event. As a result of this precipitation, elevated flows were recorded throughout the watershed, with the Calleguas Creek mean discharge for January 23rd being 200 cubic feet per second (cfs) at USGS Gauge 11106550 near Camarillo, CA, at CSUCI University Road crossing. Flows were significantly higher than typical base flow conditions in the Calleguas Watershed allowing for this event to be characterized as a wet weather event.

Stormwater Water Quality

Sampled January 23, 2012.

Table 35. Event 30 Stormwater Water Quality Sites Sampled

	Constituents					
Site ID	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
04D_WOOD	X		X		X	X
04_WOOD	X	X	X	X	X	X
04D_VENTURA	X		X		X	X
01T_ODD2_DCH	X		X		X	
02D_BROOM	X		X		X	
03_UNIV	X	X	X	X	X	X
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
9BD_GERRY	X		X		X	X
9A_HOWAR						X
05D_SANT_VCWPD	X		X		X	
05_CENTR	X			X		
13_SB_HILL	X		X			X
10_GATE	X	X	X	X		
13_BELT	X	X	X			
06T_FC_BR	X		X			
06_SOMIS	X	X	X	X		
07D_HITCH_LEVEE_2	X		X			X
07_HITCH	X	X	X	X		X
07_MADER	X			X		
07D_CTP	X		X			X
07T_DC_H	X		X			
9B_BARON						X
01_RR_BR	X		X	X	X	

Table 36. Event 30 Stormwater Water Quality Deviations from QAPP

Site ID	Deviation
All sites	Flow measurements were not taken due to unsafe conditions and rapidly changing flow rates.
All sites	Team 2's field meter had a post calibration of just over 10% for turbidity. DI was used also and the meter measured 0.0 NTU's.
01T_ODD2_DCH	Intermediate container used.
02D_BROOM	TSS bottle used to fill organic sample bottles
04D_WOOD	Sett. Solids bottle used to fill organic sample bottles
9BD_GERRY	Ziploc used to fill sample bottles. Turbidity was above meter's capabilities (1000 NTU's) and sample was sent to lab for accurate measurement.
07D_CTP	Intermediate container used for organics (#94) only
05D_SANT_VCWPD	Intermediate container used for organics (#70) only
07T_DC_H	Ziploc bag used to fill organic sample bottles only
9BD_ADOLF	Intermediate container used to fill sample bottle #130.
06T_FC_BR	Turbidity was above meter's capabilities (1000 NTU's) and sample was sent to lab for accurate measurement

Event 32

Storm Summary

The 2011-2012 monitoring year was proven to be quite dry with rainfall amounts approximately half of normal (6.53" of seasonal precipitation, VCWPD Rain Gauge 177A, Camarillo – Pacific Sod as compared to a normal average of 12.1"; 8" of seasonal precipitation, VCWPD Rain Gauge 128C, Thousand Oaks APCD RAWS as compared to an average of 15.6"). In mid-March, a storm system approached the Ventura County region and was identified as likely to provide adequate rainfall to produce runoff at a majority of sites targeted for wet weather sampling. The decision was made to initiate sampling, on March 17th 2012, to best target the peak flows associated with the storm. The rainfall was predicted to be adequate for producing elevated flows and meeting QAPP requirements for a wet event.

Total rainfall for this event was approximately half an inch, with 24 hour rain totals of 0.47 inches in the Thousand Oaks (VCWPD Rain Gauge 128C, Thousand Oaks APCD RAWS, 3/17/12) down to 0.23 inches in the lower area of the watershed (VCWPD Rain Gauge 177A, Camarillo – Pacific Sod, 3/17/12). As a result of this precipitation, elevated flows were recorded throughout the watershed, with the Calleguas Creek mean discharge for March 17th being 300 cubic feet per second (cfs) at USGS Gauge 11106550 near Camarillo, CA, at CSUCI University Road crossing. Flows were significantly higher than typical base flow conditions in the Calleguas Watershed allowing for this event to be characterized as a wet weather event.

Stormwater Water Quality

Sampled – March 17, 2012

Table 37. Event 32 Stormwater Water Quality Sites Sampled

	Constituent					
Site ID	General Parameters	Toxicity	PCBs, OP, OC, and Pyrethroid Pesticides	Nutrients	Metals	Salts
01T_ODD2_DCH	X		X	X	X	
01_RR_BR	X		X	X	X	
02D_BROOM	X		X	X	X	
03_UNIV	X	X	X	X	X	X
04_WOOD	X	X	X	X	X	X
04D_WOOD	X		X	X	X	X
04D_VENTURA	X		X		X	X
05_CENTR	X			X		
05D_SANT_VCWPD	X		X	X	X	
06_SOMIS	X	X	X	X		
06T_FC_BR	X		X	X		
07_MADER	X			X		
07_HITCH	X	X	X	X		X
07D_HITCH_LEVEE_2	X		X	X		X
07D_CTP	X		X			X
07T_DC_H	X		X			
9A_HOWAR						X
9BD_GERRY	X		X	X	X	X
9B_BARON						X
9B_ADOLF	X	X	X	X		
9BD_ADOLF	X		X		X	X
10_GATE	X	X	X	X		
13_BELT	X	X	X			
13_SB_HILL	X		X			X

Table 38. Event 32 Stormwater Water Quality Deviations from QAPP

Site ID	Deviation
All sites	Flow measurements were not taken due to rapidly changing flow rates and unsafe conditions.
07T_DCH, 07_MADER, 07D_CTP, 07_HITCH, 07D_HITCH_LEVEE_2, and 06_SOMIS.	Turbidity sensor for Field Team 1 failed calibration. Lab analysis was requested for these sites.
9BD_GERRY, 10_GATE, 13_BELT, 13_SB_HILL, 9B_BARON, 9A_HOWAR	Conductivity sensor for Team 2 failed calibration. Expedited conductivity analysis was requested for these sites.
05_CENTR, 03_UNIV, 07D_HITCH_LEVEE_2, and 06T_FC_BR	Turbidity exceeded the field meters ability to precisely measure (>1000 NTU) at these locations; therefore, turbidity was added to the laboratory analytical list for these sites.
07T_DC_H	Intermediate container used (TSS bottle) to fill organics bottles.
9BD_GERRY	Intermediate container (Ziploc bag) used to fill sample bottles.

Event Summary Conclusions

In summary, all required monitoring events were completed as required in the QAPP at all sites where adequate flow was present to allow sampling. Deviations from the QAPP were limited to sample collection using secondary containers, toxicity testing species adjustments to account for high conductivity conditions, and access to one Mugu Lagoon site has been permanently changed from boat to walk-in to avoid any harassment of harbor seals. Fish tissue analysis was not performed at some of the sites because crews were not able to catch fish needed for analysis.

Monitoring Event Summaries for Salts

Monitoring for salts was conducted using a combination of continuous sensors and grab samples. This section summarizes the dates of operation of the sensors and the grab sample collection for salts. Salts monitoring is not yet included in the QAPP, but the monitoring that was conducted is consistent with the monitoring approach for salts submitted to the Regional Water Board in 2009 and the final salt monitoring approach submitted in June 2012.

Table 39. Dates of Operation of Continuous Sensors at Salt TMDL Compliance Points during the Year 4 Monitoring Period

Subwatershed	Site ID[(1)]	Reach	Site Location	GPS Coordinates		Dates of Operation[(1)]
				Lat	Long	
Pleasant Valley – Reaches 4 and 5	**04_WOOD**	4	Revolon Slough East Side Of Wood Road	34.1703	-119.0953	July-Dec. 2011, Apr-Jun 2012
Pleasant Valley – Calleguas Ck Reach 3	**03_UNIV**	3	Calleguas Creek at University Drive	34.1793	-119.0394	July-Dec. 2011, Apr-Jun 2012
Camarillo	**9A_HOWAR**	9A	Conejo Creek at Howard Road Bridge	34.1931	-119.0025	July-Dec 2011
Conejo	**9B_BARON**	9B	Conejo Creek at Baron Brothers Nursery	34.2365	-118.9643	July-Dec 2011
Simi	**07_HITCH-S**	7	Arroyo Simi above Hitch Bl. (about 0.9 miles upstream of 07_Hitch from the QAPP)	34.2695	-118.9083	July-Dec 2011

(1) Monthly means were calculated using values for all available 5-min intervals. Intermittent EC-sensor outages were experienced at 04_WOOD during the reporting period; intervals without EC-derived salt concentrations at 04_WOOD were as follows: 7/9/11 (0:00)-7/17/11 (23:55); 10/27/11 (0:00)-10/28/11 (09:50); 11/13/11 (0:00)-11/16/11 (23:55); 12/3/11 (0:00)-12/16/11 (14:50); 4/1 (0:00)-4/2/12 (10:55); 4/7/12 (0:00)-4/11/12 (04:50); 4/22/12 (0:00)-5/3/12 (14:25); 5/20/12 (0:00)-5/30/12 (08:00).

Table 40. Salts TMDL Compliance Sites, Receiving Water and Land Use Sites, Grab Samples Only

	Event No. >>>	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
	Date Sampled>>>	**8/2 - 8/3 2011**	**8/15/2011**	**8/29/2011**	**9/15/2011**	**9/30/2011**	**10/13/2011**	**10/28/2011**	**11/9-11/10 2011**	**11/17/2011**	**11/30/2011**	**12/16/2011**	**12/28/2011**	**1/23/2012**	**2/1 – 2/2 2012**	**3/17/2012**	**5/23 – 5/24 2012**
Site	**Constituents**																
Compliance Sites																	
Revolon Slough – Wood Rd (04_WOOD)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Chloride, Sulfate, TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	EC																X
Calleguas Ck – University Dr CSUCI (03_UNIV)	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	EC																X
Conejo Ck at Howard Br (9A_HOWAR)	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X	X		X		X		X	X		X		X	X	X	X
	EC															X	X
Conejo Ck at Baron Bros. Nursery (9B_BARON)	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X		X		X		X	X		X		X	X	X	X	X
	EC															X	X
Arroyo Simi above Hitch Blvd (07_HITCH-S)	Boron	X		X		X		X	X		X		X	X	X	X	X
	Chloride, Sulfate, TDS	X		X		X		X	X		X		X	X	X	X	X
	EC																X
Land Use Sites																	
04D_VENTURA	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X	X		X		X		X	X		X		X	X	X	X
04D_WOOD	Boron								X					X	X	X	
	Chloride, Sulfate, TDS						X		X	X		X		X	X	X	
07D_CTP	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X		X		X		X	X		X		X	X	X	X	X
07D_HITCH_LEVEE_2	Boron	X												X		X	X
	Chloride, Sulfate, TDS	X									X			X		X	X
13_SB_HILL	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X		X		X		X	X		X		X	X	X	X	X
	EC															X	
9BD_ADOLF	Boron	X							X					X	X	X	X
	Chloride, Sulfate, TDS	X	X		X		X		X	X		X		X	X	X	X
9BD_GERRY	Boron													X		X	
	Chloride, Sulfate, TDS													X		X	
	EC															X	

Toxicity Testing and Toxicity Identification Evaluations (TIE) Summary

TOXICITY TESTING PROCEDURES

For the CCWTMP, toxicity testing at various locations is conducted to meet TMDL requirements. The following is a brief summary of the procedures for the analytical methods used by the CCWTMP. Specific details concerning the SOPs followed by field crews collecting applicable samples and laboratory analysis are found in the QAPP.

For the CCWTMP toxicity measures, standard test species were utilized for toxicity testing. *Ceriodaphnia dubia* was used for the aquatic toxicity testing, *Hyalella azteca* for the bulk sediment and porewater toxicity testing. *Eohaustorius estuarius* was used for aquatic, bulk sediment, and porewater toxicity at sampling locations where salinity levels adversely affect the other test species. *Hyalella azteca* was used to conduct aquatic toxicity testing if sample salinity exceeded 1.5 part per thousand (PPT) but was less than 15 PPT. *Americamysis bahia* (formerly *Mysidopsis bahia*) was used for aquatic toxicity testing if sample salinity exceeded 15 PPT. All test species are standard USEPA test species and considered the most applicable for the various types of pollutants impacting the watershed, and all analytical testing procedures were conducted using standard USEPA methods.

The results of each toxicity test are used to trigger further investigations to determine the cause of observed laboratory toxicity if necessary per the QAPP. If testing indicates the presence of significant toxicity in the sample, toxicity identification evaluations (TIEs) procedures are initiated to investigate the cause of toxicity. For the purpose of triggering TIE procedures, significant toxicity is defined as at least 50% mortality. The 50% mortality threshold is consistent with the approach recommended in guidance published by USEPA for conducting TIEs (USEPA, 1996), which recommends a minimum threshold of 50% mortality because the probability of completing a successful TIE decreases rapidly for samples with less than this level of toxicity. Similar thresholds for the reburial of *Eohaustorius estuarius* after test treatments are utilized in the final decision to initiate a TIE effort. A component of the compliance requirement when significant toxicity is found is to initiate a targeted phase 1 TIE and test to determine the general class of constituent (*i.e.*, non-polar organics) causing toxicity. The targeted TIE focuses on classes of constituents anticipated to be observed in drainages dominated by urban and agricultural discharges and those previously observed to cause toxicity. Phase 2 TIEs may also be utilized to identify specific constituents causing toxicity if warranted. TIE methods will generally adhere to USEPA procedures documented in conducting TIEs (USEPA, 1991, 1992, 1993a-b). For samples exhibiting toxic effects consistent with carbofuran, diazinon, or chlorpyrifos, TIE procedures follow those documented in Bailey *et al*. (1996). To address toxicity of unknown causes in sediment, sediment porewater was extracted and tested for toxicity when significant toxicity, defined as at least 50% mortality, was observed in the bulk sediment sample. If the subsequent sediment porewater toxicity testing resulted in greater than 50% mortality, a Phase 1 TIE was initiated on the sediment porewater.

The decision to initiate TIE procedures on any sample, including samples exceeding the mortality threshold, as well as the focus and scope of TIE procedures, was determined by the Project Manager and toxicity laboratory staff. When deciding whether to initiate TIE procedures for a specific site and monitoring event, a number of factors were considered, including the level of toxicity, the magnitude of sample mortality and/or reburial levels as compared to lab control results, history of toxicity at the site, the species and endpoints exhibiting toxic effects, as well as the primary technical basis for triggering TIEs described above. A summary of the toxicity results and subsequent TIE actions, including the rationale for initiating TIE procedures for a specific sample are described below.

TOXICITY RESULTS SUMMARY

Toxicity samples were collected at the sites and frequencies outlined in Table 2 and Table 5. Monitored sites include the following:

- **Sediment Toxicity (Freshwater Sites)**
  - 04_WOOD
  - 02_PCH
  - 03_UNIV
  - 9A_HOWAR
- **Sediment Toxicity (Mugu Lagoon)**
  - 01_BPT_3
  - 01_BPT_6
  - 01_BPT_14
  - 01_BPT_15
  - 01_SG_74
- **Freshwater Water Column Toxicity**
  - 04_WOOD
  - 03_UNIV
  - 9B_ADOLF
  - 06_SOMIS
  - 07_HITCH
  - 10_GATE
  - 13_BELT

Toxicity samples for sediment were collected in both Mugu Lagoon and the freshwater sites during dry weather Event 28. Water column toxicity testing was conducted during all four dry weather events (Events 28, 29, 31, and 33), and the two wet weather events (Events 30 and 32). The following section describes the toxicity samples collected at each site for each event, the results of the tests, and a summary of applicable TIEs initiated per the requirements in the QAPP.

Event 28 Sediment Toxicity

Table 41. Freshwater Sediment Toxicity Event 28 - *Hyalella azteca*

Site ID	Toxicity Results	
	Observed Significant Mortality	TIE Initiated
04_WOOD	**YES**	**YES**
02_PCH	**YES**	NO
03_UNIV	**YES**	NO
9A_HOWAR	NO	NO

Table 42. Mugu Lagoon Sediment Toxicity Event 28 – *Eohaustorius estuarius and Mytillus galloprovincialis*

Site ID	Toxicity Results		
	Eohaustorius estuarius		*Mytilus galloprovincialis*
	Observed Significant Mortality	Observed Significant Reductions in Reburial	Observed Significant Reductions in Normal Development
01_BPT_3	NO	NO	NO
01_BPT_6	NO	NO	NO
01_BPT_14	NO	NO	NO
01_BPT_15	NO	NO	NO
01_SG_74	NO	NO	NO

Event 28 Water Column Toxicity

Table 43. Freshwater Water Column Toxicity Event 28 - *Ceriodaphnia dubia and Hyalella azteca*

Site ID	Toxicity Results			
	Ceriodaphnia dubia			*Hyalella azteca*
	Observed Significant Mortality	TIE Initiated	Observed Significant Reduced Reproduction	Observed Significant Mortality
04_WOOD				NO
9B_ADOLF	NO	NO	NO	
03_UNIV	NO	NO	NO	
10_GATE	NO	NO	NO	
06_SOMIS	**YES**	**YES**	NO	
13_BELT	NO	NO	NO	
07_HITCH	NO	NO	NO	

Event 28 Toxicity and TIE Summary

Toxicity was not observed at the Mugu Lagoon sites. Freshwater sites exhibited significant mortality in almost all sediment samples, but toxicity was only sufficient at one site for a TIE to be performed. Freshwater water column toxicity samples were all non-toxic, except for 06_SOMIS and a TIE was performed. The following details summary outcomes for each analysis.

Sediment Toxicity Summary

- No significant toxicity was observed in any of the test species at the Mugu Lagoon sediment sites.
- Significant survival reductions were observed in the test species *Hyalella azteca* for three of the four freshwater sites sampled. Due to a more than 50% reduction in survival at the 04_WOOD site, a TIE was initiated at this site.
- For the 04_WOOD site, both a Sediment Porewater Phase I TIE and a Bulk-Sediment Phase I TIE were performed using *Hyalella azteca* for analysis. Results are as follows:
    - The following trends were observed for the porewater sediment TIE:
        - Quartz addition and SIR-300 addition treatments in the bulk sediment test increased survival, but the observed reductions were likely due to sample dilution by the treatments themselves.
        - Centrifugation reduced toxicity indicating that compound(s) associated with suspended particulates are contributing to the porewater toxicity.
        - C_{18}SPE addition also increased survival, indicating that non-polar organic compound(s) were contributing to sediment toxicity.
        - Zeolite manipulation also reduced the toxicity, but it may have been due to the particulate removal during this process.
    - The following trends were observed for the bulk sediment TIE:
        - Amberlite addition and coconut charcoal addition treatments in the bulk sediment test increased survival, indicating that non-polar organic compound(s) were contributing to sediment toxicity.
        - Centrifugation reduced toxicity indicating that compound(s) associated with suspended particulates are contributing to the porewater toxicity.
        - SIR-300 addition also increased survival, indicating that metals or polar organic compound(s) were contributing to sediment toxicity in a lesser extent.
        - Zeolite manipulation did not have a significant effect on sediment toxicity, suggesting that ammonia was not a cause of sediment toxicity.
- Findings for both sediment TIE efforts at the 04_WOOD site, while inconclusive in truly identifying a specific constituent causing toxicity, suggest that there are multiple compounds (organics, and/or ammonia) contributing to the sediment toxicity at this site and one or more of these contaminants may have an affinity for sorption to particulates.

Water Column Toxicity Summary

Significant toxicity was not found in the water column at five of the six freshwater sites sampled during Event 28. Due to a more than 50% reduction in *Ceriodaphnia dubia* survival at the 06_SOMIS site, a TIE was initiated at this site. However, the toxicity was not persistent in the baseline (untreated) sample. As a result, interpretation of the TIE results was not possible.

Event 29 Water Quality Toxicity

Table 44. Water Quality Toxicity Event 29 - *Ceriodaphnia dubia* and *Hyalella azteca*

Site ID	Toxicity Results			
	Ceriodaphnia dubia			*Hyalella azteca*
	Observed Significant Mortality	TIE Initiated	Observed Significant Reduced Reproduction	Observed Significant Mortality
04_WOOD				NO
9B_ADOLF	**YES**	**YES**	**YES**	
03_UNIV	NO	NO	NO	
10_GATE	**YES**	NO	**YES**	
06_SOMIS	NO	NO	**YES**	
07_HITCH	NO	NO	**YES**	

Event 29 Toxicity and TIE Summary

- There was no observed toxicity effects on *Hyalella azteca* at the 04_WOOD, the one site sampled for this organism.
- Significant reductions in reproduction were observed for *Ceriodaphnia dubia* at four of the five sites tested for this organism.
- Significant reductions in survival were observed for *Ceriodaphnia dubia* at two of the five sites tested for this organism. Based on the observation of a 50% reduction in survival within 96 hrs, a TIE targeted for organics was performed on the 9B_ADOLF sample.
- For the TIE at the 9B_ADOLF site, there were no reductions in survival in the baseline (untreated) treatment of the TIE site water, indicating that toxicity was not persistent. As a result, interpretation of the TIE results was not possible.

Event 30 Water Quality Toxicity

Table 45. Water Quality Toxicity Event 30 - *Ceriodaphnia dubia and Hyalella azteca*

Site ID	Toxicity Results			
	Ceriodaphnia dubia		*Hyalella azteca*	
	Observed Significant Mortality	Observed Significant Reduced Reproduction	Observed Significant Mortality	TIE
04_WOOD			**YES**	NO
9B_ADOLF	NO	NO		
03_UNIV	NO	NO		
10_GATE	NO	NO		
06_SOMIS	NO	NO		
07_HITCH	NO	NO		

Event 30 Toxicity and TIE Summary

- No significant survival or reproductive reductions were observed in the test species *Ceriodaphnia dubia* at any of the sites.
- Significant reduced survival was observed for *Hyalella azteca* at 04_WOOD. A Phase I TIE was not initiated because continued TIE efforts at the 04_WOOD have been suspended for the quarterly sampling efforts. Toxicity has been observed multiple times at this site and stakeholders have chosen to invest resources into source control measures (in lieu of TIE efforts) to address the identified toxicity issue, primarily resulting from pesticides.

Event 31 Water Quality Toxicity

Table 46. Water Quality Toxicity Event 31 - *Ceriodaphnia dubia* and *Hyalella azteca*

Site ID	Toxicity Results			
	Ceriodaphnia dubia			*Hyalella azteca*
	Observed Significant Mortality	Observed Significant Reduced Reproduction	TIE Initiated	Observed Significant Mortality
04_WOOD				NO
9B_ADOLF	NO	**YES**	NO	
03_UNIV	NO	NO	NO	
10_GATE	NO	**YES**	NO	
06_SOMIS	NO	**YES**	NO	
07_HITCH	NO	**YES**	NO	

Event 31 Toxicity and TIE Summary

- No significant reductions in survival were observed for *Ceriodaphnia dubia* and *Hyalella azteca* tests.
- Significant reduced reproduction was observed at four of the five sites yet the mortality level was not significant and did not trigger the initiation of TIE efforts per the QAPP.
- No TIE efforts were initiated for any sites sampled during Event 31.

Event 32 Water Quality Toxicity

Table 47. Water Quality Toxicity Event 32 - *Ceriodaphnia dubia*

Site ID	Toxicity Results		
	Observed Significant Mortality	Observed Significant Reduced Reproduction	TIE Initiated
04_WOOD[1]	NO	**YES**	NO
9B_ADOLF	NO	NO	NO
03_UNIV	**YES**	**YES**	**YES**
07_HITCH	NO	NO	NO
10_GATE	NO	NO	NO
06_SOMIS	NO	**YES**	NO
13_BELT	NO	NO	NO

1. Field measures for specific conductance did not exceed the trigger warranting the use of *Hyalella azteca*.

Event 32 Toxicity and TIE Summary

- No significant reductions in survival were observed for *Ceriodaphnia dubia* for all sites except 03_UNIV where both survival and reproduction were significantly reduced.
- Significant reduction in reproduction was also observed at 06_SOMIS and 04_WOOD but the mortality level was not significant and did not trigger the initiation of TIE efforts at these sites per the QAPP.
- A TIE was initiated at 03_UNIV which exhibited greater than 50% reduction in *Ceriodaphnia dubia* survival. The TIE produced the following results:
    - Initial results indicated that non-polar organic compounds were responsible for the observed toxicity.
    - Further testing indicated that compounds similar to OP pesticides were contributing to toxicity, yet final results were inconclusive to the specific compounds that may be contributing to or causing toxicity (including the possibility that other compounds including pyrethroids could be contributing to toxicity).

Event 33 Water Quality Toxicity

Table 48. Water Quality Toxicity Event 33 - *Ceriodaphnia dubia and Hyalella azteca*

Site ID	Toxicity Results		
	Ceriodaphnia dubia		*Hyalella azteca*
	Observed Significant Mortality	Observed Significant Reduced Reproduction	Observed Significant Mortality
04_WOOD			NO
9B_ADOLF	NO	-[1]	
03_UNIV	NO	-[1]	
06_SOMIS	NO	NO	
13_BELT	NO	-[1]	
07_HITCH	NO	-[1]	

1. These tests did not meet the lab water control test acceptability criteria for reproduction.

Event 33 Toxicity and TIE Summary

- No significant reductions in survival were observed for *Ceriodaphnia dubia* and *Hyalella azteca* tests.
- No TIE efforts were initiated for any sites sampled during Event 33.

Toxicity Review

The following is a summary of the toxicity results to date for water column and freshwater and Mugu Lagoon sediment sampling.

Table 49. Water Column Toxicity For All Monitoring Events and Sites (Significant mortality denoted by "X", bolded events are wet-weather events)

CCWMTP Year	Events \ Site ID	04_WOOD	9B_ADOLF	03_UNIV	10_GATE[1]	06_SOMIS	13_BELT[1]	07_HITCH
Year 1	1	X						
	2	X						
	3	**X**	**X**	**X**				**X**
	4	X						
	5	**X**						**X**
	6							
Year 2	9							
	12	X						
	14	**X**		**X**		**X**		
	16	**X**		**X**				**X**
	17							
	20			X				
Year 3	22							
	23							
	24	**X**						
	25							
	26	**X**						**X**
	27							
Year 4	28					X		
	29		X		X			
	30	**X**						
	31							
	32			**X**				
	33							

1. 10_GATE and 13_BELT are also toxicity investigation monitoring sites.

Table 50. Sediment Toxicity For All CCWTMP Freshwater Monitoring Events and Sites (Significant mortality denoted by "X")

CCWMTP Year	Events \ Site ID	04_WOOD	02_PCH[1]	03_UNIV	9A_HOWAR[1]
Year 1	1	X			
Year 2	9	X			
Year 3	22	X			
Year 4	28	X	X	X	

1. 02_PCH and 9A_HOWAR are also toxicity investigation monitoring sites.

Table 51. Sediment Toxicity For All CCWTMP Mugu Lagoon Monitoring Events and Sites (Significant mortality denoted by "X", but none was observed)

CCWMTP Year	Site ID / Events	01_BPT_3	01_BPT_6	01_BPT_14	01_BPT_15	01_SG_74
Year 1	1					
Year 4	28					

Table 49 displays significant water column mortality test results for four years of CCWTMP events, including both dry and storm (bolded text) weather events. Significant mortality found in freshwater sediments is shown in Table 50. As noted in Table 51, there was no significant mortality in Mugu Lagoon sediments for the two years when these were tested.

As previously mentioned, toxicity was frequently identified at the 04_WOOD site during the first two monitoring years in water column samples and in each of the four sediment samples. The stakeholders have chosen to invest resources into source control efforts to address sources potentially contributing to the toxicity issue. This is being accomplished through the implementation of the Agricultural Water Quality Management Plan (AWQMP) developed by the Ventura County Agricultural Irrigated Lands Group (VCAILG) as part of the Conditional Waiver for Irrigated Agricultural Lands.

During dry weather water column sampling, four monitoring sites other than 04_WOOD have been identified as having significant mortality (03_UNIV, 9B_ADOLF, 10_GATE, and 06_SOMIS for one event each). Toxicity has been identified during wet weather monitoring at all sites, except for 10_GATE and 13_BELT.

Both water column and sediment TIE efforts have been initiated as described previously, and outcomes of these efforts have had limited success in identifying the true cause of toxicity. While not identifying the specific constituents causing toxicity, the TIEs have identified:

- Most initial TIE analysis has identified non-polar organic compounds as contributing to the observed toxicity.
- Compounds similar to organophosphorus (OP) pesticides are continually being identified as possible contributors to the observed toxicity.
- Pyrethroids may also be contributing to the observed toxicity conditions.

The results of future CCWTMP toxicity testing will continue to assist in the identification of when and where conditions are toxic in the Calleguas Creek watershed, and help the stakeholders better target areas in the watershed that show continual toxicity and focus limited resources to address the problems. It is important to note that instances of observed mortality in water samples have generally been decreasing since the beginning of the CCWTMP. There were nine instances of significant mortality in water column samples during the first year of monitoring, with eight occurrences in the second year, three in the third year, and five in the fourth year.

As per the CCWTMP QAPP, additional investigation monitoring took place at 10_GATE and 13_BELT for water column toxicity and at 02_PCH and 9A_HOWAR for sediment toxicity. As shown in the tables above, significant mortality occurred once at 10_GATE, but has never been observed at 13_BELT. Similarly, sediment toxicity was observed once at 02_PCH and never at 9A_HOWAR.

Benthic Macro-Invertebrate Community Assessment and Analysis

As part of the CCWTMP, the benthic infaunal community of Mugu Lagoon, the estuarine embayment at the mouth of Calleguas Creek, was sampled during Event 28 (August 2011). The optional benthic sampling was included in the monitoring program to assess infaunal community condition, a potential indicator of exposure to contaminants in the sediments and in conjunction with toxicity testing and chemical analysis, form a triad of standardized tools to determine sediment quality in potentially impacted habitats.[4]

Five benthic samples were collected in conjunction with the required sediment sampling, and sorted to the lowest taxonomic level utilizing procedures accepted by the Southern California Association of Marine Invertebrate Taxonomists (SCAMIT 2011). Specimens were enumerated and statistical analyses were applied including: Shannon-Wiener species diversity; community composition (by station) using Euclidean distance; and four benthic indices discussed in detail in the attached final report (Appendix D).

From this effort, a total of 2,754 individuals in 49 species (or taxa) and ten phyla (major groups) were collected from the Lagoon stations. Annelids (segmented worms) were the most diverse phylum, with 21 species (43% of the total), followed by arthropods with 14 species (29%), mollusks with 9 species (18%), and nemertean (ribbon) works with 3 species (6%). The remaining two phyla, nematodes (round worms) and phoronids (horseshoe worms), were each represented by a single taxon. Arthropods were the most abundant phylum with 1,352 individuals, making up 49% of the organisms collected.

The infauna communities in the study area were composed predominantly of nematodes, small arthropods, annelid worms, and gastropods. Community composition was most similar between the two sites in the western arm of the lagoon, and between the stations in the eastern arm and central lagoon, respectively. The greatest number of taxa was reported at both Stations ML6 (corresponding to CCWTMP site 01_BPT_06) and ML74 (corresponding to CCWTMP site 01_SG_74), although abundance at Station ML6 (corresponding to CCWTMP site 01_BPT_06 was about 60% higher than found at the station with the second highest abundance. Biomass was also greatest at Station ML6 where a few large individual mollusks contributed to a biomass that was nearly 13 times greater than was found at any other station. While number of taxa and individuals were lowest at Station ML3 (corresponding to CCWTMP site 01_BPT_03), diversity was lowest at Stations ML14 and ML15 (corresponding to CCWTMP sites 01_BPT_14 and 01_BPT_15, respectively).

The 2011 infaunal community parameters at most stations were reduced compared to the results found during the 2008 survey. The Benthic Community Index Integration indicated that the stations in the western arm of Mugu Lagoon were Moderately Disturbed in 2011 compared to the Low Disturbance found in 2008. In the main lagoon, the benthic communities at the stations in the eastern arm indicated High Disturbance this year, which was also a reduction in condition compared to 2008. In the central lagoon, which is influenced by inputs from both the creek and a

[4] Since the first year of CCWTMP monitoring, the three lines of evidence related to benthic community condition have been formalized into the state adopted sediment quality objectives (SQOs) as detailed in the, "Water Quality Control Plan for Enclosed Bays and Estuaries of California, Part 1 Sediment Quality," September 2008.

nearby storm drain, indices suggested that conditions had improved and are now considered Moderately Disturbed compared to the previously found High Disturbed. While higher levels of disturbance to the infauna community were indicated in 2011 as compared to 2008, the source of the disturbance is likely related to the effects of an unusually wet year previous to the 2011 survey. In assessing sediment quality and the protection of sediment dependent biota, the benthic community condition is only one of three lines of evidence considered by the Sediment Quality Objectives. To fully evaluate sediment quality relative to the narrative objective, sediment toxicity and chemistry must also be considered.

The full final report is attached to this report in Appendix D, which includes a full summary of sampling methods, data analysis, and a summary of results and conclusions. As outlined in the QAPP, this effort is not a TMDL requirement and was completed at the request of the stakeholders, who have the discretion to complete similar efforts in the future and/or revise methods and sampling locations per further analysis.

Data Summary Tables

The following series of tables summarize both field and analytical measures per site. This section is intended as a general summary of the sampling results for the required reported constituents as described previously in this report. A summary dealing with specific compliance requirements and comparisons follows this section. The Compliance and Analysis Discussion includes summary tables of these findings compared to applicable waste load and load allocations and numeric targets for the TMDLs.

When applicable, numerous events are included for comparison in the following tables. As mentioned previously, the constituents and frequency of monitoring per site may vary during each event.

The summary tables are organized in the following order:

- Sediment Sampling Results
  - Mugu Lagoon Sediment
  - Freshwater Sediment
- Tissue Sampling Results
  - Mugu Lagoon Tissue
  - Freshwater Tissue
- Water Chemistry Results
  - Mugu Lagoon
  - Freshwater
  - POTW

Acronyms are utilized throughout the tables and the following list can be used as a reference during the review:

DNQ Detected Not Quantified

EST Estimated Result

ND Not Detected

NM Not Measured

NR Not Required

NS Not Sampled

MUGU LAGOON SEDIMENT SAMPLING DATA

Table 52. Mugu Lagoon - Central Lagoon, South Of Drain #7 (01_SG_74)

Constituent	Units		Event 28 8/18/2011	
Grain Size Analysis				
Clay <0.0039 mm	%		5.5	
Silt 0.0039 to <0.0625 mm	%		16.6	
Fine <0.0625 mm	%		22.1	
Sand 0.0625 to <2.0 mm	%		77.4	
Granule 2.0 to <4.0 mm	%		<1	
General Sediment Quality Constituents			**Sediment**	
Ammonia-N (dry weight)	mg/kg dw		46.14	
Percent Moisture	%		23.8	
Total Organic Carbon (TOC)	%		0.4	
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	4.1	6.7	16.3
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND

Table 52. Mugu Lagoon - Central Lagoon, South Of Drain #7 (01_SG_74) continued

Constituent	Units	Event 28 08/18/2011		
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND
Metals and Selenium in Sediment		**Sediment**		
Total Arsenic	µg/g dw	3.99		
Total Cadmium	µg/g dw	0.262		
Total Copper	µg/g dw	7.503		
Total Lead	µg/g dw	4.807		
Total Mercury	µg/g dw	0.0135		
Total Nickel	µg/g dw	10.128		
Total Zinc	µg/g dw	31.008		
Total Selenium	µg/g dw	0.187		

Table 53. Mugu Lagoon - Eastern Part Of Western Arm (01_BPT_6)

Constituent	Units	Event 28 8/18/2011		
Grain Size Analysis				
Clay <0.0039 mm	%		11.3	
Silt 0.0039 to <0.0625 mm	%		23.1	
Fine <0.0625 mm	%		34.4	
Sand 0.0625 to <2.0 mm	%		65.1	
Granule 2.0 to <4.0 mm	%		<1	
General Sediment Quality Constituents			**Sediment**	
Ammonia-N (dry weight)	mg/kg dw		19.68	
Percent Moisture	%		25.9	
Total Organic Carbon (TOC)	%		0.49	
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	DNQ	DNQ	14.9
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 53. Mugu Lagoon - Eastern Part Of Western Arm (01_BPT_6) continued

Constituent	Units		Event 28 8/18/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND
Metals and Selenium in Sediment			**Sediment**	
Total Arsenic	µg/g dw		5.122	
Total Cadmium	µg/g dw		0.351	
Total Copper	µg/g dw		9.241	
Total Lead	µg/g dw		4.15	
Total Mercury	µg/g dw		0.0201	
Total Nickel	µg/g dw		9.021	
Total Zinc	µg/g dw		27.346	
Total Selenium	µg/g dw		0.274	

Table 54. Mugu Lagoon - Eastern Arm (01_BPT_3)

Constituent	Units		Event 28 8/18/2011	
Grain Size Analysis				
Clay <0.0039 mm	%		3.0	
Silt 0.0039 to <0.0625 mm	%		4.7	
Fine <0.0625 mm	%		7.7	
Sand 0.0625 to <2.0 mm	%		92.1	
Granule 2.0 to <4.0 mm	%		<1	
General Sediment Quality Constituents			**Sediment**	
Ammonia-N (dry weight)	mg/kg dw		9.67	
Percent Moisture	%		18.2	
Total Organic Carbon (TOC)	%		0.07	
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	DNQ	ND	ND
2,4'-DDE	ng/g dw	DNQ	ND	ND
2,4'-DDT	ng/g dw	8.9	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	44.6	DNQ	DNQ
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 54. Mugu Lagoon - Eastern Arm (01_BPT_3) continued

Constituent	Units		Event 28 8/18/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND
Metals and Selenium in Sediment			**Sediment**	
Total Arsenic	µg/g dw		1.699	
Total Cadmium	µg/g dw		0.077	
Total Copper	µg/g dw		1.481	
Total Lead	µg/g dw		1.703	
Total Mercury	µg/g dw		ND	
Total Nickel	µg/g dw		2.842	
Total Zinc	µg/g dw		8.106	
Total Selenium	µg/g dw		0.055	

Table 55. Mugu Lagoon - Central Lagoon (01_BPT_15)

Constituent	Units	Event 28 8/18/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	0.7		
Silt 0.0039 to <0.0625 mm	%	2.5		
Fine <0.0625 mm	%	3.2		
Sand 0.0625 to <2.0 mm	%	96.4		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	12.58		
Percent Moisture	%	21.6		
Total Organic Carbon (TOC)	%	0.23		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	24.8	DNQ	DNQ
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 55. Mugu Lagoon - Central Lagoon (01_BPT_15) continued

Constituent	Units		Event 28 8/18/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND
Metals and Selenium in Sediment			**Sediment**	
Total Arsenic	µg/g dw		1.489	
Total Cadmium	µg/g dw		0.162	
Total Copper	µg/g dw		1.796	
Total Lead	µg/g dw		1.356	
Total Mercury	µg/g dw		0.0113	
Total Nickel	µg/g dw		2.856	
Total Zinc	µg/g dw		8.691	
Total Selenium	µg/g dw		1.107	

Table 56. Mugu Lagoon - Central Part Of The Western Arm (01_BPT_14)

Constituent	Units		Event 28 8/18/2011	
Grain Size Analysis				
Clay <0.0039 mm	%		2.3	
Silt 0.0039 to <0.0625 mm	%		4.9	
Fine <0.0625 mm	%		7.2	
Sand 0.0625 to <2.0 mm	%		93.6	
Granule 2.0 to <4.0 mm	%		0	
General Sediment Quality Constituents			**Sediment**	
Ammonia-N (dry weight)	mg/kg dw		20.0	
Percent Moisture	%		23.2	
Total Organic Carbon (TOC)	%		0.22	
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	DNQ	DNQ	5.4
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 56. Mugu Lagoon - Central Part Of The Western Arm (01_BPT_14) continued

Constituent	Units		Event 28 8/18/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND
Metals and Selenium in Sediment			**Sediment**	
Total Arsenic	µg/g dw		4.191	
Total Cadmium	µg/g dw		0.294	
Total Copper	µg/g dw		4.97	
Total Lead	µg/g dw		3.31	
Total Mercury	µg/g dw		0.0149	
Total Nickel	µg/g dw		7.46	
Total Zinc	µg/g dw		22.264	
Total Selenium	µg/g dw		0.232	

FRESHWATER SEDIMENT SAMPLING DATA

Table 57. Arroyo Simi – Hitch Boulevard (07_HITCH)

Constituent	Units		Event 28 8/3/2011	
Grain Size Analysis				
Clay <0.0039 mm	%		0.1	
Silt 0.0039 to <0.0625 mm	%		3.4	
Fine <0.0625 mm	%		3.5	
Sand 0.0625 to <2.0 mm	%		96.6	
Granule 2.0 to <4.0 mm	%		0	
General Sediment Quality Constituents			**Sediment**	
Ammonia-N (dry weight)	mg/kg dw		5.59	
Percent Moisture	%		21.1	
Total Organic Carbon (TOC)	%		8.0	
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	ND	ND	ND
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	1415	ND	ND

Table 57. Arroyo Simi – Hitch Boulevard (07_HITCH) continued

Constituent	Units	Event 28 8/3/2011		
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 58. Conejo Creek – Howard Road Bridge (9A_HOWAR)

Constituent	Units	Event 28 8/4/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	11.7		
Silt 0.0039 to <0.0625 mm	%	33.3		
Fine <0.0625 mm	%	45		
Sand 0.0625 to <2.0 mm	%	54.6		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	6.73		
Percent Moisture	%	20.0		
Total Organic Carbon (TOC)	%	0.22		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	5.6	DNQ	DNQ
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 58. Conejo Creek – Howard Road Bridge (9A_HOWAR) continued

Constituent	Units		Event 28 8/4/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 59. Conejo Creek – Adolfo Road (9B_ADOLF)

Constituent	Units	Event 28 8/3/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	4.9		
Silt 0.0039 to <0.0625 mm	%	16.9		
Fine <0.0625 mm	%	21.8		
Sand 0.0625 to <2.0 mm	%	78.2		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	12.63		
Percent Moisture	%	30.2		
Total Organic Carbon (TOC)	%	0.68		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	ND	DNQ	DNQ
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	DNQ	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 59. Conejo Creek – Adolfo Road (9B_ADOLF) continued

Constituent	Units	Event 28 8/3/2011		
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 60. Arroyo Las Posas – Somis Road (06_SOMIS)

Constituent	Units	Event 28 8/3/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	3.7		
Silt 0.0039 to <0.0625 mm	%	9.4		
Fine <0.0625 mm	%	13.1		
Sand 0.0625 to <2.0 mm	%	86.8		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	0.52		
Percent Moisture	%	19.5		
Total Organic Carbon (TOC)	%	0.15		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	106.7	ND	ND
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	169.4	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 60. Arroyo Las Posas – Somis Road (06_SOMIS) continued

Constituent	Units	Event 28 8/3/2011		
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 61. Calleguas Creek – University Drive CSUCI (03_UNIV)

Constituent	Units	Event 28 8/4/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	4.0		
Silt 0.0039 to <0.0625 mm	%	18.9		
Fine <0.0625 mm	%	22.9		
Sand 0.0625 to <2.0 mm	%	77.0		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	34.25		
Percent Moisture	%	25.1		
Total Organic Carbon (TOC)	%	0.62		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	ND	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	DNQ	DNQ	5.1
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	ND	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 61. Calleguas Creek – University Drive CSUCI (03_UNIV) continued

Constituent	Units	Event 28 8/3/2011		
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 62. Revolon Slough – Wood Road (04_WOOD)

Constituent	Units	Event 28 8/4/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	3.2		
Silt 0.0039 to <0.0625 mm	%	10.3		
Fine <0.0625 mm	%	13.5		
Sand 0.0625 to <2.0 mm	%	86.1		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	8.89		
Percent Moisture	%	24.9		
Total Organic Carbon (TOC)	%	0.45		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	DNQ	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	7.3	ND	DNQ
4,4'-DDD	ng/g dw	ND	DNQ	5.7
4,4'-DDE	ng/g dw	35.9	31.6	39.2
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	DNQ	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 62. Revolon Slough – Wood Road (04_WOOD) continued

Constituent	Units		Event 28 8/4/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	15.5	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

Table 63. Calleguas Creek – Hwy 1 Bridge (02_PCH)

Constituent	Units	Event 28 8/3/2011		
Grain Size Analysis				
Clay <0.0039 mm	%	5.7		
Silt 0.0039 to <0.0625 mm	%	13.3		
Fine <0.0625 mm	%	19.0		
Sand 0.0625 to <2.0 mm	%	80.2		
Granule 2.0 to <4.0 mm	%	<1		
General Sediment Quality Constituents		**Sediment**		
Ammonia-N (dry weight)	mg/kg dw	46.28		
Percent Moisture	%	20.9		
Total Organic Carbon (TOC)	%	0.55		
Organic Constituents in Sediment				
OC Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Aldrin	ng/g dw	ND	ND	ND
Alpha-BHC (HCH)	ng/g dw	ND	ND	ND
Beta-BHC (HCH)	ng/g dw	ND	ND	ND
Gamma-BHC (HCH)	ng/g dw	ND	ND	ND
Delta-BHC (HCH)	ng/g dw	ND	ND	ND
Chlordane-alpha	ng/g dw	ND	ND	ND
Chlordane-gamma	ng/g dw	ND	ND	ND
Total Chlordane	ng/g dw	ND	ND	ND
2,4'-DDD	ng/g dw	ND	ND	ND
2,4'-DDE	ng/g dw	ND	ND	ND
2,4'-DDT	ng/g dw	DNQ	ND	ND
4,4'-DDD	ng/g dw	ND	ND	ND
4,4'-DDE	ng/g dw	11.9	DNQ	DNQ
4,4'-DDT	ng/g dw	ND	ND	ND
Dieldrin	ng/g dw	ND	ND	ND
Endosulfan I	ng/g dw	ND	ND	ND
Endosulfan II	ng/g dw	ND	ND	ND
Endosulfan Sulfate	ng/g dw	ND	ND	ND
Endrin	ng/g dw	ND	ND	ND
Endrin Aldehyde	ng/g dw	ND	ND	ND
Endrin Ketone	ng/g dw	ND	ND	ND
Toxaphene	ng/g dw	DNQ	ND	ND
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1016	ng/g dw	ND	ND	ND
Aroclor 1221	ng/g dw	ND	ND	ND

Table 63. Calleguas Creek – Hwy 1 Bridge (02_PCH) continued

Constituent	Units		Event 28 8/3/2011	
PCBs		**<63 µm**	**63µm to 2mm**	**Sediment**
Aroclor 1232	ng/g dw	ND	ND	ND
Aroclor 1242	ng/g dw	ND	ND	ND
Aroclor 1248	ng/g dw	ND	ND	ND
Aroclor 1254	ng/g dw	ND	ND	ND
Aroclor 1260	ng/g dw	ND	ND	ND
OP Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Chlorpyrifos	ng/g dw	ND	ND	ND
Diazinon	ng/g dw	ND	ND	ND
Malathion	ng/g dw	ND	ND	ND
Pyrethroid Pesticides		**<63 µm**	**63µm to 2mm**	**Sediment**
Bifenthrin	ng/g dw	ND	ND	ND
Cyfluthrin	ng/g dw	ND	ND	ND
Cypermethrin	ng/g dw	ND	ND	ND
Deltamethrin	ng/g dw	ND	ND	ND
Permethrin	ng/g dw	ND	ND	ND

MUGU LAGOON TISSUE DATA

Table 64. Mugu Lagoon - Central Part Lagoon (Central Lagoon)

Sample Date: 8/18/2011

Constituent	Units	Composite Mussel Sample
Lipids in Mussel Tissue		
Percent Lipids	%	1.72
Organic Constituents in Mussel Tissue		
OC Pesticides		
Aldrin	ng/g ww	ND
Alpha-BHC (HCH)	ng/g ww	ND
Beta-BHC (HCH)	ng/g ww	ND
Gamma-BHC (HCH)	ng/g ww	ND
Delta-BHC (HCH)	ng/g ww	ND
Chlordane-alpha	ng/g ww	DNQ
Chlordane-gamma	ng/g ww	ND
2,4'-DDD	ng/g ww	DNQ
2,4'-DDE	ng/g ww	DNQ
2,4'-DDT	ng/g ww	9.4
4,4'-DDD	ng/g ww	ND
4,4'-DDE	ng/g ww	118.2
4,4'-DDT	ng/g ww	ND
Dieldrin	ng/g ww	ND
Endosulfan I	ng/g ww	ND
Endosulfan II	ng/g ww	ND
Endosulfan Sulfate	ng/g ww	ND
Endrin	ng/g ww	ND
Endrin Aldehyde	ng/g ww	ND
Endrin Ketone	ng/g ww	ND
Toxaphene	ng/g ww	DNQ
PCBs(1)		
Congener 8	ng/g ww	ND
Congener 18	ng/g ww	ND
Congener 28	ng/g ww	ND
Congener 44	ng/g ww	ND
Congener 52	ng/g ww	ND
Congener 60	ng/g ww	ND
Congener 101	ng/g ww	1.5
Congener 105	ng/g ww	ND
Congener 114	ng/g ww	ND
Congener 128	ng/g ww	ND
Congener 138	ng/g ww	2.4

Table 64. Mugu Lagoon - Central Part Lagoon (Central Lagoon) (continued)

Sample Date: 8/18/2011

Constituent	Units	Composite Mussel Sample
PCBs[(1)]		
Congener 153	ng/g ww	5.5
Congener 170	ng/g ww	ND
Congener 180	ng/g ww	ND
Congener 185	ng/g ww	NM
Congener 195	ng/g ww	ND
Congener 206	ng/g ww	ND
Congener 209	ng/g ww	ND
Metals and Selenium in Mussel Tissue		
Total Mercury	ng/g ww	0.0039
Total Selenium	ng/g ww	0.832

1. Refer to the electronic data files submitted with this report for analysis results of all PCB congeners.

Table 65. Mugu Lagoon - Western Arm Of The Lagoon (Western Arm)

Sample Date: 8/18/2011

Constituent	Units	Composite Mussel Sample
Lipids in Mussel Tissue		
Percent Lipids	%	1.01
Organic Constituents in Mussel Tissue		
OC Pesticides		
Aldrin	ng/g ww	ND
Alpha-BHC (HCH)	ng/g ww	ND
Beta-BHC (HCH)	ng/g ww	ND
Gamma-BHC (HCH)	ng/g ww	ND
Delta-BHC (HCH)	ng/g ww	ND
Chlordane-alpha	ng/g ww	ND
Chlordane-gamma	ng/g ww	ND
2,4'-DDD	ng/g ww	DNQ
2,4'-DDE	ng/g ww	DNQ
2,4'-DDT	ng/g ww	DNQ
4,4'-DDD	ng/g ww	ND
4,4'-DDE	ng/g ww	105.3
4,4'-DDT	ng/g ww	ND
Dieldrin	ng/g ww	ND
Endosulfan I	ng/g ww	ND
Endosulfan II	ng/g ww	ND
Endosulfan Sulfate	ng/g ww	ND
Endrin	ng/g ww	ND
Endrin Aldehyde	ng/g ww	ND
Endrin Ketone	ng/g ww	ND
Toxaphene	ng/g ww	ND
PCBs[(1)]		
Congener 8	ng/g ww	ND
Congener 18	ng/g ww	ND
Congener 28	ng/g ww	ND
Congener 44	ng/g ww	ND
Congener 52	ng/g ww	ND
Congener 60	ng/g ww	ND
Congener 101	ng/g ww	ND
Congener 105	ng/g ww	ND
Congener 114	ng/g ww	ND
Congener 128	ng/g ww	ND
Congener 138	ng/g ww	3.3
Congener 153	ng/g ww	ND
Congener 170	ng/g ww	ND
Congener 180	ng/g ww	ND
Congener 185	ng/g ww	NM
Congener 195	ng/g ww	ND

Table 65. Mugu Lagoon - Western Arm Of The Lagoon (Western Arm) (continued)

Sample Date: 8/18/2011

Constituent	Units	Composite Mussel Sample
PCBs(1)		
Congener 206	ng/g ww	ND
Congener 209	ng/g ww	ND
Metals and Selenium in Mussel Tissue		
Total Mercury	ng/g ww	0.0119
Total Selenium	ng/g ww	0.48

1. Refer to the electronic data files submitted with this report for analysis results of all PCB congeners.

MUGU LAGOON TISSUE DATA

As per the CCWTMP QAPP, mercury and selenium are to be measured in bird eggs collected from around Mugu Lagoon every three years. A total of twenty eggs were collected by Naval Base Ventura County environmental staff. The sample consisted of fourteen eggs from least terns and six from snowy plover nests collected between July 26th and July 29th, 2011. Results from this egg collection can be found in the table below.

Table 66. Mugu Lagoon – Composite Sample for 20 Bird Eggs

Sample Date: 7/25/2011 - 7/29/2011

Constituent	Units	Concentration
Metals and Selenium in Bird Eggs		
Total Mercury	ng/g ww	0.171
Total Selenium	ng/g ww	0.736

FRESHWATER TISSUE DATA

Table 67. Calleguas Creek – University Drive CSUCI (03_UNIV)

Constituent	Units	Common carp (*Cyprinus carpio*)
Sample Date: 8/25/2011		
Lipids in Fish Tissue		
Percent Lipids	%	1.89
Organic Constituents in Fish Tissue		
OC Pesticides		
Aldrin	ng/g ww	ND
Alpha-BHC (HCH)	ng/g ww	ND
Beta-BHC (HCH)	ng/g ww	ND
Gamma-BHC (HCH)	ng/g ww	ND
Delta-BHC (HCH)	ng/g ww	ND
Chlordane-alpha	ng/g ww	DNQ
Chlordane-gamma	ng/g ww	ND
2,4'-DDD	ng/g ww	DNQ
2,4'-DDE	ng/g ww	ND
2,4'-DDT	ng/g ww	8.5
4,4'-DDD	ng/g ww	ND
4,4'-DDE	ng/g ww	125.3
4,4'-DDT	ng/g ww	ND
Dieldrin	ng/g ww	ND
Endosulfan I	ng/g ww	ND
Endosulfan II	ng/g ww	ND
Endosulfan Sulfate	ng/g ww	ND
Endrin	ng/g ww	ND
Endrin Aldehyde	ng/g ww	ND
Endrin Ketone	ng/g ww	ND
Toxaphene	ng/g ww	DNQ
PCBs[(1)]		
Congener 8	ng/g ww	ND
Congener 18	ng/g ww	ND
Congener 28	ng/g ww	ND
Congener 44	ng/g ww	ND
Congener 52	ng/g ww	ND
Congener 60	ng/g ww	ND
Congener 101	ng/g ww	ND
Congener 105	ng/g ww	ND
Congener 114	ng/g ww	ND
Congener 128	ng/g ww	ND
Congener 138	ng/g ww	1.1
Congener 153	ng/g ww	1.3
Congener 170	ng/g ww	ND
Congener 180	ng/g ww	ND

Table 67. Calleguas Creek – University Drive CSUCI (03_UNIV) (continued)

Sample Date: 8/25/2011

Constituent	Units	Common carp (*Cyprinus carpio*)
PCBs[(1)]		
Congener 185	ng/g ww	NM
Congener 195	ng/g ww	ND
Congener 206	ng/g ww	ND
Congener 209	ng/g ww	ND

1. Refer to the electronic data files submitted with this report for analysis results of all PCB congeners.

Table 68. Conejo Creek – Adolfo Road (9B_ADOLF)

Sample Date: 8/25/2011

Constituent	Units	Common carp (*Cyprinus carpio*)
Lipids in Fish Tissue		
Percent Lipids	%	2.4
Organic Constituents in Fish Tissue		
OC Pesticides		
Aldrin	ng/g ww	ND
Alpha-BHC (HCH)	ng/g ww	ND
Beta-BHC (HCH)	ng/g ww	ND
Gamma-BHC (HCH)	ng/g ww	ND
Delta-BHC (HCH)	ng/g ww	ND
Chlordane-alpha	ng/g ww	DNQ
Chlordane-gamma	ng/g ww	DNQ
2,4'-DDD	ng/g ww	ND
2,4'-DDE	ng/g ww	ND
2,4'-DDT	ng/g ww	DNQ
4,4'-DDD	ng/g ww	ND
4,4'-DDE	ng/g ww	49.3
4,4'-DDT	ng/g ww	ND
Dieldrin	ng/g ww	ND
Endosulfan I	ng/g ww	ND
Endosulfan II	ng/g ww	ND
Endosulfan Sulfate	ng/g ww	ND
Endrin	ng/g ww	ND
Endrin Aldehyde	ng/g ww	ND
Endrin Ketone	ng/g ww	ND
Toxaphene	ng/g ww	DNQ
PCBs[(1)]		
Congener 8	ng/g ww	ND
Congener 18	ng/g ww	ND
Congener 28	ng/g ww	ND
Congener 44	ng/g ww	ND
Congener 52	ng/g ww	ND
Congener 60	ng/g ww	ND
Congener 101	ng/g ww	ND
Congener 105	ng/g ww	ND
Congener 114	ng/g ww	ND
Congener 128	ng/g ww	ND
Congener 138	ng/g ww	ND
Congener 153	ng/g ww	ND
Congener 170	ng/g ww	ND
Congener 180	ng/g ww	ND
Congener 185	ng/g ww	NM

Table 68. Conejo Creek – Adolfo Road (9B_ADOLF) (continued)

Sample Date: 8/25/2011

Constituent	Units	Common carp (*Cyprinus carpio*)
PCBs(1)		
Congener 195	ng/g ww	ND
Congener 206	ng/g ww	ND
Congener 209	ng/g ww	ND

1. Refer to the electronic data files submitted with this report for analysis results of all PCB congeners.

Table 69. Revolon Slough (04_WOOD)

Sample Date: 8/25/2011

Constituent	Units	Common carp (*Cyprinus carpio*)
Lipids in Fish Tissue		
Percent Lipids	%	2.64
Organic Constituents in Fish Tissue		
OC Pesticides		
Aldrin	ng/g ww	ND
Alpha-BHC (HCH)	ng/g ww	ND
Beta-BHC (HCH)	ng/g ww	ND
Gamma-BHC (HCH)	ng/g ww	ND
Delta-BHC (HCH)	ng/g ww	ND
Chlordane-alpha	ng/g ww	9.3
Chlordane-gamma	ng/g ww	5.5
2,4'-DDD	ng/g ww	14.9
2,4'-DDE	ng/g ww	DNQ
2,4'-DDT	ng/g ww	66.7
4,4'-DDD	ng/g ww	ND
4,4'-DDE	ng/g ww	818.5
4,4'-DDT	ng/g ww	8.5
Dieldrin	ng/g ww	ND
Endosulfan I	ng/g ww	ND
Endosulfan II	ng/g ww	ND
Endosulfan Sulfate	ng/g ww	ND
Endrin	ng/g ww	ND
Endrin Aldehyde	ng/g ww	ND
Endrin Ketone	ng/g ww	ND
Toxaphene	ng/g ww	205.59
PCBs(1)		
Congener 8	ng/g ww	ND
Congener 18	ng/g ww	ND
Congener 28	ng/g ww	ND
Congener 44	ng/g ww	ND
Congener 52	ng/g ww	ND
Congener 60	ng/g ww	ND
Congener 101	ng/g ww	ND
Congener 105	ng/g ww	ND
Congener 114	ng/g ww	ND
Congener 128	ng/g ww	ND
Congener 138	ng/g ww	ND
Congener 153	ng/g ww	1.1
Congener 170	ng/g ww	ND
Congener 180	ng/g ww	ND
Congener 185	ng/g ww	NM
Congener 195	ng/g ww	ND

Table 69. Revolon Slough (04_WOOD) (continued)

Sample Date: 8/25/2011

Constituent	Units	Common carp (*Cyprinus carpio*)
PCBs(1)		
Congener 206	ng/g ww	ND
Congener 209	ng/g ww	ND
Metals and Selenium in Fish Tissue		
Total Mercury	ng/g ww	0.0036
Total Selenium	ng/g ww	2.687

1. Refer to the electronic data files submitted with this report for analysis results of all PCB congeners.

MUGU LAGOON WATER QUALITY DATA

Table 70. Mugu Lagoon – Central Part of the Western Arm (01_BPT_14)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 31 Dry 2/23/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		8.31	8.42	8.17	7.97
Temperature	°C	17.67	15.05	13.56	13.69
Dissolved Oxygen	mg/L	8.22	7.41	9.21	8.98
Electrical Conductivity	µS/cm	50900	49300	50700	50400
TSS	mg/L	5.1	DNQ	7.3	DNQ
DOC	mg/L	0.63	0.63	DNQ	0.55
Metals & Selenium in Water					
Dissolved Copper	µg/L	0.17	0.25	0.51	DNQ
Total Copper	µg/L	0.36	0.74	0.98	0.57
Dissolved Mercury	µg/L	ND	NR	ND	0.0011
Total Mercury	µg/L	ND	0.0047	ND	0.0025
Dissolved Nickel	µg/L	0.292	0.55	0.3	0.46
Total Nickel	µg/L	0.461	1.179	0.533	0.84
Dissolved Zinc	µg/L	2.253	2.275	2.419	4.33
Total Zinc	µg/L	2.2	2.399	3.452	5.93
Dissolved Selenium	µg/L	ND	DNQ	DNQ	DNQ
Total Selenium	µg/L	0.05	0.04	0.02	DNQ

Note: field measurements are from the surface depth

Table 71. Mugu Lagoon – Central Lagoon (01_BPT_15)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 31 Dry 2/23/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		8.16	7.67	7.67	7.8
Temperature	°C	17.3	15.06	13.09	12.32
Dissolved Oxygen	mg/L	8.25	8.33	8.69	9.51
Electrical Conductivity	µS/cm	50800	29,900	50,700	50,900
TSS	mg/L	DNQ	DNQ	DNQ	DNQ
DOC	mg/L	0.66	1.2	DNQ	0.72
Metals & Selenium in Water					
Dissolved Copper	µg/L	0.18	1.03	0.39	DNQ
Total Copper	µg/L	0.25	1.46	1.09	DNQ
Dissolved Mercury	µg/L	ND	NR	ND	DNQ
Total Mercury	µg/L	ND	0.0015	ND	0.0015
Dissolved Nickel	µg/L	0.271	1.892	0.256	0.29
Total Nickel	µg/L	0.322	3.413	0.382	0.37
Dissolved Zinc	µg/L	2.07	4.208	7.508	2.84
Total Zinc	µg/L	1.44	4.334	7.832	3.19
Dissolved Selenium	µg/L	ND	0.11	DNQ	ND
Total Selenium	µg/L	ND	0.11	DNQ	ND

Note: field measurements are from the surface depth

Table 72. Mugu Lagoon – Eastern Arm (01_BPT_3)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 31 Dry 2/23/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		8.17	7.81	8.01	7.91
Temperature	°C	17.27	15.04	13.06	12.39
Dissolved Oxygen	mg/L	8.28	8.38	8.42	9.58
Electrical Conductivity	µS/cm	50800	38,000	50,800	51,000
TSS	mg/L	DNQ	DNQ	DNQ	DNQ
DOC	mg/L	0.65	1.2	DNQ	DNQ
Metals & Selenium in Water					
Dissolved Copper	µg/L	0.17	0.9	0.55	DNQ
Total Copper	µg/L	0.38	1.59	0.57	DNQ
Dissolved Mercury	µg/L	ND	NR	ND	DNQ
Total Mercury	µg/L	ND	0.0031	ND	0.0013
Dissolved Nickel	µg/L	0.26	2.176	0.275	0.28
Total Nickel	µg/L	0.511	3.983	0.384	0.37
Dissolved Zinc	µg/L	2.192	3.867	3.744	1.79
Total Zinc	µg/L	2.119	4.463	4.19	2.05
Dissolved Selenium	µg/L	ND	0.14	DNQ	ND
Total Selenium	µg/L	0.05	0.14	DNQ	ND

Note: field measurements are from the surface depth

Table 73. Mugu Lagoon – Eastern Part of the Western Arm (01_BPT_6)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 31 Dry 2/23/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		8.35	8.08	8.3	8.05
Temperature	°C	17.86	15.21	14.26	13.48
Dissolved Oxygen	mg/L	8.17	7.66	9.94	10.32
Electrical Conductivity	µS/cm	50900	50200	50700	50800
TSS	mg/L	DNQ	DNQ	DNQ	DNQ
DOC	mg/L	0.68	DNQ	DNQ	DNQ
Metals & Selenium in Water					
Dissolved Copper	µg/L	0.16	0.23	0.34	DNQ
Total Copper	µg/L	0.36	0.68	0.45	0.58
Dissolved Mercury	µg/L	ND	NR	ND	DNQ
Total Mercury	µg/L	ND	0.0012	ND	0.0019
Dissolved Nickel	µg/L	0.257	0.351	0.317	0.33
Total Nickel	µg/L	0.403	0.653	0.485	0.55
Dissolved Zinc	µg/L	1.517	3.059	2.496	7.9
Total Zinc	µg/L	1.585	3.045	3.527	9.13
Dissolved Selenium	µg/L	0.04	ND	0.02	DNQ
Total Selenium	µg/L	0.03	0.05	0.02	DNQ

Note: field measurements are from the surface depth

Table 74. Mugu Lagoon – Central Lagoon, South of Drain #7 (01_SG_74)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 31 Dry 2/23/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		8.38	7.66	8.23	8.1
Temperature	°C	20.81	16.97	14.71	13
Dissolved Oxygen	mg/L	11.5	10.2	9.06	8.08
Electrical Conductivity	µS/cm	50700	48300	50800	50600
TSS	mg/L	10.5	8.7	12.2	DNQ
DOC	mg/L	0.99	0.76	DNQ	DNQ
Metals & Selenium in Water					
Dissolved Copper	µg/L	0.4	0.94	0.68	0.31
Total Copper	µg/L	1.1	1.82	0.47	0.58
Dissolved Mercury	µg/L	ND	NR	ND	0.0011
Total Mercury	µg/L	ND	0.0018	ND	0.0024
Dissolved Nickel	µg/L	0.525	0.927	0.305	0.38
Total Nickel	µg/L	0.9	2.384	0.459	0.62
Dissolved Zinc	µg/L	12.139	39.932	1.92	1.11
Total Zinc	µg/L	15.022	46.048	2.085	2.79
Dissolved Selenium	µg/L	DNQ	0.04	0.02	DNQ
Total Selenium	µg/L	0.04	0.07	0.02	DNQ

Note: field measurements are from the surface depth

Table 75. Mugu Lagoon – Oxnard Drain #2 S. of Hueneme Rd (01T_ODD2_DCH)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	2.4306	6.53		NM		6.01296	NM	2.9185
pH		7.81	7.73		7.64		7.76	7.42	7.99
Temperature	°C	21.43	18.11		12.13		15.4	14.16	23.35
Dissolved Oxygen	mg/L	9.42	8.66		8.17		9.27	13.78	16.23
Electrical Conductivity	µS/cm	3750	3390		1157		4120	1650	3740
TSS	mg/L	DNQ	34		704		DNQ	656	ND
Total Hardness	mg/L	1972.5	1593.1		522.5		2208.6	942.5	1985.3
Nutrients									
Ammonia-N	mg/L	NM	NM		NM		DNQ	0.15	DNQ
Nitrate-N	mg/L	NM	NM		NM		68.15	30.78	47.46
Nitrite-N	mg/L	NM	NM		NM		0.07	0.14	0.41
Organic N	mg/L	NM	NM		NM		1.16	4.05	0.05
TKN	mg/L	NM	NM		NM		1.2	4.2	DNQ
Total Phosphorus-P	mg/L	NM	NM		NM		0.115	3.614	0.141
Orthophosphate-P	mg/L	NM	NM		NM		0.296	0.868	ND
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	0.0147	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	0.009	ND	DNQ	ND	0.0081	ND

Table 75. Mugu Lagoon – Oxnard Drain #2 S. of Hueneme Rd (01T_ODD2_DCH) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-gamma	µg/L	ND	ND	0.009	ND	ND	ND	0.0076	ND
Total Chlordane	µg/L	ND	ND	0.0175	ND	ND	ND	0.0157	ND
2,4'-DDD	µg/L	ND	ND	0.009	ND	ND	ND	0.0202	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDT	µg/L	ND	ND	0.03	ND	ND	ND	0.0387	ND
4,4'-DDD	µg/L	ND	ND	0.03	DNQ	ND	ND	0.0883	ND
4,4'-DDE	µg/L	0.0077	0.0149	0.208	0.007	ND	DNQ	0.1834	0.012
4,4'-DDT	µg/L	ND	ND	0.129	DNQ	0.0184	DNQ	0.2606	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.2123	DNQ	0.07	DNQ	ND	DNQ	0.3249	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 75. Mugu Lagoon – Oxnard Drain #2 S. of Hueneme Rd (01T_ODD2_DCH) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0063	0.4	0.012	0.51	0.0257	0.1094	0.0069
Diazinon	µg/L	ND	ND	ND	ND	0.0239	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	0.1233	ND	0.1041	0.02
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	DNQ	0.918	0.009	0.1437	DNQ	0.4302	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Cypermethrin	µg/L	ND	ND	0.006	ND	ND	0.002	0.0456	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	2.43	3.2		2.17		3.32	9.95	3.2
Total Copper	µg/L	2.68	5.7		64.18		3.87	43.12	3.38
Dissolved Mercury	µg/L	DNQ	0.0029		0.003		0.0015	0.003	0.0012
Total Mercury	µg/L	0.0011	0.0017		0.051		0.002	0.0271	0.0015
Dissolved Nickel	µg/L	9.02	6.5		4.8		8.25	6.21	8.19
Total Nickel	µg/L	9.21	7.3		33		8.74	22.08	8.23
Dissolved Zinc	µg/L	4.76	3.2		9.45		4.65	19.29	3.4
Total Zinc	µg/L	4.14	9.4		200.8		5.55	173.61	4.47
Dissolved Selenium	µg/L	5.25	7		1		6.66	2.69	5.34
Total Selenium	µg/L	5.1	7.2		1.37		6.83	3.04	6.71

Table 76. Mugu Lagoon – Ronald Reagan Bridge (01_RR_BR)

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011		Event 30 Wet 1/23/2011		Event 31 Dry 2/23/2012	Event 32 Wet 3/18/2012	Event 33 Dry 5/3/2012
General Water Quality Constituents									
Flow	cfs	NM	NM		NM		NM	NM	NM
pH		8.19	7.61		7.92		8.14	8.02	7.8
Temperature	°C	18.34	15.01		12.93		13	13.30	13.27
Dissolved Oxygen	mg/L	9.27	8.52		8.79		10.25	8.18	9.13
Electrical Conductivity	µS/cm	47200	10900		5710		50700	6640	48800
TSS	mg/L	19.1	6.9		170.0		5.2	187	DNQ
DOC	mg/L	1.8	2.3		1.7		DNQ	6	0.57
Nutrients									
Ammonia-N	mg/L	ND	0.2		0.14		ND	0.1	0.58
Nitrate-N	mg/L	20.54	25.65		27.73		0.27	6.87	3.09
Nitrite-N	mg/L	0.18	0.06		0.07		ND	0.07	0.09
Nitrate-N + Nitrite-N	mg/L	20.72	25.71		27.80		0.27	6.94	3.18
Organic N	mg/L	0.4	0.6		1.26		0.03	1.3	0.0
TKN	mg/L	0.4	0.8		1.4		ND	1.4	DNQ
Total Phosphorus-P	mg/L	0.362	1.228		1.261		0.067	1.605	0.581
Orthophosphate-P	mg/L	0.306	0.79		0.462		0.0373	0.671	0.2245
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 76. Mugu Lagoon – Ronald Reagan Bridge (01_RR_BR) continued

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 30 Wet 1/23/2011			Event 31 Dry 2/23/2012	Event 32 Wet 3/18/2012	Event 33 Dry 5/3/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	DNQ	DNQ	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	DNQ	ND	ND	ND	ND	ND
Total Chlordane	µg/L	ND	ND	0.008	ND	ND	ND	0.0122	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	DNQ	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	0.021	ND	ND	ND	0.0479	ND
4,4'-DDD	µg/L	0.0115	0.0108	0.09	DNQ	ND	ND	0.1062	DNQ
4,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	DNQ	DNQ	DNQ	ND	ND	ND	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 76. Mugu Lagoon – Ronald Reagan Bridge (01_RR_BR) continued

Constituent	Units	Event 28 Dry 8/16/2011	Event 29 Dry 11/15/2011	Event 30 Wet 1/23/2011			Event 31 Dry 2/23/2012	Event 32 Wet 3/18/2012	Event 33 Dry 5/3/2012
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	0.0042	0.0908	0.0296	ND	0.157	ND	0.1459	DNQ
Diazinon	µg/L	ND	ND	ND	ND	0.062	ND	ND	ND
Malathion	µg/L	ND	0.0121	ND	ND	0.02	ND	ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.09	DNQ	0.007	DNQ	0.0273	DNQ
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	ND	0.0155	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.0059	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	1.11	2.24		1.67		0.56	3.04	0.38
Total Copper	µg/L	1.61	2.94		16.9		1.09	9.33	0.64
Dissolved Mercury	µg/L	ND	NR		0.001		ND	0.0026	0.0035
Total Mercury	µg/L	ND	0.002		0.013		ND	0.0116	0.0038
Dissolved Nickel	µg/L	2.611	4.788		5.31		0.262	2.78	0.85
Total Nickel	µg/L	2.848	5.824		17.7		0.365	8.22	1.04
Dissolved Zinc	µg/L	3.175	8.874		6.16		3.982	5.84	5.53
Total Zinc	µg/L	4.494	10.572		55.51		4.233	29.49	6.52
Dissolved Selenium	µg/L	0.1	0.25		6.64		ND	1.32	DNQ
Total Selenium	µg/L	0.13	0.27		6.96		DNQ	1.76	DNQ

FRESHWATER QUALITY DATA

General Water Quality Constituents, OC Pesticides, Metals, Nutrients

Table 77. Calleguas Creek – Discharge at Broome Ranch Rd. (02D_BROOM)

		Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
Constituent	Units	8/2/2011	11/9/2011		1/23/2012		2/1/2012	3/17/2012	5/23/2012
General Water Quality Constituents									
Flow	cfs	0.45	0.45		NM		0.45	NM	0.45
pH		7.55	8.04		7.79		7.93	7.53	7.93
Temperature	°C	21.86	18.47		13.87		14.27	14.6	21.66
Dissolved Oxygen	mg/L	8.48	9.55		7.63		10.02	8.22	13.13
Electrical Conductivity	µS/cm	3230	2860		3580		4310	4510	4160
TSS	mg/L	244	98.1		39.2		8	10.5	15
Total Hardness	mg/L	1296.2	1152.7		1743.6		1822.9	1755.3	1914.3
Nutrients									
Ammonia-N	mg/L	NM	NM		NM		DNQ	DNQ	DNQ
Nitrate-N	mg/L	NM	NM		NM		67.67	78.58	59.79
Nitrite-N	mg/L	NM	NM		NM		0.13	0.11	0.16
Nitrate-N + Nitrite-N	mg/L	NM	NM		NM		67.80	78.69	59.95
Organic N	mg/L	NM	NM		NM		0.77	0.85	0.005
TKN	mg/L	NM	NM		NM		0.8	0.9	ND
Total Phosphorus-P	mg/L	NM	NM		NM		0.245	0.466	0.311
Orthophosphate-P	mg/L	NM	NM		NM		0.282	0.155	0.473
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	0.4862	ND	ND	ND	ND	ND

Table 77. Calleguas Creek – Discharge at Broome Ranch Rd. (02D_BROOM) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Gamma-BHC (HCH)	µg/L	ND	ND	0.4514	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	0.0085	0.0058	ND	ND	ND	ND	ND	DNQ
Chlordane-gamma	µg/L	0.0079	DNQ	ND	ND	ND	ND	ND	ND
Total Chlordane	µg/L	0.0164	0.0058	ND	ND	ND	ND	ND	DNQ
2,4'-DDD	µg/L	0.0154	0.0105	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	0.0051	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	0.0103	0.0146	DNQ	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	0.0515	ND	ND	ND	DNQ	DNQ	ND	0.0052
4,4'-DDE	µg/L	0.2431	0.0929	0.0124	ND	0.0064	0.011	0.01	0.0255
4,4'-DDT	µg/L	0.0396	ND	DNQ	ND	ND	DNQ	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	0.6993	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.4487	0.0774	ND	ND	DNQ	0.0722	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 77. Calleguas Creek – Discharge at Broome Ranch Rd. (02D_BROOM) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0119	ND	ND	0.0024	DNQ	ND	DNQ
Diazinon	µg/L	0.0637	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	DNQ	0.0023	ND	ND	DNQ	DNQ	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND
Cypermethrin	µg/L	ND	ND	0.0035	ND	ND	0.0027	0.0024	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	0.9346	ND	ND	ND	ND	ND	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	131.94	2.9		2.7		1.96	2.83	3.28
Total Copper	µg/L	419.23	6.4		5.47		2.41	3.18	3.66
Dissolved Mercury	µg/L	ND	0.0011		DNQ		DNQ	0.0017	DNQ
Total Mercury	µg/L	0.0089	0.0033		0.0025		0.0014	ND	0.002
Dissolved Nickel	µg/L	7.42	8.2		10.38		10.57	8.38	10.45
Total Nickel	µg/L	16.81	11.3		13.1		11.22	9.74	11.14
Dissolved Zinc	µg/L	1.47	11.8		2.87		1.47	43.73	0.68
Total Zinc	µg/L	24.49	20.9		9.74		2.44	77.12	2.68
Dissolved Selenium	µg/L	7.28	9.9		9.39		10.26	9.83	13.38
Total Selenium	µg/L	8.44	9.9		9.52		10.64	11.01	13.4

Table 78. Calleguas Creek – Hwy 1 Bridge (02_PCH)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 31 Dry 2/1/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents					
Flow	cfs	NM	NM	NM	NM
pH		6.71	7.98	8.25	7.06
Temperature	°C	15.34	13.33	15.85	17.25
Dissolved Oxygen	mg/L	0.75	8.27	9.83	8.05
Electrical Conductivity	µS/cm	51000	42700	7830	6480
TSS	mg/L	20	31.7	11.2	32.5
Nutrients					
Ammonia-N	mg/L	0.38	0.09	0.07	0.18
Nitrate-N	mg/L	17.58	16.91	20.16	17.07
Nitrite-N	mg/L	ND	0.05	0.07	ND
Nitrate-N + Nitrite-N	mg/L	17.58	16.96	20.23	17.07
Organic N	mg/L	0.56	0.74	0.73	0.12
TKN	mg/L	0.94	0.83	0.8	DNQ
Total Phosphorus-P	mg/L	1.36	1.61	1.503	2.083
Orthophosphate-P	mg/L	1.119	1.37	1.322	2.049

Table 79. Calleguas Creek – University Drive CSUCI (03_UNIV)

Constituent	Units	Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
		8/2/2011	11/9/2011		1/23/2012		2/1/2012	3/17/2012	5/23/2012
General Water Quality Constituents									
Flow	cfs	5.01	5.99		NM		6.65	NM	7.40
pH		6.61	8.12		8.09		8.41	7.76	8.21
Temperature	°C	20.36	16.2		13.93		19.11	14.85	25.2
Dissolved Oxygen	mg/L	7.84	9.08		8.59		9.7	14.77	8.41
Electrical Conductivity	µS/cm	1690	1650		971		1590	795	1540
TSS	mg/L	DNQ	15.2		81.5		5.5	2192	8.1
Total Hardness	mg/L	477.6	440.3		297.7		461.2	182.5	420
Nutrients									
Ammonia-N	mg/L	DNQ	0.14		0.17		0.16	0.17	0.11
Nitrate-N	mg/L	7.64	7.99		5.91		8.55	6.9	5.79
Nitrite-N	mg/L	0.1	0.08		0.05		0.09	0.06	0.15
Nitrate-N + Nitrite-N	mg/L	7.74	8.07		5.96		8.64	6.96	5.94
Organic N	mg/L	0.79	1.1		1.13		1.04	7.13	0.007
TKN	mg/L	0.84	1.24		1.3		1.2	7.3	0.117
Total Phosphorus-P	mg/L	2.75	2.734		2.151		2.048	7.446	2.592
Orthophosphate-P	mg/L	2.312	2.653		1.733		1.996	1.344	2.894
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND

Table 79. Calleguas Creek – University Drive CSUCI (03_UNIV) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	0.0077	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDT	µg/L	ND	ND	DNQ	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	DNQ	ND	ND	ND	0.0429	ND
4,4'-DDE	µg/L	ND	ND	0.0405	DNQ	0.0085	DNQ	0.132	ND
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.0529	ND	DNQ	ND	ND	ND	0.0861	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 79. Calleguas Creek – University Drive CSUCI (03_UNIV) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	0.0146	ND	0.0703	0.0143	0.1395	ND
Diazinon	µg/L	ND	ND	ND	ND	0.008	ND	0.1876	0.0435
Malathion	µg/L	ND	ND	ND	ND	0.6858	ND	0.1462	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.0408	ND	0.003	DNQ	0.1472	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	ND	0.0143	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	ND	0.0319	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	ND	0.268	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	1.9	2.6		3.6		2.78	5.86	2.77
Total Copper	µg/L	1.94	3.2		8.26		3.35	84.17	3.25
Dissolved Mercury	µg/L	ND	ND		0.0013		0.0011	0.0024	DNQ
Total Mercury	µg/L	ND	ND		0.0063		0.0016	0.0996	0.0018
Dissolved Nickel	µg/L	5.97	5.6		3.82		5.4	3.59	5.22
Total Nickel	µg/L	6.5	6.2		7.97		5.81	74.55	5.78
Dissolved Zinc	µg/L	13.27	18.2		18.82		17.8	12.24	17.33
Total Zinc	µg/L	14.67	19.5		36.46		18.96	308.24	20.13
Dissolved Selenium	µg/L	2.26	3.9		1.27		1.5	0.51	1.06
Total Selenium	µg/L	2.96	4.3		1.21		1.55	1.08	1.15

Table 80. Revolon Slough – Wood Road (04_WOOD)

		Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
Constituent	Units	8/2/2011	11/9/2011		1/23/2012		2/1/2012	3/17/2012	5/23/2012
General Water Quality Constituents									
Flow	cfs	7.46	13.97		NM		9.16	NM	7.02
pH		8.14	8.31		7.9		8.09	7.73	8.3
Temperature	°C	29.25	18.9		12.5		11.25	13.88	29.9
Dissolved Oxygen	mg/L	14.94	10.42		8.2		11.3	68.1	12.23
Electrical Conductivity	µS/cm	4160	3620		3840		4570	2550	3640
TSS	mg/L	33.2	112.2		62		40.9	526	16.5
Total Hardness	mg/L	1764.8	1604.9		2048.4		2280.3	982.4	1643.4
Nutrients									
Ammonia-N	mg/L	0.09	0.1		0.24		0.07	0.24	0.19
Nitrate-N	mg/L	41.28	39.52		51.28		57.62	24.13	34.73
Nitrite-N	mg/L	0.28	0.19		0.09		0.1	0.24	0.21
Nitrate-N + Nitrite-N	mg/L	41.56	39.71		51.37		57.72	24.37	34.94
Organic N	mg/L	0.62	1.2		0.96		1.13	4.56	0.0
TKN	mg/L	0.71	1.3		1.2		1.2	4.8	0.145
Total Phosphorus-P	mg/L	0.32	0.389		0.303		0.075	2	0.11
Orthophosphate-P	mg/L	ND	0.188		ND		ND	ND	ND
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	DNQ	ND	ND	ND	ND	DNQ	ND

Table 80. Revolon Slough – Wood Road (04_WOOD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-gamma	µg/L	ND	DNQ	ND	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	DNQ	ND	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	0.0106	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	DNQ
2,4'-DDT	µg/L	ND	0.0179	DNQ	ND	ND	DNQ	ND	ND
4,4'-DDD	µg/L	ND	ND	DNQ	ND	ND	DNQ	0.0408	DNQ
4,4'-DDE	µg/L	0.0116	0.0677	0.0211	DNQ	ND	0.0136	0.0987	0.0166
4,4'-DDT	µg/L	ND	ND	0.0057	ND	ND	0.0065	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.1621	0.087	DNQ	ND	ND	0.0572	0.0983	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 80. Revolon Slough – Wood Road (04_WOOD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0269	DNQ	ND	0.024	0.0203	0.0373	0.0035
Diazinon	µg/L	0.0122	ND	ND	ND	0.0091	DNQ	ND	ND
Malathion	µg/L	ND	0.0614	ND	ND	0.0433	ND	ND	0.0102
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	0.012	0.0085	DNQ	ND	DNQ	0.0468	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.0616	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.1934	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	1.44	1.9		2.15		1.93	3.39	2.16
Total Copper	µg/L	3.01	5.9		6.11		3.34	18.39	3.04
Dissolved Mercury	µg/L	ND	ND		DNQ		0.0011	0.0017	DNQ
Total Mercury	µg/L	DNQ	0.0086		0.0041		0.0023	0.021	0.0014
Dissolved Nickel	µg/L	4.49	5.1		6.36		6.39	3.77	4.98
Total Nickel	µg/L	5.14	7		8.65		6.94	13.5	5.65
Dissolved Zinc	µg/L	1.32	2		2.46		1.47	22.64	0.46
Total Zinc	µg/L	4.53	14.9		15.19		4.56	150.27	2.59
Dissolved Selenium	µg/L	26.45	31.4		19.1		24.45	10.64	22.13
Total Selenium	µg/L	23.06	30.4		19.33		25.71	11.54	24.14

Table 81. Camarillo Hills Drain at Ventura Blvd. & Las Posas Rd. (04D_VENTURA)

		Event 28	Event 29	Event 30			Event 31	Event 32	Event 33
		Dry	Dry	Wet			Dry	Wet	Dry
Constituent	**Units**	**8/2/2011**	**11/9/2011**	**1/23/2012**			**2/1/2012**	**3/17/2012**	**5/23/2012**
General Water Quality Constituents									
Flow	cfs	0.12	0.21	NM			0.03	NM	0.06
pH		9.79	9.05	8.25			10.3	7.89	9.13
Temperature	°C	33.81	14.65	11.93			19.6	14.21	24.4
Dissolved Oxygen	mg/L	15.09	11.58	10.35			13.54	9.69	14.6
Electrical Conductivity	µS/cm	450	615	50			1138	108	1760
TSS	mg/L	56.4	7.2	82			39.1	101.7	18.5
Total Hardness	mg/L	231.4	162.6	20.4			314.3	19.4	445.8
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	0.0138	DNQ	ND	0.0052	0.0409	0.0143
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	0.0784	ND	0.0117

Table 81. Camarillo Hills Drain at Ventura Blvd. & Las Posas Rd. (04D_VENTURA) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.0532	ND	ND	ND	ND	0.051	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0067	ND	ND	0.0039	0.173	0.013	ND
Diazinon	µg/L	ND	ND	ND	ND	0.0044	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	0.0219	ND	0.143	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	0.0053	0.1339	0.0154	0.0028	0.0088	0.3499	ND
Cyfluthrin	µg/L	ND	ND	0.0098	DNQ	ND	0.0087	0.0413	ND
Cypermethrin	µg/L	ND	ND	ND	0.0035	ND	0.0059	ND	ND

Table 81. Camarillo Hills Drain at Ventura Blvd. & Las Posas Rd. (04D_VENTURA) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	0.7743	1.2072	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	6.42	4.1		3.25		16.16	5	14.18
Total Copper	µg/L	7.5	5.3		15.07		19.63	18.82	15.51
Dissolved Mercury	µg/L	0.0018	ND		0.002		0.0039	0.0039	0.0019
Total Mercury	µg/L	0.0017	ND		0.0139		0.0054	0.0174	0.0023
Dissolved Nickel	µg/L	1.56	1		0.77		2.34	0.59	2.17
Total Nickel	µg/L	1.75	1.2		5.16		3.11	5.42	2.21
Dissolved Zinc	µg/L	2.16	7.6		11.04		4.8	22.04	6.86
Total Zinc	µg/L	4.24	15		91.08		50.13	187.1	9.19
Dissolved Selenium	µg/L	0.58	3.1		DNQ		DNQ	DNQ	0.63
Total Selenium	µg/L	0.51	3.2		DNQ		0.25	DNQ	0.6

Table 82. Revolon Slough – Ag Drain, E. Side of Wood Rd N. of Revolon (04D_WOOD)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs		0.19	7.78			0.05	NM	
pH			8.09	7.45			8.26	7.90	
Temperature	°C		17.08	14.67			8.64	11.26	
Dissolved Oxygen	mg/L	NS Site Dry	9.14	9.75			17.84	10.55	NS Site Dry
Electrical Conductivity	µS/cm		2.33	2238			4670	431	
TSS	mg/L		120.4	408.8			17.7	2820.0	
Total Hardness	mg/L		917.8	845.0			2145.8	137.2	
Nutrients									
Ammonia-N	mg/L		NM	NM			3.13	30.6	
Nitrate-N	mg/L		NM	NM			63.83	45.11	
Nitrite-N	mg/L		NM	NM			0.05	0.35	
Nitrate-N + Nitrite-N	mg/L	NS Site Dry	NM	NM			63.88	45.46	NS Site Dry
Organic N	mg/L		NM	NM			2.27	1.6	
TKN	mg/L		NM	NM			5.4	32.2	
Total Phosphorus-P	mg/L		NM	NM			0.189	5.194	
Orthophosphate-P	mg/L		NM	NM			ND	3.615	
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L		ND	ND	ND	ND	ND	ND	
Alpha-BHC (HCH)	µg/L	NS Site Dry	ND	ND	ND	ND	ND	ND	NS Site Dry
Beta-BHC (HCH)	µg/L		ND	ND	ND	ND	ND	ND	
Gamma-BHC (HCH)	µg/L		ND	ND	ND	ND	ND	ND	

Table 82. Revolon Slough – Ag Drain, E. Side of Wood Rd N. of Revolon (04D_WOOD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Delta-BHC (HCH)	µg/L	NS Site Dry	ND	ND	ND	ND	ND	ND	NS Site Dry
Chlordane-alpha	µg/L		ND	DNQ	ND	ND	ND	DNQ	
Chlordane-gamma	µg/L		ND	DNQ	ND	ND	ND	DNQ	
Total Chlordane	µg/L		ND	DNQ	ND	ND	ND	DNQ	
2,4'-DDD	µg/L		ND	DNQ	ND	ND	DNQ	0.0222	
2,4'-DDE	µg/L		ND	ND	ND	ND	ND	DNQ	
2,4'-DDT	µg/L		ND	0.0086	ND	ND	ND	ND	
4,4'-DDD	µg/L		ND	0.0105	ND	ND	DNQ	0.0902	
4,4'-DDE	µg/L		0.0138	0.0906	0.0064	ND	0.0284	0.1847	
4,4'-DDT	µg/L		ND	0.0226	ND	ND	0.0081	ND	
Dieldrin	µg/L		ND	ND	ND	ND	ND	ND	
Endosulfan I	µg/L		ND	ND	ND	ND	ND	ND	
Endosulfan II	µg/L		ND	ND	ND	ND	ND	ND	
Endosulfan Sulfate	µg/L		ND	ND	ND	ND	ND	ND	
Endrin	µg/L		ND	ND	ND	ND	ND	ND	
Endrin Aldehyde	µg/L		ND	ND	ND	ND	ND	ND	
Endrin Ketone	µg/L		ND	ND	ND	ND	ND	ND	
Toxaphene	µg/L		DNQ	0.0554	ND	0.1718	0.282	0.2124	
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	NS Site Dry	ND	ND	ND	ND	ND	ND	NS Site Dry
Aroclor 1221	µg/L		ND	ND	ND	ND	ND	ND	
Aroclor 1232	µg/L		ND	ND	ND	ND	ND	ND	
Aroclor 1242	µg/L		ND	ND	ND	ND	ND	ND	
Aroclor 1248	µg/L		ND	ND	ND	ND	ND	ND	

Table 82. Revolon Slough – Ag Drain, E. Side of Wood Rd N. of Revolon (04D_WOOD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1254	µg/L	NS Site Dry	ND	ND	ND	ND	ND	ND	NS Site Dry
Aroclor 1260	µg/L		ND	ND	ND	ND	ND	ND	
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	NS Site Dry	0.0081	DNQ	ND	0.0713	0.0438	0.0183	NS Site Dry
Diazinon	µg/L		ND	ND	ND	0.0072	ND	ND	
Malathion	µg/L		ND	ND	ND	ND	ND	ND	
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	NS Site Dry	ND	0.0034	ND	ND	0.0021	0.006	NS Site Dry
Cyfluthrin	µg/L		ND	ND	ND	ND	0.0041	ND	
Cypermethrin	µg/L		0.0052	0.0215	ND	ND	0.0045	0.0463	
Deltamethrin	µg/L		ND	ND	ND	ND	ND	ND	
Permethrin	µg/L		ND	ND	ND	ND	ND	ND	
Metals & Selenium in Water									
Dissolved Copper	µg/L	NS Site Dry	5		4.45		4.11	12.43	NS Site Dry
Total Copper	µg/L		5.9		21.02		5.96	36.11	
Dissolved Mercury	µg/L		0.0097		0.002		0.0017	0.0026	
Total Mercury	µg/L		ND		0.0131		0.0035	0.0225	
Dissolved Nickel	µg/L		17.9		18.14		21.51	6.07	
Total Nickel	µg/L		18.4		31.46		23.08	19.48	
Dissolved Zinc	µg/L		2.6		4.11		0.88	6.41	
Total Zinc	µg/L		2.9		67.49		6.4	107.93	
Dissolved Selenium	µg/L		8.1		4.18		6.88	2.29	
Total Selenium	µg/L		8.4		4.28		6.88	2.54	

Table 83. Beardsley Wash – Central Avenue (05_CENTR)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2011	Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents							
Flow	cfs	2.03	2.53	NM	2.24	NM	1.53
pH		6.34	8.42	8.11	8.58	7.88	8.42
Temperature	°C	17.25	14.93	11.82	20.52	13.62	27
Dissolved Oxygen	mg/L	8.79	10.93	10.57	13.17	8.12	16.24
Electrical Conductivity	µS/cm	3120	3790	2850	2970	2100	2760
TSS	mg/L	101.5	48.5	249	5.4	2993	11.2
Nutrients							
Ammonia-N	mg/L	0.09	DNQ	0.15	ND	0.29	ND
Nitrate-N	mg/L	29.99	54.82	12.68	35.18	17.56	21.16
Nitrite-N	mg/L	0.22	0.08	0.06	0.05	2.05	0.2
Nitrate-N + Nitrite-N	mg/L	30.21	54.9	12.74	35.23	19.61	21.36
Organic N	mg/L	0.17	1.06	1.85	0.57	37.31	0.055
TKN	mg/L	0.26	1.11	2	0.6	37.6	DNQ
Total Phosphorus-P	mg/L	0.512	0.299	1.081	DNQ	8.7	0.07
Orthophosphate-P	mg/L	0.225	ND	0.405	ND	ND	ND

Table 84. Revolon Slough – Santa Clara Drain prior to confluence with Beardsley Channel (05D_SANT_VCWPD)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012	Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents							
Flow	cfs	1.30	1.99	NM	1.22	NM	0.52
pH		8.81	8.03	7.95	8.64	7.57	6.83
Temperature	°C	29.49	11.93	12.1	17.32	13.68	16.59
Dissolved Oxygen	mg/L	12.1	11.3	9.56	13.81	7.9	10.92
Electrical Conductivity	µS/cm	3000	3110	2900	3080	2650	3230
TSS	mg/L	6.9	315	63.5	DNQ	417	9.8
Total Hardness	mg/L	1182.7	1245.9	1300.1	1319.3	929.5	1408.4
Nutrients							
Ammonia-N	mg/L	NM	NM	NM	0.55	0.14	ND
Nitrate-N	mg/L	NM	NM	NM	40.1	35.52	34.3
Nitrite-N	mg/L	NM	NM	NM	0.16	0.24	0.09
Nitrate-N + Nitrite-N	mg/L	NM	NM	NM	40.26	35.76	34.39
Organic N	mg/L	NM	NM	NM	0.55	3.86	0.077
TKN	mg/L	NM	NM	NM	1.1	4	DNQ
Total Phosphorus-P	mg/L	NM	NM	NM	DNQ	19.5	DNQ
Orthophosphate-P	mg/L	NM	NM	NM	ND	0.227	ND

Organic Constituents in Water

OC Pesticides	Units	Event 28	Event 29	Event 30 <63µm	Event 30 63µm to 2mm	Event 30 Filtrate	Event 31	Event 32	Event 33
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 84. Revolon Slough – Santa Clara Drain prior to confluence with Beardsley Channel (05D_SANT_VCWPD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	0.0143	ND	ND	ND	ND	0.0166	ND
2,4'-DDE	µg/L	ND	DNQ	ND	ND	ND	ND	0.0064	ND
2,4'-DDT	µg/L	ND	0.1194	DNQ	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	DNQ	ND	ND	ND	0.0711	ND
4,4'-DDE	µg/L	ND	0.3606	0.0285	DNQ	ND	DNQ	0.2096	0.0136
4,4'-DDT	µg/L	ND	ND	0.0057	ND	ND	ND	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.1471	0.8311	ND	ND	ND	0.15	0.0669	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 84. Revolon Slough – Santa Clara Drain prior to confluence with Beardsley Channel (05D_SANT_VCWPD) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0498	0.0318	DNQ	0.2798	0.0197	0.1992	0.0022
Diazinon	µg/L	0.0114	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	0.4989	ND	ND	ND	0.0121	ND	DNQ
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	0.0053	0.0975	DNQ	0.0043	0.0021	0.0886	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	0.0022	0.0192	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	ND	0.0614	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	0.76	3.2		2.01		1.8	11.48	1.15
Total Copper	µg/L	1.02	20.2		5.73		2.12	25.97	1.41
Dissolved Mercury	µg/L	ND	0.0022		0.0024		0.0017	0.0031	0.0012
Total Mercury	µg/L	ND	0.0102		0.0058		0.0022	0.0131	DNQ
Dissolved Nickel	µg/L	1.77	1.8		2.83		2.13	3.41	1.75
Total Nickel	µg/L	2.01	9		5.5		2.22	11.65	2.06
Dissolved Zinc	µg/L	1.32	2.7		4.08		DNQ	26.46	0.33
Total Zinc	µg/L	DNQ	47.3		13.98		DNQ	163.73	1.41
Dissolved Selenium	µg/L	62.11	72.3		55.22		53.25	39.7	63.34
Total Selenium	µg/L	59.37	72.1		52.45		52.92	42.53	64.58

Table 85. Arroyo Las Posas – Somis Road (06_SOMIS)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	5.15	9.49		NM		10.95	NM	4.96
pH		8.16	8.18		7.7		8.23	7.95	8.25
Temperature	°C	25.66	11.98		13.7		16.98	14.47	19.71
Dissolved Oxygen	mg/L	7.58	9.46		9.95		9.2	8.95	8.48
Electrical Conductivity	µS/cm	1820	1730		1168		1800	1500	1800
TSS	mg/L	29.1	24.2		131.5		45	283	34.7
Nutrients									
Ammonia-N	mg/L	ND	ND		0.09		0.2	0.14	ND
Nitrate-N	mg/L	8.49	8.19		6.09		10.55	18.06	9.11
Nitrite-N	mg/L	DNQ	DNQ		DNQ		0.05	DNQ	0.05
Nitrate-N + Nitrite-N	mg/L	8.49	8.19		6.09		10.60	18.06	9.16
Organic N	mg/L	0.82	0.5		0.02		0.6	1.96	0.032
TKN	mg/L	0.85	0.53		1.1		0.8	2.1	DNQ
Total Phosphorus-P	mg/L	0.659	0.73		1.131		0.78	1.216	0.786
Orthophosphate-P	mg/L	0.618	0.714		0.745		0.72	1.031	0.822
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 85. Arroyo Las Posas – Somis Road (06_SOMIS) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	DNQ	0.0176	ND
4,4'-DDE	µg/L	ND	ND	0.0111	DNQ	ND	0.022	0.0427	0.0267
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	0.017	ND	0.007
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	DNQ	ND	ND	ND	ND	0.0609	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 85. Arroyo Las Posas – Somis Road (06_SOMIS) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	0.0052	ND	ND	0.0107	0.0134	0.1905	0.0045
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	0.0259
Malathion	µg/L	ND	ND	ND	ND	ND	ND	ND	DNQ
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.0062	ND	ND	DNQ	0.0177	ND
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.0282	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.0495	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	ND	ND	ND	DNQ	ND	ND

Table 86. Las Posas – Fox Canyon at Bradley Rd N of Hwy 118 (06T_FC_BR)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents									
Flow	cfs			NM				NM	0.003
pH				8.15				8.18	8.59
Temperature	°C	NS Site Dry	NS Site Dry	10.29			NS Site Dry	12.58	16.21
Dissolved Oxygen	mg/L			10.1				9.25	6.36
Electrical Conductivity	µS/cm			477				571	780
TSS	mg/L			1980.8				3057	43.9
Nutrients									
Ammonia-N	mg/L			NM				0.34	DNQ
Nitrate-N	mg/L			NM				6.61	1.77
Nitrite-N	mg/L			NM				0.27	0.11
Nitrate-N + Nitrite-N	mg/L	NS Site Dry	NS Site Dry	NM			NS Site Dry	6.88	1.88
Organic N	mg/L			NM				16.76	0.532
TKN	mg/L			NM				17.1	0.572
Total Phosphorus-P	mg/L			NM				17.92	0.957
Orthophosphate-P	mg/L			NM				0.506	1.199
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L			ND	ND	0.0315		ND	ND
Alpha-BHC (HCH)	µg/L			ND	ND	ND		ND	ND
Beta-BHC (HCH)	µg/L			ND	ND	ND		ND	ND
Gamma-BHC (HCH)	µg/L	NS Site Dry	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
Delta-BHC (HCH)	µg/L			ND	ND	ND		ND	ND
Chlordane-alpha	µg/L			DNQ	ND	ND		0.0109	ND
Chlordane-gamma	µg/L			DNQ	ND	ND		0.0075	ND

Table 86. Las Posas – Fox Canyon at Bradley Rd N of Hwy 118 (06T_FC_BR) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L			DNQ	ND	ND		0.00859	ND
2,4'-DDD	µg/L			ND	ND	ND		0.054	ND
2,4'-DDE	µg/L			ND	ND	ND		0.0173	ND
2,4'-DDT	µg/L			0.0183	ND	ND		ND	ND
4,4'-DDD	µg/L			0.0179	ND	0.0185		0.2372	ND
4,4'-DDE	µg/L			0.2185	0.0121	0.0217		0.8398	0.0253
4,4'-DDT	µg/L			0.0386	DNQ	ND		ND	0.0788
Dieldrin	µg/L	NS Site Dry	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
Endosulfan I	µg/L			ND	ND	ND		ND	ND
Endosulfan II	µg/L			ND	ND	ND		ND	ND
Endosulfan Sulfate	µg/L			ND	ND	ND		ND	ND
Endrin	µg/L			ND	ND	ND		ND	ND
Endrin Aldehyde	µg/L			ND	ND	ND		ND	ND
Endrin Ketone	µg/L			ND	ND	ND		ND	ND
Toxaphene	µg/L			0.106	DNQ	0.1751		0.2322	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L			ND	ND	ND		ND	ND
Aroclor 1221	µg/L			ND	ND	ND		ND	ND
Aroclor 1232	µg/L			ND	ND	ND		ND	ND
Aroclor 1242	µg/L	NS Site Dry	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
Aroclor 1248	µg/L			ND	ND	ND		ND	ND
Aroclor 1254	µg/L			ND	ND	ND		ND	ND
Aroclor 1260	µg/L			ND	ND	ND		ND	ND

Table 86. Las Posas – Fox Canyon at Bradley Rd N of Hwy 118 (06T_FC_BR) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	NS Site Dry	NS Site Dry	ND	ND	0.007	NS Site Dry	0.0114	ND
Diazinon	µg/L			ND	ND	ND		ND	ND
Malathion	µg/L			ND	ND	ND		ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	NS Site Dry	NS Site Dry	ND	ND	ND	NS Site Dry	0.0039	ND
Cyfluthrin	µg/L			ND	ND	ND		0.042	ND
Cypermethrin	µg/L			ND	ND	ND		ND	ND
Deltamethrin	µg/L			ND	ND	ND		ND	ND
Permethrin	µg/L			ND	ND	ND		0.9979	ND

Table 87. Arroyo Simi – Hitch Boulevard (07_HITCH)

		Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
Constituent	**Units**	**8/2/2011**	**11/9/2011**		**1/23/2012**		**2/1/2012**	**3/17/2012**	**5/23/2012**
General Water Quality Constituents									
Flow	cfs	12.93	16.92		NM		14.15	NM	9.45
pH		7.91	7.88		7.82		8.02	7.75	8.06
Temperature	°C	25.6	14.95		15.11		22.92	10.96	25.07
Dissolved Oxygen	mg/L	8.1	7.67		9.07		8.37	11.65	8.35
Electrical Conductivity	µS/cm	1800	1700		1780		1760	248	1910
TSS	mg/L	DNQ	5.2		7.3		10.3	756.7	8.7
Nutrients									
Ammonia-N	mg/L	ND	DNQ		0.25		0.13	0.17	DNQ
Nitrate-N	mg/L	9.98	9.71		6.27		10.95	3.09	10.16
Nitrite-N	mg/L	DNQ	DNQ		0.06		DNQ	DNQ	0.07
Nitrate-N + Nitrite-N	mg/L	9.98	9.71		6.33		10.95	3.09	10.23
Organic N	mg/L	0.62	0.67		1.75		0.57	2.73	0.0
TKN	mg/L	0.65	0.71		2.0		0.7	2.9	ND
Total Phosphorus-P	mg/L	0.913	0.935		1.526		0.846	1.33	0.944
Orthophosphate-P	mg/L	0.87	0.945		0.699		0.923	0.527	1.01
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND

Table 87. Arroyo Simi – Hitch Boulevard (07_HITCH) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	0.0148	ND	ND	ND	ND	DNQ
4,4'-DDD	µg/L	ND	ND	0.0135	ND	ND	0.0054	0.0494	ND
4,4'-DDE	µg/L	ND	ND	0.1746	0.0067	0.0088	DNQ	0.0595	0.0182
4,4'-DDT	µg/L	ND	ND	0.0305	ND	ND	ND	ND	0.0072
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	DNQ	ND	DNQ	ND	ND	ND	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 87. Arroyo Simi – Hitch Boulevard (07_HITCH) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	0.0146	ND	0.0274	0.0062	0.0405	0.0377
Diazinon	µg/L	ND	ND	ND	ND	0.0128	ND	0.0478	0.0481
Malathion	µg/L	ND	ND	ND	ND	ND	ND	0.0201	DNQ
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.0484	DNQ	ND	DNQ	0.47	ND
Cyfluthrin	µg/L	ND	ND	0.0039	ND	ND	DNQ	0.0652	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	0.2099	ND	ND	DNQ	0.6722	ND

Table 88. Arroyo Simi – Madera Avenue (07_MADER)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012	Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents							
Flow	cfs	4.67	3.90	NM	4.06	NM	1.84
pH		8.29	8.32	7.5	8.21	8.05	8.25
Temperature	°C	25.22	12.98	12.53	14.14	15.01	20.26
Dissolved Oxygen	mg/L	9.83	9.66	10.5	11.4	9.27	9.52
Electrical Conductivity	µS/cm	2490	2350	1146	2530	1720	2600
TSS	mg/L	DNQ	DNQ	123.0	DNQ	26.1	DNQ
Nutrients							
Ammonia-N	mg/L	0.06	0.11	0.24	0.14	0.34	DNQ
Nitrate-N	mg/L	4.02	4.94	3.33	4.99	2.64	4.16
Nitrite-N	mg/L	0.06	DNQ	DNQ	DNQ	DNQ	0.09
Nitrate-N + Nitrite-N	mg/L	4.08	4.94	3.33	4.99	2.64	4.25
Organic N	mg/L	0.62	0.61	4.46	0.26	1.36	0.002
TKN	mg/L	0.68	0.72	4.7	DNQ	1.7	DNQ
Total Phosphorus-P	mg/L	0.278	0.302	0.434	DNQ	0.121	0.086
Orthophosphate-P	mg/L	ND	ND	0.24	ND	0.131	ND

Table 89. Arroyo Simi –Flood Control Channel at County Trail Park (07D_CTP)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents									
Flow	cfs	0.08	0.03		NM		0.10	NM	0.07
pH		10.43	10.35		7.5		10.74	7.71	10.28
Temperature	°C	34.55	16.49		11.58		19.46	13.02	28.58
Dissolved Oxygen	mg/L	11.47	13.32		10.58		15.19	10.34	9.69
Electrical Conductivity	µS/cm	986	883		131		770	56	683
TSS	mg/L	11.2	8.3		16.4		5.1	144.5	14.7
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	DNQ	ND	ND	ND	0.007	ND
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	0.0463
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 89. Arroyo Simi –Flood Control Channel at County Trail Park (07D_CTP) continued

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	0.0023	ND	0.0163	ND
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	ND	ND	0.285	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	0.0335	0.0322	0.7857	0.0111	ND	0.0707	1.0674	0.145
Cyfluthrin	µg/L	ND	ND	0.1264	0.0034	ND	0.0095	0.2263	ND
Cypermethrin	µg/L	ND	ND	0.0056	ND	ND	DNQ	0.0092	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	0.5178	ND	ND	0.0574	1.4306	ND

Table 90. Arroyo Simi – 2nd corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd (07D_HITCH_LEVEE_2)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	0.018		NM				NM	0.00008
pH		8.06		7.6				7.79	8.22
Temperature	°C	26.77	NS Site Dry	10.47			NS Site Dry	12.65	23.01
Dissolved Oxygen	mg/L	6.74		11.2				10.39	8.43
Electrical Conductivity	µS/cm	1890		650				826	3740
TSS	mg/L	1362.0		3225.0				3210.0	21.8
Nutrients									
Ammonia-N	mg/L	NM		NM				0.72	13.98
Nitrate-N	mg/L	NM		NM				16.01	92.85
Nitrite-N	mg/L	NM		NM				0.15	0.54
Nitrate-N + Nitrite-N	mg/L	NM	NS Site Dry	NM			NS Site Dry	16.16	93.39
Organic N	mg/L	NM		NM				13.18	0.0
TKN	mg/L	NM		NM				13.9	0.346
Total Phosphorus-P	mg/L	NM		NM				18.61	1.818
Orthophosphate-P	mg/L	NM		NM				0.851	1.156
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND		ND	ND	0.0179		ND	ND
Alpha-BHC (HCH)	µg/L	ND		ND	ND	ND		ND	ND
Beta-BHC (HCH)	µg/L	ND	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
Gamma-BHC (HCH)	µg/L	ND		ND	ND	ND		0.0587	ND
Delta-BHC (HCH)	µg/L	ND		ND	ND	ND		ND	ND
Chlordane-alpha	µg/L	ND		ND	ND	ND		0.0932	0.0053

Table 90. Arroyo Simi – 2nd corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd (07D_HITCH_LEVEE_2) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-gamma	µg/L	ND	NS Site Dry	DNQ	ND	ND	NS Site Dry	0.0695	DNQ
Total Chlordane	µg/L	ND		DNQ	ND	ND		0.1627	0.0053
2,4'-DDD	µg/L	0.0975		0.0177	DNQ	ND		0.3811	0.007
2,4'-DDE	µg/L	0.066		0.0163	DNQ	ND		0.0902	0.0101
2,4'-DDT	µg/L	0.3502		0.0402	0.0072	0.0053		0.1789	0.0291
4,4'-DDD	µg/L	0.3806		0.062	DNQ	ND		1.6924	0.0099
4,4'-DDE	µg/L	3.6224		0.5124	0.0875	0.1473		4.7021	0.1914
4,4'-DDT	µg/L	2.0508		0.1164	0.0181	ND		0.3119	0.131
Dieldrin	µg/L	ND		ND	ND	ND		ND	ND
Endosulfan I	µg/L	ND		ND	ND	ND		ND	ND
Endosulfan II	µg/L	ND		ND	ND	ND		ND	ND
Endosulfan Sulfate	µg/L	ND		ND	ND	ND		ND	ND
Endrin	µg/L	ND		ND	ND	ND		ND	ND
Endrin Aldehyde	µg/L	ND		ND	ND	ND		ND	ND
Endrin Ketone	µg/L	ND		ND	ND	ND		ND	ND
Toxaphene	µg/L	3.2532		0.2065	DNQ	ND		0.6524	DNQ
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
Aroclor 1221	µg/L	ND		ND	ND	ND		ND	ND
Aroclor 1232	µg/L	ND		ND	ND	ND		ND	ND
Aroclor 1242	µg/L	ND		ND	ND	ND		ND	ND
Aroclor 1248	µg/L	ND		ND	ND	ND		ND	ND
Aroclor 1254	µg/L	ND		ND	ND	ND		ND	ND

Table 90. Arroyo Simi – 2nd corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd (07D_HITCH_LEVEE_2) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1260	µg/L	ND	NS Site Dry	ND	ND	ND	NS Site Dry	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	1.4752	NS Site Dry	0.0242	DNQ	0.0286	NS Site Dry	0.2809	2.0597
Diazinon	µg/L	ND		ND	ND	ND		0.5818	ND
Malathion	µg/L	ND		ND	ND	ND		ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	NS Site Dry	0.0061	ND	ND	NS Site Dry	0.0027	ND
Cyfluthrin	µg/L	ND		ND	ND	ND		0.0079	ND
Cypermethrin	µg/L	ND		ND	ND	ND		0.0286	ND
Deltamethrin	µg/L	ND		ND	ND	ND		ND	ND
Permethrin	µg/L	ND		2.7951	0.2799	1.1867		4.5609	ND

Table 91. Arroyo Simi – Dry Canyon at Heywood Street Crossing (07T_DC_H)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents									
Flow	cfs	0.028	0.029		NM		0.056	NM	0.048
pH		9.51	8.5		7.33		8.92	7.57	9.02
Temperature	°C	29.47	14.23		11.9		11.49	12.79	19.19
Dissolved Oxygen	mg/L	8.41	10.55		10.86		11.04	10.33	8.49
Electrical Conductivity	µS/cm	1082	938		121		572	83	690
TSS	mg/L	10.9	5.9		29.5		DNQ	68.0	8.7
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-gamma	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	0.0088	ND
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	0.0577
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 91. Arroyo Simi – Dry Canyon at Heywood Street Crossing (07T_DC_H) continued

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	0.0264	ND	0.1393	ND

Table 91. Arroyo Simi – Dry Canyon at Heywood Street Crossing (07T_DC_H) continued

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	0.0123	0.0102	0.1591	0.012	0.0135	0.028	0.7153	0.0258
Cyfluthrin	µg/L	ND	ND	0.0336	DNQ	0.0062	0.0193	0.2951	ND
Cypermethrin	µg/L	ND	ND	ND	ND	ND	0.0028	ND	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	0.0804	ND	ND	0.0321	1.1062	ND

Table 92. Conejo Creek – Hill Canyon below N Fork (10_GATE)

		Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
Constituent	Units	8/2/2011	11/9/2011		1/23/2011		2/1/2012	3/17/2012	5/24/2012
General Water Quality Constituents									
Flow	cfs	NM	16.40		NM		26.09	NM	18.73
pH		7.74	7.64		7.45		8.19	7.98	7.76
Temperature	°C	24.94	19.55		16.27		18.61	13.33	22.42
Dissolved Oxygen	mg/L	8.05	6.78		7.77		7.66	9.96	7.01
Electrical Conductivity	µS/cm	1220	1123		941		1128	549	1089
TSS	mg/L	DNQ	DNQ		DNQ		DNQ	539.0	DNQ
Nutrients									
Ammonia-N	mg/L	0.2	0.57		0.41		0.69	0.44	0.43
Nitrate-N	mg/L	3.49	4.73		3.35		4.11	1.15	4.01
Nitrite-N	mg/L	0.44	0.17		0.06		0.11	0.05	0.15
Nitrate-N + Nitrite-N	mg/L	3.93	4.9		3.41		4.22	1.2	4.16
Organic N	mg/L	0.8	1.47		0.79		0.91	4.46	0.0
TKN	mg/L	1.0	2.04		1.2		1.6	4.9	DNQ
Total Phosphorus-P	mg/L	2.439	2.796		2.026		2.115	1.48	2.942
Orthophosphate-P	mg/L	1.984	2.524		1.775		2.098	0.163	2.321
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	DNQ	NM
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	DNQ	NM

Table 92. Conejo Creek – Hill Canyon below N Fork (10_GATE) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2011		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	DNQ	NM
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
4,4'-DDE	µg/L	ND	ND	ND	ND	ND	DNQ	0.0111	NM
4,4'-DDT	µg/L	ND	ND	DNQ	ND	ND	ND	ND	NM
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Endosulfan I	µg/L	ND	ND	0.3137	ND	ND	ND	ND	NM
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Toxaphene	µg/L	0.0637	ND	ND	ND	ND	ND	ND	NM
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 92. Conejo Creek – Hill Canyon below N Fork (10_GATE) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2011			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/24/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Malathion	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.0041	ND	ND	DNQ	0.3097	NM
Cyfluthrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.0453	NM
Cypermethrin	µg/L	ND	ND	ND	ND	ND	ND	0.0212	NM
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	NM
Permethrin	µg/L	ND	ND	ND	ND	ND	DNQ	0.7137	NM

Table 93. Conejo Creek – North Fork above Hill Canyon (12_PARK)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/9/2011	Event 31 Dry 2/2/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents					
Flow	cfs	1.23	0.938	1.30	0.78
pH		8.23	8.33	8.55	8.53
Temperature	°C	20.19	10.18	9.83	18.46
Dissolved Oxygen	mg/L	10.54	9.97	11.21	9.49
Electrical Conductivity	µS/cm	1960	1850	1950	1940
TSS	mg/L	DNQ	DNQ	DNQ	DNQ
Nutrients					
Ammonia-N	mg/L	DNQ	ND	0.08	DNQ
Nitrate-N	mg/L	0.47	1.08	1.05	0.2
Nitrite-N	mg/L	ND	ND	ND	ND
Nitrate-N + Nitrite-N	mg/L	0.47	1.08	1.05	0.2
Organic N	mg/L	0.51	0.03	0.22	0.146
TKN	mg/L	0.54	ND	DNQ	0.196
Total Phosphorus-P	mg/L	0.376	0.083	0.105	0.122
Orthophosphate-P	mg/L	ND	0.172	0.243	ND

Table 94. Conejo Creek – S Fork behind Belt Press Build (13_BELT)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	NM	3.01		NM		4.19	NM	7.12
pH		8.23	8.5		8.2		8.46	7.98	8.22
Temperature	°C	22.11	11.21		11.24		11.89	13.8	21.54
Dissolved Oxygen	mg/L	10.71	9.62		9.65		11.12	10.3	8.97
Electrical Conductivity	µS/cm	1610	1469		1063		1670	948	1600
TSS	mg/L	8.7	DNQ		DNQ		DNQ	309.0	DNQ
Nutrients									
Ammonia-N	mg/L	0.23	DNQ		NM		DNQ	NM	DNQ
Nitrate-N	mg/L	0.61	1.01		NM		DNQ	NM	0.35
Nitrite-N	mg/L	ND	ND		NM		0.98	NM	ND
Nitrate-N + Nitrite-N	mg/L	0.61	1.01		NM		0.98	NM	0.35
Organic N	mg/L	0.31	0.01		NM		0.25	NM	0.103
TKN	mg/L	0.54	ND		NM		DNQ	NM	0.143
Total Phosphorus-P	mg/L	0.31	0.067		NM		0.081	NM	0.102
Orthophosphate-P	mg/L	ND	0.189		NM		0.25	NM	ND
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Alpha-BHC (HCH)	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Beta-BHC (HCH)	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Gamma-BHC (HCH)	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Delta-BHC (HCH)	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Chlordane-alpha	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Chlordane-gamma	µg/L	ND	NM	ND	ND	ND	NM	ND	ND

Table 94. Conejo Creek – S Fork behind Belt Press Build (13_BELT) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
2,4'-DDD	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
2,4'-DDE	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
2,4'-DDT	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
4,4'-DDD	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
4,4'-DDE	µg/L	ND	NM	ND	ND	ND	NM	0.0097	0.0111
4,4'-DDT	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Dieldrin	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endosulfan I	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endosulfan II	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endosulfan Sulfate	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endrin	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endrin Aldehyde	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Endrin Ketone	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Toxaphene	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1221	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1232	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1242	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1248	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1254	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1260	µg/L	ND	NM	ND	ND	ND	NM	ND	ND

Table 94. Conejo Creek – S Fork behind Belt Press Build (13_BELT) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Diazinon	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Malathion	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	NM	0.0186	ND	ND	NM	0.2635	ND
Cyfluthrin	µg/L	ND	NM	0.0046	ND	ND	NM	0.0655	ND
Cypermethrin	µg/L	ND	NM	ND	ND	ND	NM	0.0126	ND
Deltamethrin	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Permethrin	µg/L	ND	NM	ND	ND	ND	NM	0.6136	ND

Table 95. Conejo Creek – South Branch Arroyo Conejo S Side of W Hillcrest (13_SB_HILL)

		Event 28	Event 29		Event 30		Event 31	Event 32	Event 33
		Dry	Dry		Wet		Dry	Wet	Dry
Constituent	**Units**	**8/2/2011**	**11/9/2011**		**1/23/2012**		**2/2/2012**	**3/17/2012**	**5/23/2012**
General Water Quality Constituents									
Flow	cfs	2.08	4.40		NM		2.70	NM	1.82
pH		8.51	8.19		7.87		8.24	8.04	7.97
Temperature	°C	31.61	12.52		11.2		10.92	12.7	18.31
Dissolved Oxygen	mg/L	8.36	10.13		10.79		9.93	9.56	8.06
Electrical Conductivity	µS/cm	1196	1206		113		1263	226	1429
TSS	mg/L	DNQ	DNQ		81.5		DNQ	306.0	ND
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
Total Chlordane	µg/L	ND	ND	DNQ	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	DNQ	ND	ND	ND	ND	0.0116
4,4'-DDT	µg/L	ND	ND	ND	0.0069	ND	ND	ND	DNQ
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 95. Conejo Creek – South Branch Arroyo Conejo S Side of W Hillcrest (13_SB_HILL) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Table 95. Conejo Creek – South Branch Arroyo Conejo S Side of W Hillcrest (13_SB_HILL) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.1654	0.021	DNQ	DNQ	0.0947	ND
Cyfluthrin	µg/L	ND	ND	0.02	DNQ	ND	ND	0.02	ND
Cypermethrin	µg/L	ND	ND	0.006	DNQ	ND	ND	ND	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	0.1334	ND	ND	DNQ	ND	ND

Table 96. Conejo Creek – Howard Road Bridge (9A_HOWAR)

Constituent	Units	Event 28 Dry 8/3/2011	Event 29 Dry 11/10/2011	Event 31 Dry 2/2/2012	Event 33 Dry 5/24/2012
General Water Quality Constituents					
Flow	cfs	3.57	4.22	NM	5.96
pH		8.27	7.9	7.65	8.06
Temperature	°C	26.17	16.93	13.62	14.51
Dissolved Oxygen	mg/L	10.9	8.8	9.28	7.36
Electrical Conductivity	µS/cm	1530	1520	561	1474
TSS	mg/L	DNQ	DNQ	DNQ	51.3
Nutrients					
Ammonia-N	mg/L	0.46	0.51	0.86	1.51
Nitrate-N	mg/L	5.25	8.65	6.72	5.6
Nitrite-N	mg/L	ND	0.05	0.07	0.11
Nitrate-N + Nitrite-N	mg/L	5.25	8.70	6.79	5.71
Organic N	mg/L	1.24	1.29	1.04	0.0
TKN	mg/L	1.7	1.8	1.9	DNQ
Total Phosphorus-P	mg/L	3.347	3.209	2.266	3.988
Orthophosphate-P	mg/L	2.855	3.074	2.183	3.121

Table 97. Conejo Creek – Adolfo Road (9B_ADOLF)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	17.48	19.59		NM		18.56	NM	16.29
pH		8.11	8.27		8.03		8.33	7.79	8.49
Temperature	°C	21.29	16.83		14		16.97	16.06	24.9
Dissolved Oxygen	mg/L	9.51	9.36		9.3		10.63	9.1	10.29
Electrical Conductivity	µS/cm	1294	1185		662		1239	973	1139
TSS	mg/L	19.3	6.3		71.2		DNQ	645.0	6.8
Nutrients									
Ammonia-N	mg/L	DNQ	0.09		0.18		DNQ	0.19	DNQ
Nitrate-N	mg/L	4.26	6.86		3.63		6.33	5.51	4.24
Nitrite-N	mg/L	ND	0.07		DNQ		DNQ	DNQ	0.06
Nitrate-N + Nitrite-N	mg/L	4.26	6.93		3.63		6.33	5.51	4.3
Organic N	mg/L	0.7	0.86		0.92		0.75	2.71	0.13
TKN	mg/L	0.73	0.95		1.1		0.8	5.9	0.18
Total Phosphorus-P	mg/L	2.183	1.952		1.522		2.071	3.106	2.488
Orthophosphate-P	mg/L	1.801	1.821		1.27		1.853	1.601	1.972
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	0.006	ND
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	0.0054	ND

Table 97. Conejo Creek – Adolfo Road (9B_ADOLF) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	0.0114	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	DNQ	ND	ND	DNQ	0.0419	0.0128
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	DNQ	ND	ND	ND	ND	ND	DNQ	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1221	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1232	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1242	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1248	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1254	µg/L	ND	NM	ND	ND	ND	NM	ND	ND
Aroclor 1260	µg/L	ND	NM	ND	ND	ND	NM	ND	ND

Table 97. Conejo Creek – Adolfo Road (9B_ADOLF) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/1/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	DNQ	ND	0.0368	ND
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	0.1234
Malathion	µg/L	ND	ND	ND	ND	ND	ND	ND	0.0062
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	ND	0.0436	0.0028	ND	DNQ	0.1929	ND
Cyfluthrin	µg/L	ND	ND	0.0099	ND	ND	DNQ	0.0397	ND
Cypermethrin	µg/L	ND	ND	DNQ	ND	ND	DNQ	0.0197	ND
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	DNQ	ND	ND	ND	ND	ND

Table 98. Conejo Creek – Storm drain under N side of Adolfo Road (9BD_ADOLF)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011		Event 30 Wet 1/23/2012		Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	17.48	19.59		NM		18.56	NM	16.29
pH		8.11	8.27		8.03		8.33	7.79	8.49
Temperature	°C	21.29	16.83		14		16.97	16.06	24.9
Dissolved Oxygen	mg/L	9.51	9.36		9.3		10.63	9.1	10.29
Electrical Conductivity	µS/cm	1294	1185		662		1239	973	1139
TSS	mg/L	22.7	17.4		7.0		187.1	23.0	78.0
Total Hardness	mg/L	1264.2	1598.1		72.9		1572.3	38.9	1110.5
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC (HCH)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane-alpha	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
Chlordane-gamma	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlordane	µg/L	ND	ND	ND	ND	ND	ND	DNQ	ND
2,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L	ND	ND	DNQ	ND	ND	ND	ND	0.0119
4,4'-DDT	µg/L	ND	ND	ND	ND	ND	0.063	ND	0.0204

Table 98. Conejo Creek – Storm drain under N side of Adolfo Road (9BD_ADOLF) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Dieldrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.0583	ND	ND	ND	ND	0.37892	ND	ND
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	ND	ND	ND	ND	0.0048	ND	0.1781	ND
Diazinon	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Malathion	µg/L	ND	ND	ND	ND	0.0141	ND	ND	ND
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	ND	0.0022	0.0395	DNQ	0.0056	ND	0.0593	ND
Cyfluthrin	µg/L	ND	ND	0.0039	ND	ND	0.0043	0.0097	ND
Cypermethrin	µg/L	ND	ND	DNQ	ND	ND	0.007	0.0243	ND

Table 98. Conejo Creek – Storm drain under N side of Adolfo Road (9BD_ADOLF) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Deltamethrin	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin	µg/L	ND	ND	0.0349	ND	ND	0.189	ND	ND
Metals & Selenium in Water									
Dissolved Copper	µg/L	3.39	4.8	6.34			4.31	13.3	7.84
Total Copper	µg/L	5.24	5.1	7.45			4.95	17.65	8.77
Dissolved Mercury	µg/L	DNQ	0.002	0.0055			0.0026	0.0037	0.0019
Total Mercury	µg/L	0.0014	ND	0.0084			0.0038	0.0103	0.0016
Dissolved Nickel	µg/L	6.34	8.8	2.13			8.05	1.07	7.39
Total Nickel	µg/L	7.78	8.9	2.56			8.5	2.01	8.1
Dissolved Zinc	µg/L	5.18	3.3	20.27			5.93	23.09	4.64
Total Zinc	µg/L	13.55	3.7	31.95			9.94	45.34	8.05
Dissolved Selenium	µg/L	3.03	8.3	0.32			3.32	DNQ	2.73
Total Selenium	µg/L	2.76	8.4	0.37			3.38	DNQ	3.27

Table 99. Conejo Creek – Drainage ditch crossing Santa Rosa Rd at Gerry Rd (9BD_GERRY)

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
General Water Quality Constituents									
Flow	cfs	NS Site Dry	NS Site Dry	NM			NS Site Dry	NM	NS Site Dry
pH				8.06				8.13	
Temperature	°C			14.66				13.3	
Dissolved Oxygen	mg/L			10.37				9.61	
Electrical Conductivity	µS/cm			264				391	
TSS	mg/L			1744.7				185.0	
Total Hardness	mg/L			183.1				91.9	
Nutrients									
Ammonia-N	mg/L	NS Site Dry	NS Site Dry	NM			NS Site Dry	0.19	NS Site Dry
Nitrate-N	mg/L			NM				2.81	
Nitrite-N	mg/L			NM				0.05	
Nitrate-N + Nitrite-N	mg/L			NM				2.86	
Organic N	mg/L			NM				2.31	
TKN	mg/L			NM				2.5	
Total Phosphorus-P	mg/L			NM				1.09	
Orthophosphate-P	mg/L			NM				0.303	
Organic Constituents in Water									
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aldrin	µg/L	NS Site Dry	NS Site Dry	ND	ND	0.0173	NS Site Dry	ND	NS Site Dry
Alpha-BHC (HCH)	µg/L			ND	ND	ND		ND	
Beta-BHC (HCH)	µg/L			ND	ND	ND		ND	
Gamma-BHC (HCH)	µg/L			ND	ND	ND		ND	
Delta-BHC (HCH)	µg/L			ND	ND	ND		ND	
Chlordane-alpha	µg/L			0.0237	ND	DNQ		0.0184	

Table 99. Conejo Creek – Drainage ditch crossing Santa Rosa Rd at Gerry Rd (9BD_GERRY) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OC Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlordane-gamma	µg/L	NS Site Dry	NS Site Dry	0.0186	ND	DNQ	NS Site Dry	0.0143	NS Site Dry
Total Chlordane	µg/L			0.0424	ND	DNQ		0.0327	
2,4'-DDD	µg/L			ND	ND	ND		ND	
2,4'-DDE	µg/L			ND	ND	ND		ND	
2,4'-DDT	µg/L			ND	ND	ND		ND	
4,4'-DDD	µg/L			0.0098	ND	ND		0.0345	
4,4'-DDE	µg/L			0.0566	ND	ND		0.0516	
4,4'-DDT	µg/L			0.0371	ND	ND		0.2484	
Dieldrin	µg/L			ND	ND	ND		ND	
Endosulfan I	µg/L			ND	ND	ND		ND	
Endosulfan II	µg/L			ND	ND	ND		ND	
Endosulfan Sulfate	µg/L			ND	ND	ND		ND	
Endrin	µg/L			ND	ND	ND		ND	
Endrin Aldehyde	µg/L			ND	ND	ND		ND	
Endrin Ketone	µg/L			ND	ND	ND		ND	
Toxaphene	µg/L			ND	ND	ND		ND	
PCBs				**<63µm**	**63µm to 2mm**	**Filtrate**			
Aroclor 1016	µg/L	NS Site Dry	NS Site Dry	ND	ND	ND	NS Site Dry	ND	NS Site Dry
Aroclor 1221	µg/L			ND	ND	ND		ND	
Aroclor 1232	µg/L			ND	ND	ND		ND	
Aroclor 1242	µg/L			ND	ND	ND		ND	
Aroclor 1248	µg/L			ND	ND	ND		ND	
Aroclor 1254	µg/L			ND	ND	ND		ND	
Aroclor 1260	µg/L			ND	ND	ND		ND	

Table 99. Conejo Creek – Drainage ditch crossing Santa Rosa Rd at Gerry Rd (9BD_GERRY) continued

Constituent	Units	Event 28 Dry 8/2/2011	Event 29 Dry 11/9/2011	Event 30 Wet 1/23/2012			Event 31 Dry 2/2/2012	Event 32 Wet 3/17/2012	Event 33 Dry 5/23/2012
OP Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Chlorpyrifos	µg/L	NS Site Dry	NS Site Dry	0.0102	ND	0.0107	NS Site Dry	0.0778	NS Site Dry
Diazinon	µg/L			ND	ND	0.0212		ND	
Malathion	µg/L			ND	ND	ND		ND	
Pyrethroid Pesticides				**<63µm**	**63µm to 2mm**	**Filtrate**			
Bifenthrin	µg/L	NS Site Dry	NS Site Dry	0.0471	ND	0.0039	NS Site Dry	0.0058	NS Site Dry
Cyfluthrin	µg/L			ND	ND	ND		ND	
Cypermethrin	µg/L			ND	ND	ND		ND	
Deltamethrin	µg/L			ND	ND	ND		ND	
Permethrin	µg/L			ND	ND	ND		ND	
Metals & Selenium in Water									
Dissolved Copper	µg/L	NS Site Dry	NS Site Dry	24.47			NS Site Dry	22.51	NS Site Dry
Total Copper	µg/L			162.89				43.7	
Dissolved Mercury	µg/L			0.0048				0.0035	
Total Mercury	µg/L			0.0626				0.0126	
Dissolved Nickel	µg/L			4.92				1.37	
Total Nickel	µg/L			92.98				8.96	
Dissolved Zinc	µg/L			5.97				25.67	
Total Zinc	µg/L			415.39				192.77	
Dissolved Selenium	µg/L			0.32				0.28	
Total Selenium	µg/L			0.57				0.29	

Freshwater Salt Concentrations

Table 100. Compliance Sites - Receiving Water, Grab Samples Only

Site and Constituent (mg/L)	Salt Event Number and Date															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	8/2 - 8/3 2011	8/15/2011	8/29/2011	9/15/2011	9/30/2011	10/13/2011	10/28/2011	11/9-11/10 2011	11/17/2011	11/30/2011	12/16/2011	12/28/2011	1/23/2012	2/1 – 2/2 2012	3/17/2012	5/23 – 5/24 2012
Revolon Slough – Wood Road (04_WOOD)																
Boron	1.89	2.21	1.82	1.92	1.84	1.07	1.90	1.83	2.00	1.67	1.79	2.11	1.62	2.03	1.07	1.63
Chloride	194	220	174	166	173	118	160	154	176	145	141	185	151	186	93	172
Sulfate	1811	1952	1696	1677	1534	1043	1686	1579	1914	1630	1481	1964	1741	2040	943	1661
TDS	3360	4110	3530	3360	3305	2130	3200	3030	3510	3180	2870	3940	3510	3870	2060	3100
Calleguas Creek – University Drive CSUCI (03_UNIV)																
Boron	0.45	NR	NR	NR	NR	NR	NR	0.54	NR	NR	NR	NR	0.27	0.42	0.18	0.44
Chloride	196	210	199	196	212	196	192	190	196	185	181	182	108	179	62	195
Sulfate	233	226	263	224	256	242	271	252	254	257	233	264	149	228	112	240
TDS	980	1040	1040	991	1100	1040	1040	1010	965	1010	964	1020	623	940	430	955
Arroyo Simi – Above Hitch Boulevard (07_HITCH-S)																
Boron	0.68	NR	0.65	NR	0.69	NR	0.74	0.73	NR	0.68	NR	0.70	0.28	0.63	0.26	0.64
Chloride	162	NR	158	NR	159	NR	146	141	NR	150	NR	151	62	145	53	165
Sulfate	409	NR	384	NR	399	NR	387	362	NR	399	NR	407	182	408	145	390
TDS	1075	NR	1060	NR	1080	NR	1060	1030	NR	1085	NR	1100	492	1025	415	1050

Table 100. Compliance Sites - Receiving Water, Grab Samples Only (continued)

Site and Constituent (mg/L)	Salt Event Number and Date															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	8/2 - 8/3 2011	8/15/2011	8/29/2011	9/15/2011	9/30/2011	10/13/2011	10/28/2011	11/9-11/10 2011	11/17/2011	11/30/2011	12/16/2011	12/28/2011	1/23/2012	2/1 – 2/2 2012	3/17/2012	5/23 – 5/24 2012
Conejo Creek at Baron Brothers (9B_BARON)																
Boron	0.31	NR	NR	NR	NR	NR	NR	0.35	NR	NR	NR	NR	0.24	0.22	0.19	0.30
Chloride	144	NR	142	NR	144	NR	137	137	NR	133	NR	134	106	131	121	135
Sulfate	159	NR	154	NR	160	NR	169	159	NR	162	NR	167	125	169	196	156
TDS	690	NR	695	NR	720	NR	690	718	NR	700	NR	700	583	660	750	640
Conejo Creek at Howard Road Bridge (9A_HOWAR)																
Boron	0.42	NR	NR	NR	NR	NR	NR	0.51	NR	NR	NR	NR	0.17	0.38	0.15	0.40
Chloride	182	215	NR	177	NR	186	NR	171	175	NR	156	NR	75	164	56	173
Sulfate	211	194	NR	203	NR	231	NR	228	243	NR	204	NR	114	222	79	216
TDS	890	940	NR	903	NR	950	NR	923	880	NR	851	NR	393	850	330	820

Table 101. Land Use Monitoring Sites, Grab Samples Only

Site and Constituent (mg/L)	Salt Event No. and Date															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	8/2 - 8/3 2011	8/15/2011	8/29/2011	9/15/2011	9/30/2011	10/13/2011	10/28/2011	11/9-11/10 2011	11/17/2011	11/30/2011	12/16/2011	12/28/2011	1/23/2012	2/1 – 2/2 2012	3/17/2012	5/23 – 5/24 2012
04D_VENTURA																
Boron	0.27	NR	NR	NR	NR	NR	NR	0.27	NR	NR	NR	NR	0.01	0.33	0.03	0.39
Chloride	90	136	NR	80	NR	169	NR	75	75	NR	171	NR	3	110	8	317
Sulfate	153	147	NR	137	NR	274	NR	97	108	NR	383	NR	4	235	7	113
TDS	510	642	NR	523	NR	940	NR	392	420	NR	1010	NR	33	660	50	1140
04D_WOOD																
Boron	NS Site Dry	NS Site Dry	NR	NS Site Dry	NR	NR	NR	2.12	NR	NR	NR	NR	1.34	1.85	0.53	NS Site Dry
Chloride			NR		NR	172	NR	160	110	NR	174	NR	135	183	62	
Sulfate			NR		NR	1966	NR	1917	1083	NR	1831	NR	1530	2052	489	
TDS			NR		NR	3720	NR	3560	2050	NR	3490	NR	3170	4010	1100	
07D_CTP																
Boron	0.28	NR	NR	NR	NR	NR	NR	0.38	NR	NR	NR	NR	0.02	0.17	0.02	0.26
Chloride	125	NR	104	NR	101	NR	129	119	NR	91	NR	76	8	95	3	89
Sulfate	105	NR	75	NR	78	NR	92	101	NR	79	NR	74	8	85	4	83
TDS	520	NR	410	NR	410	NR	510	516	NR	410	NR	340	79	390	30	390
07D_HITCH_LEVEE_2																
Boron	0.88	NR	NS Site Dry	NR	NS Site Dry	NR	NS Site Dry	NS Site Dry	NR	NR	NR	NS Site Dry	0.23	NS Site Dry	0.27	1.42
Chloride	145	NR		NR		NR			NR	167	NR		51		28	257
Sulfate	499	NR		NR		NR			NR	696	NR		130		218	1088
TDS	1310	NR		NR		NR			NR	1840	NR		517		560	2930

Table 101. Land Use Monitoring Sites, Grab Samples Only (continued)

Site and Constituent (mg/L)	Salt Event Number and Date															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	8/2 - 8/3 2011	8/15/2011	8/29/2011	9/15/2011	9/30/2011	10/13/2011	10/28/2011	11/9-11/10 2011	11/17/2011	11/30/2011	12/16/2011	12/28/2011	1/23/2012	2/1 – 2/2 2012	3/17/2012	5/23 – 5/24 2012
13_SB_HILL																
Boron	0.14	NR	NR	NR	NR	NR	NR	0.13	NR	NR	NR	NR	0.01	0.08	0.03	0.17
Chloride	136	NR	138	NR	134	NR	310	124	NR	128	NR	132	11	125	11	200
Sulfate	123	NR	122	NR	120	NR	127	115	NR	126	NR	126	11	128	10	132
TDS	730	NR	720	NR	710	NR	1020	721	NR	740	NR	730	84	770	100	880
9BD_ADOLF																
Boron	1.17	NR	NR	NR	NR	NR	NR	2.60	NR	NR	NR	NR	0.07	1.83	0.06	1.43
Chloride	293	313	NR	349	NR	437	NR	449	558	NR	436	NR	18	388	12	386
Sulfate	1023	1061	NR	1429	NR	2026	NR	2478	2561	NR	2312	NR	51	1980	24	1417
TDS	2390	2640	NR	3420	NR	4700	NR	4810	5810	NR	5090	NR	174	3900	120	3100
9BD_GERRY																
Boron	NS Site Dry	NS Site Dry	NR	NS Site Dry	NR	NS Site Dry	NR	NS Site Dry	NS Site Dry	NR	NS Site Dry	NR	0.04	NS Site Dry	0.06	NS Site Dry
Chloride			NR		NR		NR			NR		NR	16		32	
Sulfate			NR		NR		NR			NR		NR	38		25	
TDS			NR		NR		NR			NR		NR	188		190	

Table 102. Salts: Monthly Means for Salt Concentrations Derived from Continuous EC Data [a]

		TDS (mg/L)		Chloride (mg/L)		Sulfate (mg/L)		Boron (mg/L)	
Site	**Month**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
03_UNIV	Jul. 2011	1031	29	196	6	249	7		
	Aug. 2011	1026	39	196	8	248	9		
	Sep. 2011	1048	37	200	8	254	9		
	Oct. 2011	1012	110	193	23	245	27		
	Nov. 2011	889	194	167	40	215	47		
	Dec. 2011	965	116	183	24	233	28		
	Apr. 2012	824	154	153	32	199	38		
	May 2012	948	26	179	5	229	6		
	Jun. 2012	968	34	183	7	234	8		
04_WOOD [b]	Jul. 2011	3409	449	172	21	1683	218	1.76	0.21
	Aug. 2011	3635	319	182	15	1793	155	1.87	0.15
	Sep. 2011	3392	219	171	10	1675	106	1.75	0.10
	Oct. 2011	2651	451	136	21	1316	219	1.40	0.21
	Nov. 2011	2937	734	149	35	1454	356	1.54	0.35
	Dec. 2011	3777	505	189	24	1862	245	1.93	0.24
	Apr. 2012	3350	789	169	37	1655	383	1.73	0.37
	May 2012	3362	353	169	17	1660	171	1.74	0.17
	Jun. 2012	3713	337	186	16	1831	163	1.90	0.16

Table 102. Salts: Monthly Means for Salt Concentrations Derived from Continuous EC Data [a] (continued)

		TDS (mg/L)		Chloride (mg/L)		Sulfate (mg/L)		Boron (mg/L)	
Site	**Month**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
9A_HOWAR	Jul. 2012	922	29	180	6	226	7		
	Aug. 2012	933	50	183	10	229	13		
	Sep. 2012	949	44	186	9	233	11		
	Oct. 2012	933	98	183	20	229	25		
	Nov. 2012	815	165	158	34	199	43		
	Dec. 2012	882	91	172	19	216	24		
07-HITCH-S	Jul. 2012	1158	19	162	3	435	7	0.73	0.01
	Aug. 2012	1133	25	159	3	425	9	0.71	0.01
	Sep. 2012	1108	25	155	3	416	10	0.70	0.01
	Oct. 2012	1068	130	150	18	401	50	0.67	0.08
	Nov. 2012	960	213	135	29	359	82	0.61	0.12
	Dec. 2012	1060	132	149	18	397	51	0.67	0.08
9B_BARON	Jul. 2012	734	10	143	2	172	3		
	Aug. 2012	721	31	141	6	169	8		
	Sep. 2012	721	19	141	4	169	5		
	Oct. 2012	712	57	139	12	166	15		
	Nov. 2012	648	105	126	21	150	27		
	Dec. 2012	679	66	132	13	158	17		

[a] Monthly means were derived from continuous sensor data for EC (5-min data) and the surrogate relationships predicting salt concentrations from EC.
[b] Monthly means were calculated using values for all available 5-min intervals. Intermittent EC-sensor outages were experienced at 04_WOOD during the reporting period; intervals without EC-derived salt concentrations at 04_WOOD were as follows: 7/9/11 (0:00)-7/17/11 (23:55); 10/27/11 (0:00)-10/28/11 (09:50); 11/13/11 (0:00)-11/16/11 (23:55); 12/3/11 (0:00)-12/16/11 (14:50); 4/1 (0:00)-4/2/12 (10:55); 4/7/12 (0:00)-4/11/12 (04:50); 4/22/12 (0:00)-5/3/12 (14:25); 5/20/12 (0:00)-5/30/12 (08:00).

POTW Water Quality

Table 103. Camarillo Water Reclamation Plant (9AD_CAMA)

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/1/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/1/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/2/2012	Jun 2012[1]	Jul 2012[1]
General Water Quality Constituents													
Flow	cfs	5.85	---	---	5.78	---	---	5.89	---	---	5.99	---	---
pH		7.6	---	---	7.4	---	---	7.5	---	---	7.4	---	---
Temperature	°C	24.44	---	---	22.22	---	---	16.11	---	---	21.67	---	---
Dissolved Oxygen	mg/L	7.2	---	---	8.2	---	---	8.5	---	---	5.4	---	---
Electrical Conductivity	µS/cm	NM	---	---	NM	---	---	NM	---	---	NM	---	---
TSS	mg/L	ND	---	---	DNQ	---	---	DNQ	---	---	DNQ	---	---
Total Hardness	mg/L	384.8	---	---	416.6	---	---	419	---	---	399.3	---	---
Nutrients													
Ammonia-N	mg/L	1.04	---	---	0.48	---	---	0.21	---	---	1.27	---	---
Nitrate-N	mg/L	5.6	---	---	5.87	---	---	4.02	---	---	6.72	---	---
Nitrite-N	mg/L	0.08	---	---	0.27	---	---	ND	---	---	0.2	---	---
Nitrate-N + Nitrite-N	mg/L	5.68	---	---	6.14	---	---	4.02	---	---	6.92	---	---
Organic N	mg/L	0.5	---	---	0.69	---	---	1.29	---	---	0.4	---	---
TKN	mg/L	1.5	---	---	1.17	---	---	1.5	---	---	1.7	---	---
Total Phosphorus-P	mg/L	4.9	---	---	5.83	---	---	5.16	---	---	5.86	---	---
Orthophosphate-P	mg/L	4.62	---	---	5.6	---	---	4.92	---	---	5.43	---	---
Organic Constituents in Water													
OC Pesticides													
Aldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Alpha-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Beta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 103. Camarillo Water Reclamation Plant (9AD_CAMA) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/1/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/1/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/2/2012	Jun 2012[1]	Jul 2012[1]
OC Pesticides													
Gamma-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Delta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Chlordane-alpha	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Chlordane-gamma	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Total Chlordane	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDE	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDE	µg/L	ND	---	---	ND	---	---	DNQ	---	---	0.0069	---	---
4,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Dieldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan I	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan II	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan Sulfate	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Aldehyde	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Ketone	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Toxaphene	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
PCBs													
Aroclor 1016	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1221	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1232	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1242	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 103. Camarillo Water Reclamation Plant (9AD_CAMA) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/1/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/1/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/2/2012	Jun 2012[1]	Jul 2012[1]
PCBs													
Aroclor 1248	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1254	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1260	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
OP Pesticides													
Chlorpyrifos	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Diazinon	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Malathion	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Triazine Pesticides													
Atrazine	µg/L	NM	---	---	NM	---	---	NM	---	---	NM	---	---
Prometryn	µg/L	NM	---	---	NM	---	---	NM	---	---	NM	---	---
Simazine	µg/L	NM	---	---	NM	---	---	NM	---	---	NM	---	---
Pyrethroid Pesticides													
Bifenthrin	µg/L	ND	---	---	ND	---	---	DNQ	---	---	DNQ	---	---
Cyfluthrin	µg/L	ND	---	---	ND	---	---	DNQ	---	---	ND	---	---
Cypermethrin	µg/L	ND	---	---	ND	---	---	0.0021	---	---	ND	---	---
Deltamethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Permethrin	µg/L	ND	---	---	ND	---	---	DNQ	---	---	ND	---	---
Permethrin, cis-	µg/L	ND	---	---	ND	---	---	DNQ	---	---	ND	---	---
Permethrin, trans-	µg/L	ND	---	---	ND	---	---	DNQ	---	---	ND	---	---
Metals & Selenium in Water													
Dissolved Copper	µg/L	4.75	---	---	4.1	---	---	5.16	---	---	4.71	---	---
Total Copper	µg/L	4.55	---	---	4.4	---	---	5.62	---	---	5.24	---	---
Dissolved Mercury	µg/L	ND	---	---	ND	---	---	0.0016	---	---	0.0032	---	---
Total Mercury	µg/L	ND	---	---	ND	---	---	0.0017	---	---	0.0017	---	---

Table 103. Camarillo Water Reclamation Plant (9AD_CAMA) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/1/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/1/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/2/2012	Jun 2012[1]	Jul 2012[1]
Metals & Selenium in Water													
Dissolved Nickel	µg/L	3.27	---	---	2.8	---	---	2.34	---	---	2.96	---	---
Total Nickel	µg/L	3.16	---	---	2.9	---	---	2.44	---	---	2.91	---	---
Dissolved Zinc	µg/L	37.72	---	---	38.4	---	---	44.89	---	---	43.65	---	---
Total Zinc	µg/L	35.16	---	---	37.6	---	---	46.84	---	---	43.91	---	---
Dissolved Selenium	µg/L	0.78	---	---	0.6	---	---	DNQ	---	---	0.22	---	---
Total Selenium	µg/L	0.34	---	---	0.6	---	---	DNQ	---	---	0.19	---	---
Salts in Water													
Chloride	mg/L	210	210	226	226	213	224	221	229	204	217	223	212
Sulfate	mg/L	231	253	277	338	294	343	288	274	339	282	271	255
TDS	mg/L	938	1012	1058	1054	1028	1148	1040	1026	1130	1054	1048	1038
Boron	mg/L	0.73	0.75	0.71	0.74	0.72	0.79	0.71	0.74	0.74	0.66	0.76	0.74

1. Salts were monitored monthly; all others quarterly.

Table 104. Hill Canyon Wastewater Treatment Plant (10D_HILL)

		Event 28			Event 29			Event 31			Event 33		
Constituent	**Units**	**Dry 8/4/2011**	**Sep 2011[1]**	**Oct 2011[1]**	**Dry 11/10/2011**	**Dec 2011[1]**	**Jan 2012[1]**	**Dry 2/9/2012**	**Mar 2012[1]**	**Apr 2012[1]**	**Dry 5/10/2012**	**Jun 2012[1]**	**Jul 2012[1]**
General Water Quality Constituents													
Flow	cfs	14.82	---	---	14.61	---	---	14.54	---	---	14.62	---	---
pH		7.0	---	---	6.8	---	---	6.8	---	---	7.0	---	---
Temperature	°C	25.11	---	---	23.56	---	---	21.11	---	---	23.33	---	---
Dissolved Oxygen	mg/L	6.4	---	---	5.4	---	---	7.3	---	---	7.4	---	---
Electrical Conductivity	µS/cm	951	---	---	876	---	---	781	---	---	806	---	---
TSS	mg/L	1.4	---	---	1.1	---	---	1.2	---	---	1.1	---	---
Total Hardness	mg/L	177	---	---	168	---	---	169	---	---	143	---	---
Nutrients													
Ammonia-N	mg/L	1.8	---	---	2.1	---	---	1.6	---	---	1.4	---	---
Nitrate-N	mg/L	6.1	---	---	8.4	---	---	7	---	---	6.8	---	---
Nitrite-N	mg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Nitrate-N + Nitrite-N	mg/L	6.1	---	---	8.4	---	---	7	---	---	6.8	---	---
Organic N	mg/L	0.6	---	---	0.6	---	---	0.2	---	---	1	---	---
TKN	mg/L	2.4	---	---	2.7	---	---	1.8	---	---	2.4	---	---
Total Phosphorus-P	mg/L	3.9	---	---	4.2	---	---	3.8	---	---	2.7	---	---
Orthophosphate-P	mg/L	3.9	---	---	4.1	---	---	3.8	---	---	2.7	---	---
OC Pesticides													
Aldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Alpha-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Beta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Gamma-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 104. Hill Canyon Wastewater Treatment Plant (10D_HILL) continued

Constituent	Units	Event 28 Dry 8/4/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/10/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/9/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/10/2012	Jun 2012[1]	Jul 2012[1]
OC Pesticides													
Delta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Chlordane-gamma	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Chlordane-alpha	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Total Chlordane	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDE	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDE	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Dieldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan I	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan II	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
OC Pesticides													
Endosulfan Sulfate	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Aldehyde	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Ketone	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Toxaphene	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
PCBs													
Aroclor 1016	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1221	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1232	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1242	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 104. Hill Canyon Wastewater Treatment Plant (10D_HILL) continued

Constituent	Units	Event 28 Dry 8/4/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/10/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/9/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/10/2012	Jun 2012[1]	Jul 2012[1]
PCBs													
Aroclor 1248	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1254	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1260	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
OP Pesticides													
Chlorpyrifos	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Diazinon	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Malathion	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Pyrethroid Pesticides													
Bifenthrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Cyfluthrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Cypermethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Deltamethrin	µg/L	NM	---	---	ND	---	---	ND	---	---	ND	---	---
Permethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	0.006	---	---
Metals & Selenium in Water													
Dissolved Copper	µg/L	5	---	---	3.5	---	---	3.7	---	---	3.7	---	---
Total Copper	µg/L	4.1	---	---	3.6	---	---	4.1	---	---	3.8	---	---
Dissolved Mercury	µg/L	ND	---	---	ND	---	---	ND	---	---	DNQ	---	---
Total Mercury	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Dissolved Nickel	µg/L	2.3	---	---	2.1	---	---	1.8	---	---	2.8	---	---
Total Nickel	µg/L	2	---	---	2.8	---	---	1.9	---	---	2.9	---	---

Table 104. Hill Canyon Wastewater Treatment Plant (10D_HILL) continued

Constituent	Units	Event 28 Dry 8/4/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/10/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/9/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/10/2012	Jun 2012[1]	Jul 2012[1]
Metals & Selenium in Water													
Dissolved Zinc	µg/L	46	---	---	41	---	---	38	---	---	37	---	---
Total Zinc	µg/L	44	---	---	34	---	---	39	---	---	34	---	---
Dissolved Selenium	µg/L	0.45	---	---	ND	---	---	0.45	---	---	1.4	---	---
Total Selenium	µg/L	0.44	---	---	0.5	---	---	0.4	---	---	0.6	---	---
Salts in Water													
Chloride	mg/L	133	130	120	127	112	113	109	126	111	116	111	113
Sulfate	mg/L	99	108	99	109	96	94	91	95	89	92	85	86
TDS	mg/L	574	557	547	546	508	490	501	549	512	511	507	501
Boron	mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5

1. Salts were monitored monthly; all others quarterly.

Table 105. Simi Valley Water Quality Control Plant (07D_SIMI)

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/9/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/7/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/8/2012	Jun 2012[1]	Jul 2012[1]
General Water Quality Constituents													
Flow	cfs	12.69	---	---	13.46	---	---	13.62	---	---	12.84	---	---
pH		7.3	---	---	7.1	---	---	7.0	---	---	7.1	---	---
Temperature	°F	25.00	---	---	25.56	---	---	21.11	---	---	22.78	---	---
Dissolved Oxygen	mg/L	7.8 [2]	---	---	7.9	---	---	8.7 [3]	---	---	8.2	---	---
Electrical Conductivity	µS/cm	NM	---	---	NM	---	---	NM	---	---	NM	---	---
TSS	mg/L	DNQ	---	---	ND	---	---	ND	---	---	DNQ	---	---
Nutrients													
Ammonia-N	mg/L	1.1	---	---	1.3	---	---	1.3	---	---	1	---	---
Nitrate-N	mg/L	7.1	---	---	7.1	---	---	8.3	---	---	7.1	---	---
Nitrite-N	mg/L	0.017	---	---	0.015	---	---	0.026	---	---	0.011	---	---
Nitrate-N + Nitrite-N	mg/L	7.117	---	---	7.115	---	---	8.326	---	---	7.111	---	---
Organic N	mg/L	1.2	---	---	1.3	---	---	2.2	---	---	1.7	---	---
TKN	mg/L	2.5	---	---	3.3	---	---	4.3	---	---	2.4	---	---
Total Phosphorus-P	mg/L	3.6	---	---	3.1	---	---	3.4	---	---	3.5	---	---
Orthophosphate-P	mg/L	3.4	---	---	2.89	---	---	3.2	---	---	3.1	---	---
Organic Constituents in Water													
OC Pesticides													
Aldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Alpha-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Beta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Gamma-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Delta-BHC (HCH)	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Chlordane-alpha	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 105. Simi Valley Water Quality Control Plant (07D_SIMI) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/9/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/7/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/8/2012	Jun 2012[1]	Jul 2012[1]
OC Pesticides													
Chlordane-gamma	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Total Chlordane	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDE	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
2,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDD	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDE	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
4,4'-DDT	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Dieldrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan I	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan II	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endosulfan Sulfate	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Aldehyde	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Endrin Ketone	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Toxaphene	µg/L	ND	---	---	ND	---	---	ND	---	---	DNQ	---	---
PCBs													
Aroclor 1016	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1221	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1232	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1242	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1248	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Aroclor 1254	µg/L	ND	---	---	ND	---	---	ND	---	---	0.039	---	---
Aroclor 1260	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---

Table 105. Simi Valley Water Quality Control Plant (07D_SIMI) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/9/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/7/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/8/2012	Jun 2012[1]	Jul 2012[1]
OP Pesticides													
Chlorpyrifos	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Diazinon	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Malathion	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Pyrethroid Pesticides													
Bifenthrin	µg/L	ND	---	---	ND	---	---	DNQ	---	---	DNQ	---	---
Cyfluthrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Cypermethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Deltamethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Permethrin	µg/L	ND	---	---	ND	---	---	ND	---	---	ND	---	---
Metal and Selenium in Water													
Dissolved Copper	µg/L	NM	---	---	NM	---	---	4.89	---	---	4.28	---	---
Total Copper	µg/L	DNQ	---	---	ND	---	---	5.05	---	---	4.52	---	---
Dissolved Mercury	µg/L	NM	---	---	NM	---	---	0.0026	---	---	0.0042	---	---
Total Mercury	µg/L	ND	---	---	ND	---	---	0.0038	---	---	0.0027	---	---
Dissolved Nickel	µg/L	NM	---	---	NM	---	---	1.78	---	---	1.58	---	---
Total Nickel	µg/L	DNQ	---	---	ND	---	---	1.85	---	---	1.54	---	---
Dissolved Zinc	µg/L	NM	---	---	NM	---	---	56.22	---	---	52.37	---	---
Total Zinc	µg/L	58	---	---	52.5	---	---	55.86	---	---	55.25	---	---
Dissolved Selenium	µg/L	NM	---	---	NM	---	---	0.57	---	---	0.66	---	---
Total Selenium	µg/L	2.0	---	---	1.0	---	---	0.59	---	---	0.69	---	---

Table 105. Simi Valley Water Quality Control Plant (07D_SIMI) continued

Constituent	Units	Event 28 Dry 8/2/2011	Sep 2011[1]	Oct 2011[1]	Event 29 Dry 11/9/2011	Dec 2011[1]	Jan 2012[1]	Event 31 Dry 2/7/2012	Mar 2012[1]	Apr 2012[1]	Event 33 Dry 5/8/2012	Jun 2012[1]	Jul 2012[1]
Salts in Water													
Chloride	mg/L	150	139	142	132	124	119	122	115	121	121	117	117
Sulfate	mg/L	187	176	177	154	161	158	161	156	175	169	156	149
TDS	mg/L	742	655	690	699	581	575	626	568	553	641	636	633
Boron	mg/L	0.55	0.54	0.55	0.47	0.46	0.48	0.53	0.59	0.54	0.51	0.46	0.49

1. Salts were monitored monthly; all others quarterly.

Compliance Analysis and Discussion

COMPLIANCE COMPARISON

As outlined in the QAPP, data applicable to compliance targets or allocations is reviewed in this report. The following tables list the applicable compliance measures that are covered by this fourth year of monitoring. For the compliance assessment, two types of assessment procedures were used depending on whether or not the final compliance dates for the TMDL were applicable during the monitoring year.

For TMDLs for which no final allocations or targets are currently effective (OC Pesticides and Metals TMDLs), the following compliance comparisons were conducted:

1. Applicable receiving water data at the compliance locations (base of each subwatershed) were compared to the interim load and waste load allocations.
2. If an exceedance of an interim load and/or waste load allocation was observed, the contributing land use data were assessed to evaluate the potential cause of the exceedance.
3. POTW effluent data were compared to the relevant interim waste load allocations.

For the Nitrogen TMDL the following compliance comparisons were conducted:

1. For POTWs, the final waste load allocations are currently effective. As a result, effluent monitoring results were compared to the final allocations for the analysis.
2. For agricultural dischargers and other non-point sources, load allocations are currently effective. Since agricultural dischargers are the only entities with allocations other than POTWs, compliance is assessed by comparing receiving water results against TMDL numeric targets.

For the Toxicity TMDL, the following compliance comparisons were conducted:

1. For POTWs, the final waste load allocations are currently effective. As a result, effluent monitoring results were compared to the final allocations for the analysis.
2. For MS4 dischargers, the final waste load allocations are currently effective. As a result, applicable receiving water data at the compliance locations (base of each subwatershed) were compared to the final waste load allocations. If an exceedance of the final waste load allocation was found, the contributing urban land use data were assessed to evaluate whether the MS4 was potentially causing the exceedance.
3. For agricultural dischargers, the final load allocations are not yet effective. As a result, applicable receiving water data at the compliance locations (base of each subwatershed) were compared to the interim load allocations. If an exceedance of an interim load allocation was observed, the contributing agricultural land use data were assessed to evaluate whether agricultural discharges were potentially causing the exceedance.
4. In cases where the applicable interim load allocations or final waste load allocations have different values for acute (1-hour) toxicity and chronic (4-day) toxicity, the acute toxicity allocations were used for assessing wet-weather data and the chronic toxicity allocations were used for assessing dry-weather data.

The following tables compare the applicable allocations based on the compliance procedure outlined above for each of the TMDLs. Some constituents sampled under the CCWTMP do not have applicable allocations and/or targets and are not included in the compliance analysis.

Compliance at Receiving Water Sites

Table 106. OC Pesticides, PCBs, & Siltation

Site & Constituent	Units	Interim WLA & LA[1]	Event 28 Aug-2011
Mugu Lagoon – Eastern Arm (01_BPT_3)			
Total Chlordane[2]	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	DNQ
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs[3]	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Eastern Part of Western Arm (01_BPT_6)			
Total Chlordane[2]	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	14.9
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs[3]	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Central Part of Western Arm (01_BPT_14)			
Total Chlordane[2]	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	DNQ
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs[3]	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND

Table 106. OC Pesticides, PCBs, & Siltation (continued)

Site & Constituent	Units	Interim WLA & LA[1]	Event 28 Aug-2011
Mugu Lagoon – Central Lagoon (01_BPT_15)			
Total Chlordane[2]	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	DNQ
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs[3]	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Central Lagoon, South of Drain #7 (01_SG_74)			
Total Chlordane[2]	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	16.3
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs[3]	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Calleguas Creek – Hwy 1 Bridge (02_PCH)			
Total Chlordane[2]	ng/g dw	17	ND
4,4'-DDD	ng/g dw	66	DNQ
4,4'-DDE	ng/g dw	470	ND
4,4'-DDT	ng/g dw	110	ND
Dieldrin	ng/g dw	3	ND
PCBs[3]	ng/g dw	3800	ND
Toxaphene	ng/g dw	260	ND
Revolon Slough – Wood Road (04_WOOD)			
Total Chlordane[2]	ng/g dw	48	DNQ
4,4'-DDD	ng/g dw	400	5.7
4,4'-DDE	ng/g dw	1600	39.2
4,4'-DDT	ng/g dw	690	ND
Dieldrin	ng/g dw	5.7	ND
PCBs[3]	ng/g dw	7600	ND
Toxaphene	ng/g dw	790	ND

Table 106. OC Pesticides, PCBs, & Siltation (continued)

Site & Constituent	Units	Interim WLA & LA[1]	Event 28 Aug-2011
Calleguas Creek – University Drive CSUCI (03_UNIV)			
Total Chlordane[2]	ng/g dw	17	ND
4,4'-DDD	ng/g dw	66	ND
4,4'-DDE	ng/g dw	470	5.1
4,4'-DDT	ng/g dw	110	ND
Dieldrin	ng/g dw	3	ND
PCBs[3]	ng/g dw	3800	ND
Toxaphene	ng/g dw	260	ND
Conejo Creek – Adolfo Road (9B_ADOLF)			
Total Chlordane[2]	ng/g dw	3.4	ND
4,4'-DDD	ng/g dw	5.3	ND
4,4'-DDE	ng/g dw	20	DNQ
4,4'-DDT	ng/g dw	2	ND
Dieldrin	ng/g dw	3	ND
PCBs[3]	ng/g dw	3800	ND
Toxaphene	ng/g dw	260	ND
Arroyo Simi – Hitch Boulevard (07_HITCH)			
Total Chlordane[2]	ng/g dw	3.3	ND
4,4'-DDD	ng/g dw	14	ND
4,4'-DDE	ng/g dw	170	ND
4,4'-DDT	ng/g dw	25	ND
Dieldrin	ng/g dw	1.1	ND
PCBs[3]	ng/g dw	25700	ND
Toxaphene	ng/g dw	230	ND

ND=not detected; DNQ=detected not quantified

1. Interim waste load allocation for stormwater permittees and interim load allocations for agricultural dischargers; effective until March 24, 2026 (R4-2005-010).
2. Total chlordane is the sum of alpha and gamma-chlordane.
3. PCBs concentrations are the sum of the seven aroclors identified in CTR (1016, 1221, 1232, 1242, 1248, 1254, and 1260).

Table 107. Nitrogen Compounds

Site & Constituent	Units	Target[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 33 Dry May-2012	Event 30 Wet Jan-2012	Event 32 Wet Mar-2012
Mugu Lagoon – Ronald Reagan Bridge (01_RR_BR)								
Ammonia-N	mg/L	8.1[2]	ND	0.2	ND	0.58	0.14	0.1
Nitrate-N	mg/L	10	**20.54**	**25.65**	0.27	3.09	**27.73**	6.87
Nitrite-N	mg/L	1	0.18	0.06	ND	0.09	0.07	0.07
Nitrate-N + Nitrite-N	mg/L	10	**20.72**	**25.71**	0.27	3.18	**27.80**	6.94
Revolon Slough – Wood Road (04_WOOD)								
Ammonia-N	mg/L	5.7[2]	0.09	0.1	0.07	0.19	0.24	0.24
Nitrate-N	mg/L	10	**41.28**	**39.52**	**57.62**	**34.73**	**51.28**	**24.13**
Nitrite-N	mg/L	1	0.28	0.19	0.1	0.21	0.09	0.24
Nitrate-N + Nitrite-N	mg/L	10	**30.21**	**54.9**	**35.23**	**21.36**	**12.74**	**19.61**
Beardsley Wash – Central Avenue (05_CENTR)								
Ammonia-N	mg/L	5.7[2]	0.09	DNQ	ND	ND	0.15	0.29
Nitrate-N	mg/L	10	**29.99**	**54.82**	**35.18**	**21.16**	**12.68**	**17.56**
Nitrite-N	mg/L	1	0.22	0.08	0.05	0.2	0.06	**2.05**
Nitrate-N + Nitrite-N	mg/L	10	**30.21**	**54.9**	**35.23**	**21.36**	**12.74**	**19.61**
Calleguas Creek – Hwy 1 Bridge (02_PCH)								
Ammonia-N	mg/L	5.5[2]	0.38	0.09	0.07	0.18	NR	NR
Nitrate-N	mg/L	10	17.58	**16.91**	**20.16**	**17.07**	NR	NR
Nitrite-N	mg/L	1	ND	0.05	0.07	ND	NR	NR
Nitrate-N + Nitrite-N	mg/L	10	**17.58**	**16.96**	**20.23**	**17.07**	NR	NR
Calleguas Creek – University Drive CSUCI (03_UNIV)								
Ammonia-N	mg/L	8.4[2]	DNQ	0.14	0.16	0.11	0.17	0.17
Nitrate-N	mg/L	10	7.64	7.99	8.55	5.79	5.91	6.9
Nitrite-N	mg/L	1	0.1	0.08	0.09	0.15	0.05	0.06
Nitrate-N + Nitrite-N	mg/L	10	7.74	8.07	8.64	5.94	5.96	6.96
Conejo Creek – Howard Road Bridge (9A_HOWAR)								
Ammonia-N	mg/L	9.5[2]	0.46	0.51	0.86	1.51	NR	NR
Nitrate-N	mg/L	10	5.25	8.65	6.72	5.6	NR	NR
Nitrite-N	mg/L	1	ND	0.05	0.07	0.11	NR	NR
Nitrate-N + Nitrite-N	mg/L	10	5.71	9.21	7.65	7.22	NR	NR

Table 107. Nitrogen Compounds (continued)

Site & Constituent	Units	Target[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 33 Dry May-2012	Event 30 Wet Jan-2012	Event 32 Wet Mar-2012
Conejo Creek – Adolfo Road (9B_ADOLF)								
Ammonia-N	mg/L	9.5[2]	0.09	DNQ	DNQ	0.18	0.19	0.09
Nitrate-N	mg/L	10	6.86	6.33	4.24	3.63	5.51	6.86
Nitrite-N	mg/L	1	0.07	0.03J	0.06	0.04J	0.04J	0.07
Nitrate-N + Nitrite-N	mg/L	10	6.93	6.36	4.30	3.67	5.55	6.93
Conejo Creek – Hill Canyon Below N Fork (10_GATE)								
Ammonia-N	mg/L	8.4[2]	0.2	0.57	0.69	0.43	0.41	0.44
Nitrate-N	mg/L	10	3.49	4.73	4.11	4.01	3.35	1.15
Nitrite-N	mg/L	1	0.44	0.17	0.11	0.15	0.06	0.05
Nitrate-N + Nitrite-N	mg/L	10	3.93	4.9	4.22	4.16	3.41	1.2
Conejo Creek – North Fork Above Hill Canyon (12_PARK)								
Ammonia-N	mg/L	3.2[2]	DNQ	ND	0.08	DNQ	NR	NR
Nitrate-N	mg/L	10	0.47	1.08	1.05	0.2	NR	NR
Nitrite-N	mg/L	1	ND	ND	ND	ND	NR	NR
Nitrate-N + Nitrite-N	mg/L	10	0.47	1.08	1.05	0.2	NR	NR
Conejo Creek – S Fork Behind Belt Press Build (13_BELT)								
Ammonia-N	mg/L	5.1[2]	0.23	DNQ	DNQ	DNQ	NR	NR
Nitrate-N	mg/L	10	0.61	1.01	DNQ	0.35	NR	NR
Nitrite-N	mg/L	1	ND	ND	0.98	ND	NR	NR
Nitrate-N + Nitrite-N	mg/L	10	0.61	1.01	0.98	0.35	NR	NR
Arroyo Las Posas – Somis Road (06_SOMIS)								
Ammonia-N	mg/L	8.1[2]	ND	ND	0.2	ND	0.09	0.14
Nitrate-N	mg/L	10	8.49	8.19	**10.55**	9.11	6.09	**18.06**
Nitrite-N	mg/L	1	0.01J	0.03J	0.05	0.05	0.03J	0.04J
Nitrate-N + Nitrite-N	mg/L	10	8.50	8.22	**10.60**	9.16	6.12	**18.10**
Arroyo Simi – Hitch Boulevard (07_HITCH)								
Ammonia-N	mg/L	4.7[2]	ND	DNQ	0.13	DNQ	0.25	0.17
Nitrate-N	mg/L	10	9.98	9.71	**10.95**	**10.16**	6.27	3.09
Nitrite-N	mg/L	1	0.04J	0.04J	0.04J	0.07	0.06	0.03J
Nitrate-N + Nitrite-N	mg/L	10	**10.02**	9.75	**10.99**	**10.23**	6.33	3.12

Table 107. Nitrogen Compounds (continued)

Site & Constituent	Units	Target[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 33 Dry May-2012	Event 30 Wet Jan-2012	Event 32 Wet Mar-2012
Arroyo Simi – Madera Avenue (07_MADER)								
Ammonia-N	mg/L	4.7[2]	0.06	0.11	0.14	DNQ	0.24	0.34
Nitrate-N	mg/L	10	4.02	4.94	4.99	4.16	3.33	2.64
Nitrite-N	mg/L	1	0.06	0.04J	0.04J	0.09	0.04J	0.04J
Nitrate-N + Nitrite-N	mg/L	10	4.08	4.98	5.03	4.25	3.37	2.68

NR=not required; ND=not detected; DNQ=detected not quantified; J=estimated DNQ values for Nitrite-N, shown for the purpose of calculating the Nitrite-N + Nitrate-N sum and comparing it against the Nitrate-N + Nitrite-N target.

1. Load allocations for Nitrate-N + Nitrite-N are in effect for agricultural and other non-point sources. To evaluate compliance, monitoring results at receiving water compliance sites were compared against TMDL numeric targets (R4-2008-009).
2. One-hour average.

Results in **bold type** exceed numeric TMDL target.

Table 108. Toxicity, Diazinon, & Chlorpyrifos

Site & Constituent	Units	Dry WLA[1]	Dry Interim LA[2]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 33 Dry May-2012	Wet WLA[1]	Wet Interim LA[2]	Event 30 Wet Jan-2012	Event 32 Wet Mar-2012
Mugu Lagoon – Ronald Reagan Bridge (01_RR_BR)											
Chlorpyrifos	µg/L	0.014	0.81	0.0042	**0.0908**	ND	DNQ	0.014	2.57	**0.0296**	**0.1459**
Diazinon	µg/L	0.1	0.138	ND	ND	ND	ND	0.1	0.278	ND	ND
Revolon Slough – Wood Road (04_WOOD)											
Chlorpyrifos	µg/L	0.014	0.81	ND	**0.0269**	**0.0203**	0.0035	0.014	2.57	DNQ	**0.0373**
Diazinon	µg/L	0.1	0.138	0.0122	ND	DNQ	ND	0.1	0.278	ND	ND
Calleguas Creek – University Drive CSUCI (03_UNIV)											
Chlorpyrifos	µg/L	0.014	0.81	ND	ND	**0.0143**	ND	0.014	2.57	**0.0146**	**0.1395**
Diazinon	µg/L	0.1	0.138	ND	ND	ND	0.0435	0.1	0.278	ND	**0.1876**
Conejo Creek – Adolfo Road (9B_ADOLF)											
Chlorpyrifos	µg/L	0.014	0.81	ND	ND	ND	ND	0.014	2.57	ND	**0.0368**
Diazinon	µg/L	0.1	0.138	ND	ND	ND	**0.1234**	0.1	0.278	ND	ND
Arroyo Simi – Hitch Boulevard (07_HITCH)											
Chlorpyrifos	µg/L	0.014	0.81	ND	ND	0.0062	**0.0377**	0.014	2.57	**0.0146**	**0.0405**
Diazinon	µg/L	0.1	0.138	ND	ND	ND	0.0481	0.1	0.278	ND	0.0478

ND=not detected; DNQ=detected not quantified

1. Dry and Wet Weather WLAs for Stormwater Dischargers (R4-2005-009)
2. Interim Dry and Wet Weather Load Allocations for Irrigated Agriculture; effective until March 2014 (R4-2005-009)

Results in **bold type** exceed applicable WLA or LA.

Table 109. Metals & Selenium

Site & Constituent	Units	Dry Interim WLA[1]	Dry Interim LA[2]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 33 Dry May-2012	Wet Interim WLA[1]	Wet Interim LA[2]	Event 30 Wet Jan-2012	Event 32 Wet Mar-2012	Annual Average[3]
Revolon Slough – Wood Road (04_WOOD)												
Total Copper	µg/L	19	19	3.01	5.9	3.34	3.04	204	1390	6.11	18.39	
Total Nickel	µg/L	13	42	5.14	7.0	6.94	5.65	74[4]	74[4]	6.36	3.77	
Total Selenium	µg/L	13	6	**23.06**	**30.4**	**25.71**	**24.14**	290[4]	290[4]	19.33	11.54	
Total Mercury[5]	lbs/yr	1.7	2					4	4.8			0.11
Calleguas Creek – University Drive CSUCI (03_UNIV)												
Total Copper	µg/L	19	19	1.94	3.2	3.35	3.25	204	1390	8.26	84.17	
Total Nickel	µg/L	13	42	6.5	6.2	5.81	5.78	74[4]	74[4]	7.97	74.55	
Total Selenium	µg/L	none	none	2.96	4.3	1.55	1.15	none	none	1.21	1.08	
Total Mercury[5]	lbs/yr	3.3	3.9					10.5	12.6			0.73

1. Interim Dry Weather WLAs for Stormwater Dischargers; effective until March 2022 (R4-2006-0012)
2. Interim Dry Weather Load Allocations for Irrigated Agriculture; effective until March 2022 (R4-2006-0012)
3. Mercury allocation is assessed as an annual load in suspended sediment. The water column mercury concentrations were used in calculating the loads, conservatively assuming that all mercury is on suspended sediment rather than being dissolved. The loads at each site are based on estimated annual concentrations (average of all monitored events at each site) and total annual flow calculated from preliminary streamflow data received from the Ventura County Watershed Protection District (VCWPD) via email on 12/17/2012.
4. No wet weather exceedances of these constituents were observed in the TMDL analysis so no interim limits were assigned for the TMDL. For comparison purposes the wet weather targets are included in the table.
5. Interim WLA and LAs are expressed as annual loads. Total annual flow for 08/01/1 to 07/31/12 into Mugu Lagoon from Calleguas Creek and Revolon Slough is calculated as 7,704 Mgal/yr. As such, the interim WLA and LA shown correspond to the flow range of 0 to 15,000 to Mgal/yr, per R4-2006-0012.

Results in **bold type** exceed applicable WLA or LA.

POTW Compliance

Table 110. Nitrogen Compounds

POTW & Constituent	Units	Final WLA[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 31 Dry May-2012
Camarillo Water Reclamation Plant (9AD_CAMA)						
Ammonia-N	mg/L	3.5[2] 7.8[3]	1.04	0.48	0.21	1.27
Nitrate-N	mg/L	9	5.6	5.87	4.02	6.72
Nitrite-N	mg/L	0.9	0.08	0.27	ND	0.2
Nitrate-N + Nitrite-N	mg/L	9	5.68	6.14	4.02	6.92
Hill Canyon Wastewater Treatment Plant (10D_HILL)						
Ammonia-N	mg/L	3.1[2] 5.6[3]	1.8	2.1	1.6	1.4
Nitrate-N	mg/L	9	6.1	8.4	7.0	6.8
Nitrite-N	mg/L	0.9	ND	ND	ND	ND
Nitrate-N + Nitrite-N	mg/L	9	6.1	8.4	7.0	6.8
Simi Valley Water Quality Control Plant (07D_SIMI)						
Ammonia-N	mg/L	2.4[2] 3.3[3]	1.1	1.3	1.3	1.0
Nitrate-N	mg/L	9	7.1	7.1	8.3	7.1
Nitrite-N	mg/L	0.9	0.017	0.015	0.026	0.011
Nitrate-N + Nitrite-N	mg/L	9	7.117	7.115	8.326	7.111

1. The effective date for these WLAs was July 16, 2007 (R4-2008-009)
2. WLAs as Average Monthly Effluent Limit
3. WLAs as Maximum Daily Effluent Limit

Results in **bold type** exceed applicable WLA.

Table 111. OC Pesticides, PCBs, and Siltation

POTW & Constituent	Units	Interim WLA[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 31 Dry May-2012
Camarillo Water Reclamation Plant (9AD_CAMA)						
Total Chlordane [2]	ng/L	100	ND	ND	ND	ND
4,4'-DDD	ng/L	6	ND	ND	ND	ND
4,4'-DDE	ng/L	188	ND	ND	ND	ND
4,4'-DDT	ng/L	10	ND	ND	ND	ND
Dieldrin	ng/L	10	ND	ND	ND	ND
PCBs [3]	ng/L	31	ND	ND	ND	ND
Toxaphene	ng/L	500	ND	ND	ND	ND
Hill Canyon Wastewater Treatment Plant (10D_HILL)						
Total Chlordane [2]	ng/L	1.2	ND	ND	ND	ND
4,4'-DDD	ng/L	20	ND	ND	ND	ND
4,4'-DDE	ng/L	260	ND	ND	ND	ND
4,4'-DDT	ng/L	10	ND	ND	ND	ND
Dieldrin	ng/L	10	ND	ND	ND	ND
PCBs [3]	ng/L	500	ND	ND	ND	ND
Toxaphene	ng/L	500	ND	ND	ND	ND
Simi Valley Water Quality Control Plant (07D_SIMI)						
Total Chlordane [2]	ng/L	100	ND	ND	ND	ND
4,4'-DDD	ng/L	50	ND	ND	ND	ND
4,4'-DDE	ng/L	1.2	ND	ND	ND	ND
4,4'-DDT	ng/L	10	ND	ND	ND	ND
Dieldrin	ng/L	10	ND	ND	ND	ND
PCBs [3]	ng/L	500	ND	ND	ND	ND
Toxaphene	ng/L	500	ND	ND	ND	ND

1. Interim daily WLAs are effective until March 14, 2026 (R4-2005-010).
2. Total chlordane is the sum of alpha and gamma-chlordane.
3. PCBs concentrations are the sum of the seven aroclors identified in CTR (1016, 1221, 1232, 1242, 1248, 1254, and 1260).

Table 112. Toxicity, Chlorpyrifos, and Diazinon

POTW & Constituent	Units	Final WLA[1]	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 31 Dry May-2012
Camarillo Water Reclamation Plant (9AD_CAMA)						
Chlorpyrifos	µg/L	0.0133	ND	ND	ND	ND
Diazinon	µg/L	0.1	ND	ND	ND	ND
Hill Canyon Wastewater Treatment Plant (10D_HILL)						
Chlorpyrifos	µg/L	0.014	ND	ND	ND	ND
Diazinon	µg/L	0.1	ND	ND	ND	ND
Simi Valley Water Quality Control Plant (07D_SIMI)						
Chlorpyrifos	µg/L	0.014	ND	ND	ND	ND
Diazinon	µg/L	0.1	ND	ND	ND	ND

1. The effective date for these WLAs was March 16, 2008 (R4-2005-009).

Table 113. Metals and Selenium

POTW & Constituent	Units	Daily Max WLA	Monthly Avg WLA	WLA	Event 28 Dry Aug-2011	Event 29 Dry Nov-2011	Event 31 Dry Feb-2012	Event 31 Dry May-2012
Camarillo Water Reclamation Plant (9AD_CAMA)								
Total Copper	µg/L	57.0 [i]	20.0 [i]		4.55	4.4	5.62	5.24
Total Nickel	µg/L	16.0 [i]	6.2 [i]		3.16	2.9	2.44	2.91
Total Mercury	lbs/month			0.03 [i]	0.00021	0.00024	0.00161	0.00162
Hill Canyon Wastewater Treatment Plant (10D_HILL)								
Total Copper	µg/L	20.0 [i]	16.0 [i]		4.1	3.6	4.1	3.8
Total Nickel	µg/L	8.3 [i]	6.4 [i]		2.0	2.8	1.9	2.9
Total Mercury[1]	lbs/month			0.23 [i]	0.005[1]	0.005[1]	0.004[1]	0.005[1]
Simi Valley Water Quality Control Plant (07D_SIMI)								
Total Copper	µg/L	31.0 [f]	30.5 [f]		DNQ	ND	5.05	4.52
Total Nickel	µg/L	960 [f]	169 [f]		DNQ	ND	1.85	1.54
Total Mercury[1]	lbs/month			0.18 [i]	0.11[1]	0.11[1]	0.008	0.006

i. Interim WLA effective until March 26, 2017 (R4-2006-012)
f. Final WLA; effective date was March 26, 2007 (R4-2006-012)
1. Total Mercury concentration reported as not detected (ND) for all monitoring events; one half of the method detection limit was used to calculate the monthly loads

COMPLIANCE COMPARISON DISCUSSION

General Water Quality Constituents, OC Pesticides, Metals, Nutrients

The compliance analysis shown in Table 106 through Table 113 above demonstrates that for the most part, the CCW is in compliance with the applicable interim or final WLAs and LAs currently in effect for the Nutrients, OC Pesticides, Toxicity, and Metals TMDLs addressed in the QAPP. The following observations summarize the compliance status with these load allocations:

- No exceedances of any interim WLA or LAs for OC Pesticides or PCBs were observed at any location in the watershed.
- Exceedances of numeric targets for Nitrate-N and Nitrate-N + Nitrite-N were observed at sites in Mugu Lagoon, Revolon Slough, Arroyo Simi, Arroyo Las Posas, and Calleguas Creek (02_PCH). Most exceedances occurred during dry events; wet-weather exceedances were observed only within three subwatersheds: Revolon Slough, Mugu Lagoon, and Arroyo Las Posas.
- One site (04_WOOD) exceeded the interim dry weather WLA and LA for selenium. However, per the Basin Plan Amendment, the attainment of the interim allocation will be evaluated in consideration of background loading if available. As noted in previous annual reports, Revolon Slough, where this site is located, has been shown to have rising groundwater, a large background source of selenium. No exceedances of other interim WLA or LAs for any other metals were observed at any location in the watershed. Though final load allocations and waste load allocations are not in effect until March 2022, bird eggs collected at Mugu Lagoon met the numeric targets for mercury and selenium.
- Although toxicity was observed at some locations in the watershed, TIEs were initiated for all samples meeting the requirements in the QAPP. As a result, the Stakeholders are in compliance with the toxicity WLAs and LAs per the requirements of the TMDL.
- Exceedances of the final WLAs for chlorpyrifos and diazinon were observed at several locations in the watershed; most of them were for chlorpyrifos during wet weather events. No exceedances of the chlorpyrifos and diazinon interim LAs were observed.

Nutrients

Exceedances of numeric targets for Nitrate-N and Nitrate-N + Nitrite-N were observed at sites in Mugu Lagoon, Revolon Slough, Arroyo Simi, Arroyo Las Posas, and Calleguas Creek (02_PCH). Nitrate-N exceedances are summarized in Table 114 below. The table focuses on Nitrate-N results since Nitrate-N + Nitrite-N exceedances were generally caused by high Nitrate-N values. With one exception, 05_CENTR during wet-weather Event 32, Nitrite-N was below the 1 mg/L target at all sites and events.

Table 114. Exceedances of Nitrate-N Numeric TMDL Target of 10 mg/L (all units in mg/L)

Nitrogen TMDL Compliance Sites	Event 28 Aug-2011 Dry	Event 29 Nov-2011 Dry	Event 31 Feb-2011 Dry	Event 33 May-2011 Dry	Event 30 Jan-2012 Wet	Event 32 Mar-2012 Wet
01_RR_BR	**yes**	**yes**	no	no	**yes**	no
04_WOOD	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
05_CENTR	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
02_PCH	**yes**	**yes**	**yes**	**yes**	NM	NM
03_UNIV	no	no	no	no	no	no
9A_HOWAR	no	no	no	no	NM	NM
9B_ADOLF	no	no	no	no	no	no
10_GATE	no	no	no	no	no	no
12_PARK	no	no	no	no	NM	NM
13_BELT	no	no	no	no	NM	NM
06_SOMIS	no	no	**yes**	no	no	**yes**
07_HITCH	no	no	**yes**	**yes**	no	no
07_MADER	no	no	no	no	no	no

no signifies that monitoring results were below the Nitrate-N target during the monitoring event.
yes signifies that monitoring results were below the Nitrate-N target during the monitoring event.
NM – not monitored

Nitrogen exceedances occurred primarily in areas of the watershed with agricultural inputs. Reaches downstream of POTW discharges are generally in compliance with the TMDL requirements and urban discharges were determined to be negligible during the TMDL analysis and therefore do not have TMDL allocations. The final nitrogen allocations for agriculture became effective in July 2010. The exceedances of the nitrogen load allocations since that time have triggered the inclusion of nitrogen in the Agricultural Water Quality Management Plan (AWQMP) required under the Conditional Waiver of Irrigated Lands that is currently being implemented in the Calleguas Creek Watershed. The past two years of agricultural education courses have included various classes focused on nitrogen management; AWQMP implementation will continue to target nitrogen and include BMPs to address these exceedances. Compliance with the load allocations is determined through implementation of the AWQMP.

Chlorpyrifos and Diazinon

Further examination of the chlorpyrifos and diazinon exceedances at receiving water sites was needed to assess whether urban dischargers caused the exceedance of the receiving water allocations. The WLAs for urban dischargers are assessed in the receiving water, while agricultural dischargers are not yet required to be in compliance with the chlorpyrifos and diazinon final load allocations. Monitoring data at land use sites from each subwatershed for which an exceedance was observed was compared to the WLA to determine if MS4 discharges exceeded the allocation during the monitoring event where elevated receiving water concentrations were observed.[5] If the MS4 land use data were below the WLA, the MS4 dischargers were considered to be in compliance with the WLAs. If the MS4 land use data were above the WLA, the MS4 could be contributing to the exceedance in the receiving water.

As shown in Table 115, there were only two exceedances of diazinon targets at the receiving water sites and, in both cases, the upstream diazinon levels in MS4 discharges were less the WLA for diazinon.

There were also fourteen exceedances of chlorpyrifos targets at the receiving water sites and, in all but three instances, the exceedances were in reaches to which MS4 discharges were not occurring or the land use data was less than the WLA for chlorpyrifos. The receiving water exceeded the chlorpyrifos target at sites 09B_ADOLF and 07_HITCH during the second storm sampled (Event 32). Each of these watersheds has two MS4 and one agricultural use site upstream of the receiving water sites. In both cases, the agricultural sites and one of the two MS4 sites exceeded the targets for chlorpyrifos. As a result, it is possible that the either the MS4 or agricultural discharges, or both, contributed to the receiving water exceedances. Because chlorpyrifos is often associated with sediment, it is likely these discharges represent legacy applications of chlorpyrifos that were flushed into the stream with sediment during this storm.

The chlorpyrifos WLA was also exceeded in the urban site upstream of 04_WOOD during a dry event in February 2012 (Event 31). Once again, the upstream agricultural sites also exceeded the target. As a result, it is possible that the either the MS4 or agricultural discharges, or both, contributed to the receiving water exceedances.

Table 115. Compliance and Land Use Sites Comparison to Determine MS4 Chlorpyrifos and Diazinon WLA Compliance

Sites Exceeding WLAs	Constituent	Event 28 Aug-2011 Dry	Event 29 Nov-2011 Dry	Event 31 Feb-2011 Dry	Event 33 May-2012 Dry	Event 30 Jan-2012 Wet	Event 32 Mar-2012 Wet
01_RR_BR	Chlorpyrifos		no[1]			no[1]	no[1]
04_WOOD	Chlorpyrifos		no	**yes**			no
03_UNIV	Chlorpyrifos			no[1]		no[1]	no[1]
	Diazinon						no[1]
09B_ADOLF	Chlorpyrifos						**yes**
	Diazinon				no		
06_SOMIS	Chlorpyrifos						no
07_HITCH	Chlorpyrifos			no		no	**yes**

no signifies that none of the MS4 land use site for the subwatershed exceeded the WLA during the monitoring event.
yes signifies that at least one the MS4 land use site for the subwatershed exceeded the WLA during the monitoring event.
2. There are no urban discharges to these subwatersheds above the sampling location.
Blank cells indicate that a WLA exceedance did not occur at the compliance monitoring site during a particular event.

[5] Refer to Table 6 for a list of land use sites in each subwatershed.

Selenium

Selenium concentrations in Revolon Slough at 04_WOOD exceeded the urban dischargers interim WLA and the agricultural dischargers interim LA during all four dry weather monitoring events. A summary of monitoring results for total selenium at sites in the Revolon Slough subwatershed is shown in Table 116 below. For discussion purposes both dry weather and wet weather monitoring results are included in the table.

Table 116. Selenium Monitoring Data in the Revolon Slough Subwatershed

		Dry Weather Events & Dates						Wet Weather Events & Dates		
		Interim		28	29	31	33		30	32
Site ID	Use	WLA[1]	LA[1]	Aug-11	Nov-11	Feb-12	May-12	Target[2]	Jan-12	Mar-12
04_WOOD	RW	13	6	23.06	30.4	25.71	22.13	290	19.1	11.54
04D_WOOD	Ag		6	NS	8.4	6.88	NS	290	4.18	2.54
05D_SANT_VCWPD	Ag		6	**62.11**	**72.1**	**53.25**	**63.34**	290	52.45	39.7
04D_VENTURA	Urban	13		0.51	3.2	DNQ	0.6	290	DNQ	DNQ

3. Interim WLAs for stormwater permittees and interim LAs for agricultural dischargers are effective until March 2022 (R4-2006-012).
4. No wet weather exceedances were observed in the TMDL analysis so no interim limits were assigned for the TMDL. For comparison purposes, the wet weather targets were included in this table.

RW – Receiving water compliance site; Ag – Agricultural

NS – Not sampled; DNQ – Detected not quantified; ND – Not detected

Results in **bold type** exceed applicable interim WLA or interim LA.

As noted in the table above, high levels of selenium were also observed at 05D_SANT_VCWPD, an agricultural use site in the upper reach of the subwatershed. Selenium levels at the 04_WOOD receiving water site and at the upstream 05D_SANT_VCWPD site are generally higher during dry weather events as the concentrations are being diluted during wet weather events. As discussed in the TMDL, a primary source of selenium in Revolon Slough is considered to be rising groundwater levels and the interim allocations were to be considered in this context. These exceedances were likely caused by rising groundwater. Further investigation of selenium sources will be conducted through special studies as required by the TMDL.

Trends Discussion

GENERAL WATER QUALITY CONSTITUENTS, OC PESTICIDES, METALS, NUTRIENTS

Nitrogen Compounds

Ammonia and Nitrite-N are consistently below TMDL allocations at all Nitrogen TMDL compliance sites. Nitrate-N is occasionally above the 10 mg/L objective in the Mugu Lagoon (01_RR_BR), the lower reaches of Calleguas Creek (02_PCH and 03_UNIV), in Revolon Slough (04_WOOD and 05_CENTR), and in the Las Posas and Simi Arroyos (06_SOMIS and 07_HITCH). Exceedances in Conejo Creek and in the upper reaches of Calleguas Creek are seldom observed. Levels in the Mugu Lagoon and in freshwater immediately upstream (02_PCH) appear to be decreasing from year to year. Nevertheless, statistically-significant trends have not been observed at any of the sites.

OC Pesticides, PCBs, and Siltation

No exceedances of interim WLA or LAs for OC Pesticides or PCBs were observed at any location in the watershed during the previous four monitoring years. Because most constituents are below method detection or quantification levels, meaningful trends in the data cannot be assessed at this time.

Toxicity, Chlorpyrifos, and Diazinon

Chlorpyrifos and diazinon levels are low and often non-detect at compliance sites in Mugu Lagoon and in upstream freshwater sites with occasional spikes in concentrations observed during storm events, especially at sites with agricultural inputs. This is expected as rain washes out sediment particles which may contain these constituents. There are no clear trends observed at this time.

Toxicity is occasionally identified at receiving water sites, especially during storm events. One particular site, 04_WOOD, has been more problematic and the stakeholders have invested resources into source control efforts to address contributing sources. Water column toxicity results of the past four years are summarized in Table 49.

Metals and Selenium

For the most part, metals and selenium levels at receiving water sites have been low and in compliance with the interim LAs and WLAs and TMDL targets. Concentrations of total metals, such as copper and nickel, tend to be higher during rainstorms, but are generally below the final wet-weather allocations. As a result, the watershed is generally meeting the TMDL. Selenium concentrations at receiving water sites are also low, with few exceedances of selenium interim LAs and WLA, except in the Revolon Slough (04_WOOD and 05D_SANT_VCWPD). As discussed in the TMDL, a primary source of selenium in Revolon Slough is considered to be rising groundwater levels and the interim allocations were to be considered in this context.

With the completion of four years of CCWTMP monitoring, a significant number of metals and selenium samples have been collected for comparison with the TMDL numeric targets. The final targets for the Metals and Selenium TMDL are not required to be achieved until March 26, 2022 for agricultural and point source dischargers; POTWs have until 2017. The targets for mercury and selenium are already being met in bird eggs collected at the Mugu Lagoon. Additionally, the 2011 mercury and selenium concentrations are lower than the concentrations detected in the 2008 bird egg sample.

The data summary tables below focus on the receiving waters and look ahead towards progress in meeting the TMDL numeric targets. Sufficient samples are available to also determine whether delisting from the 303(d) list is possible using recently collected data.[6]

For Table 117 all available Mugu Lagoon receiving water data from the six sites (01_RR_BR, 01_BPT_3, 01_BPT_6, 01_BPT_14, 01_BPT_15, and 01_SG_74) was combined and compared to the appropriate numeric target according to whether the samples were collected during dry or wet weather. Mugu Lagoon is consistently complying with the TMDL numeric targets, which are the lowest for all constituents except for selenium.

Table 117. Mugu Lagoon Metals Progress to Achieving Numeric Targets

Constituent	TMDL Numeric Target		Sample Size	Exceedances	Allowable Exceedances
	Dry Weather Criteria (µg/L)	Wet Weather Criteria (µg/L)			
Copper [1]	4.68	7.25	113	1	9
Mercury	0.051	0.051	113	2	9
Nickel	8.2	74	113	1	9
Selenium	71	290	113	0	9
Zinc	81	90	113	0	9

[1] Copper numeric target calculated using the approved site-specific WER.

The receiving water site in reach 2 is only sampled for nutrients. Therefore, to assess the achievement of the numeric targets in this reach, data from 01_RR_BR was used since it is located at the divide between Mugu Lagoon and Reach 2. As shown in Table 118, this is the first upstream site where exceedances in selenium begin to be observed. Reach 3 has zero selenium exceedances (Table 119); however reach 4 almost continuously exceeds the targets (Table 120). A special study has been completed demonstrating the high concentrations of selenium in Revolon Slough are attributable to groundwater.

[6] State of California State Water Resources Control Board. "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List." Adopted September 2004. Resolution No. 2004-0063.

Table 118. Reach 2 Metals Progress to Achieving Numeric Targets

Constituent	TMDL Numeric Target		Sample Size	Exceedances	Allowable Exceedances
	Dry Weather Criteria (µg/L)	Wet Weather Criteria (µg/L)			
Copper [1]	11.44	17.71	33	0	2
Mercury	0.051	0.051	33	2	2
Nickel	8.2	74	33	1	2
Selenium	5	290	33	**6**	2
Zinc	81	90	33	0	2

[1] Copper numeric target calculated using the approved site-specific WER.

Table 119 assesses compliance with the reach 3 numeric targets using the receiving water site 03_UNIV, located in the middle of the reach.

Table 119. Reach 3 Metals Progress to Achieving Numeric Targets

Constituent	TMDL Numeric Target		Sample Size	Exceedances	Allowable Exceedances
	Dry Weather Criteria (µg/L)	Wet Weather Criteria (µg/L)			
Copper	25.9	26.3	33	0	2
Mercury	0.051	0.051	33	**4**	2
Nickel	149	856	33	0	2
Selenium	5	None	25	0	2
Zinc	338	214	33	0	2

[1] Copper numeric target calculated using the approved site-specific WER.

Revolon Slough is close to meeting all numeric targets, except for selenium.

Table 120. Reach 4 Metals Progress to Achieving Numeric Targets

Constituent	TMDL Numeric Target		Sample Size	Exceedances	Allowable Exceedances
	Dry Weather Criteria (µg/L)	Wet Weather Criteria (µg/L)			
Copper [1]	4.68	7.25	33	1	2
Mercury	0.051	0.051	33	**3**	2
Nickel	8.2	74	33	**3**	2
Selenium	5	290	33	**25**	2
Zinc	81	90	33	1	2

[1] Copper numeric target calculated using the approved site-specific WER.

As shown in the previous tables, the TMDL numeric targets are now being met for all constituents at the terminus of the watershed, Mugu Lagoon. Upstream there are ongoing exceedances of the selenium target in Revolon Slough. In other listed reaches of the watershed, most numeric targets are currently being met. Constituents that exceed the final targets above the allowable number are few and infrequent, giving confidence that the TMDL should be achieved within the implementation schedule.

As required by the Metals and Selenium TMDL Implementation Task 18, by March 2013, the responsible parties are required to evaluate the effectiveness of BMPs implemented under the AWQMP and UWQMP in controlling metals and selenium discharges. The analysis discussed above demonstrates that the BMPs being implemented in the watershed have been effective in reducing concentrations of metals in the receiving waters. The analysis indicates that the implementation of BMPs will be sufficient to result in compliance with the interim reduction milestones and final TMDL targets within the schedule laid out in the TMDL. Selenium in Revolon Slough is the only constituent for which further work will be necessary to determine if more BMPs should be implemented to meet the final TMDL target, however the final TMDL bird egg targets are being achieved in the watershed, indicating that beneficial uses are not being impacted by the current selenium concentrations. The analysis provided in this section is provided to meet the Metals and Selenium TMDL Implementation Task 18 requirement to evaluate the effectiveness of BMPs being implementing under the metals and selenium AWQMP and UWQMP.

Revisions and Recommendations

The QAPP specifies that during the completion of each CCWTMP annual report, revisions to the standard procedures will be made, including: site relocation, ceasing monitoring efforts and/or deleting certain constituents from sample collection. Some revisions were recommended in the previous annual reports; however no response from the Regional Water Board has been received to date. In order to continue implementing the CCWTMP in an adaptive and cost effective manner, some of the previously requested revisions have been carried out. The following revisions to the QAPP include those previously requested in past annual reports, actions taken, and additional recommendations:

First Year Annual Report Recommendations and Actions

- The relocation of certain CCWTMP land use site to match new locations of the Ventura County Watershed Protection District (VCWPD) MS4 Stormwater Site:
    - The relocations are still being evaluated by the Stakeholders and will be provided to the Regional Water Board when they occur.
- Cease sampling the Nitrogen TMDL investigation sites. These sites were selected to characterize land use discharges to meet a special study requirement in the TMDL. The monitoring was only scheduled to occur for one year (see Nonpoint Source Monitoring Workplan (LWA, 2004)) so this monitoring has now been completed.
    - Nutrient samples were collected from land use sites through the second year of monitoring, but ceased starting with year three.
    - Nutrient sampling of agricultural land use sites was re-started this year beginning with event 31 to assess compliance with the Conditional Ag Waiver (Order No. R4-2010-0186) and inform BMP implementation.
- Cease monthly monitoring of metals after June 2010 monitoring event is completed and return to quarterly for the remainder of the year. This will complete one year of monitoring and prevent additional monitoring costs from being incurred while the data evaluation is occurring. Monthly monitoring can be reinitiated in 2013if deemed necessary by the Regional Water Board based on the data review.
    - Monthly metals monitoring ended after the completion of event 21 in June 2010.
- The triazine herbicides atrazine, prometryn, and simazine were included in the monitoring program as they have been detected in toxic samples and have the potential to increase toxicity of OP pesticides (Anderson and Lydy, 2002). However, triazine herbicides are not on the 303(d) list and have not been identified as contributing to or increasing toxicity in the CCW in either the historical data or in the recently collected data. As such, conducting analysis for triazine herbicides will be discontinued.
    - Triazine analysis continued through year two and the first two dry weather and first storm event of year three. Triazine sample collection has not been performed since the end of 2010.
- Cease conducting Toxicity Evaluation Investigations (TIEs) at the 04_WOOD site (Revolon Slough at Wood Road crossing) as detailed in the letter sent to the Regional

Water Board on July 20, 2009 (Appendix D of CCWTMP First Year Annual Monitoring Report). Continual toxicity has been observed at this site and as outlined in the letter, the stakeholders would rather invest resources into implementation activities targeting load reductions.

- TIEs at the 04_WOOD site were not initiated when water quality toxicity was observed during the second and third years of monitoring.

Second Year Annual Report Recommendations and Actions

- Cease PCBs monitoring at all land use sites.
    - PCB analysis has continued since there is no cost savings in not obtaining these results.

Third Year Annual Report Recommendations and Actions

- Ending toxicity investigation monitoring. As outlined in the Toxicity Review section of this report, significant mortality has not occurred at either the two water column or two sediment toxicity investigation sites in the three years of the CCWTMP.
    - Although toxicity monitoring has not demonstrated ongoing toxicity at these sites that would warrant continued monitoring, toxicity monitoring will be restarted and samples collected until sufficient data are collected to support a delisting of these reaches.
- Revise the nitrogen TMDL monitoring to reflect a subwatershed approach consistent with the other TMDLs. The nitrogen TMDL was adopted many years before the remaining CCW TMDLs and required a different monitoring approach. Since the compliance deadlines for this TMDL have been reached and many of the TMDL reaches are in compliance, a revised monitoring approach that provides more consistency with the other TMDLs is warranted. Modifications to remove sites for reaches upstream of a subwatershed monitoring location are recommended.

Fourth Year Annual Report Recommendations and Actions

- Cease quarterly monitoring in Mugu Lagoon. Metals and general chemistry are the only constituents being monitored during these events, and sufficient data is available to support delisting in the lagoon.

Recommended revisions from the first year annual report have been implemented as outlined above. The second year recommendation was not implemented since continuing to report PCB results requires no additional effort. Third and fourth year recommendations will be incorporated into the revised QAPP.

In addition to the recommendations presented above, the QAPP needs to be updated to incorporate the Salts TMDL monitoring approach. At that time, it is also recommended that the QAPP be updated for all constituents to reflect the recommendations identified above and reflect monitoring adjustments that have been implemented due to field conditions.

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