



23 November 2009

Mr. Gerard Thibeault
Regional Water Quality Control Board
- Santa Ana Region
3737 Main St., Suite 500
Riverside, CA 92501

RE: Comments on Tentative Order No. R8-2009-0036 (NPDES No. CAS618036)

Dear Mr. Thibeault:

Thank you for the opportunity to review the second draft of the proposed MS4 permit for San Bernardino County. In previous correspondence the Permittees encouraged Regional Board staff to implement the water quality-based effluent limits (WQBELs) through an iterative best management practices (BMP) approach rather than expressing the wasteload allocations (WLAs) as numeric effluent limits (NELs). It appears from the many revisions throughout the draft document that the Regional Board has accepted the Permittee's recommendation.

Commenting on the draft permit, U.S. EPA acknowledged that the Regional Board could rely on the BMP approach to achieve compliance with the aforementioned WLAs.¹ However, EPA also indicated that, in order to do so, the administrative record for the permit must contain "technical documentation demonstrating that specific BMPs would achieve the WLAs." Risk Sciences has been asked review the administrative record and supplement it as necessary to meet EPA's requirements.

It appears that EPA is unaware that this issue was carefully considered at the time the TMDLs were adopted. And, in each instance, the Regional Board made specific findings that various BMPs identified in the TMDL implementation plans were expected to achieve compliance with the WLAs.² By incorporating the TMDLs, WLAs, and related implementation plans into the draft permits (by reference), the administrative record already contains the scientific evidence needed to demonstrate the probable success of the BMP requirements in the permit. Therefore, the permittees hereby request that the entire administrative record related to the Big Bear Lake Nutrient TMDL (Order No. R8-2006-0023) and the Middle Santa Ana River Bacteria TMDL (Order No. R8-2005-0001) be added (by reference) to the administrative record for the proposed MS4 permit.

¹ U.S. EPA. Letter to Maria Macario, California Regional Water Quality Control Board-Santa Ana Region. Re: Draft MS4 Permit for San Bernardino County and Incorporated Cities within San Bernardino County (NPDES Permit No. CAS 618036). Sept. 9, 2009.

² In addition to the adoption resolutions for each TMDL, see the Regional Water Quality Control Board's related Staff Reports and Response to Comments for the Big Bear Lake Nutrient TMDLs and the Middle Santa Ana River Bacterial Indicators TMDLs.

There are several different Task Forces working on implementation planning for both of the adopted TMDLs in San Bernardino County. Much of the technical documentation relied on to support using the BMP approach was developed by these Task Forces. Therefore, the MS4 permittees hereby request that all of the technical reports, scientific articles, meeting minutes and other documents previously presented to the Regional Board by the Big Bear Lake TMDL Task Force, Storm Water Quality Standards Task Force, and Middle Santa Ana River TMDL Task Force be incorporated (by reference) into the administrative record for the proposed MS4 permit.

In addition, new evidence continues to become available to support the Regional Board's decision. For example, on Thursday, November 19, 2009, the Middle Santa Ana River TMDL Task Force reviewed routine water quality monitoring data (attached as Appendix A). These data indicate that bacteria concentrations are declining significantly and the Permittees are actively working to sustain these improvements in order to meet the WLA on schedule. Other documents recently prepared by the Storm Water Quality Standards Task Force (attached as Appendix B) describe the additional BMPs that are expected to close the remaining gap. Finally, a brief bibliography of the scientific and technical papers reviewed by the Task Force is included as Appendix C to this letter.

Collectively, there is substantial evidence to support the Regional Board's conclusion that WLAs could be achieved by implementing one or more of the BMPs identified in the record. The State Board and U.S. EPA also affirmed this conclusion when each subsequently approved the TMDLs. Any claim that the administrative record is deficient with respect to BMP effectiveness is incorrect.

Submitted on behalf of the MS4 Permittees in San Bernardino County,



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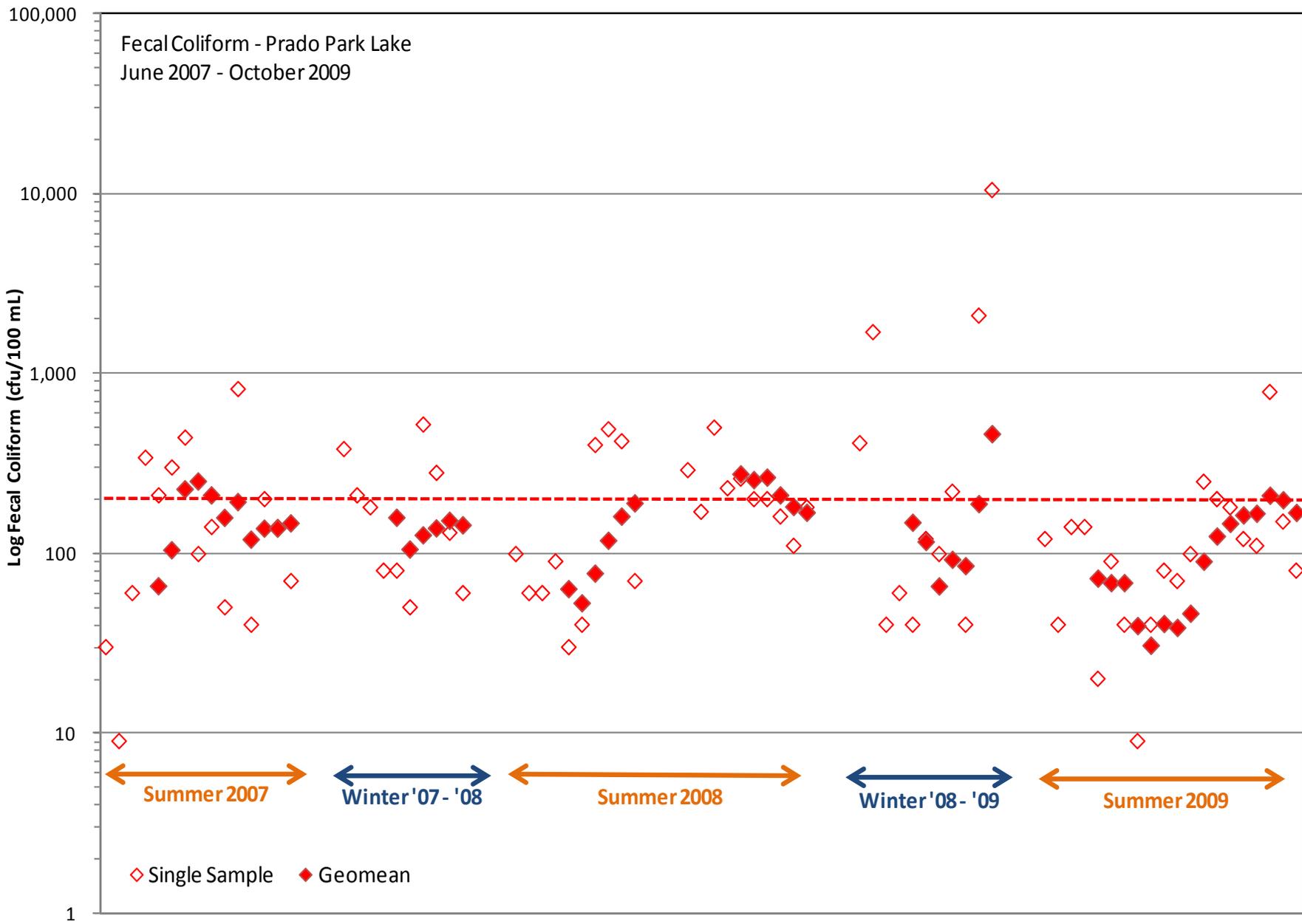
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Appendix A:

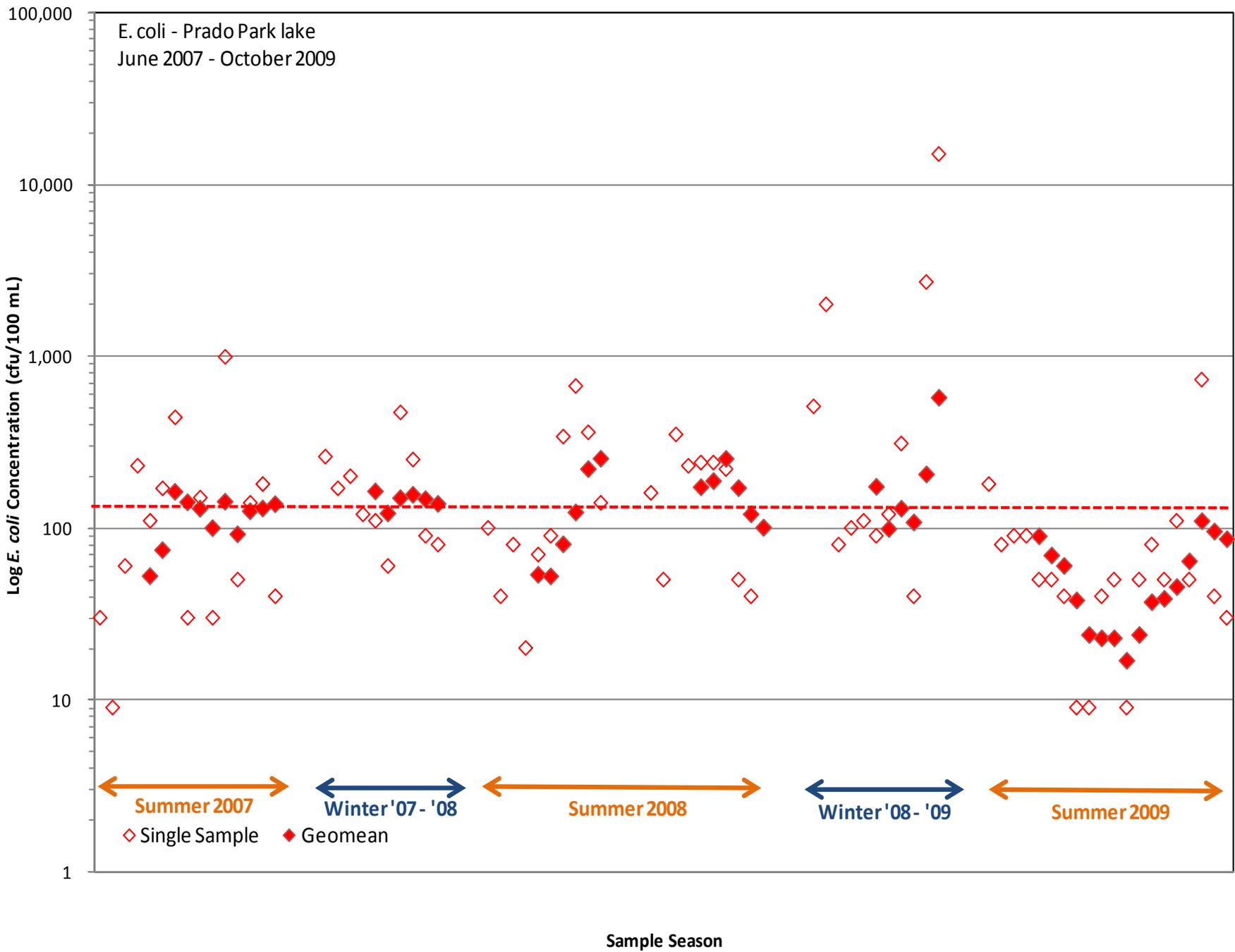
Summary of Water Quality Monitoring Data

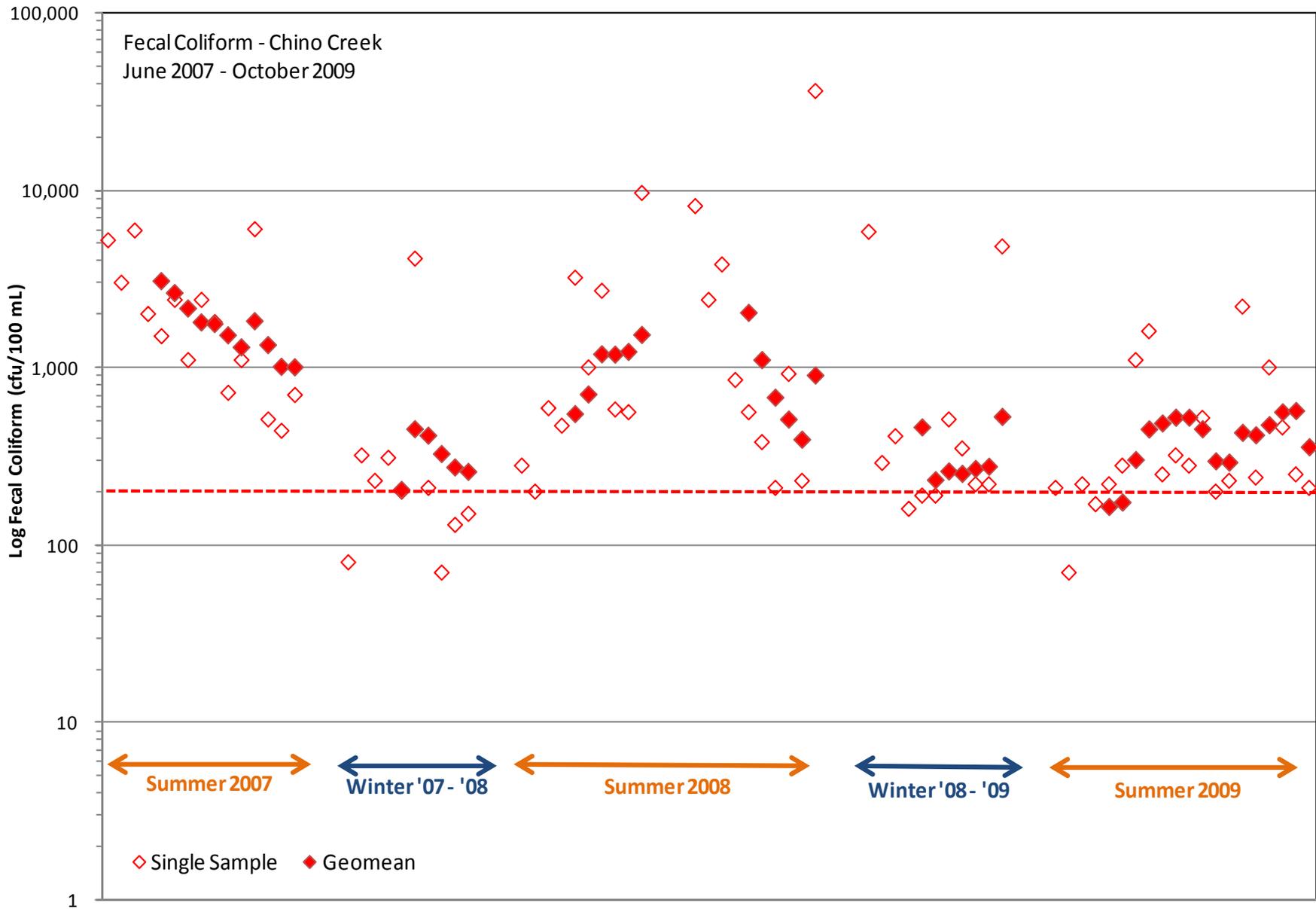
for the Middle Santa Ana River Bacteria TMDL

Presented by Dr. Richard Meyerhoff, CDM on November 19, 2009

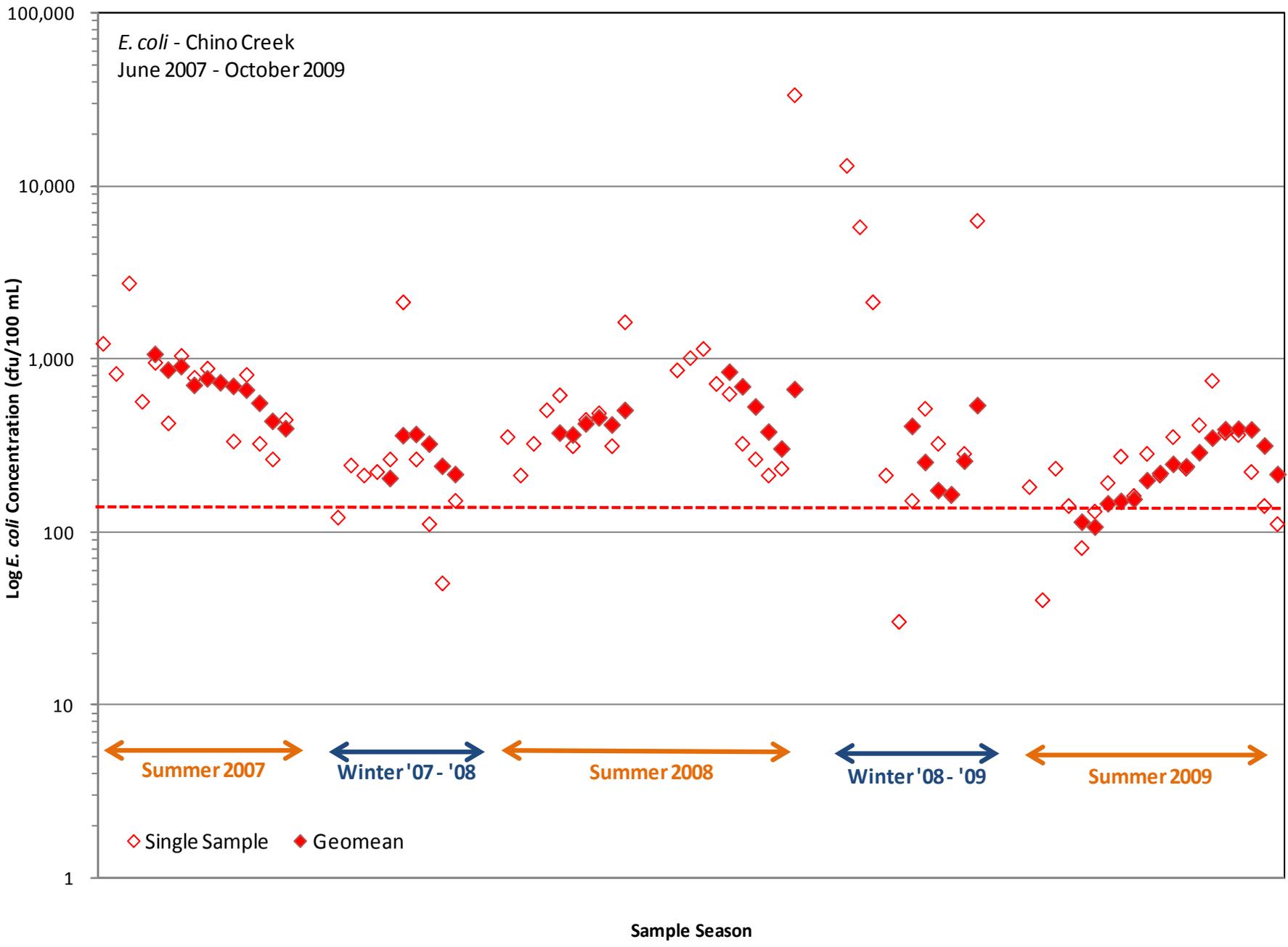


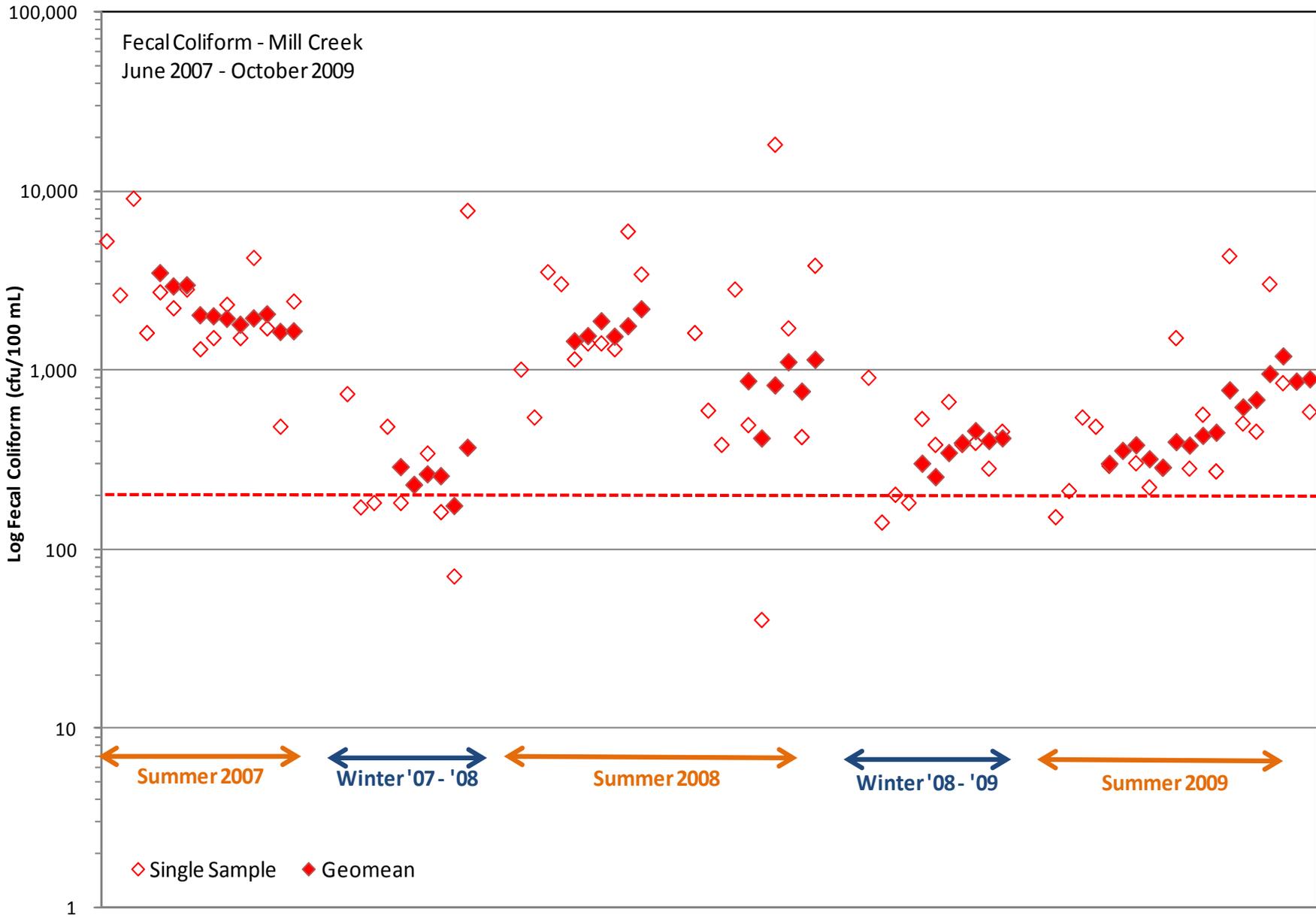
Sample Season



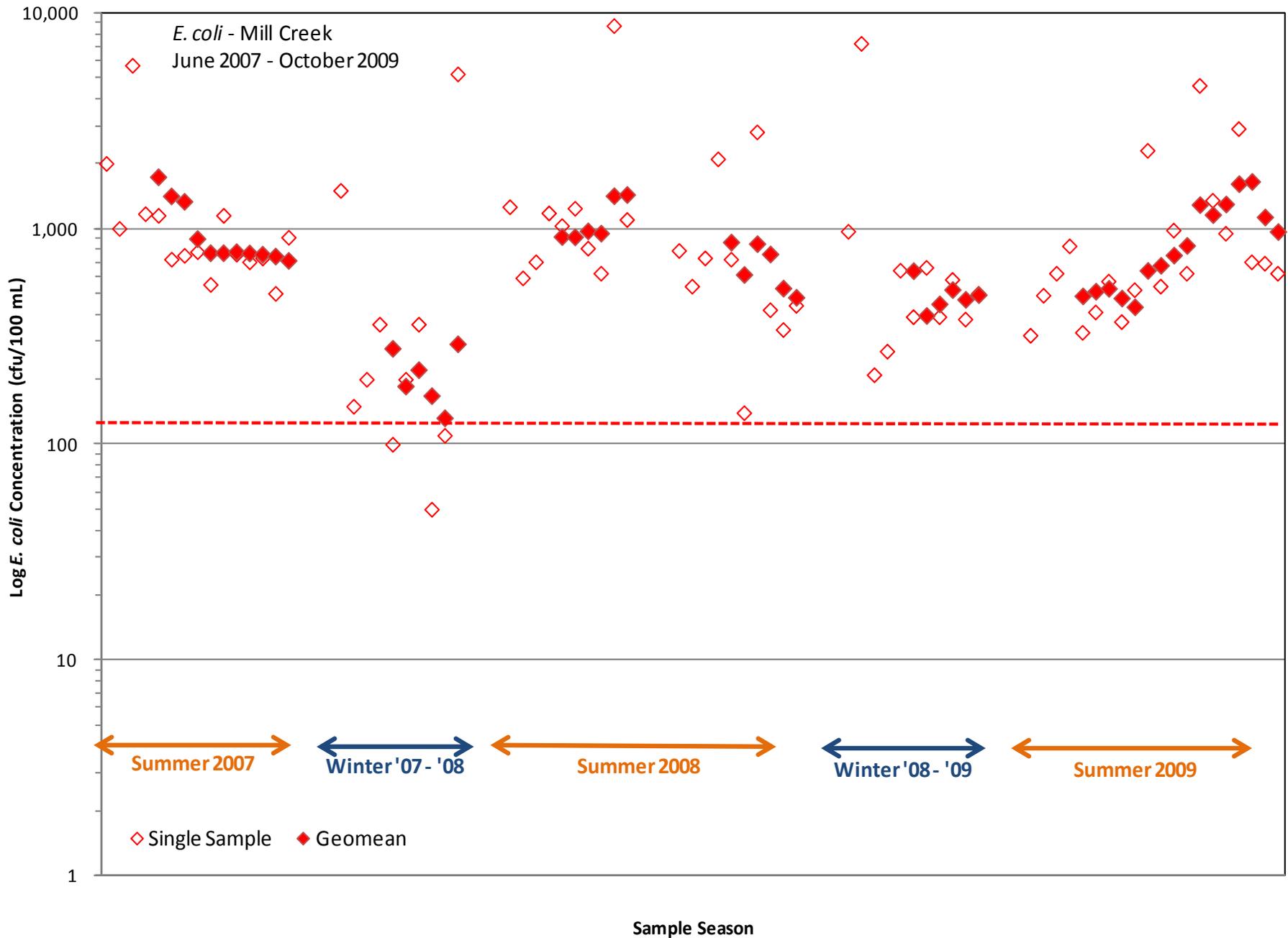


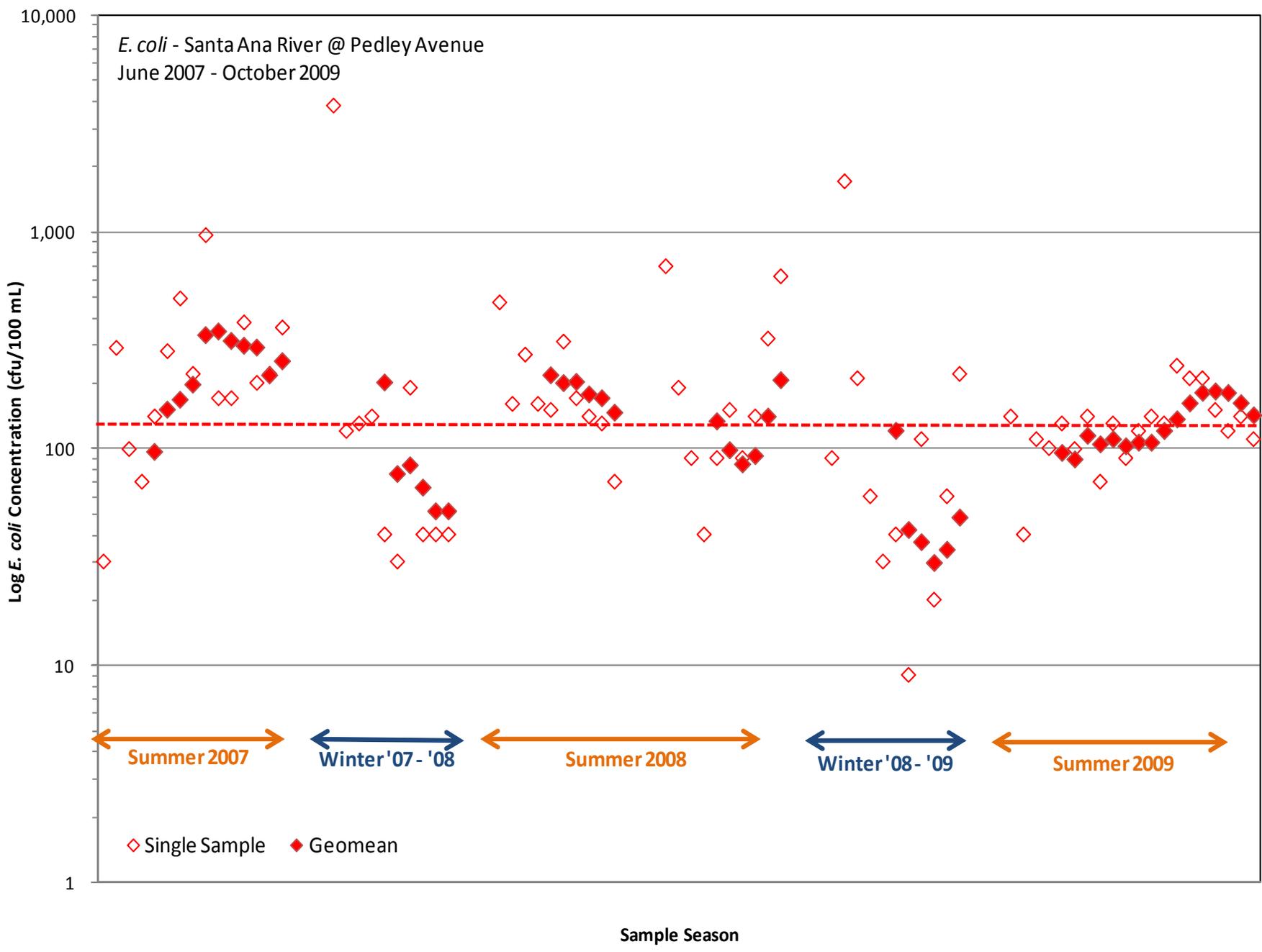
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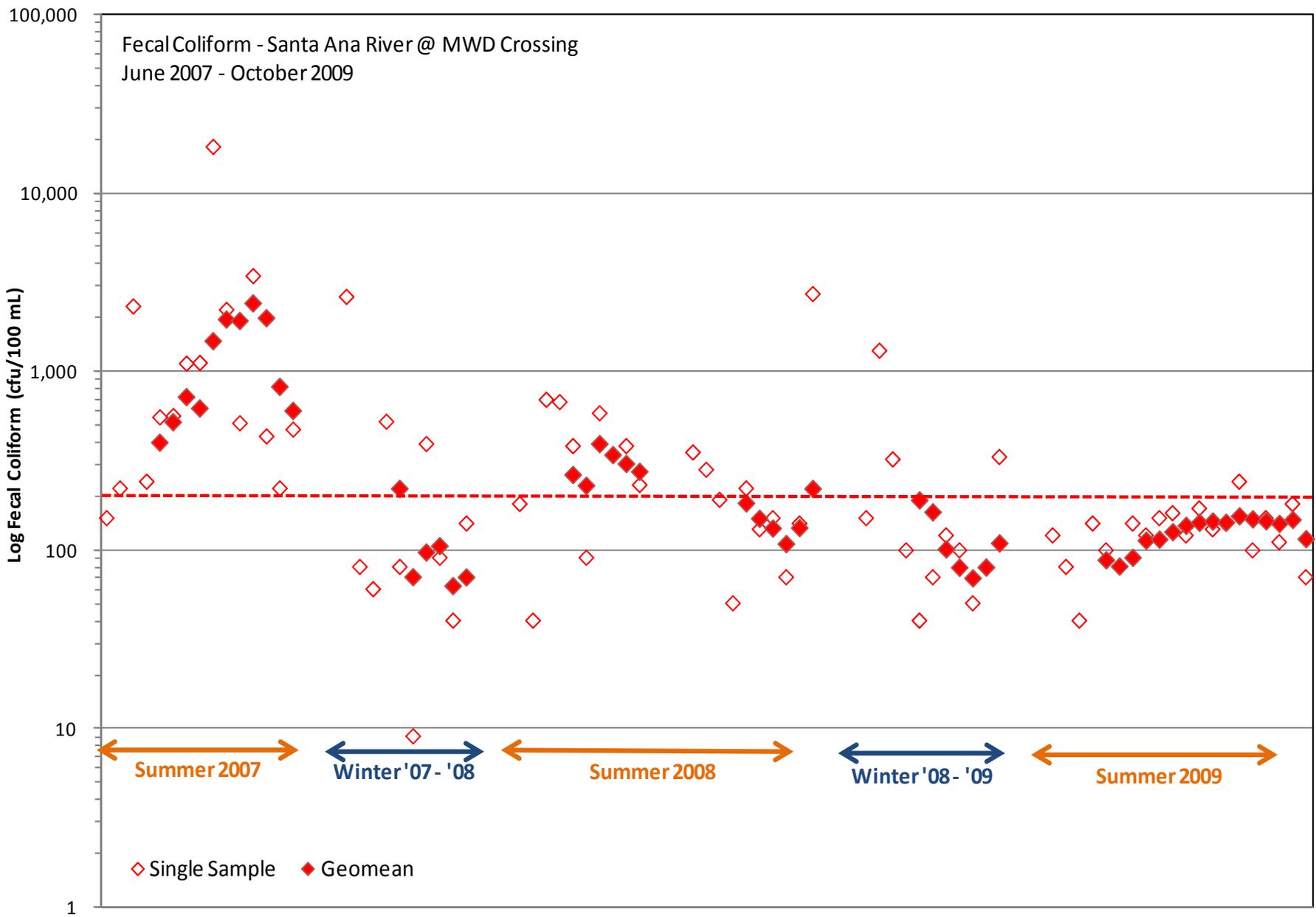




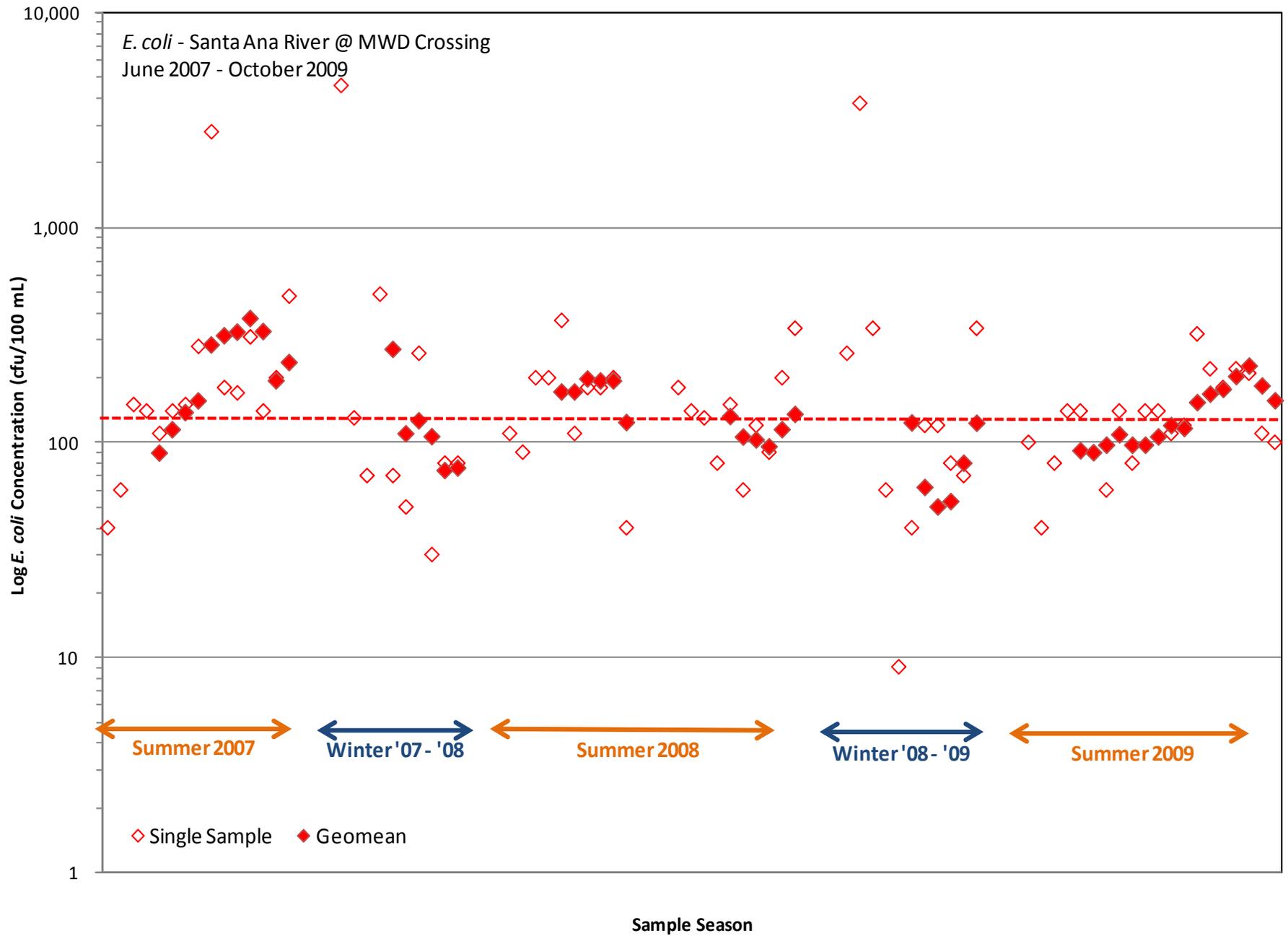
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Appendix B: Stormwater Bacteria BMPs

Bacteria BMP Type	Storm?	Parameter	Mean Influent #/100 mL	Mean Effluent #/100 mL	n	Percent Removal	Construction Cost (excluding land costs)	Annual O & M Cost	Source
Water Treatment BMPs									
Wet Basins (Retention ponds, wet ponds, wet extended detention ponds, stormwater ponds, retention basins). Retains permanent pool.	Y	FC	11700	100	NR	99	\$1.00-12.25/ft ³ Typically <\$100,000 per acre	Up to \$10,000 per pond	CalTrans (2004) study in SoCal
	N	FC	4400	20	NR	99			CalTrans (2004) study in SoCal
		FC	1929	515	9	73			BMP dB; Fremont, CA
		FC	58	5	24	91			BMP dB; Largo, FL
		FC	4231	2475	16	41.5			BMP dB; Valhalla, NY
	Y	FC	NR	1779	10	90			Schueler (2000); ON
	Y	FC	NR	2858	10	64			Schueler (2000); ON
	Y	<i>E. coli</i>	NR	NR	10	86			Schueler (2000); ON
	Y	<i>E. coli</i>	NR	NR	10	51			Schueler (2000); ON
	Y/N	FC	152	63	84	58			Mallin et al. (2002); NC
Dry Basins (Dry ponds, detention or extended detention basins or ponds). Designed to empty within several days.	Y	FC	900	2000	NR	-122	\$0.30-1.00/ft ³ Typically < \$100,000 per acre	\$3,100-10,000 per pond	CalTrans (2004) study in SoCal; storm
	Y	FC	6700	7500	NR	-12			CalTrans (2004) study in SoCal; storm
	Y	FC	27	27	8	0			USGS (2004) study in USVI
	Y	FC	3412	724	35	79			Harper et al. (1999) study in FL
	N	<i>E. coli</i>	563	515	18	9			MSAR (2009)
	N	FC	957	738	18	23			MSAR (2009)
	Y	<i>E. coli</i>	149	204	12	-37			MSAR (2009)
	Y	FC	380	490	12	-29			MSAR (2009)
Constructed Wetlands (Stormwater wetlands, wetland basins, shallow marshes, extended detention wetlands). "Essentially shallow wet basins."	Y/N	FC	33.8	7.4	5	78	\$0.35-1.30/ft ³ , or \$26,325-55,485/acre of wetland	\$1,500-2,700/hectare	Hinds et al. (2004); Columbus
	N	FC	760	80	10	89			LN & COO (2004); Laguna Niguel
	N	FC	1915	116	9	94			LN & COO (2004); Laguna Niguel
	N	FC	5178	101	12	98			LN & COO (2004); Laguna Niguel
	N	<i>E. coli</i>	4163	27	10	99			LN & COO (2004); Laguna Niguel
	N	<i>E. coli</i>	1897	107	9	94			LN & COO (2004); Laguna Niguel
	N	<i>E. coli</i>	630	73	9	88			LN & COO (2004); Laguna Niguel
	Y	FC	5800	1400	NR	76			CalTrans (2004) study in SoCal
Media Filters		FC	NR	18528		-85	\$6,600-18,500 per acre drainage Total \$230,000-\$485,000 in So CA	5% of construction costs	City of Austin (1997)
	Y	FC	NR	NR		36			Glick et al. (1998); Austin, TX
Disinfection (UV, ozone, chlorine)	N	FC	32800**	16**		99.9% (inversely proportional to turbidity)	For facilities to treat 1,250-5,000 cfs peak flow: \$19.2-30.5 million for ozone, \$48-87.8 million for UV	\$534,000-657,000 for ozone, \$248,000-992,000 for UV	**County of Orange (2008)
Diversion						100% of diverted fraction	\$14,400-2,071,000 for diversions of up to 0.5 MGD in Orange County	\$2,800-83,000	RBF (2003)
Vegetated Swales or Channels (Grassed channels, dry swales, retention swales). Only includes those features with little to moderate soil infiltration.	Y	FC	386	459	NR	-19	\$0.50/ft ² (<\$35,000 for 3 ft x 21 ft x 1,000 ft swale)	32% of construction costs	BMP dB; Altadena, Caltrans (2004)
	Y	FC	84853	47	NR	99.9			BMP dB; Carlsbad, Caltrans (2004)
	Y	FC	490	1122	NR	-129			BMP dB; Cerritos, Caltrans (2004)
	N	<i>E. coli</i>	20651	717	18	97			MSAR (2009); dry
	N	FC	16293	675	18	96			MSAR (2009); dry
	Y	<i>E. coli</i>	2448	2904	12	-19			MSAR (2009); wet
	Y	FC	3954	4196	12	-6			MSAR (2009); wet
	Y	FC	65	105	NR	-62			BMP dB; Downey, Caltrans (2004)
	Y	FC	9460	9168	NR	3			BMP dB; Lakewood, Caltrans (2004)
	Y	FC	1366	239	NR	82			BMP dB; Vista, CA, Caltrans (2004)
Volume Reduction BMPs									
Infiltration Basins & Trenches	Y	FC	80-5000	<23	9	>99	\$1.25-20.76/ft ³ <\$110,000 per 1 ac basin	<\$3,000 per basin or trench	LASGRWC (2005)
	Y	<i>E. coli</i>	20-1300	<6.9	9	>99			
	Y	FC	500	ND-800	8				
	Y	FC	ND-13000	11-110	8				
	Y	<i>E. coli</i>	ND-120	ND	8	>99			
	Y	FC	230	ND	5	>99			
	Y	<i>E. coli</i>	310	ND	5	>99			
									100% for infiltrated fraction
Low Impact Development (LID)						No data.	N/A	N/A	
Source Control BMPs									
Agricultural BMPs						No data	Variable	Variable	
Public Education/Outreach						No data	Variable (up to \$1,000,000+)	Variable	
Routine Inspection/Maintenance of Sewer and Septic Systems						No data	Variable	Variable	

NR = Not reported; ND = Not detected

Cost estimates from CASQA (2003), Olivieri et al. (2007), RBF (2003), and Narayanan & Pitt (2006)

Shaded percent removal values were not statistically significant

BMP categorization scheme mostly from Minton (2002) and Olivieri et al. (2007)

Appendix C: Scientific and Technical Literature on Bacteria BMP Effectiveness

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