DECISION ID	63257	Region 8
Santa Ana River, Reach 3		

Pollutant:	**Total Dissolved Solids**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant

Regional Board Staff Conclusion:

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One (1) line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the two hundred ninety-seven (297) samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the two hundred ninety-seven (297) samples exceed the water quality objective and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Staff Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are not being exceeded.

Line of Evidence (LOE) for Decision ID 63257, Total Dissolved Solids **Region 8**
Santa Ana River, Reach 3

LOE ID:	82353
Pollutant:	Total Dissolved Solids
LOE Subgroup:	Pollutant-Water
Matrix:	Water
Fraction:	Total Dissolved
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	297
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Numeric data generated from 297 samples collected had no exceedences of the site-specific objective.
Data Reference:	Data for Metals and Other Inorganic Pollutants in Orange County Water District, 1994-2010.
SWAMP Data:	Non-SWAMP
Water Quality Objective/Criterion:	The site-pecific objective for Total Dissolved Solids at Santa Ana River, Reach 3 according to table 4-1 of the Santa Ana Basin plan is 700 mg/L.
Objective/Criterion Reference:	Water Quality Control Plan, Santa Ana River Basin
Evaluation Guideline:	
Guideline Reference:	
Spatial Representation:	Data was collected from the following stations: SAR-ETIWANDA-01 SAR-HAMNER-01 SAR-MISSION-01 SAR-MWDXING-01 SAR-RIVERRD-01 SAR-VANBUREN-01
Temporal Representation:	Data was collected approximately once a month from February 1994 to August 2009.
Environmental Conditions:	
QAPP Information:	The samples were collected under the Orange County Water District Main Laboratory Quality Assurance Manual. November 2009.
QAPP Information Reference(s):	

DECISION ID	65478	Region 8
Santa Ana River, Reach 3		

Pollutant:	**Benthic Community Effects**
Final Listing Decision:	**List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Sources:	Source Unknown
Expected TMDL Completion Date:	2027
Impairment from Pollutant or Pollution:	Pollutant

Regional Board Staff Conclusion:

Benthic Community Effects is being considered for placement on the CWA section 303(d) List under sections 3.9 and 3.1 of the Listing Policy. Under section 3.9, an additional line of evidence associating Benthic Community Effects with a water or sediment concentration of pollutant(s) is necessary to assess listing status.

Several lines of evidence are available in the administrative record to assess this indicator. One of the 3 benthic macroinvertebrate samples exceed (fall below) the California Streams Condition Index (CSCI) threshold for likely altered biological condition. The water segment does have associated pollutant(s) samples that exceed water quality objectives.

Based on the readily available data and information, the weight of evidence provides sufficient justification for placing Benthic Community Effects in this water segment on the CWA section 303(d) List.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Pursuant to section 3.9 of the Listing Policy, the water segment exhibits significant degradation in biological populations and/or communities as compared to reference site(s) using the California Stream Condition Index.
4. Pursuant to section 3.9 of the Listing Policy, the water segment does have associated pollutant(s) samples that exceed water quality objectives.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not being met.

The California Stream Condition Index is a new scoring tool for bioassessment data that is applicable statewide, accounts for a much wider range of natural variability, and provides equivalent scoring thresholds in all regions of the state. The CSCI has been used in some assessments this reporting cycle and will be used in the future for water quality assessment purposes statewide over the regional indices of biologic integrity (IBIs). If CSCI scores have not been calculated for data and only IBI scores are available, IBI scores will still be used to interpret the data.

Regional Board Staff Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem. Based on the readily available data and information, the weight of evidence provides sufficient justification for placing Benthic Community Effects in this water segment on the CWA section 303(d) List.

LOE ID:	82390
Pollutant:	Benthic-Macroinvertebrate Bioassessments
LOE Subgroup:	Population/Community Degradation
Matrix:	Water
Fraction:	None
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	3
Number of Exceedances:	1
Data and Information Type:	Benthic macroinvertebrate surveys
Data Used to Assess Water Quality:	Three samples were collected from three different sites on the Santa Ana River during 2006 and 2007 to assess benthic macroinvertebrates. One of the three samples collected had a CSCI score below the 0.79 threshold and therefore exceeds the water quality objective for the aquatic life beneficial use. The CSCI scores for the sites are 0.80 and 0.85 (2006) and 0.76 (2007).
Data Reference:	Data for Various Pollutants in the Streams of Region 8, 2009. Region 8 CSCI scores and data.
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Inland surface water communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that balanced community no longer exists. The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses.
Objective/Criterion Reference:	Water Quality Control Plan, Santa Ana River Basin
Evaluation Guideline:	The California Stream Condition Index (CSCI) is a biological scoring tool that helps aquatic resource managers translate complex data about benthic macroinvertebrates found living in a stream into an overall measure of stream health. The CSCI score is calculated by comparing the expected condition with actual (observed) results (Rehn, A.C. et al., 2015). CSCI scores range from 0 (highly degraded) to greater than 1 (equivalent to reference). CSCI scoring of biological condition are as follows (per the scientific paper supporting the development of the CSCI scoring tool): greater than or equal to 0.92 = likely intact condition, 0.91 to 0.80 = possibly altered condition, 0.79 to 0.63 = likely altered condition, less than or equal to 0.62 = very likely altered condition. Sites with scores below 0.79 are considered to have exceeded the water quality objective for the aquatic life beneficial use.
Guideline Reference:	The California Stream Condition Index (CSCI): A New Statewide Biological Scoring Tool for Assessing the Health of Freshwater Streams.
Spatial Representation:	The samples were collected from stations 801PFB019 (SMCR8_019), 801SAR110 (SMCR8_110), 801SAR151 (SMCR8_151).
Temporal Representation:	The samples were collected in June 2006 at stations 801PFB019 (SMCR8_019) and 801SAR110 (SMCR8_110) and in June 2007 at station 801SAR151 (SMCR8_151).
Environmental Conditions:	
QAPP Information:	Samples were collected for the RWB8's Probabilistic Stream Survey CY2006 and CY2007 following SWAMP protocols and data were stored in the SWAMP database.
QAPP Information Reference(s):	

Line of Evidence (LOE) for Decision ID 65478, Benthic Community Effects **Region 8**
Santa Ana River, Reach 3

LOE ID:	8263
Pollutant:	Salinity/TDS/Chlorides
LOE Subgroup:	Pollutant-Water
Matrix:	Water
Fraction:	None
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	4182
Number of Exceedances:	734
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Of the 4182 samples collected, 734 ecxeeded the Basin Plan objective. The exceedances occurred between the years 11/4/1966 through 12/27/2006
Data Reference:	2006 HCMP Database
SWAMP Data:	Non-SWAMP
Water Quality Objective/Criterion:	Santa Ana River Basin Plan Objective: 700 mg/l
Objective/Criterion Reference:	Water Quality Control Plan for the Santa Ana River Basin
Evaluation Guideline:	
Guideline Reference:	
Spatial Representation:	The samples were collected at six locations in the Santa Ana River as follows: at Etiwanda Avenue, at Hamner, at MWD Xing, at River Road, at Van Buren Blvd., and below Prado Dam.
Temporal Representation:	The samples were collected multiple times per month over several years beginning with 10/11/1966 through 2/21/2007
Environmental Conditions:	
QAPP Information:	The data's quality is deemed acceptable because it was submitted by an NPDES discharger in accordance with its Monitoring and Reporting Requirements.
QAPP Information Reference(s):	

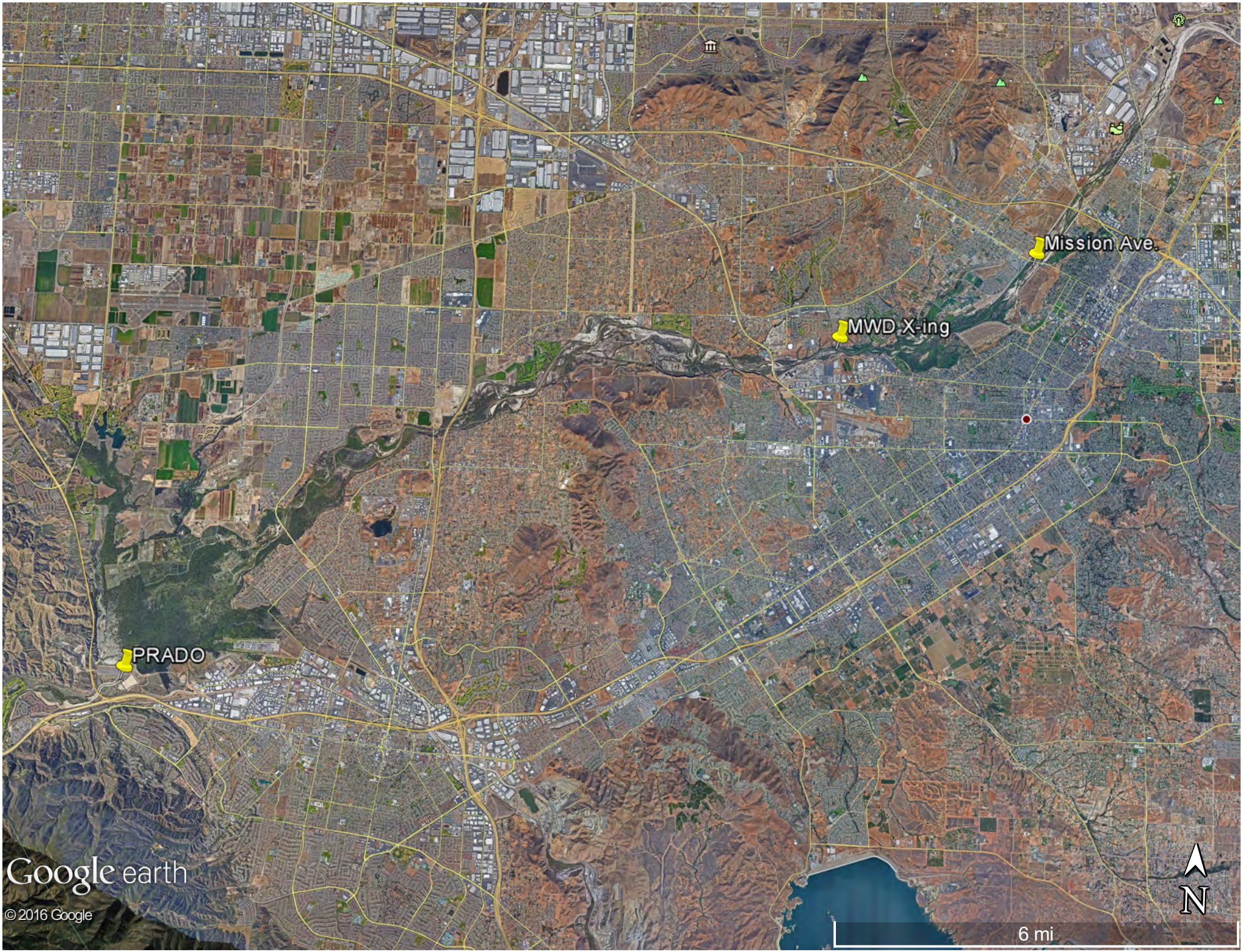
Mission Ave.
MWD X-ing
PRADO
Google earth
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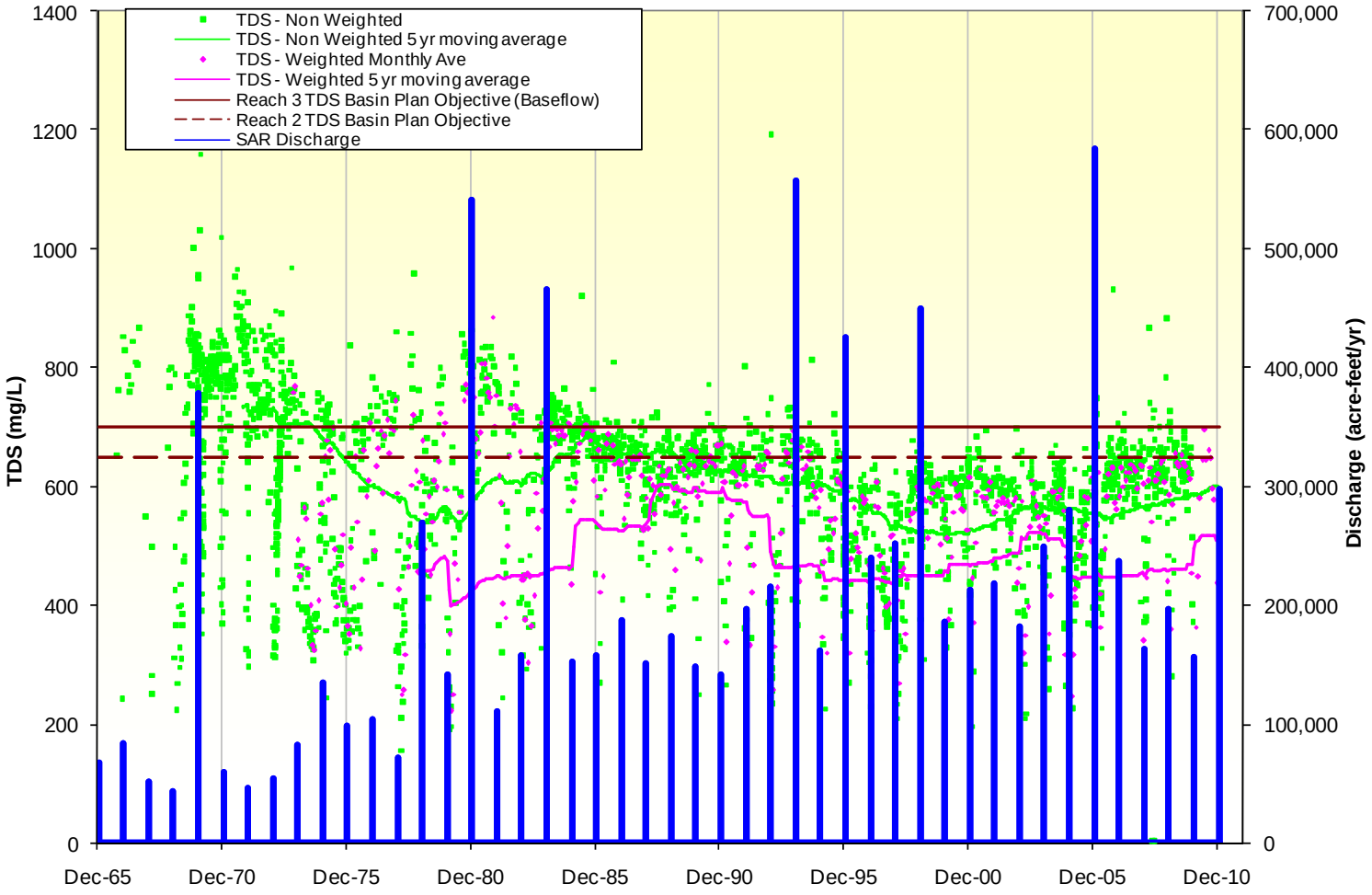
Figure 3-1
Total Dissolved Solids (TDS) Below Prado Dam



Notes:
TDS Non-Weighted = TDS samples from RWQCB, USGS, HCMP, OCWD.
TDS Weighted = Monthly flow weighted TDS calculated from EC. Data prior to October 2003 from Watermaster; October 2003 to December 2004 from WeInc, 2005 to 2010 from SAWPA.

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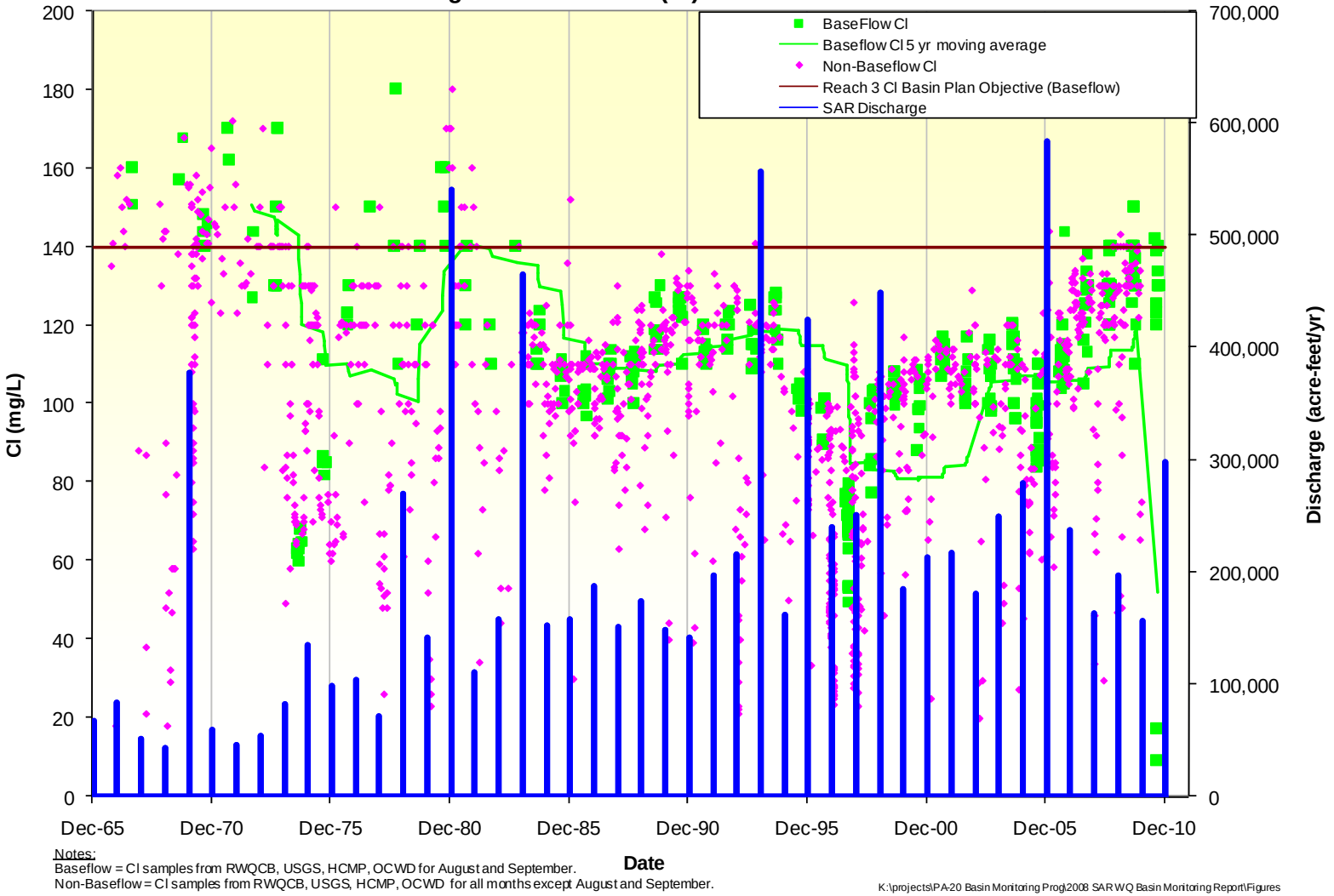
Figure 3-4. Chloride (Cl) Below Prado Dam



Notes:
Baseflow = Cl samples from RWQCB, USGS, HCMP, OCWD for August and September.
Non-Baseflow = Cl samples from RWQCB, USGS, HCMP, OCWD for all months except August and September.

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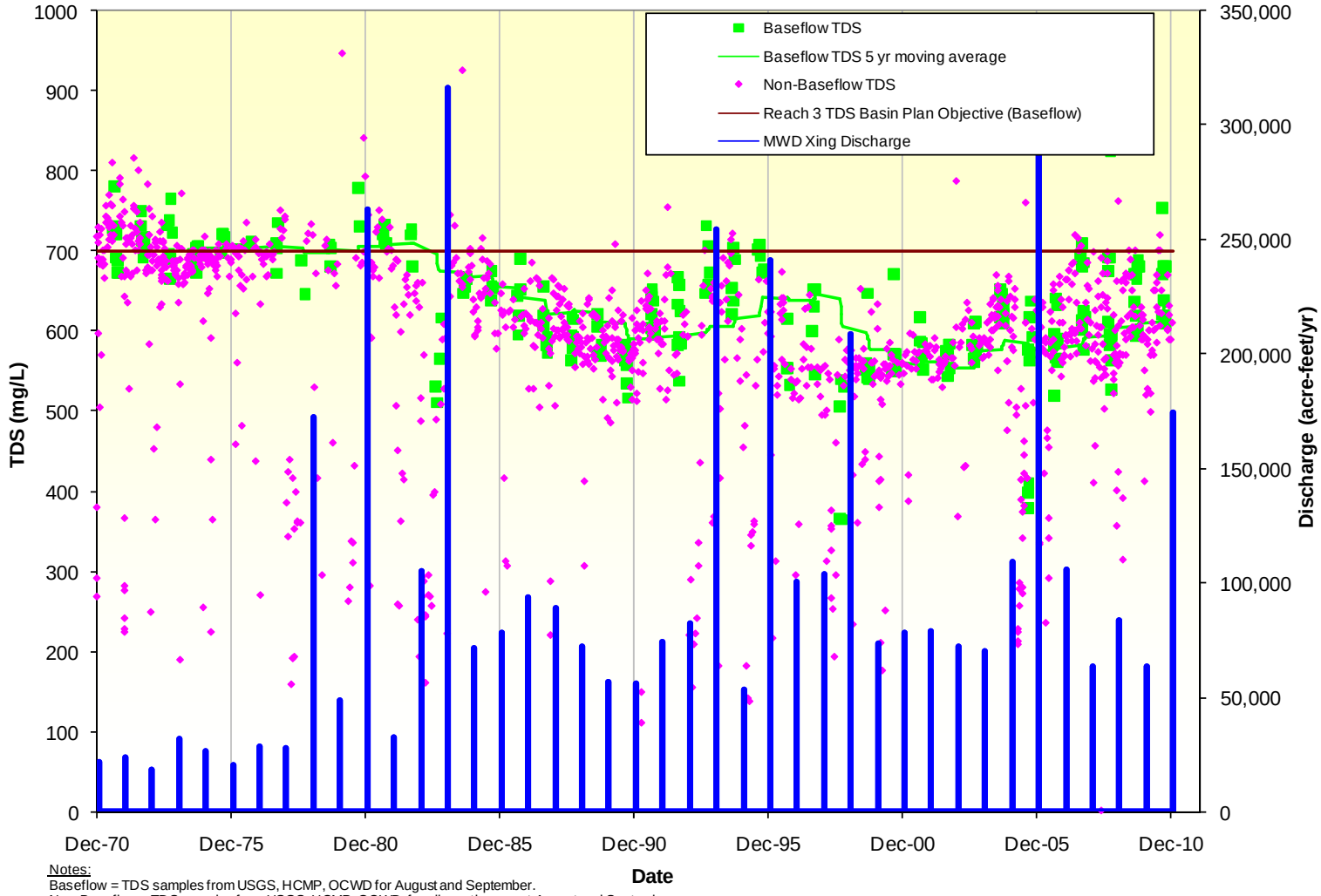
Figure 3-9. Total Dissolved Solids (TDS) MWD Crossing



Notes:
Baseflow = TDS samples from USGS, HCMP, OCWD for August and September.
Non-Baseflow = TDS samples from USGS, HCMP, OCWD for all months except August and September.

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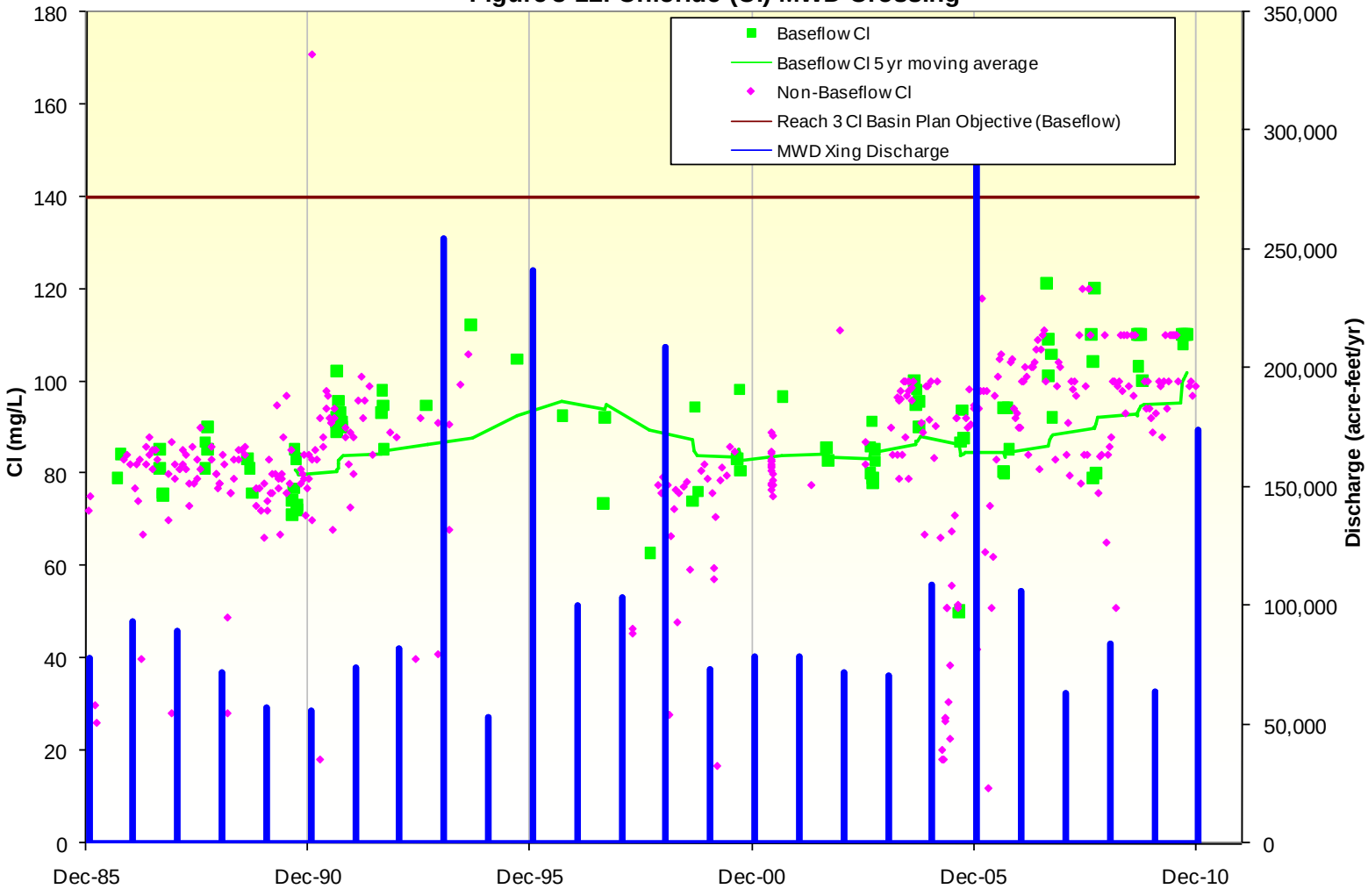
Figure 3-12. Chloride (Cl) MWD Crossing



Notes:
Baseflow = Cl samples from USGS, HCMP, OCWD for August and September.
Non-Baseflow = Cl samples from USGS, HCMP, OCWD for all months except August and September.

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Table 2

Volume-Weighted TDS Concentration of POTW Discharge during August-September

2004-2014

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total POTW Discharge during August-September (million gallons)	RIX	2,394	2,458	2,484	2,294	2,205	2,124	2,175	2,081	2,043	1,921	1,779
	Rialto	436	411	436	400	404	360	360	356	376	346	357
	RWQCP	1,986	2,014	1,991	1,954	1,898	1,818	1,790	1,773	1,713	1,806	1,693
	WRCRWTP	160	187	195	299	344	389	351	351	343	373	396
	IEUA RP-1 (DP-001)	409	572	228	335	299	272	216	179	130	112	161
	IEUA RP-1 (DP-002)	1,535	1,401	1,060	1,150	791	497	356	269	448	143	212
	IEUA RP-5	375	392	391	342	259	213	279	138	95	0	100
	IEUA Carbon Canyon	487	417	590	643	592	490	21	0	41	93	0
	Corona 1B	193	311	388	187	179	108	192	189	120	108	92
	Corona 3	0	0	0	10	4	6	4	3	0	0	0
	LLWD	32	38	36	38	51	52	47	50	51	0	0
	EVMWD	207	350	351	105	59	41	19	329	36	44	28
	EMWD	0	332	22	0	0	0	0	0	0	0	0
	Total	8,213	8,885	8,171	7,758	7,085	6,370	5,812	5,718	5,396	4,945	4,819
Average TDS concentration of POTW Discharge during August-September (mg/L)	RIX	517	490	486	490	510	490	505	505	490	520	460
	Rialto	510	482	490	453	507	470	498	480	489	486	479
	RWQCP	571	585	616	619	652	626	600	603	647	633	636
	WRCRWTP	596	665	590	545	639	560	555	540	535	550	450
	IEUA RP-1 (DP-001)	482	437	449	469	502	489	511	487	515	536	541
	IEUA RP-1 (DP-002)	476	454	455	474	497	520	500	488	471	511	514
	IEUA RP-5	494	477	489	517	544	548	499	514	516	-	586
	IEUA Carbon Canyon	498	473	482	494	511	505	528	-	532	561	-
	Corona 1B	692	810	823	859	720	735	723	690	670	795	730
	Corona 3	748	720	825	735	725	675	700	605	625	-	-
	LLWD	585	483	479	480	570	535	-	460	555	-	-
	EVMWD	715	715	670	745	760	740	800	560	655	640	635
	EMWD	-	783	753	-	-	-	-	-	-	-	-
Volume-Weighted TDS Concentration of POTW Discharge, during August-September (mg/L)		529	535	539	534	562	544	545	544	548	569	536

1 -- The LLWD POTW was excluded from the 2010 volume-weighted TDS concentration calculations because TDS data was not available for 2010.

Table 3
Volume-Weighted TDS Concentration of POTW Discharge as Assumed in WLAM Scenario 8 during August-September

POTW Discharge Location	WLAM Scenario 8 TDS Concentration (mg/L)[1]	Total Assumed POTW Discharge during August-September (million gallons)					
		Scenario 8a Low Discharge 2015	Scenario 8b Intermediate Discharge 2015	Scenario 8c High Discharge 2015	Scenario 8d Low Discharge 2020	Scenario 8e Intermediate Discharge 2020	Scenario 8f High Discharge 2020
RIX	550	1,623	1,958	1,958	1,385	1,769	1,940
Rialto	490	395	395	411	468	517	533
RWQCP	650	1,849	1,849	1,910	1,664	1,947	2,007
WRCRWTP	625	488	488	488	248	732	732
Western WRF[2]	550	0	0	8	0	33	53
IEUA RP-1 (DP-001)	550	217	233	417	92	240	431
IEUA RP-1 (DP-002)	550	87	89	113	77	93	119
IEUA RP-5	550	98	102	157	96	160	217
IEUA Carbon Canyon	550	92	92	336	92	220	464
Corona 1B	725	0	0	15	0	0	21
Corona 3	700	0	0	21	0	5	33
LLWD	650	31	31	207	31	214	390
EVMWD	700	0	0	0	0	0	0
EMWD	650	4,911	5,278	6,184	4,184	5,977	7,094
POTW Discharge Assumed during August-September (million gallons)		9,789	10,513	12,225	8,336	11,905	14,034
Volume-Weighted TDS Concentration during August-September (mg/L)		621	619	619	619	620	620

1 -- With one exception, the TDS concentrations associated with POTW discharges were simulated using the wasteload allocation in the current Basin Plan (RWQCB,2008). The exception is the City of Corona's Plant 1 discharge. The current wasteload allocation for TDS of the City of Corona's Plant 1 discharge is 700 mg/L as an annual average.To represent both the high summertime TDS concentrations and the TDS wasteload allocation, the TDS concentration of Plant 1 discharge was assumed to be 725 mg/L from May to November and 665 mg/L from December to April. This modeling strategy was necessary to more accurately simulate the summertime TDS concentration of the SAR below Prado Dam for comparison to the TDS objective for Reach 3 of the SAR.

2 -- The Western Municipal Water District Western Water Recycling Facility discharges at the WRCRWTP discharge location.